

South Carolina Department of Natural Resources

Board Meeting Agenda and Materials and Monthly Division Reports



DNR

**Board Meeting Scheduled
for**

Rembert C. Dennis Building, RM 335
1000 Assembly Street
Columbia, SC 29201
August 19, 2021 10:00 AM

Agenda

AGENDA
SC DEPARTMENT OF NATURAL RESOURCES BOARD

Rembert C. Dennis Building, RM 335
1000 Assembly Street
Columbia, SC

August 19, 2021 10:00 AM

Members of the public may only participate virtually

<https://scdnr2.webex.com/scdnr2/j.php?MTID=m1b358227a93cfc77a907c14766da3c74>

Telephone: 1-844-992-4726
Access Code: 132 841 7832##

- I. Call to Order..... Norman Pulliam, Chairman, SC DNR Board
- II. Videoconference Guidelines..... Valerie Shannon, Facilitator
- III. Invocation
- IV. Pledge of Allegiance..... Mike Hutchins, Vice Chairman, SC DNR Board
- V. Chairman's Comments
- VI. Introduction of Guests Angie Cassella, Deputy Director for Administration
- VII. Introduction of Staff
- VIII. Constituent Comments (Comments are limited to 5 minutes) Angie Cassella
- IX. Approval of Minutes from June 17, 2021 meeting and July 15, 2021 workshop
- X. Presentations/Commendations
- XI. Advisory Committee Reports
 - A. Wildlife and Freshwater Fisheries..... Mike Hutchins, Chairman
 - B. Marine Duane Swygert, Chairman
 - C. Heritage Trust..... Jake Rasor, Jr., DNR Board Representative
 - D. Land, Water and Conservation Dr. Mark Hartley, DNR Board Representative
- XII. Item(s) for Board Information
 - A. Climate Update..... Hope Mizzell, Land, Water and Conservation Division
 - B. Coyote Harvest Updates and Trends..... Jay Butfiloski
Wildlife and Freshwater Fisheries Division
 - C. SC DNR Coastal Beaches Survey Blaik Keppler, Marine Resources Division
 - D. Legal Update Shannon Bobertz, General Counsel
- XIII. Director's Briefings
 - A. Executive Office Robert H. Boyles, Jr., Director
 - 1. Legislative Report..... Kevin R. Ryan, Director, Government Affairs
 - 2. Environmental Report..... Lorianne Riggan, Director, Office of Environmental Programs

- B. Deputy Directors' Reports
 - 1. Administration.....Angie Cassella
 - 2. Land, Water and Conservation Ken Rentiers
 - 3. Wildlife and Freshwater Fisheries Emily Cope
 - 4. Law Enforcement..... COL Chisolm Frampton
 - 5. Marine Resources.....Blaik Keppler for Phil Maier
- XIV. Item(s) for Board Action
 - A. Approval of FY 2023 Heritage Trust Budget Ken Rentiers
Deputy Director for Land, Water and Conservation
 - B. Approval of FY 2023 Budget Request..... Robert H. Boyles, Jr.
 - C. Approval of Deletion of Policy #200.01 (Duck Stamp Distribution) Angie Cassella
 - D. Approval of Update of Policy #400.01 (Request to Use or Acquire Real Property Under the Jurisdiction of SCDNR) Ken Prosser
Assistant Deputy Director, Wildlife and Freshwater Fisheries
 - E. Approval of Expenditure of Funds from Twelvemile Creek Mitigation Trust Fund..... Ross Self
Wildlife and Freshwater Fisheries Division
 - F. Approval of 2021-22 Duck Stamp Budget..... Emily Cope
Deputy Director for Wildlife and Freshwater Fisheries
 - G. Deer Hunting with Dogs..... COL Chisolm Frampton, Deputy Director for Law Enforcement
 - H. Approval of Potential Property Donation in Charleston County Sean Taylor
Land, Water and Conservation Division
 - I. Approval of Potential Property Acquisition in Horry County..... Ken Prosser
 - J. Approval of Potential Property Acquisition in Horry County..... Ken Prosser
- XV. Executive Session (if necessary)
- XVI. Comments..... Board Members
- XVII. Time and Location of Next Board Meeting..... Board Members
- XVIII. Adjournment

Minutes

Minutes
Board of the South Carolina Department of Natural Resources
Rembert C. Dennis Building, RM 335
1000 Assembly Street
Columbia, SC
June 17, 2021 10:00 AM

The regular meeting of the Board of the South Carolina Department of Natural Resources was held at 10:00 a.m., June 17, 2021. Notice of the date, time and place of the meeting was posted and mailed to the news media. Chairman Norman Pulliam presided at the meeting. Board members present included Dr. Mark Hartley, Mike Hutchins, Jerry Lee, Carlisle Oxner, Jake Rasor, Jr. and Duane Swygert. Director Boyles and staff members of the Department of Natural Resources were present at the meeting.

- I. **Call to Order**
Chairman Norman Pulliam called the meeting to order and welcomed everyone to the meeting.
- II. **Invocation**
Chaplain Eric Skidmore, SC Law Enforcement Assistance Program (SC LEAP), offered the invocation.
- III. **Pledge of Allegiance**
Mr. Hutchins led the group in the Pledge of Allegiance.
- IV. **Chairman's Comments**
Chairman Pulliam welcomed and thanked Board members for being present and for contacting legislators during budget discussions.
- V. **Introduction of Guests**
COL Chisolm Frampton, Deputy Director for Law Enforcement, introduced Scott Whitaker, Coastal Conservation Association.
- VI. **Constituent Comments**
COL Frampton noted that there were no requests for constituent comment.
- VII. **Approval of Minutes**
Chairman Pulliam asked if there were any additions, deletions or corrections to the May 20, 2021 meeting minutes. *Dr. Hartley made a motion that the Board approve the minutes of the May 20, 2021 meeting and April 22, 2021 workshop be approved as presented. Mr. Oxner seconded the motion and the motion carried unanimously.*
- VIII. **Presentations/Commendations**
Director Boyles and Chairman Pulliam presented the Meritorious Service Award to Susan Davis of the Office of Environmental Programs.

Director Boyles commended Tanner Arrington of Land, Water and Conservation Division, our SCDNR graduate of the Department of Administration's Certified Public Manager (CPM) program which is a nationally accredited management development program for public managers.

Director Boyles commended Achi Treptow and Felicia Sanders of Wildlife and Freshwater Fisheries Division for their fantastic work on the PBS special at the Santee Coastal Reserve that was done on conserving bird populations.

Director Boyles commended Matt Perkinson and Kris Reynolds of Marine Resources Division and the members of the Murrells Inlet Rotary for their efforts during the Murrells Inlet Rotary Flounder Tournament on June 5 at the Crazy Sister Marina. This year, the tournament moved to an all-release format, and Matt and Kris were able to weigh, measure, fin clip, and tag around 60 southern flounder.

Director Boyles commended Bill Marshall of Land, Water and Conservation Division for his work in coordinating the 2020 S.C. Environmental Awareness Award selection process and ceremony honoring the recipient Jane Hiller, education director with Sonoco Recycling in Columbia, held on June 16 and presented by Governor Henry McMaster.

Director Boyles commended Felicia Sanders of Wildlife and Freshwater Fisheries Division and Erin Weeks of Marine Resources Division for their hard work and effort involved in the “Discovery at Deveaux” presentation at the Charleston Museum on June 15 about the discovery of 20,000 whimbrel confirmed roosting at night at the Deveaux Bank Seabird Sanctuary during their annual journey north.

Director Boyles commended Greg Mixon of the Office of Environmental Programs for his professionalism and expertise in a high profile Commerce Project with comments received from Richard Darden of the US Army Corps of Engineers thanking him for his “timely and technically detailed” comments and his “obvious knowledge of the mitigation rule and the art of evaluating credit-generating stream/wetland mitigation design,” and that “it seems clear to me that Greg is an expert in this field.”

IX. Items for Board Information

A. Climate Update

Hope Mizzell, Land, Water and Conservation Division, informed the Board that six counties are in incipient drought. Dr. Mizzell provided rainfall totals, precipitation percentiles, streamflow, lake levels, groundwater monitoring wells around the state, precipitation forecast and temperature forecast.

B. Update of Geological Survey Activities

Scott Howard, Land, Water and Conservation Division, reviewed several activities of the SC Geological Survey section. Dr. Howard highlighted STATEMAP, Data Preservation, Earth MRI, Geologic Map Schema, GIS work, BOEM, Surface Elevation Tables, Regional Sand Management Working Group, Pockoy Island Studies, Environmental Reviews, Broad River Sediment Project, Historic Sea-Level Study and Outreach Programs.

X. Director’s Briefings

Director Boyles reviewed the status of the budget.

Director Boyles met with Jason Johnson of The Conservation Fund to discuss partnership opportunities.

XI. Legislative Report

Kevin Ryan, Director of Government Affairs, distributed and reviewed the final summary of flounder legislation (Act 91). Mr. Ryan also spoke of the budget and the proposed legislation before the conference committee.

XII. Environmental Report

Lorianne Riggan, Director, Office of Environmental Programs, gave the Board an update on Crab Bank restoration and Horry County Rezoning (Lewis Ocean Bay).

XIII. Deputy Directors' Reports

A. Marine Resources

Phil Maier, Deputy Director for Marine Resources, recognized Mr. Ed Holder for service to DNR most recently as a Marine Advisory Committee member. Mr. Maier mentioned new partnerships with the Navy and Tom Mullikin.

B. Administration

No further report.

C. Land, Water and Conservation

Ken Rentiers, Deputy Director for Land, Water and Conservation, announced Spartanburg High School as the winner of the Envirothon.

D. Wildlife and Freshwater Fisheries

No further report.

E. Law Enforcement

COL Frampton distributed and briefly reviewed the Law Enforcement activities over Memorial Day. COL Frampton gave a brief update on the new class of officers. COL Frampton distributed Georgia's Deer Dog Hunting Law and a listing of Dog-Deer Hunting in Other Southern States as provided by the Coalition for Ethical Deer Hunting. COL Frampton noted that the Law Enforcement Advisory Committee did not come to a consensus for a recommendation to the Board.

XIV. Item(s) for Board Action

A. Contribution to Ducks Unlimited Canada

Emily Cope, Deputy Director for Wildlife and Freshwater Fisheries, reviewed the proposed contribution to Ducks Unlimited Canada, as included in the meeting packet. *Dr. Hartley made a motion that the DNR Board approve the \$19,376.00 requested contribution to Ducks Unlimited Canada as required by S.C. Code Section 50-9-920(B). Mr. Lee seconded the motion and the motion carried unanimously.*

XV. Executive Session

Mr. Hutchins made a motion that the DNR Board go into executive session pursuant to SC Code Section 30-4-70(A)(1) and (A)(2) to discuss personnel issues related to Item XII. Director's Briefings, and appointments related to Item(s) for Board Action (B and D) and to discuss contractual matters and legal advice related to Item(s) for Board Action (C). Mr. Oxner seconded the motion and the motion carried unanimously.

XVI. Open Session

Mr. Hutchins made a motion that the DNR Board return to open session, noting that no action was taken during executive session. Dr. Hartley seconded the motion and the motion carried unanimously.

XVII. Item(s) for Board Action

B. Conservation District Commissioner Appointments/Reappointments

Mr. Swygert made a motion that upon the approval and recommendation of the Land, Water and Conservation Advisory Committee, I move that the DNR Board approve the following Conservation District Commissioner appointments:

*Sam Gilliam, Abbeville – 1/31/21 – 1/31/25
John Rhett Covington, Marlboro – 1/31/21 – 1/31/25*

Dr. Hartley seconded the motion and the motion carried unanimously.

Mr. Swygert made a motion that upon the approval and recommendation of the Land, Water and Conservation Advisory Committee, I move that the DNR Board approve the following Conservation District Commissioner reappointments:

*Jefferson Wilson, Chester – 7/1/21 – 7/1/25
Cleveland Hiott III, Colleton – 4/23/21 – 4/23/25
Malcolm J. O'Neal, Edgefield – 7/31/20 – 7/31/24
Kerry H. Matthews, Fairfield – 1/31/21 – 1/31/25
Patrick T. Rogers, Marlboro – 2/11/21 – 2/11/25
Rowland Alston, Sumter – 1/3/21 – 1/3/25*

Mr. Lee seconded the motion and the motion carried unanimously.

Mr. Swygert made a motion that upon the approval and recommendation of the Land, Water and Conservation Advisory Committee, I move that the DNR Board approve the following Conservation District Commissioner Emeritus appointments:

*Stan Keaton, Abbeville
Wayne Satterwhite, Newberry
Francis Hinson, III, Marlboro*

Dr. Hartley seconded the motion and the motion carried unanimously.

C. Property Acquisition in Charleston County

Dr. Hartley made a motion that upon the recommendation of staff and subject to standard due diligence and approval of state appropriated funds, I move the DNR Board grant final approval to purchase approximately 23 acres adjoining SC DNR's Marine Resources Complex on Fort Johnson Road in Charleston County. Mr. Oxner seconded the motion and the motion carried unanimously.

D. Wildlife and Freshwater Fisheries Advisory Committee Appointments

Mr. Hutchins made a motion that upon the recommendation of staff, the DNR Board reappoint Mr. Stan Halliday of Spartanburg, SC to serve a third consecutive four-year

term, as requested by the Advisory Committee Chair, on the Wildlife and Freshwater Fisheries Advisory Committee. His term shall expire June 30, 2025. Mr. Rasor seconded the motion. The motion carried 5-1 with Mr. Swygert voting against.

Mr. Hutchins made a motion that upon the recommendation of staff, the DNR Board reappoint Dr. Cleveland Smith of Columbia, SC to serve a third consecutive four-year term, as requested by the Advisory Committee Chair, on the Wildlife and Freshwater Fisheries Advisory Committee. His term shall expire June 30, 2025. Mr. Rasor seconded the motion. The motion carried 5-1 with Mr. Swygert voting against.

Mr. Hutchins made a motion that upon the recommendation of staff, the DNR Board appoint Mr. Sam Hiott of Charleston, SC to serve a four-year term on the Wildlife and Freshwater Fisheries Advisory Committee. His term shall expire June 30, 2025. Mr. Rasor seconded the motion and the motion carried unanimously.

XVIII. Time and Location of Next Board Meeting

The Board will be having a workshop on July 15, 2021 in Charleston.

The Board's next meeting is scheduled for August 19, 2021 in Columbia.

XIX. Adjournment

Mr. Hutchins made a motion that the meeting be adjourned. Mr. Oxner seconded the motion and the motion carried unanimously.

Minutes
Board of the South Carolina Department of Natural Resources
Workshop
SC DNR – Marine Resources Division
Eltzroth Building Conference Room – Third Floor
217 Ft. Johnson Road
Charleston, SC
July 15, 2021 10:00 am

The Board of the South Carolina Department of Natural Resources held a workshop at 10:00 am, July 15, 2021 at SC DNR Marine Resources Division, Eltzroth Building Conference Room, 217 Ft. Johnson Road, Charleston, SC. Notice of the date, time and place of the workshop was posted and mailed to the news media. Members present included Chairman Norman Pulliam, Dr. Mark Hartley, Jerry Lee, Carlisle Oxner, Jake Rasor, Jr. and Duane Swygert. Mike Hutchins was absent. Director Boyles and staff members of the Department of Natural Resources were present at the workshop. Chairman Pulliam introduced guest Senator Chip Campsen, and Director Boyles introduced guest Riley Egger, SC Coastal Conservation League.

The Board previewed the “Discovery at Deveaux” film. The Board received presentations or reports on the following items: review of FY 2022 State Budget and Discussion of FY 2023 State Budget.

Time and Location of Next Board Meeting

The next meeting will be held on August 19, 2021 in Columbia.

Item(s) for Action

Summary of Budget Requests for FY2023

Heritage Trust Programs

<u>Program</u>	<u>FY2022 Requested Budget</u>	<u>FY2023 Requested Budget</u>	<u>Increase/ Decrease In Dollars</u>	<u>Inc/Dec Percentage</u>
Habitat Protection	\$ 523,367.00	\$ 574,102.00	\$ 50,735.00	10%
Cultural Preserve Management	\$ 2,486,000.00	\$ 2,832,300.00	\$ 346,300.00	14%
Heritage Preserve Management	\$ 1,981,000.00	\$ 3,431,000.00	\$ 1,450,000.00	73%
Coastal Preserves	\$ 119,890.00	\$ 155,662.00	\$ 35,772.00	30%
Total	\$ 5,110,257.00	\$ 6,993,064.00	\$ 1,882,807.00	37%

**The budgets listed for these projects are estimates only.

These numbers will fluctuate based on various factors such as funding source, cost of labor, and cost of materials.

**Budget Request for FY2023
Habitat Protection**

1. Personal Services	FY2022	FY2023	Change
Classified	\$ 276,970.00	\$ 295,000.00	\$ 18,030.00
Hourly	\$ 15,000.00	\$ 38,400.00	\$ 23,400.00
Total	\$ 291,970.00	\$ 333,400.00	\$ 41,430.00
2. Fringe			
Classified	\$ 119,097.00	\$ 132,750.00	\$ 13,653.00
Hourly	\$ -	\$ 10,752.00	\$ 10,752.00
Total	\$ 119,097.00	\$ 143,502.00	\$ 24,405.00
Grand Total Personal Services	\$ 411,067.00	\$ 476,902.00	\$ 65,835.00
3. Operating			
Contractual Services	\$ 5,000.00	\$ 7,500.00	\$ 2,500.00
Supplies and Materials	\$ 8,000.00	\$ 10,000.00	\$ 2,000.00
Fixed Charges	\$ 26,000.00	\$ 30,000.00	\$ 4,000.00
Travel	\$ 7,200.00	\$ 7,200.00	\$ -
Equipment	\$ 59,700.00	\$ 35,000.00	\$ (24,700.00)
Gasoline	\$ 6,400.00	\$ 7,500.00	\$ 1,100.00
Total	\$ 112,300.00	\$ 97,200.00	\$ (15,100.00)
Grand Total	\$ 523,367.00	\$ 574,102.00	\$ 50,735.00

FY2022 Budget

\$ 523,367.00

FY2023 Request

\$ 574,102.00

Change

\$ 50,735.00

Request Includes:

- (1) Temporary/Hourly staff at 15/hr. with fringe to improve heritage database & support the program's data entry needs
- 10% Anticipated Personal Services Increase
- 10% Operating Increase for additional staff, equipment and fuel costs

**Budget Request for FY2023
Cultural Preserve Management Operating**

1. Personal Services	FY2022	FY2023	Change
Classified	\$ 890,000.00	\$ 1,050,000.00	\$ 160,000.00
Hourly	\$ 165,000.00	\$ 165,000.00	\$ -
Total	\$ 1,055,000.00	\$ 1,215,000.00	\$ 160,000.00
2. Fringe			
Classified	\$ 383,800.00	\$ 472,500.00	\$ 88,700.00
Hourly	\$ 46,200.00	\$ 46,200.00	\$ -
Total	\$ 430,000.00	\$ 518,700.00	\$ 88,700.00
Grand Total Personal Services	\$ 1,485,000.00	\$ 1,733,700.00	\$ 248,700.00
3. Operating			
Contractual Services	\$ 275,000.00	\$ 302,500.00	\$ 27,500.00
3.a. Petroglyph Study	\$ 25,000.00	\$ 25,000.00	\$ -
Supplies and Materials	\$ 55,000.00	\$ 60,500.00	\$ 5,500.00
Fixed Charges	\$ 275,000.00	\$ 302,500.00	\$ 27,500.00
Travel	\$ 121,000.00	\$ 133,100.00	\$ 12,100.00
Equipment	\$ 220,000.00	\$ 242,000.00	\$ 22,000.00
Gasoline	\$ 30,000.00	\$ 33,000.00	\$ 3,000.00
Total	\$ 1,001,000.00	\$ 1,098,600.00	\$ 97,600.00
Grand Total	\$ 2,486,000.00	\$ 2,832,300.00	\$ 346,300.00

FY2022 Budget

\$ 2,486,000.00

FY2023 Request

\$ 2,832,300.00

Change

\$ 346,300.00

Request Includes:

- (3) FTE's - Archaeologist II's for existing temp grant & hourly staff
- (5) Temporary/Hourly staff at 12/hr. with fringe
- 10% Anticipated Personal Services Increase
- 10% Operating Increase

HERITAGE PRESERVE MANAGEMENT BUDGET
Fiscal Year 2023

	Region 1	Region 2	Region 3	Region 4	Total
1. PERSONAL SERVICES					
Classified Employees	\$165,000	\$170,000	\$235,000	\$302,000	\$872,000
Temporary Employees	\$20,000	\$15,000	\$35,000	\$25,000	\$95,000
2. CONTRACTUAL SERVICES	\$135,000	\$100,000	\$100,000	\$425,000	\$760,000
3. SUPPLIES AND MATERIALS	\$105,000	\$100,000	\$125,000	\$375,000	\$705,000
4. FIXED CHARGES	\$16,000	\$16,000	\$16,000	\$25,000	\$73,000
5. TRAVEL	\$3,000	\$3,000	\$3,000	\$3,000	\$12,000
6. EQUIPMENT	\$50,000	\$50,000	\$50,000	\$275,000	\$425,000
7. GASOLINE	\$15,000	\$15,000	\$15,000	\$25,000	\$70,000
8. FRINGE	\$80,000	\$80,000	\$115,000	\$144,000	\$419,000
TOTAL	\$589,000	\$549,000	\$694,000	\$1,599,000	\$3,431,000

FY 2022 Final	\$ 359,000	\$ 386,000	\$ 412,000	\$ 824,000	\$ 1,981,000
Change from FY22 budget to FY2	\$ 230,000	\$ 163,000	\$ 282,000	\$ 775,000	\$ 1,450,000

New Tech 2's in each Region

25% of 3 bird biologist's time in Region 4, \$42,000 salary, \$19,000 FB

\$40K for boat, motor and trailer for Bird Project work on HPs - Region 4.

New GIS analyst.

\$160K - 4 vehicles for new staff

\$75K for Bald Rock cleanup.

\$25K Forty Acre Rock bridge construction.

\$25K Seegars-McKinnon boardwalk construction.

\$40K for Henderson shed construction.

\$200K for mulching - Region 4.

\$20K Pumper Unit for fire control Region 4.

\$165K for semi and lowboy for equipment transport - Region 4

\$75 for startup costs for new properties - All Regions.

\$400K for gravel on new preserves and some existing ones - All Regions.

\$30K Region 4 / \$15K others

\$350K Region 4 / \$50K others

Marine Resources Division Request to Heritage Trust Board for FY 2023: \$155,662

MRD-Managed Heritage Trust Islands: *Primary Management Responsibility:* Capers Island HP, Saint Helena Sound HP/WMA (Otter, Big, Warren, South Williman, Old Combahee, Ashe, and Beet Islands); *Significant Involvement:* Botany Bay WMA/HP, Cedar, Murphy, and Deveaux Bank

The Marine Resources Division (MRD) of DNR manages two coastal Heritage Preserves which include eleven islands with a combined acreage of 17,110 acres. In addition, the MRD has significant involvement with Cedar, Murphy, and Deveaux Bank through sea turtle nest protection efforts as well as management of visitation and volunteers at Botany Bay.

These coastal preserves have habitats that range from ocean beaches to maritime forests and have significant cultural and archeological attributes. The maritime beaches play valuable roles in nesting of threatened and endangered sea turtles and provide foraging habitats for migratory and non-migratory bird species, many of which are species of concern. The hammock islands contain intact mixed hardwood and maritime forests which provide valuable refuge for many animals including painted bunting, brown-headed nuthatch, common ground dove, southern hognose snake, diamondback terrapin, fox squirrel, mink, river otter and others. These properties also contain many rare plants including, seabeach amaranth, golden canna, southern privet, sweetgrass, midden prickly pear, and shellmound buckthorn. Several of the properties have valuable cultural aspects including historical buildings, remnants of antebellum structures, and shell rings and middens. Additionally, these properties provide public access to habitats that are reflective of the many plant and animal species found only on undeveloped beaches and in maritime forests.

Funds are requested to support staff time, routine transportation costs, and supplies to ensure compliance with the management plans. Routine work includes regular visits for inspection and maintenance of trails and open areas, structures (docks, sheds), and equipment (mowers, 4-wheelers, etc.). It also includes support for natural resource management efforts such as species monitoring and habitat management efforts (ie native plantings, invasive species control, and species surveys). Protection of threatened and endangered sea turtle nests is also a major focus. Nests are protected from mortality due to raccoons, coyote, and other invasive and natural predators through efforts including nest caging and predator trapping. Sea turtle nest densities on Heritage Trust islands are among the highest in the state, requiring routine monitoring and nest protection.

Funds are also requested to support staff time, administration, supplies, and communications to ensure a safe and meaningful visitor experience at MRD's Heritage Preserves. Because these properties are among some of the most frequently visited in the Heritage Trust system, there are considerable and increasing costs associated with accommodating and managing visitors. This includes administration requests for camping and hunting permits; operation and management of a 100-person volunteer network at Botany Bay; and the production of informational materials for the visiting public as well as others including website and print media content creation, interpretative signage, and social media. Funds also support staff time for direct in-person engagement with visitors and stakeholders.

Over the last several years, coastal Heritage Trust lands have experienced increased visitor use. Particularly in the last year, as residents and visitors have re-discovered a passion for engaging in outdoor activities, visitation and use has increased. For example, from January to June of 2021, over 60,000 people visited Botany Bay, about a 47% increase in visitation during the same six-month period in previous years. Additionally, camping has increased significantly on Caper’s Island and Otter Island and requests for hunting permits have increased significantly within the St. Helena Sound HP/WMA. We do not anticipate that this renewed interest will diminish but will continue to grow in the years to come. This offers the opportunity to engage visitors in resource protection and inspire resource stewardship.

The FY23 budget request represents a 24% increase over the FY21 budget, the bulk of which (\$22,468 salary, fringe) will provide 50% of one additional staff member to support land management and outreach activities on MRD’s Heritage Trust properties. The remainder of the funding request increase is attributed to cost-of-living salary increases, hourly pay rate increase, additional supply funds for Caper’s Island, and contractual funds to implement predator trapping on Caper’s Island to protect nesting shorebirds and sea turtles.

MRD Heritage Preserve Budget Request for FY 2023

FTE – Personal Services	\$74,379
Hourly – Personal Services	\$22,500
Fringe Benefits	\$38,283
Contractual Services	\$9,000
Supplies and Materials	\$8,000
Fixed Charges	\$3,000
Travel	\$500
Equipment	\$0
Total	\$155,662

South Carolina Department of Natural Resources



Robert H. Boyles, Jr.
Director

MEMORANDUM

To: DNR Board Members

From: Robert H. Boyles, Jr. 

CC: Deputy Directors
Scott Speares
Kevin Ryan

Date: 13 August 2021

RE: August 19 DNR Board Action Item: Recommendations for FY 2023 State Budget request

Attached please find the list of recommended items to be included in our FY 2023 State Budget request. Note that these items are listed in order of priority, as specified in the instructions from the Executive Budget Office (EBO).

These recommendations are based on presentations and discussions at our July 15 DNR Board workshop in Charleston. As was plain from the workshop, our needs are many. At the same time, I believe it is important that we present a disciplined approach to our request as we seek further support via the appropriations process, and we present these items for your consideration based on the following criteria:

- fulfill existing promises and commitments
- protect existing assets and investments
- improve efficiency and effectiveness
- meet emerging needs

For context, recall that we received \$6.125M in new recurring appropriations for the current fiscal year, and the Deputy Directors shared with you new recurring budget needs for FY 2023 of over \$23M. To craft our recommendations, I have had extensive discussions with our Deputy Directors to carefully evaluate and pare the initial request to what is presented here—the items herein are those that we all agree are critical to the future of the agency, and they are presented in order of my suggested priority. This has been a difficult and challenging process, but I believe that these items will help us best meet the myriad needs of our agency while recognizing the constraints of the annual appropriations process.

Also, we are including many of our nonrecurring needs in the hopes that funding from the American Rescue Plan Act and/or Savannah River settlement are available in addition to regular state funds. Our deferred maintenance and property needs are many and we will continue to seek all available sources of funding.

I look forward to discussing these recommendations with you at next week's DNR Board meeting.

Thank you for your consideration.

2023 \$ 11,049,697 \$ 69,783,700
 Goal \$ 9,000,000 \$ -
 Variance \$ 2,049,697 \$ 69,783,700

Department of Natural Resources
 FY 2023 Proposed General Funds Request

Priority	Recurring Amount	Nonrecurring Amount	R NR	Div	Detailed Items
1	\$ 4,496,457	\$ -			Agency Recruitment & Retention
	\$ 987,237		R	ADM	Retention Plan and Change funding source for 9.80 FTEs (Other Fund FTEs) to provide funds for Retention Plan (Other Funds)
	\$ 225,040		R	LWC	Recruitment & Retention
	\$ 2,827,087		R	LE	Retention Plan (Salary Structure)
	\$ 373,338		R	LE	Step Increase (based on new salary structure)
	\$ 83,755		R	MR	Retention and Step Increases
2	\$ 334,268	\$ -			Staff for New Public Properties, Reptiles and Red Cockaded Woodpecker Programs
	\$ 334,268		R	WFF	(6) Wildlife Resource Technician II for New Properties (1) Wildlife Biologist II (1) Herpatologist Technician II
3 & 10	\$ 861,000	\$ 8,820,000			Water Planning, Monitoring and Mapping
	\$ 7,670,000		NR	LWC	State Water Plan (5 remaining basins)
	\$ 190,995		R	LWC	State Water Plan Coordinator (1) Hydrologist II
	\$ 64,780		R	LWC	Flood Mitigation and Mapping - (1) Program Coordinator I
	\$ 135,225		R	LWC	Flood Mitigation-Inundation & State Mapping Priorities
	\$ 450,000		NR	LWC	30 Stream Gauges (\$15,000 installation each)
	\$ 500,000		NR	LWC	50-60 Monitoring Wells - Groundwater and saltwater intrusion
	\$ 470,000		R	LWC	Annual maintenance charges for data connections (stream gauges/monitoring wells)
	\$ 200,000		NR	LWC	Coastal Program Study Continuation - Saltwater Intrusion, Shoreline, Sand Resources
4	\$ 606,154	\$ -			Conservation Districts
	\$ 146,154		R	LWC	Conservation Districts - (2) Program Coordinator II
	\$ 460,000		R	LWC	Enhanced Aid to Conservation Districts- \$10,000 per District
5	\$ 1,043,516	\$ -			Inland Fisheries and State Lakes Staffing and Operations
	\$ 843,516		R	WFF	Fisheries Staff- (3) Hatcheries (2) State Lakes (1) Invertebrate (4) Regional Fisheries (1) Stream Habitat & Aquatic Species Project (1) Commercial Fisheries
	\$ 200,000		R	WFF	Public Fishing Areas/State Lakes Maintenance & Repairs

Priority	Recurring Amount	Nonrecurring Amount	R NR	Div	Detailed Items
6	\$ 340,367	\$ -			Information Technology
			\$ 340,367	R ADM	Unfunded FTES- (1) Asst DBA II (1) IT Consultant I; New FTES (1) IT Mgr I (1) IT Consultant I
7 & 11	\$ 881,422	\$ 9,322,000			Marine Resources Center Infrastructure Support
			\$ 502,108	R MR	Change funding source- Watercraft Staff: (1) Watercraft Capt II (1) Watercraft Capt I (1) Mechanic III (1) Food Specialist IV , Ft Johnson: (1) Facilities Maintenance Mgr (1)General Maintenance Tech III (1) Building & Grounds Mgr II
			\$ 379,314	R MR	Marine Resources Center Infrastructure
			\$ 405,000	NR MR	Ft Johnson Historic Structure Maintenance
			\$ 5,000,000	NR MR	Ft Johnson Central Mechanical Systems Update
			\$ 1,452,000	NR MR	CCEHBR Building Demolition - out of code structure vacated by NOAA
			\$ 550,000	NR MR	Public Shellfish Grounds - maintenance, acquire, transport and plant shell
			\$ 970,000	NR MR	Repair Spoil Site Retaining Wall - replace pilings and curtain wall facing harbor
			\$ 945,000	NR MR	Ft Johnson Building Demolition
8 & 12	\$ 1,594,413	\$ 676,500			Law Enforcement Class
			\$ 1,010,413	R LE	15 Officers and basic LE Equipment (15-JC20)
			\$ 676,500	NR LE	15 LE Trucks for new Officer Class
			\$ 584,000	R LE	LE Technology (Smart Cop, Power DMS, 800MHz Radio Maintenance)
9	\$ 892,100	\$ -			Vehicle Rotation
			\$ 62,000	R ADM	2 Vehicles-Motor Pool, Titling & License, OEP, OMO, IT, Legal
			\$ 194,000	R LWC	5 Vehicles-Hydrology, Geology, Conservation Districts, Flood Mitigation
			\$ 315,700	R LE	7 LE Vehicles Trucks
			\$ 204,000	R MR	7 Vehicles-Shellfish, Coastal Preserves, Marine Fisheries, Marine Research, Garage Operations
			\$ 116,400	R MR	3 Vehicles- Herpatology, Shorebirds, Bats, Gopher Tortoise, other non revenue species
13	\$ -	\$ 2,727,000			Waterfowl Impoundments Infrastructure Maintenance
			\$ 1,500,000	NR WFF	Category 1 Waterfowl Areas Maintenance & Repair
			\$ 150,000	NR WFF	Clemson WMA-water control structures, riprap, recore dike
			\$ 277,000	NR WFF	BeaverDam Creek WMA-water control structures, dike rehab, creek restoration

Priority	Recurring Amount	Nonrecurring Amount	R	Div	Detailed Items	
			\$ 350,000	NR	WFF	Bear Island WMA-new trunks/wingwalls, re-establish berm
			\$ 450,000	NR	WFF	Wateree River WMA-water control structures, grade pond
14	\$ -	\$ 29,228,000	Fish Hatcheries and State Lakes Maintenance & Repairs			
			\$ 9,800,000	NR	WFF	Walhalla
			\$ 5,337,500	NR	WFF	Cheraw
			\$ 4,665,000	NR	WFF	Dennis Ctr
			\$ 2,200,000	NR	WFF	Barnwell
			\$ 1,088,000	NR	WFF	Waddell
			\$ 837,500	NR	WFF	Cohen Campbell
			\$ 300,000	NR	WFF	Springs Stevens
			\$ 5,000,000	NR	WFF	State Lakes
16	\$ -	\$ 3,600,000	Shooting Ranges & Dove Fields			
			\$ 3,000,000	NR	LE	Shooting Range renovations/improvements (Leeds and Pickens)
			\$ 600,000	NR	WFF	Dove Fields (approximately 50 acre plots) land acquisition in various counties
16	\$ -	\$ 11,450,000	Internal Roads, Bridges and Boat Ramp Maintenance			
			\$ 8,000,000	NR	ADM	Renovate Boat Ramps, access points and parking in counties with insufficient Water Rec Funds
			\$ 2,450,000	NR	WFF	WMAs (15 locations, Botany Bay bridge)-crush & run gravel, farm bridge
			\$ 1,000,000	NR	WFF	Hatcheries (7 Hatcheries, Spring Stevens bridge)-crush & run gravel, farm bridge
17	\$ -	\$ 3,635,200	Field/Regional Office and Building Maintenance			
			\$ 680,000	NR	DNR	York Office - Replace existing structure and consolidate Rock Hill Fisheries Office
			\$ 500,000	NR	DNR	Clemson Office Expansion and Security
			\$ 805,200	NR	MRD	Bennett's Point Field Station-roof, HVAC, Fire Alarm, flooring, electrical
			\$ 575,000	NR	WFF	Renovate/Replace/Expand 4 work centers
			\$ 1,075,000	NR	WFF	WMA Buildings: Replace 1 bldg, Renovate 17other bldgs on 10 properties-HVAC, roofs, windows, plumbing etc
18	\$ -	\$ 140,670,000	Land Conservation Acquisitions			
			\$ 140,670,000	NR	DNR	Land Acquisitions to preserve critical habitat for public use

Not included in total

Priority	Recurring Amount	Nonrecurring Amount	R NR	Div	Detailed Items
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GENERAL FUND

Request - Revised though 8/12/21

Division	Recurring	NonRecurring	R %	NR %	
ADM	\$ 1,389,604	\$ 8,000,000	12.6%	11.5%	ADMINISTRATION
LWC	\$ 1,886,194	\$ 8,820,000	17.1%	12.6%	LAND WATER CONSERVATION
LE	\$ 5,110,538	\$ 3,676,500	46.3%	5.3%	LAW ENFORCEMENT
MR	\$ 1,169,177	\$ 11,540,200	10.6%	16.5%	MARINE RESOURCES
WFF	\$ 1,494,184	\$ 36,567,000	13.5%	52.4%	WILDLIFE - FRESHWATER FISHERIES
<u>DNR</u>	<u>\$ -</u>	<u>\$ 1,180,000</u>	<u>0.0%</u>	<u>1.7%</u>	DNR
DNR	\$ 11,049,697	\$ 69,783,700	100.0%	100.0%	TOTAL

Request - Original

Division	Recurring	NonRecurring	R %	NR %	
ADM	\$ 2,047,385	\$ 1,907,300	8.7%	3.8%	ADMINISTRATION
LWC	\$ 5,938,695	\$ 8,540,912	25.3%	17.1%	LAND WATER CONSERVATION
LE	\$ 10,031,440	\$ 1,953,000	42.7%	3.9%	LAW ENFORCEMENT
MR	\$ 2,851,218	\$ 5,730,500	12.1%	11.5%	MARINE RESOURCES
<u>WFF</u>	<u>\$ 2,612,405</u>	<u>\$ 31,685,000</u>	<u>11.1%</u>	<u>63.6%</u>	WILDLIFE - FRESHWATER FISHERIES
DNR	\$ 23,481,143	\$ 49,816,712	100.0%	100.0%	TOTAL

Priority	Recurring Amount	Nonrecurring Amount	R	Div	Detailed Items
19	\$ 4,728,326	\$ 1,000,000			Other Funds Authorization Requests
		\$ 694,976	R	ADEX	Recruitment/Retention Plan- (.5) Habitat Land Mgmt (1) Human Dimensions Analyst (1) Procurement Manager I (1) Admin Mgr 1 (1) Admin Specialist II
		\$ 952,632	R	LWC	Heritage Trust Properties and Program (3) Archeologists (.5) Habitat Land
		\$ 1,000,000	NR	LWC	One Time Heritage Preserve Project
		\$ 24,739	R	LWC	Recruitment & Retention
		\$ 372,359	R	LE	Hunter/Boater Education and Shooting Sports-2.5% increase,
		\$ 1,600,000	R	MR	Flounder and Enhanced Saltwater Recreational Fishing (3) Biologist I
		\$ 1,083,620	R	WFF	Coyote, Deer, Turkey, Mitigation - 2.5% and Operating
20	\$ 1,790,861	\$ -			Federal Funds Authorization Requests
		\$ 71,648	R	LWC	Recruitment & Retention
		\$ 912,058	R	LE	Boating Safety Program-2 Investigators, 1 ATON, 2.5% Increase, all are Temp Grant positions
		\$ 807,155	R	LE	Hunter/Boater Education and Shooting Sports-2.5% increase,

18 Land Conservation Acquisitions

Tract	Acreage	Cost Estimate	County	House District	Senate District
Jopeco LP Tracts	1,093	5,800,000	Pickens	Hiott	Rice
Fort Lawn Catawba River Tract	1,266	17,100,000	Chester	Ligon	Fanning
Cowpens Land & Timber	1,650	5,820,000	Horry	McGinnis	Hembree
Weyerhauser Tract River Fork	2,434	10,000,000	Florence	Kirby	Leatherman
Congaree Creek Additions	653	7,000,000	Lexington	Caskey	Setzler
Martin Marietta	195	3,000,000	Lexington	Caskey	Setzler
Sox Hunt Club	261	4,000,000	Lexington	Caskey	Setzler
Dominion Tracts	773	11,200,000	Lexington	Caskey	Setzler
Cedar Hill	3,488	13,500,000	Berkeley	Jefferson	Grooms
Pine Island	498	28,000,000	Beaufort	Rivers	Campsen
Slater Plantation Tract	3,749	16,000,000	Jasper	Williams	Bright Matthews
Slater Glover Tracts	2,440	8,000,000	Jasper	Williams	Bright Matthews
Buckfield	2,500	11,250,000	Hampton	Williams	Bright Matthews
	21,000	140,670,000	9		

DNR Budget Request v. Appropriations History – FY12 to Present

Updated 8/13/21 11:13 AM

	RECURRING			NONRECURRING		
	Requested	Appropriated (Final Act)	% (Of Requested)	Requested	Appropriated (Final Act)	% (Of Requested)
FY11-12	\$0	\$0	N/A	\$0	\$0	N/A
FY12-13	\$4,017,752	\$1,067,340	26.6%	\$2,660,505	\$5,560,505	209.0%
FY13-14	\$3,204,585	\$2,469,254	77.1%	\$6,088,050	\$4,760,050	78.2%
FY14-15	\$3,774,884	\$2,274,499	60.3%	\$5,895,000	\$5,795,000	98.3%
FY15-16	\$3,386,643	\$1,613,677	47.6%	\$1,850,000	\$1,200,000	64.9%
FY16-17	\$7,042,461	\$698,359	9.9%	\$10,493,412	\$6,025,132	57.4%
FY17-18	\$7,117,871	\$3,725,599	52.3%	\$4,286,820	\$400,000	9.3%
FY18-19	\$8,787,161	\$4,721,534	53.7%	\$22,786,600	\$500,000	2.2%
FY19-20¹	\$6,154,408	\$1,494,255	24.3%	\$31,581,540	\$5,845,680	18.5%
FY20-21²	\$5,268,877	\$4,750,438	90.2%	\$6,144,360	\$8,644,360	140.7%
FY21-22	\$6,053,186	\$6,125,475	101.2%	\$10,041,250	\$10,437,500	103.9%
Averages³	\$5,480,783	\$2,894,043	54.3%	\$10,182,754	\$4,916,823	78.2%
FY22-23	\$11,049,697			\$69,783,700		

¹ Reflects House-Passed Version – Prior to Covid-19 Adjournment.

² Nonrecurring does not include May Forest (Fort Johnson) Acquisition or Special Legislative Projects.

³ Does not include FY12 when no new funding was appropriated.

**SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES
BOARD POLICY**

POLICY #: ~~200.01~~

Page ~~1 of 1~~

SUBJECT: ~~Duck Stamp Distribution~~

~~Revised and Approved: April 19, 2018~~

THE LANGUAGE USED IN THIS DOCUMENT DOES NOT CREATE AN EMPLOYMENT CONTRACT BETWEEN THE EMPLOYEE AND THE AGENCY. THIS DOCUMENT DOES NOT CREATE ANY CONTRACTUAL RIGHTS OR ENTITLEMENTS. THE AGENCY RESERVES THE RIGHT TO REVISE THE CONTENT OF THIS DOCUMENT, IN WHOLE OR IN PART. NO PROMISES OR ASSURANCES, WHETHER WRITTEN OR ORAL, WHICH ARE CONTRARY TO OR INCONSISTENT WITH THE TERMS OF THIS PARAGRAPH CREATE ANY CONTRACT OF EMPLOYMENT.

STATEMENT OF POLICY

The Board has established the ~~duck stamp~~ for collection of fees. The distribution is set forth below:

I. Duck Stamps:

- ~~A. Sheet # 1 will be purchased by the Hampton Foundation and donated to the Department.~~
- ~~B. Sheets # 2-500 will be reserved for collectors for sale only as full sheets.~~
- ~~C. Sheets # 501-1,000 will be used to sell numbered blocks of four stamps.~~
- ~~D. Single-numbered stamps will be sold from sheets numbered above 1,000.~~
- ~~E. Collectors would also be permitted to purchase the same numbered sheet, block of four or numbered stamp from year to year.~~
- ~~F. Requests for stamps from collectors are dated and will be disbursed on a first-come, first-served basis on the date the requests come in.~~
- ~~G. The Agent's fee collected by the Department will be used on promotions to sell the stamps. In addition, the Department keeps the current year stamp, and three previous year stamps for sale to the public. The fifth year after issuance, the stamps are no longer available for sale to the public and are destroyed.~~

**SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES
BOARD POLICY**

POLICY #: 400.01

Page 1 of 3

SUBJECT: Request to Use or Acquire Real Property Under the Jurisdiction of SCDNR

Revised and Approved: ~~January 6, 2016~~ August 19, 2021

THE LANGUAGE USED IN THIS DOCUMENT DOES NOT CREATE AN EMPLOYMENT CONTRACT BETWEEN THE EMPLOYEE AND THE AGENCY. THIS DOCUMENT DOES NOT CREATE ANY CONTRACTUAL RIGHTS OR ENTITLEMENTS. THE AGENCY RESERVES THE RIGHT TO REVISE THE CONTENT OF THIS DOCUMENT, IN WHOLE OR IN PART. NO PROMISES OR ASSURANCES, WHETHER WRITTEN OR ORAL, WHICH ARE CONTRARY TO OR INCONSISTENT WITH THE TERMS OF THIS PARAGRAPH CREATE ANY CONTRACT OF EMPLOYMENT.

STATEMENT OF POLICY

This policy applies to all Department-owned property, however the following activities may be governed by the following specialized policies:

- Department-owned housing use by on-site Department staff is subject to DNR Policy 203.02 and Guidelines for DNR Employee Housing.
- The Department's permitting programs established by other laws (e.g. – WMA, shellfish, and special event use permits) are not subject to this policy. See S.C. Code Ann. § 50-5-900 *et seq.* (shellfish) and S.C. Code Ann. Regs. 123-200 *et seq.*
- DNR Policy 203.04 (Recreational Use of SCDNR Properties) may apply to requests not covered by this policy.

In all other instances, Rrequests to use or acquire any real property or interest therein under the jurisdiction of SCDNR(Department) must be made in writing to the Director. The request must identify:

- I. The name(s) and address(es) of all persons or entities on whose behalf the request is made.
- II. The specific parcel of property, including a map and county tax map number, -which is the subject of the request and the specific area or acreage of the property which is the subject of the request.

<u>POLICY #: 400.01</u>	<u>Page 2 of 3</u>
<u>SUBJECT: Request to Use or Acquire Real Property Under the Jurisdiction of SCDNR</u>	<u>Revised and Approved: August 19, 2021</u>

- III. A brief description of the nature of the request; *e.g.*, request to purchase; request for property exchange; request for a right-of-way, rental or temporary use, *etc.*
- IV. The duration of the requested use; *e.g.* permanent, thirty days, twelve months with renewal, *etc.*
- V. The type of use and the expected frequency of use; *e.g.*, light truck travel - weekly, heavy equipment travel for duration of project, *etc.*
- VI. What benefit will accrue to the public if the Department grants the request.
- VII. Whether alternate routes or locations not on state property have been investigated and why they cannot be used in lieu of state property.
- VIII. The anticipated impact on the natural or cultural resources; anticipated impact on Department programs; anticipated impact on current or future Department use of the property; and any anticipated impact on any surrounding property.
- IX. What mitigation or compensation is offered for the use of the property.
- X. Whether the requesting entity expects exclusive use of the property or whether the intended use will allow other members of the public to ~~make a similar use~~ of continue to use the property.
- XI. In evaluating requests for use or acquisition of real property or interest therein under the jurisdiction of SCDNR, the Department must consider those requirements outlined in S.C. Code Ann. § 10-1-130 and -135, as amended. Those are Information must be provided on the following:
 - A. Does the proposed use materially impair the utility of the property or damage it?
 - B. Is there an important public necessity for the encroachment?
 - C. Are there alternate routes or locations not on state property which are either prudent or feasible?
 - D. Is the proposed encroachment disruptive of the existing or planned uses of state property?

<u>POLICY #: 400.01</u>	<u>Page 3 of 3</u>
<u>SUBJECT: Request to Use or Acquire Real Property Under the Jurisdiction of SCDNR</u>	<u>Revised and Approved: August 19, 2021</u>

- E. What reasonable mitigation of the impacts is proposed by the entity requesting the encroachment?
- XII. Requests for use or acquisition of real property or interest therein associated with the Heritage Trust Program (Heritage Site, Heritage Preserve, or Heritage Trust properties) must also be evaluated by the Department under the requirements of the Heritage Trust Act, S.C. Code Ann. § 51-17-10, *et seq.* and, if affiliated with National Register of Historic Places features, S.C. Code Ann. § 60-12-10, *et seq.* Similarly, many SCDNR properties are subject to additional considerations related to the Department's title (e.g. - reversions, existing easements that benefit or burden the SCDNR property, restrictive covenants, conservation easements, etc.) and funding sources (e.g. – federal, state, or other grant funds associated with acquisition or management that limit use or disposition).
- XIII. Once a request is received the Director will contact the Division whose programs or operations is most directly affected and request that that Division undertake a study of the request and make a written response to the Director on the impacts to proposed use. In addition to addressing prospective considerations outlined above, this report to the Director will contemplate existing limitations or considerations on the Department's use ~~(e.g. — deed restrictions)~~.
- XIV. The written report must be transmitted to the Director within ninety (90) days after a completion of the investigation.
- XV. The Director with assistance from the Office of ~~Chief General~~ Counsel, if requested, will then make a determination as to whether or not the request should be granted and the Director, or the Director's designee, will notify the requesting individual. Requests to use or acquire Department land may require approval by the Department's Board. Some requests may also require review and approval by the Heritage Trust Advisory Board prior to being presented to the Department's Board.
- XVI. If the Department concludes that the request should be granted, the Office of ~~Chief General~~ Counsel, in consultation with the Department's staff, will prepare the appropriate documents to obtain the necessary external approvals – e.g. Department of Administration, State Fiscal Accountability Authority, and/or Department of Archives and History. Once the reviewing entities have taken action, the Department staff will notify the requesting party of that action.

~~XVII. The leasing of a Department-owned residence to on-site Department staff is not subject to this policy.~~

~~XVIII. The Department's permitting programs established by other laws (e.g., WMA, shellfish, and special event use permits) are not subject to this policy. See S.C. Code Ann. § 50-5-900 *et seq.* (shellfish) and S.C. Code Ann. Regs. 123-200 *et seq.*~~

~~XIX.~~XVII. DNR Policy 203.04 (Recreational Use of SCDNR Properties) may apply to requests not covered by this policy.

**Mitigation Trust Fund Request
Presented for DNR Board Action
August 19, 2021**

In 1996 the State Legislature established the *Mitigation Trust Fund of South Carolina* (Section 50-3-180) for the purpose of receiving proceeds for mitigation for impacts to natural resources. This legislation established the chairman and members of the Department of Natural Resources (DNR) Board as the Board of Trustees with authority over administration of the Mitigation Trust Fund (Fund).

SECTION 50-3-180. Mitigation Trust Fund.

(A) The Mitigation Trust Fund of South Carolina is credited for the purposes of receiving gifts, grants, contributions, and other proceeds for mitigation projects in the State. The Board of Trustees for the Mitigation Trust Fund is the chairman and the members of the South Carolina Department of Natural Resources Board with full authority over the administration of the funds deposited in the fund. The State Treasurer is the custodian of the fund and shall invest its assets in an interest-bearing account pursuant to South Carolina law.

(B) The Mitigation Trust Fund may receive appropriations of state general funds, federal funds, donations, gifts, bond issue receipts, securities, and other monetary instruments of value. Reimbursement for monies expended from this fund must be deposited in this fund. Funds received through sale, exchange, or otherwise, of products of the property including, but not limited to, timber and utility easement rights, accrue to the Mitigation Trust Fund. Funds recovered for losses or damages to natural resources must be deposited to the Mitigation Trust Fund to be used first for restoration in the areas affected and then as provided in subsection (C) of this section.

(C) The income received and accruing from the fund must be spent only for the acquisition, restoration, enhancement, or management of property for mitigation for adverse impacts to natural resources.

(D) The proceeds from this fund may be carried forward from year to year and do not revert to the general fund of the State.

HISTORY: 1996 Act No. 458, Part II, Section 66A; 1998 Act No. 419, Part II, Section 43A.

The SCDNR received \$799,817.49 to implement components of the South Carolina Recreational Fishing Compensation Plan as a part of the Lake Hartwell PCB Settlement. SCDNR is one of five Trustees carrying out the Settlement plan as documented in the Consent Decree. These funds are intended to be used by SCDNR, to carry out stream restoration projects in the Twelvemile Creek drainage. These monies are deposited into a subaccount of the Fund, and have been dedicated for use in the Twelvemile Creek drainage by the Trustee Resolution signed by USFWS, DHEC, Georgia DNR, and the ACOE. Today we are presenting the DNR Board with a request to release \$799,817.49 to implement the Trustee Resolution No. 2021-1- STR01 consistent with the Feasibility Report of Future Restoration Activities on Twelvemile Creek and Tributaries presented by Naturaland Trust and prepared by Jennings Environmental, LLC. Primary efforts will be directed to purchase and restore the 60-acre Crisp Tract on UT Mill Shoals Creek with Naturaland Trust being the long-term owner of the property. This purchase will allow Naturaland Trust to restore the stream on that property. Stream restoration will also be done by Naturaland Trust at Holly Springs Center on UT Cove Creek and Hagood Mill Park on Hagood Branch, and Jaycee Park Stream Buffer enhancement on Town Creek, all of which are tributaries of Twelvemile Creek.

Action requested:

We ask that the Board approve the expenditure of \$799,817.49 from the Mitigation Trust Fund of South Carolina, South Carolina Recreational Fishing Compensation Plan Funds, Lake

Hartwell PCB Settlement, to implement Twelvemile Creek stream restoration projects through Naturaland Trust.

SOUTH CAROLINA MITIGATION TRUST FUND
BOARD OF TRUSTEES

The Board of Trustees for the South Carolina Mitigation Trust Fund does hereby authorize the release from the fund of \$799,817.49 as requested by the South Carolina Department of Natural Resources to implement, through Naturaland Trust, stream restoration projects in the Twelvemile Creek drainage authorized under Trustee Resolution No. 2021-1- STR01 with funds provided through the South Carolina Recreational Fishing Compensation Plan under the Lake Hartwell PCB Settlement.

Approved by the Board of Trustees of the Mitigation Trust Fund on August 19, 2021.

Norman F. Pulliam
Chairman, Board of South Carolina Natural Resources
Trustee, South Carolina Mitigation Trust Fund

TRUSTEE RESOLUTION

Resolution No. 2021-1-STR01

Whereas the South Carolina Department of Natural Resources, the South Carolina Department of Health and Environmental Control, the Georgia Department of Natural Resources, the U. S. Army Corps of Engineers, and the U. S. Fish and Wildlife Service on behalf of the Department of the Interior, are the designated Natural Resource Trustees for the Sangamo Weston/Twelvemile Creek/Lake Hartwell PCB Contamination Superfund Site (the Site) (Case #00324) located in Pickens, Oconee, and Anderson Counties, South Carolina, and Hart, Franklin, and Stephens Counties, Georgia;

And, whereas, under the terms of the Memorandum of Understanding for the Restoration Associated with the Site among the Trustees (Trustee MOU), the undersigned Trustee Council representatives have authority to vote on matters which come before the Council;

And, whereas, the Trustees have prepared a Restoration and Compensation Determination Plan/Environmental Assessment, provided that plan for public comment, reviewed and considered all public comments received, and provided public notice of the availability of the final plan;

And, whereas the final plan and Consent Decree provide for projects to compensate for recreational fishing losses to include (1) create opportunities for the public generally to harvest fish that are not subject to fish consumption advisories currently in place for Lake Hartwell and 12-Mile Creek, (2) enhance the recreational fishery of Lake Hartwell, Twelvemile Creek, and the surrounding area, and/or (3) implement projects designed to improve the habitat and natural resources within the 12-Mile Creek corridor.

And, whereas the Woodside I and Woodside II dams have been removed and the implementation of stream restoration along the affected reach of Twelvemile Creek is of utmost importance.

And, whereas the Lake Hartwell PCB Settlement, South Carolina Recreational Fishing Compensation Plan specifically outlined projects for implementation in South Carolina, including the expenditure of approximately \$800,000 for stream restoration projects within the Twelvemile Creek stream corridor.

The Trustees resolve to provide not more than \$800,000 from the Lake Hartwell Natural Resource Damage Assessment and Restoration Fund administered by the Department of the Interior to the South Carolina Department of Natural Resources for the procurement of stream restoration consulting services. The South Carolina Department of Natural Resources is hereby designated the Lead Trustee for planning and implementing this action consistent with the Trustee MOU consistent with the Feasibility

Report of Future Restoration Activities on Twelvemile Creek and Tributaries (see Attachment 1) presented by Naturaland Trust and prepared by Jennings Environmental, LLC. Primary efforts will be directed to purchase and restore the 60-acre Crisp Tract on UT Mill Shoals Creek with Naturaland Trust being the long-term owner of the property. This purchase will allow Naturaland Trust to restore the stream on that property. Stream restoration will also be done by Naturaland Trust at Holly Springs Center on UT Cove Creek and Hagood Mill Park on Hagood Branch, and Jaycee Park Stream Buffer enhancement on Town Creek, all of which are tributaries of Twelvemile Creek.

Accordingly, the Trustees hereby direct the Manager of Department of the Interior Natural Resource Damage Assessment and Restoration Fund to release all remaining funds including any interest that may accrue, to the South Carolina Department of Natural Resources to pass through to Naturaland Trust to implement the aforementioned project.

IN WITNESS WHEREOF, the parties hereto have caused this Trustee Resolution to be executed by their duly authorized representatives as of the last date signed.

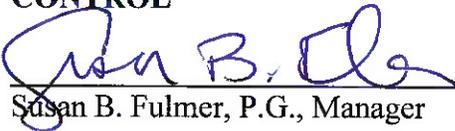
GEORGIA DEPARTMENT OF NATURAL RESOURCES

_____, 2021
Anthony Rabern, Senior Fisheries Biologist

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

_____, 2021
Ross Self, Chief of Freshwater Fisheries

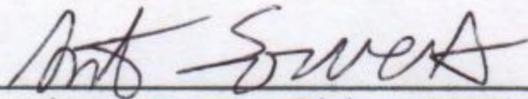
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

 _____, 2021
Susan B. Fulmer, P.G., Manager

UNITED STATES ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION

_____, 2021
Larry D. McCallister, PhD, PE, SES, Director of Programs

**UNITED STATES FISH AND WILDLIFE SERVICE, AS THE AUTHORIZED
REPRESENTATIVE OF THE DEPARTMENT OF THE INTERIOR**



Anthony Sowers, Fish and Wildlife Biologist

6-10-, 2021

Report of Future Restoration Activities on Twelvemile Creek and Tributaries (see Attachment 1) presented by Naturaland Trust and prepared by Jennings Environmental, LLC. Primary efforts will be directed to purchase and restore the 60-acre Crisp Tract on UT Mill Shoals Creek with Naturaland Trust being the long-term owner of the property. This purchase will allow Naturaland Trust to restore the stream on that property. Stream restoration will also be done by Naturaland Trust at Holly Springs Center on UT Cove Creek and Hagood Mill Park on Hagood Branch, and Jaycee Park Stream Buffer enhancement on Town Creek, all of which are tributaries of Twelvemile Creek.

Accordingly, the Trustees hereby direct the Manager of Department of the Interior Natural Resource Damage Assessment and Restoration Fund to release all remaining funds including any interest that may accrue, to the South Carolina Department of Natural Resources to pass through to Naturaland Trust to implement the aforementioned project.

IN WITNESS WHEREOF, the parties hereto have caused this Trustee Resolution to be executed by their duly authorized representatives as of the last date signed.

GEORGIA DEPARTMENT OF NATURAL RESOURCES

_____, 2021
Anthony Rabern, Senior Fisheries Biologist

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES


_____, 2021
Ross Self, Chief of Freshwater Fisheries

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

_____, 2021
Susan B. Fulmer, P.G., Manager

UNITED STATES ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION

_____, 2021
Larry D. Mccallister, PhD, PE, SES, Director of Programs

Report of Future Restoration Activities on Twelvemile Creek and Tributaries (see Attachment 1) presented by Naturaland Trust and prepared by Jennings Environmental, LLC. Primary efforts will be directed to purchase and restore the 60-acre Crisp Tract on UT Mill Shoals Creek with Naturaland Trust being the long-term owner of the property. This purchase will allow Naturaland Trust to restore the stream on that property. Stream restoration will also be done by Naturaland Trust at Holly Springs Center on UT Cove Creek and Hagood Mill Park on Hagood Branch, and Jaycee Park Stream Buffer enhancement on Town Creek, all of which are tributaries of Twelvemile Creek.

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GEORGIA DEPARTMENT OF NATURAL RESOURCES

Anthony Rabern May 26, 2021
Anthony Rabern, Senior Fisheries Biologist

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

_____, 2021
Ross Self, Chief of Freshwater Fisheries

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

_____, 2021
Susan B. Fulmer, P.G., Manager

UNITED STATES ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION

_____, 2021
Larry D. Mccallister, PhD, PE, SES, Director of Programs

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GEORGIA DEPARTMENT OF NATURAL RESOURCES

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Anthony Rabern, Senior Fisheries Biologist

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

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Ross Self, Chief of Freshwater Fisheries

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

_____, 2021
Susan B. Fulmer, P.G., Manager

UNITED STATES ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION

MCCALLISTER.LARRY.DWAYN Digitally signed by
E.1144889661 MCCALLISTER.LARRY.DWAYNE.1144889661
Date: 2021.07.13 13:04:00
_____, 2021
Larry D. McCallister, PhD, PE, SES, Director of Programs

Duck Stamp Budget Requests 2020-2021

Description of Request	Amount
Statewide Wood Duck Box Project	\$62,000.00
Wood Duck Nest Box Recruitment Project, year 3 (per year for 3-5 years)	\$30,000.00
Development of Waterfowl Abundance and Habitat Quality Surveys	\$30,000.00
Migration Ecology and Demographics of E. Mallards	\$5,000.00
Beaverdam WMA Renovation, NAWCA Match	\$68,563.00
Atlantic Flyway Council Banding Assessment and Dues	\$10,000.00
Habitat Mangement: Plantings, Maintenance, & Structures	
Region I	
Beaverdam	\$2,800.00
Clemson	\$1,000.00
Russell Creek	\$1,200.00
Tyger River and Duncan Creek	\$2,000.00
Region II	
Broad River	\$8,500.00
Region III	
Enoree River	\$7,500.00
Hickory Top (Spraying)	\$30,000.00
Region IV	
Control of Undesirable Vegetation (Bear Island, Donnelley)	\$10,000.00
(Santee Coastal Reserve, Samworth)	\$20,000.00
Planting, fertilizer (Donnelley, Bear Island)	\$10,000.00
Maintenace and Materials (Donnelly, Bear Island)	\$25,000.00
(Santee Coastal, Samworth)	\$30,000.00
Total Request for FY22	\$353,563.00
AVAILABLE to budget	\$490,720.00
BALANCE	\$137,157.00

BUDGET FOR MIGRATORY WATERFOWL PERMIT FUNDS

Staff Request

FY 2022

Wood Duck Box Project: \$62,000

These funds will be used to continue the SCDNR Wood Duck Box Project. This request covers the cost of construction of 1,200 nest boxes and predator guards, and administrative costs associated with the box program. Construction of boxes will be contracted through the statewide bid process. Nest boxes and predator guards will be constructed according to SCDNR specifications and standards. Boxes and guards will be distributed statewide in Winter 2021-2022.

Wood Duck Nest Box Recruitment Project (Year 3 of 5): \$30,000

SCDNR is entering the third year of partnership with the Nemours Wildlife Foundation, the James C. Kennedy Center for Waterfowl & Wetlands Conservation (Clemson University), and the US Fish & Wildlife Service to investigate the contribution of nest boxes to wood duck recruitment (i.e., female ducklings surviving to the next breeding season) in South Carolina. Our participation is an integral part of a regional effort which includes eight states from the Atlantic and Mississippi Flyways including, North Carolina, Maryland, Delaware, Georgia, Florida, Mississippi, Louisiana, and Wisconsin. Regional study objectives include: Estimating annual duckling production from established nest boxes; Estimating annual female recruitment; Determining site characteristics that influence nest selection, nest success, duckling production, female recruitment, and nest parasitism; Determining if nest box design influences production; and developing recommendations that enhance the contribution of next boxes to wood duck populations. During summer 2020, 181 wood duck boxes were monitored on Lake Marion and 293 nest attempts were recorded. Over 1,100 wood duck ducklings were outfitted with web-tags to aid in monitoring recruitment. The funding for FY22 will be used for field supplies and for a graduate student to analyze project data. Nemours and the Kennedy Center are also making considerable financial contributions to the South Carolina portion of the project. The project has a target completion date of 2025.

Waterfowl Abundance and Habitat Quality Surveys for Waterfowl Management Areas: \$30,000

This project was delayed in late 2020 due to staffing changes at Clemson University. This request covers startup costs of developing ground-based surveys to estimate wintering waterfowl population abundances and to evaluate winter habitat quality and quantity on SCDNR waterfowl areas. Given the broad range of wetland sizes and habitat diversity on SCDNR managed wetlands, we are pursuing a population modeling expert to develop a standardized survey methodology that will allow practical application and produce results that are statistically defensible. Using the same survey methodology across all SCDNR waterfowl areas will allow comparison of population abundances from year to year within and between waterfowl properties. Santee Coastal Reserve and Samworth WMA will be used as pilot study sites to develop and test the survey methods. These properties

were selected for their diverse wetland sizes, habitat types, and access and visibility challenges they pose for ground survey methods. The first year of developing and testing the survey will be implemented in Winter 2021-22. After one year of evaluating and refining the survey, it will be implemented on all Category 1 Waterfowl Areas.

Migration Ecology and Demographics of Eastern Mallards (Year 1 of 4): \$5,000

SCDNR is partnering with 14 Atlantic Flyway States, the US Fish and Wildlife Service, the Canadian Wildlife Service, Ducks Unlimited, and private landowner groups on a 4-year study to evaluate the migration ecology and reproductive metrics of eastern mallards in the United States and eastern Canada. During the mid-1990s, eastern mallard breeding populations peaked at approximately 1.4 million. This population peak has been followed by a steady population decline of approximately 1% annually to a 2019 breeding population estimate of 1.05 million (USFWS 2019). While the overall declining trend is worrisome, a greater concern is the sub-population of breeding mallards in the NE US is declining rapidly (-36% over the last 20 years), while the sub-population in Eastern Canada remains relatively stable (-5%). To manage eastern mallards more effectively, managers need more reliable estimates of productivity and season survival at the sub-population scale. This project will also provide informal on mallard habitat use and selection, which will be valuable for property managers looking to improve breeding, staging, and wintering habitat throughout the Atlantic Flyway. Over the next 4 years, a minimum of 200 GPS transmitters will be deployed annually across eastern Canada and Atlantic Flyways states as far south as South Carolina. A minimum of 15 GPS transmitters are anticipated to be deployed annually on adult, female mallards in SC beginning in winter 2021-2022.

North American Wetlands Conservation Act (NAWCA) Matching Funds, Beaverdam Waterfowl Management Area: \$68,563

These funds will be used as NAWCA match to improve the function and management capabilities of the Beaverdam Waterfowl Management Area in Anderson County. The NAWCA renovation will include coring and retopping the dike, removal of sedimentation and debris along Little Beaverdam Creek, and installation of one new water control structure.

Atlantic Flyway Council Banding Assessment and Dues: \$10,000

This request covers the cost for South Carolina to participate in various preseason banding and other efforts conducted in the Atlantic Flyway which benefit waterfowl management in South Carolina.

Control of Undesirable Vegetation: \$60,000

Efforts continue to control, limit, and possibly eradicate noxious weeds from areas managed for waterfowl. Phragmites in coastal areas, and alligator weed, water hyacinth, and giant cut grass in other areas continue to hamper management. Treatment of phragmites is of primary concern. Considerable progress has been made in Phragmites control, but annual maintenance is necessary. Chinese tallow tree occurrence on edges of waterfowl management units, transition zones from wetland to upland, and along dikes

are beginning to encroach on waterfowl management activities. Giant cutgrass can dominate shallowly, permanently flooded areas limiting waterfowl use. Conducting more intentional and targeted control measures now can prevent larger, long-term problems.

Piedmont Habitat Management: \$15,500

These funds will be used for management of three Category I Waterfowl Areas, (Beaverdam and Clemson Waterfowl Areas in Anderson County, and Broad River Waterfowl Area in Fairfield County) and three Category II Waterfowl Areas (Duncan Creek in Laurens County, Tyger River in Union County, and Russell Creek in McCormick County). These funds will be used for, pump rental and fuel costs to improve wintering waterfowl habitat and supplemental agricultural plantings to increase forage for wintering waterfowl. The above requests will improve and increase waterfowl habitat availability in the Piedmont Region.

Midlands Habitat Management: \$7,500

These funds will be used for the management of Enoree River Wildlife Management Area to purchase supplemental agricultural plantings that improve wintering waterfowl habitat and forage. Funds will also be used to assist the U.S. Forest Service with expenditures for pump rental and fuel cost to flood the areas.

Coastal Habitat Management: \$10,000

These funds will be used to manage waterfowl habitats (primarily supplemental agricultural plantings) on Donnelley Wildlife Management Area where youth waterfowl hunts are conducted, as well as Bear Island Wildlife Management Area where significant public waterfowl hunting opportunity and waterfowl use occurs.

Maintenance and Materials: \$55,000

Funds will be used to purchase materials for construction of water control structures (i.e. rice trunks) and bulkheads for the maintenance of dikes on the major coastal areas of Bear Island, Donnelley, Santee Coastal Reserve, Santee Delta, and Samworth Wildlife Management Areas. A substantial portion of the State's waterfowl use and public waterfowl hunting occur on these properties.

TOTAL Request: \$353,563.00

SCDNR Law Enforcement Advisory Committee Deer Hunting with Dogs Assessment

At the request of the SCDNR Board the Law Enforcement Advisory Committee recommends the following be considered in regard to hunting deer with dogs in South Carolina.

SCDNR continues to support deer hunting with dogs in areas of the state where dog hunting has traditionally taken place, provided that it is conducted in a legal, respectful and ethical manner.

Over time, the department has been charged by the legislature to evaluate the issue and have conducted stakeholder meetings to better understand concerns over hunting deer with dogs while also seeking to preserve this hunting tradition for those who dog hunt legally and ethically

Through these efforts and renewed conversations three primary concerns stand out. First preserving this traditional method of hunting for those who hunt legally, respectfully and ethically. Second, the issue of “dog trespass” in which hunting dogs cross into private property of another, adversely affecting their private property rights or coming into conflict with still hunting practices. Third, additional safety concerns regarding the current lawful hunting from public roads.

Committee Recommendations:

- Permit/license specific to running dogs
- Minimum acreage requirement (Ga 1000 contiguous acres for leases/250acres private property)
- Requiring permit number or owner’s information on dogs
- Penalty enhancements for repeated violations
- Additional protections for deer dogs from being killed or harmed or removal of tracking collar

After reviewing several current southeastern states laws regarding dog hunting, there appear to be several components of Georgia State Law 27-3-17 that could be considered in South Carolina. Implementation of some or all of these recommendations should be considered as positive steps to ensure this hunting tradition continues.

Georgia Deer Dog Hunting Law

§ 27-3-17. Hunting deer with dogs; permits

(a) It shall be unlawful to hunt deer with dogs except during such special open seasons for the hunting of deer with dogs as may be designated by the board on a state-wide, regional, or local basis.

(b) In accordance with subsection (a) of this Code section, the board is authorized to promulgate rules and regulations establishing an open season for the hunting of deer with dogs as may be appropriate based on sound wildlife management principles.

(c) It shall be unlawful for any person to hunt deer with dogs on any tract of real property unless a permit for hunting deer with dogs has been issued by the department for such tract to the owner or owners of such tract or the lessee of deer hunting rights for such tract. A permit for hunting deer with dogs shall not be issued to a lessee of deer hunting rights for any tract of real property that is less than 1,000 contiguous acres or to the property owner or owners for any tract of real property that is less than 250 contiguous

acres. Any application for a permit for hunting deer with dogs shall be on such form as prescribed by the department and shall include a written description of the tract boundaries and a map showing key features such as public roads or streams on or bordering the tract and occupied dwellings on adjacent properties. The application must be signed by all persons owning any portion of the tract of real property or an authorized agent thereof.

(d) The owner of any dog that is used for hunting deer must cause such dog to be identified at all times during the hunt with the permit number for the tract being hunted.

(e) Any person operating a motor vehicle used in conducting a deer hunt with dogs shall during such hunt clearly display in the front or rear windshield of such motor vehicle a decal or card showing the tract permit number in numerals not less than two inches high.

(f) The department shall thoroughly investigate for validity any complaints from adjacent property owners regarding hunting deer with dogs in violation of this title or rules and regulations issued pursuant to this title. The commissioner may take action against a permit as provided by Code Section 27-2-25 for violations of the provisions of this title or rules and regulations issued pursuant to this title occurring on the tract of real property for which the permit was issued.

(g) In addition to the provisions of subsection (f) of this Code section, the commissioner may suspend deer-dog hunting privileges for a specified period of time not to exceed two years for any hunter who, within a single hunting season, commits two or more violations of dogs off of permitted property. The hunter shall be notified of the proposed suspension personally or by a letter sent by certified mail or statutory overnight delivery to the hunter's address indicated on the application for a hunting license. The proposed suspension shall become final 30 days after issuance if not appealed as provided in this Code section. The hunter shall, upon petition within 30 days of issuance of notice given as stated in this Code section, have a right to a hearing before an administrative law judge appointed by the board. The hearing before the administrative law judge shall be conducted in accordance with Chapter 13 of Title 50, the "Georgia Administrative Procedure Act," and the rules and regulations adopted by the board pursuant thereto. The decision of the administrative law judge shall constitute the final decision of the board, and any party to the hearing, including the commissioner, shall have the right of judicial review thereof in accordance with such chapter.

Environmental Report



Office of Environmental Programs DNR Board Briefing Document – July 15, 2021

Office of Environmental Programs DNR Board Briefing Document – July 15, 2021

The following document lists ongoing major environmental permitting issues under review by staff of the South Carolina Department of Natural Resources (DNR). These projects have the potential for significant natural resource impacts. Comments submitted to the regulatory agencies since the last DNR Board meetings are attached. **New information is presented below in red.**

Inland Project Proposals

Atlanta to Charlotte Passenger Rail. Anderson, Cherokee, Greenville, Laurens, Oconee, Pickens, Spartanburg, Union and York Counties. See <http://www.dot.ga.gov/IS/Rail/AtlantatoCharlotte>.

The United States Department of Transportation - Federal Railroad Administration (USDOT-FRA) in cooperation with the Georgia Department of Transportation (GDOT) is preparing a Draft Tier 1 Environmental Impact Statement (DEIS) for the Atlanta to Charlotte Passenger Rail Corridor Investment Plan. The purpose of the project is to improve intercity passenger travel between Atlanta and Charlotte by expanding the region's transportation system capacity and improving trip time and reliability through highspeed passenger rail services. GDOT has selected three build alternatives and a no-build alternative for further evaluation in the Tier 1 EIS process. The Southern Crescent Alternative primarily follows the existing Norfolk Southern right-of-way (ROW) across South Carolina. The Interstate 85 Alternative is located primarily within the Interstate 85 ROW. The Greenfield Corridor Alternative is a 274-mile route primarily located on a new alignment across the state. DNR received the project on September 20, 2019 and provided comments on November 4, 2019. The USDOT - FRA and the GDOT reviewed comments received during the Tier 1 DEIS public comment period and selected the Greenfield Corridor Alternative as the Preferred Corridor Alternative. The Greenfield Corridor Alternative is a 274-mile route primarily on a new "greenfield" dedicated high-speed passenger rail alignment between CLT airport and Athens, GA, then following shared railroad ROW in the approaches to the Charlotte and Atlanta termini. This route serves three stations in North Carolina at Charlotte Gateway, CLT airport, and South Gastonia; two stations in South Carolina at GSP airport and Anderson; and five stations in Georgia in Athens, Suwanee, Doraville, downtown Atlanta (Georgia Multi-modal Passenger Terminal), and Hartsfield-Jackson Atlanta International Airport. In South Carolina, this corridor continues along a greenfield alignment for 65 miles passing east of Kings Mountain State Park to a route paralleling I-85, approximately 10 miles to the southeast, then diverging westward to a station near the GSP airport. From the GSP airport, this corridor returns eastward to a route paralleling I-85, approximately 15 miles to the east, for 50 miles to the state line at the Savannah River with a station in Anderson, SC. In addition to general concerns related to species and habitat fragmentation, DNR is particularly concerned that the proposed Greenfield alternative will cross both an existing mitigation bank, a proposed mitigation bank and a scenic river corridor. Portions of the existing Big Generostee Creek Mitigation Bank are located in the project corridor near SC Highway 187 in Anderson County and the project corridor crosses the proposed Minkum Creek Mitigation Bank including the main stem and several tributaries of Minkum Creek in Cherokee County. The Greenfield alternative will cross the Broad Scenic River Corridor approximately one-half mile downstream of the 99 Islands Dam on the Broad River. FRA and GDOT anticipate issuing a combined Final Environmental Impact Statement and Record of Decision (FEIS/ROD). DNR project manager: Greg Mixon mixong@dnr.sc.gov.

SC Department of Commerce, Project Magma SAC-2020-01715. See

https://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/Jan2021_PN/SAC-2020-01715-Chester-County-Project-Magma.pdf?ver=CL39n-1crWpOZpAmKw0BaQ%3d%3d The proposed work consists of construction and operation of a production, bottling, containerization, and distribution facility for wine and spirits at a location east of US Highway 21 and south of SC Highway 9 near the Town of Fort Lawn in Chester County. In detail, the work will require the discharge of fill material into 1.23 acres of freshwater wetlands and 8,018 linear feet of tributaries that flow to the Catawba River. The applicant has proposed to mitigate for impacts to wetlands and/or waters of the United States by accomplishing

permittee-responsible compensatory mitigation to provide equal to or greater than 13.1 freshwater wetland credits and 58,747 stream credits at the Wrenn Tree Mitigation Project site in Lancaster County. The Wrenn Tree site is in the same watershed approximately 4.1 miles northeast of the proposed facility and is adjacent to a portion of the Landsford Canal State Park on the Catawba River. The proposed compensatory mitigation will include stream restoration and enhancement of 12 intermittent and/or perennial 1st order, 2nd order or 3rd order channels; enhancement and preservation of the wetlands onsite; and establishment of 300-foot buffers to protect all streams and wetlands within the proposed conservation easement. The SC Department of Parks, Recreation and Tourism (PRT) will be the long-term steward of the property and their intent is to enroll the 533-acre property into the Wildlife Management Area (WMA) program. This fits well with the adjacent PRT lands comprising 219 acres that are currently enrolled in the WMA program. The USACE placed the proposed project on public notice on January 28, 2021 and DNR provided comments on February 26, 2021. The applicant provided a revised permittee-responsible compensatory mitigation plan on May 5, 2021 and DNR provide comments on May 14, 2021. DNR project manager: Greg Mixon mixong@dnr.sc.gov.

Haile Gold Mine Expansion – OceanaGold, LLC <http://www.hailegoldmineseis.com/>

Haile Gold Mine, Inc., a subsidiary of OceanaGold Corporation, submitted a proposal to the U.S. Army Corps of Engineers to expand operations at the existing Haile Gold Mine facilities near Kershaw, South Carolina. The proposed project would include expansion of surface mining and associated mine pits and overburden storage facilities, initiation of underground mining at the Horseshoe deposit, and increased ore processing through optimization of the mill and related infrastructure including expansion of the water management system and existing tailings storage facility. Proposed mining activities in the expanded proposed project would focus on areas affected by past mining activities and additional land purchased by Haile to support proposed mining expansion activities.

A Notice of Intent to prepare the DSEIS was published in the Federal Register on December 4, 2018. DNR staff attended an Agency Scoping Meeting on April 8, 2019, in Kershaw, SC. During the scoping meeting, OceanaGold staff described potential environmental impacts and suggested that Permittee Responsible Mitigation would likely be proposed to mitigate for impacts associated with the proposed expansion. A joint public notice for the Mine Modification and Draft Supplemental Environmental Impact Statement (SEIS) was issued on March 3, 2021. The proposed modification consists of increasing the mine plan area by approximately 832 acres to expand surface mining pits and associated facilities, initiate underground mining at the Horseshoe deposit, optimize mill operations and increase ore processing rates, and improve water treatment and storage capabilities. Impacts to Water of the United States (WOTUS) include directly filling 86.22 acres of wetlands and open water and will directly affect 13,124.08 linear feet of streams. The applicant has proposed to mitigate for impacts to wetlands and/or waters of the United States by a permittee-responsible mitigation plan that identifies three separate sites along Flat Creek in the Lynches River watershed for preservation and enhancement/restoration of aquatic resources. The project purpose is to expand gold producing operations from mineralized gold-bearing zones on the Haile property. The USACE and SCDHEC hosted a joint virtual public hearing on April 01, 2021 at 6:30PM on the draft SEIS and the application to modify Haile Gold Mine, Inc.'s Mine Operating Permit. DNR provided comments in response to the noticed mine modification on April 23, 2021. DNR project manager: Tom Daniel danielt@dnr.sc.gov

Haile Gold Mine Modification – Oceana Gold, LLC. I-000601

Oceana Gold, the parent company of the Haile Gold Mine, has requested that the USACE authorize a modification to their current permit (SAC-1992-24122) originally authorized in 2014. Five operational adjustments have been identified and one of these (East PAG-Phase 2) will impact 4.75 acres of jurisdictional freshwater wetlands and open water reservoirs/impoundments. Considering the original permit authorizing approximately 120 acres of wetland fill, the additional 4.75 acres of wetland impact within the existing mine boundary is viewed as a minor modification by the USACE. The proposed mitigation for these impacts is through the perpetual protection of approximately 512 acres of land known as the Blackwell Tract. The referenced mitigation site is located approximately 9 miles northeast of Kershaw, SC adjacent to Old Jefferson Highway. Positioned in the Flat Creek Basin, the tract is a part of

larger conservation efforts in the area associated with the protection and enhancement of habitat for the Carolina Heelsplitter. The site contains approximately 29,525 linear feet of stream and 3.4 acres of wetlands as identified by field delineations. Preservation of the site will be accomplished through the fee simple transfer of the land to the Katawba Valley Land Trust. Katawba Valley Land Trust will additionally serve as the Long-term Steward of the property. DNR received the minor modification to the existing Haile Gold Mine permit July 1, 2020 and provided comments to the USACE and DHEC on July 8, 2020 asking that the permit be held in abeyance until additional information regarding the mitigation plan and additional geology data could be provided. DNR received a response to comments on August 4, 2020 and provided follow up comments on August 7, 2020. DNR project manager: Lorianne Riggins RigginsL@dnr.sc.gov

SCDOT, Interstate 73. P/N SAC-2008-1333-DIS. See

<http://www.sac.usace.army.mil/?action=publicnotices.pn2011>.

The proposed Interstate-73 (I-73) was public noticed on January 28, 2011 and February 18, 2011 for a high-speed, fully controlled-access roadway with interchanges, frontage roads and overpasses to provide access and maintain existing traffic patterns that begins at the North Carolina state line near Bennettsville and ends at SC Highway 22 near Conway. The project corridor would be approximately 80 mi long and would cross through Marlboro, Dillon, Marion and Horry counties. The roadway would include 4 travel lanes with a grassed median. The right-of-way would be 300 ft wide for most of the project corridor and 400 ft wide where frontage roads are needed. The project would involve 212 separate crossings of streams, wetlands and open water bodies impacting a total of 4,643 linear ft of streams and 342.3 acres of wetlands and open waters. DNR staff served on the Agency Coordination Team (ACT) for I-73 from June 2004 through December 2009. The ACT determined that I-73 should be evaluated in separate Environmental Impact Statement (EIS) documents covering the southern segment (I-95 to SC Highway 22) and the northern segment (NC state line to I-95). DNR staff provided comments and input throughout the EIS process and consistently stated the primary natural resource concerns associated with the proposed roadway are habitat fragmentation, the crossing of the Little Pee Dee River and adjacent wetlands, and the need for landscape scale mitigation that adequately compensates for all project impacts. On December 3, 2015 the DOT Commission unanimously approved the purchase and use of Gunter's Island for mitigation of the environmental impacts associated with the construction of I-73. A revised mitigation plan focusing on acquisition of Gunter's Island was submitted by DOT to USACE on May 23, 2016 and USACE issued a revised public notice on July 8, 2016 that included Gunter's Island as the proposed PRM plan for the wetland and stream impacts associated with I-73. On August 8, 2016, DNR submitted comments in response to the revised mitigation plan. An interagency site visit took place to evaluate the Gunter's Island Revised Mitigation Plan on November 10, 2016. DNR staff conducted two follow-up site visits along with DOT staff on December 2 and 15, 2016. On March 2, 2017 DNR received the I-73 NEPA Re-evaluation documents for review and comments were submitted April 3, 2017. DHEC issued the 401 Water Quality Certification on April 26, 2017 and the USACE issued the final 404 permit on June 19, 2017. SCDOT closed on the Gunter's Island Property on August 7, 2017. DNR will continue with the necessary external approval processes, including presenting the project to the Joint Bond Review Committee for approval on August 15, 2017. The project posted in the Federal Register for the Federal Highway Administration on August 1, 2017. This marks the beginning of the 150-day period for any claim seeking review of the Federal agency action regarding the Section 404 permit for the project. This period ended on December 29, 2017; however, the Southern Environmental Law Center on behalf of the Coastal Conservation League released a notice of intent to sue over violations of the Clean Water Act related to the approval of the USACE 404 permit on October 13, 2017. For additional information: <http://www.i73insc.com>. DNR project manager: Greg Mixon mixong@dnr.sc.gov.

Coastal Project Proposals

Cainho Plantation Mixed Use Development, Charleston & Berkeley Counties. See

http://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/March2018_PN/SAC_%202016-756_Cainho_Plantation_Development_Berkeley%20County.pdf?ver=2018-03-22-115555-720

The 9,238-acre Cainhoy Plantation property is being planned and developed as a mixed-use community with homes, public schools, retail shops, restaurants and office space located within the City of Charleston and Berkeley County. The development of this project will result in unavoidable impacts to freshwater jurisdictional wetlands (approximately 200 acres). According to preliminary plans, approximately 50% of the property (4,500 acres) will be preserved property that provides vital habitat and connectivity for plant and animal species, with the centerpiece being the 500+acre Point Hope Nature Sanctuary. OEP staff attended an interagency meeting held on October 18, 2017 to review preliminary plans and provide initial feedback. Overall the project received a very favorable review from the reviewing agencies, including DNR.

On March 21, 2018 the public notice for this project was submitted for review. The proposed master plan would impact 185.25 acres of freshwater jurisdictional wetlands and 2.65 acres of saltwater critical area wetlands. As compensatory mitigation, a Permittee Responsible Mitigation (PRM) Plan has been developed. An approximately 585-acre Point Hope Nature Sanctuary (PHNS) would be the centerpiece of this PRM plan. The PHNS would be placed under a conservation easement held by Lord Berkeley Conservation Trust and would protect the most valuable and sensitive habitats and their associated suite of species. Financial assurances would provide funding for the long-term management of this area. Approximately 268 acres of wetlands that were previously managed for pine production would be restored to a hardwood mix wetland and protected along with the remaining unimpacted wetlands and associated upland buffers. On May 5, 2018 OEP staff submitted comments on the proposed development, highlighting the significance of the natural resources on this site and asking for clarification on various issues including protected species assessments, permit phasing, protections for remainder of property and avoidance and minimization measures. It was recommended that permit issuance be held in abeyance until issues and concerns were addressed. In August of 2019, the applicant provided a response to DNR's original comments; OEP staff provided additional comments in a letter dated September 25, 2019. The DNR continued to express that the best use for this property, based on the ecological functions and unique resources located here, would be conservation and the need to address several outstanding issues. The DNR again recommended that permit issuance be held in abeyance until outstanding issues and concerns were addressed. On December 8, 2020, OEP staff commented on a revised Mitigation Plan for Cainhoy Plantation dated November 2020. The DNR continued to recommend that additional efforts are made to further avoid and minimize project impacts before consideration for compensatory mitigation. Specific comments regarding protected species and other elements of the plan were also provided. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Carolina Bays Parkway Extension, Horry County. Action ID: SAW-2004-00823. See:

<https://www.ncdot.gov/projects/carolina-bays-parkway/Pages/default.aspx>

The North Carolina Department of Transportation (NCDOT) in cooperation with the South Carolina Department of Transportation (SCDOT) will be preparing a DEIS for the extension of the Carolina Bays Parkway. The project's purpose is to bypass congestion within the areas of Calabash, North Carolina and, in South Carolina, the Little River and Grand Strand areas. The project also intends to improve traffic flow and safety at the intersection of SC Hwy 9 and SC Hwy 57 and provide a more direct route for coastal truck traffic moving through North Carolina. In August of 2017, the DNR accepted an invitation to become a participating agency in the development of an EIS for this project. As a participating agency, the DNR will identify, as early as possible, any issues of concern regarding the project's potential environmental impacts. As decisions are made through the merger process, DNR will have the ability to concur, abstain, or not concur at each concurrence point. In September of 2017, the DNR provided scoping comments on this project, identifying a number of important coastal habitats in the study area, including intertidal marsh, tidal creeks and freshwater wetlands and the Waccamaw River Heritage Preserve (WRHP). Comments were also made on the need for careful consideration to avoiding and minimizing impacts to important natural resources in the selection of alternatives to be considered in the EIS. DNR recommended that project alternatives that encroach on the WRHP eliminated from consideration. DNR staff have participated in three coordination meetings regarding this project. On May 4, 2020, OEP staff participated in a meeting to review preliminary alternatives for the proposed Carolina Bays Parkway Extension project and reach concurrence on the alternatives that will be carried forward for

detailed study. Formal concurrence on NEPA/Section 404 Merger Concurrence Point 2 was requested during this meeting. On December 8, 2020, staff submitted comments on a revised mitigation plan. In addition, staff continued to recommend that additional efforts were made to further avoid and minimize project impacts before considering compensatory mitigation and reiterated several concerns regarding the mitigation plan. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Charleston Peninsula Coastal Flood Risk Management Study. See

<https://www.sac.usace.army.mil/Missions/Civil-Works/Supplemental-Funding/Charleston-Peninsula-Study/>

The U.S. Army Corps of Engineers (USACE), Charleston District and City of Charleston are performing a feasibility study to evaluate storm surge risk reduction measures for the Charleston Peninsula. The goal is to reduce risks to health, safety, and economic damages from coastal storm surge inundation on the peninsula. An integrated Draft Feasibility Report (FR)/Environmental Assessment (EA) has been prepared to present the results of the study to date, and to analyze impacts of the proposed measures on the environment. The Draft FR/EA was prepared in accordance with the National Environmental Policy Act (NEPA). It evaluates potential impacts of the alternative actions on the environment, including the no-action alternative. The Tentatively Selected Plan (TSP), which is also the National Economic Development Plan (NED) is Alternative 3. The TSP consists of a storm surge wall along the perimeter of the Peninsula, recreation features, interior drainage facilities, a wave attenuation structure offshore of the Battery, and nonstructural measures. Based on the Environmental Assessment, the USACE has proposed a Draft Finding of No Significant Impact (FONSI). DNR staff have been actively participating in Interagency Coordination Team (ICT) meetings on various aspects of the project since December 10, 2018. The Draft FR/EA and FONSI were placed on public notice on April 20, 2020. DNR submitted formal written comments on June 16, 2020. On September 16, 2020, DNR staff attended a virtual ICT meeting held by USACE to update agencies on study progress, including outcomes of optimization of the TSP. The project was revised to reduce impacts by 64 acres and eliminate the miter gate and the proposed wave attenuator. The recommended plan is now Alternative 2, perimeter protection plus nonstructural measures. DNR Staff attended a virtual ICT update meeting for natural resource agencies on the Charleston Peninsula Coastal Flood Risk Management Study on January 11, 2021. At the meeting, the USACE announced that after further agency analysis and review of comments on the Draft FR/EA and FONSI, they would be seeking approval to pursue an Integrated Feasibility Report/Environmental Impact Statement (IFR/EIS) with a Record of Decision (ROD) for the study. On March 12, 2021 DNR staff participated in a Cooperating Agency Kick Off Meeting hosted by the Corps to discuss agency roles, project updates and next steps. The Notice of Intent for the Charleston Peninsula CFRM Study was published in the Federal Register on March 23, 2021, which initiates the 30-day scoping period. A virtual public scoping meeting was held on March 30th. DNR staff have been attending standing working group meetings of natural resource agencies and USACE for the project on a bi-weekly schedule. DNR Project manager: Stacie Crowe crowes@dnr.sc.gov

Horizon Project Foundation (WestEdge Development), Charleston County. On May 22, 2018, the USACE public noticed the Horizon Project Foundation proposal. The proposed project consists of construction of residential and mixed-use commercial, medical and research facilities in the tidal wetlands commonly known as Gadsen Creek and the proposed purpose is to serve and enhance existing functions of the Medical University of South Carolina and to advance development and improve the quality of life in the City of Charleston. The proposed work consists of impacting 3.835 acres of tidal and critical area wetlands, which are also considered Essential Fish Habitat under the Magnuson-Stevens Fishery Conservation and Management Act. These estuarine substrates and emergent wetlands are a functioning salt marsh providing habitat. DNR staff reviewed the project and provided a comment letter on June 18, 2018 recommending that the applicant consider pursuing less damaging alternatives to minimize or avoid impacts to these tidal wetland resources. On June 25, 2019, the project was re-public noticed for the same purpose with an increase in impact to a total of 3.923 acres of tidal waters and critical area wetlands. DNR staff reviewed the project and provided a comment letter on July 15, 2019 again recommending that the applicant consider pursuing less damaging alternatives to minimize or avoid impacts to these tidal wetlands resources. On January 19, 2021, the DNR provided comments on a

revised mitigation plan and continued to recommend that impacts to tidal resources are avoided and minimized to the greatest extent possible and that the DNR would not be opposed to the use of the currently proposed PRM in compensating for unavoidable wetland impacts. **On June 17, 2021, SCDHEC issued the critical area permit for this project.** DNR project manager: Susan Davis daviss@dnr.sc.gov

I-526 East Lowcountry Corridor Improvements Project, Charleston County. See

<http://www.526lowcountrycorridor.org/>

I-526 Lowcountry Corridor EAST (I-526 LCC EAST), extends from the eastern terminus of the I-526 LCC WEST project (Virginia Avenue) to US 17 in Mount Pleasant. The I-526 LCC EAST project would address current and projected congestion and operational issues along this 9.9 mile segment of I-526. The project consists of two major river crossings that include the Don Holt Bridge (over the Cooper River) and the James B. Edwards Bridge (over the Wando River). The Planning and Environment Linkages (PEL) program will be used to evaluate this project and was developed by FHWA to assist the transportation decisionmakers by encouraging the incorporation of key elements that include environmental resources, community, and economic goals early in project planning and development phases. On January 9, 2020, OEP staff participated in a meeting to discuss the PEL Program and how it will be implemented for this project. On April 15, 2020 DNR accepted an Invitation to Participate on the Planning and Environmental Linkages Study for I-526 Lowcountry Corridor East DNR project manager: Susan Davis daviss@dnr.sc.gov.

I-526 Extension Project (Mark Clark Expressway), Charleston County. See

<http://www.scdotmarkclark.com/>

On August 22, 2019, OEP attended the kick-off meeting for this project. The project history was discussed, including the original FEIS signed in 1977 for the Charleston Inner Belt Freeway, SEIS and eventual construction of the 7-mile section from West Ashley to James Island in 1995, signed DEIS for the 7-mile section from West Ashley to James Island in 2010. The project was stopped in 2010 after the signing of the DEIS. A Re-evaluation of the West Ashley to James Island was prepared and signed by SCDOT and FHWA in 2016. The project was reinitiated in 2019 with the identification of funding through Charleston County and the SIB. Since there have been changes to land use, demographics, population and economic growth within the project area, and the availability of a new BCDCOG CHATS Travel Demand Model, it was determined that a SEIS would be prepared for the project. The project will not include re-scoping or redefinition of the project purpose and need. The 39 alternatives will be reanalyzed with updated and supplemented current data. The project area includes a new location 7-mile roadway from the existing I-526 terminus at US 17 (Savannah Highway) to the James Island Connector (SC 30). On March 26, 2020, OEP attended a meeting to discuss the development of the Supplemental Environmental Impact Statement (SEIS) for the Mark Clark Extension project using the evaluation process originally developed for the 2010 Draft Environmental Impact Statement (2010 DEIS) to reevaluate the 39 preliminary alternatives identified in the 2010 DEIS using current data. The preliminary alternatives were analyzed based on traffic performance and environmental impact criteria. The goal of this process was to screen the 39 alternatives originally presented in the 2010 DEIS to a smaller set of Reasonable Alternatives that will be further evaluated in the SEIS. On April 16, 2020, the DNR submitted comments on the SEIS Alternative Analysis Tier 1 Criteria Evaluation process, developed for the Mark Clark Extension project, stating that the DNR found the proposed approach to be rational in identifying a set of reasonable alternatives to be further evaluated in the SEIS. DNR project manager: Susan Davis daviss@dnr.sc.gov.

I-526 West Lowcountry Corridor Improvements Project, Charleston County. Federal Project Number P027507. See

<http://www.526lowcountrycorridor.org/>

The Federal Highway Administration (FHWA) in cooperation with the South Carolina Department of Transportation (SCDOT) are preparing a DEIS for improvements to the I-526 corridor. The purpose of this project is to increase capacity and improve operations at the I-26/I-526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard. The project will follow One Federal Decision (OFD) in accordance with Executive Order 13807. On April 10, 2019, the DNR accepted an invitation to become a participating agency in the development of an EIS for this project. As a participating agency,

the DNR will identify, as early as possible, any issues of concern regarding the project's potential environmental impacts. As decisions are made through the OFD process, DNR will have the ability to concur, abstain, or not concur at each concurrence point. OEP staff submitted a letter of concurrence, May 3, 2019, on the Agency Coordination Plan (dated May 2019), the Purpose & Need Statement and the Permitting Timetable. DNR had no specific comments or concerns regarding these documents. On September 11, OEP staff participated in a meeting to discuss the mitigation needs assessment developed for the project. The DNR expressed that the protection of natural resources at Cainhoy Plantation would be DNR's priority in mitigating impacts for this project. On October 7, DNR submitted comments on the preliminary range of alternatives being considered and requested further analysis of the designs for avoidance and minimization of impacts such as reduce shoulder width and slopes and construction methods to avoid and minimize impacts. On December 11, 2019, OEP staff participated in a meeting to discuss the revised mitigation report and to further discuss mitigation options being considered. It was the consensus of the group that five options would be further considered, including Cedar Hill for freshwater and Jehossee Farms, a James Island spoil site, Noisette Creek and Filbin Creek for saltwater impacts. On March 11, 2020, OEP participated in a meeting on DOT's update on the mitigation needs assessment for the I-526 LCC West project. The DOT will continue vetting mitigation options including at Cedar Hill, Jehossee, Hermine, Noisette and others. On March 19, OEP sent a letter of concurrence on the proposed alternatives to be carried forward for detailed evaluation for the proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS). On May 13, 2020 OEP staff participated in a meeting discuss the recommended Preferred Alternative. On June 8, 2020, DNR responded with concurrence to a Request for Concurrence on the Proposed Preferred Alternative to be carried forward for detailed analysis in the Proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS). In August of 2020, the SCDOT circulated portions of the DEIS for preview and comment before finalizing the DEIS; OEP staff provided several recommendations. On October 22, 2020, the final DEIS for this project was submitted for review. On November 25, 2020, OEP staff provided comment on the permit request (SAC-2019-00593) for the proposed project with recommendations on construction methods and other BMPs to minimize project impacts. **On June 9, 2021, the SCDOT issued a draft FEIS, ROD and final Section 4(f) Evaluation for this project. The SCDNR provided no additional comments or concerns regarding this document.** DNR project manager: Susan Davis daviss@dnr.sc.gov.

McClellanville 115 kV Transmission Project, Central Electric Power Cooperative, Inc. DEIS April 2014. Central Electric proposed to construct, operate, and maintain a new 115 kV electrical transmission line (Project) that would bring service to the proposed McClellanville Substation to serve Berkeley Electric members in the McClellanville area. The new transmission line would originate at one of two potential locations near the Winyah Generation Station. The transmission line would terminate at the proposed McClellanville Substation. Approximately 15-20 miles of new 115 kV transmission line is proposed to be constructed along with a new 115 kV substation. The Project area identified encompasses parts of Georgetown and Charleston counties. DNR has been involved in the environmental review of the proposed project for well over a decade, including the submittal of extensive comments during the preliminary planning and scoping stages and most recently with the submittal of comments dated July 2, 2014 in response to the DEIS. Throughout the review process DNR has maintained a consistent position that any overhead, high voltage transmission line adjacent to US Highway 17 across the Santee-Delta Wildlife Management Area (WMA) would, at a minimum, cause unacceptable and unavoidable impact to wetlands, sensitive species, intensively managed habitat, endangered species, migratory birds and result in avoidable view-shed impacts to a historic and culturally rich corridor. We have consistently recommended that any environmental review for the improved delivery of power to the McClellanville area fully consider alternatives that minimize or eliminate potential impacts to the Francis Marion National Forest, properties titled to the citizens of South Carolina through DNR, private properties protected by conservation easement, sensitive species/habitats and cultural and historic resources. Despite our efforts to emphasize the important of the Santee River Delta and to highlight the potential adverse impacts resulting from new transmission line construction through this sensitive area, all of the alternatives considered for review in the DEIS cross the Santee River Delta. DNR submitted comments on July 2, 2014 outlining fundamental flaws and inadequacies of the DEIS and recommended the existing DEIS be revised and/or supplemented

prior to proceeding with the development of a FEIS for the project, including a focused effort to fully reconsider less environmentally damaging alternatives to the McClellanville area. DNR staff met with Central Electric on August 18, 2014 to discuss alternatives that are less environmentally damaging. On April 15, DNR staff attended an interagency meeting to discuss Central Electric's re-evaluation of transmission line route alternatives and to present preliminary findings to the agencies before RUS and the cooperating agencies determine the next steps in the NEPA process. Following the agency meeting held in April 2015, Central Electric is moving forward with having an independent engineering study performed on the project. RUS has provided Central Electric a draft statement of work (SOW). Central Electric is handling the procurement side and will pay for the study. RUS solicited comments on the submitted SOW. No comments on the SOW were submitted by DNR. On February 28, 2017, DNR staff attended a meeting to discuss the results of the independent engineering study conducted for CEC. The results of the study determined that for various reasons the crossing of the Santee Delta was not a viable alternative and that the Jamestown to McClellanville was outlined as the preferred alternative. The Forest Service is initiating the next consultation meeting with Central Electric on March 21, 2017 to discuss survey requirements and initiate discussions on how to avoid impacts to endangered species, other sensitive species and habitats, private protected lands, and the Wilderness Area at Wambaw Creek. There will be a Supplemental DEIS prepared for the project that will focus on the Jamestown to McClellanville route as the preferred alternative. On August 23, 2019, a Supplemental Draft Environmental Impact Statement (DEIS) was published in the Federal Register (<https://www.rd.usda.gov/publications/environmental-studies/impact-statements/mcclellanville-115kv-transmission-line>) The Supplemental DEIS addresses the construction, operation and maintenance of Central Electric's proposed Project. The Project includes the construction of a new 115 kV transmission line needed to energize the new McClellanville Substation located near the McClellanville service area. The Supplemental DEIS considers three alternatives, encompassing three potential corridor locations with one corridor including two different alignments. The overall project area encompasses parts of Berkeley, Georgetown and Charleston counties in coastal South Carolina, and potentially crosses the Francis Marion National Forest. On October 28, 2019, OEP staff submitted comments on the SDEIS. DNR recommended that no alternatives crossing the Santee Delta be considered in the Final EIS (FEIS). DNR also recommended that the FEIS include information that adequately describes and evaluates the potential environmental impacts of the proposed project and provides for a full comparative environmental analysis of alternatives and that the selection of a preferred alternative be based on those alternatives that minimize or eliminate potential impacts to the Francis Marion National Forest (FMNF), private land conservation easement (CE) properties, sensitive species/habitats and cultural and historic resources. The FEIS is anticipated early in 2021. DNR project manager: Susan Davis DavisS@dnr.sc.gov

Riverport Development SAC-2010-00064. See

https://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/May_2020_PN/SAC-2010-00064-Jasper-County-Riverport-Development.pdf?ver=2020-05-27-091515-030.

The proposed work consists of the construction of a mixed-use development including industrial, commercial, civic and residential uses. In detail, the proposed project is a master planned development at the 4,368.81-acre Riverport Tract situated north and south of I-95, with improvements to the existing two-lane Purrysburg Road as well as a new interchange with I-95 at Mile Marker 3. Residential development, including 3,339 residential dwelling units, would occupy the project area north of I-95, with commercial and civic development situated along both sides of the new interchange and within the southern portion of the site, including over 10.6 million square feet of industrial warehouse space and 2.6 million square feet of commercial space (restaurant and hotel, grocery store, hospital, and office/retail space). The proposed work would require the placement of fill material into 35.17 acres of wetlands to accomplish road crossings for internal project access as well as for improvements to Purrysburg Road and I-95 where Exit 3 is proposed. The applicant has proposed to offset impacts to wetlands and other waters of the United States by implementing an on-site permittee-responsible compensatory mitigation plan, including the buffered preservation of all remaining wetlands on the site and restoration of approximately 150 acres of pine plantation to historic wetland condition. The project purpose is to construct a development in Jasper County, South Carolina, incorporating residential, commercial and industrial uses with direct access to Interstate 95 to meet projected future growth associated with the existing Port of Savannah and Jasper Ocean Terminal. On June 19, 2020, DNR asked that the permit be held in abeyance until comments

addressing additional protections for the adjacent Savannah National Wildlife Refuge are addressed and additional information is provided regarding the proposed mitigation plan. On January 29, 2021, a revised notice was issued for this project, including a reduction in wetland impacts, as a result of a reevaluation of the jurisdictional status of wetlands on-site and a revised mitigation plan involving the purchase of mitigation credits from an approved mitigation bank. The SCDNR provided comment on this notice on February 9, 2021 and recommended that all undisturbed, excluded wetlands are included in the acreage to be preserved on-site and that mitigation is provided for all impacts to these areas. The SCDNR asked that the permit not be issued until all previously expressed concerns and recommendations were addressed. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Savannah River below Augusta Restoration Feasibility Study. Under the authority of a resolution passed on 1 August 1990 by the U.S. House of Representatives Committee on Public Works and Transportation and by Section 1201(29) of the Water Resources Development Act of 1986, the SRBA Ecosystem Restoration Study considers modifications to restore hydraulic connectivity for ecosystem restoration to river meanders that were cut off to aid commercial river navigation. Of the 46 cutoff meanders that the study originally identified, the study team used detailed screening criteria to focus on an array of alternatives at seven sites that show potential to provide the greatest ecosystem restoration benefits. The USACE-Savannah District and the Savannah Riverkeeper have initiated a study to evaluate the feasibility of restoring natural bends (oxbows) in the Savannah River below Augusta. DNR staff are serving on the Task Force that will guide the feasibility study and evaluate the environmental impacts of the proposed restoration project. A total of \$12.5 million has been dedicated to this project through the Savannah Harbor Expansion Project (SHEP) Settlement Agreement, but the release of those funds will not occur until dredging begins in the inner harbor. The feasibility study is expected to be completed in 2019, when dredging of the inner harbor is expected to begin. Non-federal matching funds (\$1.5 million) to complete the oxbow restoration project are being solicited from state and local agencies and non-governmental organizations. The Task Force met on March 7, 2017 and identified several issues that should be addressed in the Feasibility Study. These include impacts on upstream migration of sturgeon; impacts on spawning habitat for sturgeon and robust redhorse; impacts on endangered freshwater mussel species; maintenance of stable channel configurations after the initial restoration; effects on sedimentation, geomorphology, hydrology, and water quality; and property ownership issues, including potential flooding. A field trip for Task Force Members to examine potential oxbow restoration sites was conducted April 24, 2017. In February 2019, it was announced that funding had been received to resume the Savannah River Below Augusta study. DNR staff participated in a web conference kickoff meeting held on February 26, 2019. DNR staff attended the Corps Savannah District Charrette Meeting held on March 12, 2019 at the Lower Savannah River Alliance Education Center in Allendale. DNR submitted comments on the proposed restoration study on April 18, 2019. DNR staff attended the Alternatives Milestone meeting May 22, 2019. DNR staff participated in a webinar and conference call for restoration project updates on June 5, 2019. DNR staff conducted a site visit to the seven oxbows being considered for restoration on August 26, 2019. Staff will be attending a stakeholder meeting on March 30, 2021 regarding this project. The USACE study team, with assistance from the National Ecosystem Restoration Planning Center of Expertise, is in the process of determining costs and benefits of the various alternatives at each site and will perform a cost effectiveness and incremental cost analysis to help determine the National Ecosystem Restoration Plan. Staff attended a stakeholder meeting on March 30, 2021 regarding this project. The USACE study team, with assistance from the National Ecosystem Restoration Planning Center of Expertise, is in the process of determining costs and benefits of the various alternatives at each site and will perform a cost effectiveness and incremental cost analysis to help determine the National Ecosystem Restoration Plan. DNR staff attended a monthly status update meeting on May 24, 2021. DNR project manager: Stacie Crowe crowes@dnr.sc.gov.

Savannah Harbor Navigation Project Mitigation Recovery. A Draft Environmental Assessment (EA), placed on public notice in November 2016, evaluated the potential impacts of the USACE's proposal to make specific improvements to selected wetland impoundments at the Savannah National Wildlife Refuge (SNWR) in order to enhance the effectiveness of those sites as bird habitat. The proposed action

is intended to compensate for past and future short-term deficits in mitigation credits for the Savannah Harbor Navigation Project (which addresses long-term operation and maintenance requirements for the Harbor). Mitigation was required due to wetland impacts resulting from the impoundment of Dredged Material Containment Area (DMCA) 14A in 2006. In the Draft EA, USACE evaluated four alternatives for enhancing bird habitat in the SNWR and selected the least cost alternative as their preferred alternative, rather than the alternative recommended by SNWR staff. In our comment letter on the Draft EA (submitted December 8, 2016), DNR supported the selection of the alternative preferred by Refuge staff. DNR project manager: Stacie Crowe crowes@dnr.sc.gov.

Savannah Harbor Expansion Project (SHEP).

<http://www.sas.usace.army.mil/Missions/Civil-Works/Savannah-Harbor-Expansion/>

DNR project manager: Stacie Crowe crowes@dnr.sc.gov

1. Dissolved Oxygen (DO) Injection System. OEP staff attended a stakeholder meeting at the USACE Savannah District Headquarters on September 28, 2017 to discuss the proposed sampling and analysis plan to evaluate the efficacy of the SHEP DO injection systems (Speece Cones). The injection systems are being constructed at two locations on the Savannah River to mitigate for reduced oxygen levels due to harbor deepening. Modeling results indicate that a total of 40,000 lbs. of DO per day needs to be diffused into the Savannah River to compensate for the incremental reduction in DO. Construction began on the DO Injection System in February 2016 and the Hutchinson Island location was completed in March 2019. The first initial test, the Transfer Efficiency Study, which identifies the amount of oxygen being absorbed by the water column for each pound of oxygen introduced into the water, was conducted from February 17-March 3, 2019. The 60-day Water Collection Transfer Efficiency test run data collection occurred from March 17-May 16, 2019 and a data report is expected in mid-July 2019 for public comment and review. The Water Column Transfer Efficiency Report for the Dissolved Oxygen Facility Environmental Testing for the Savannah Harbor Expansion Project report was released August 15, 2019 for public comment. DNR staff reviewed the report and determined that the results of the tests indicate that the Corps met the standards they outlined in the settlement agreement. Water Column Transfer Efficiency Data Collection for the Upper System has been rescheduled to occur from July 6, 2020 – July 10, 2020 and a data report is now expected on August 1, 2020 for public comment and review. This is a slight change due to COVID-19.

As a part of a settlement agreement reached in 2013, prior to commencing the dredging of the Inner Harbor Channel, the USACE will also conduct additional tests to evaluate the downriver DO Injection System located at Hutchinson Island to demonstrate its ability to mitigate DO impacts of the SHEP project. The entire Oxygen Injection System must be operated, and instream DO must be monitored continuously for a period of 59 days (2 lunar cycles), of which at least one 29.5 day testing (one lunar cycle) must occur in July, August, or September immediately following the installation of the Oxygen Injection System. Continuous daily water quality monitoring must be conducted during this period at locations specified in and pursuant to the monitoring plan. This 59-day period of operation is referred to herein as the “Start-up Run.” The Start-up Run has been rescheduled to begin on July 25, 2020 – September 11, 2020. Due to warranty (mechanical) issues with the Upriver DO plant and the COVID-19 impacts, the USACE has added 14 additional days of data collection to extend the Start-up Run through September 23, 2020. On October 28, 2020, USACE distributed the QAQC’d DO System plant raw data collected from July 13 – September 23, 2020, which includes the Start Up Run data. Only raw data was distributed and a full report summarizing the data is still expected in early 2021.

Following the Start-up Run and analysis of the modeling results and monitoring data, the USACE will provide a report comparing the monitoring data collected during the Start-up Run to the modeling results to the Conservation Groups (including DNR), Commission, and DHEC for review to assess whether the DO Injection System will work to mitigate the impacts of the SHEP project. The Startup Run Data Collection and Modeling Report was made available by the Corps for review on May 3 2021 and **DNR staff submitted comments on June 11, 2021.**

- 2. Excavation and Placement of Cadmium-Laden Sediments.** A Draft Supplemental Environmental Assessment (SEA), placed on public notice in December 2016, proposes to modify the currently authorized plan for handling cadmium-laden sediments as described in the Final Environmental Impact Statement (FEIS) for the Savannah Harbor Expansion Project (SHEP). The purpose of the proposed action is to place cadmium-laden sediments that will be dredged as part of SHEP in a manner that reduces risk to wildlife without causing dike failure in Dredged Material Containment Areas (DMCAs) 14A and 14B. The Draft SEA describes ten alternatives for the disposal of these cadmium-laden sediments. Seven of the ten alternatives were eliminated during the initial screening evaluation due to one or more factors, including a high cost of construction, high cost of mitigation, high risk of dike failure, or unacceptable risk to wildlife from exposure to cadmium-laden sediments. The USACE preferred alternative (Alternative 10) would place cadmium-laden sediments from SHEP into DMCAs 14A and 14B and maintain these sites in a “moist” (saturated) rather than “flooded” (inundated) condition during placement, followed by shallow flooding with 6 to 12 inches of water until the site could be capped with 2 feet of clean dredged material. The currently authorized alternative described in the FEIS would have maintained these DMCAs in a more deeply flooded condition (4 to 6 feet of water) until the cadmium-laden sediments are capped. In our comment letter, dated February 2, 2017, the DNR acknowledged the USACE’s need to develop an alternate plan for disposing cadmium-laden sediments due to the risk of dike failure under the currently authorized plan; however, we recommended that Alternative 9 be implemented rather than Alternative 10 because it would more effectively limit the exposure of birds and other wildlife to cadmium-laden sediments. Alternative 9 would involve the construction of finger dikes within DMCAs 14A and 14B to create smaller impoundments that could be filled and capped more quickly than Alternative 10.
- 3. McCoy’s Cut Flow-Rerouting Plan.** A Draft Supplemental Environmental Assessment (SEA) and Finding of No Significant Impact (FONSI) for proposed modifications to the McCoy’s Cut flow-rerouting feature of the Savannah Harbor Expansion Project (SHEP) was released on May 24, 2017 for public comment. The draft SEA supplements the 2012 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for SHEP. The proposed modifications would extend the dredging area within the upper Middle River to ensure sufficient freshwater flow to intended areas, as well as save space in the upland Dredged Material Containment Areas (DMCAs) by using some of the dredged sediments to convert open-water manmade cuts (McCoomb’s Cut and Rifle Cut) to freshwater wetlands. These cuts are already planned to be plugged with recycled concrete material (from the former Highway 17 Bridge) and rock in order to prevent saltwater from the Savannah River from flowing into the Back River and adjacent tidal wetlands. The proposed modifications also include increasing the dredging depth at the mouth of Union Creek by four feet to account for potential future shoaling and constructing a temporary pile-supported platform on the edge of existing tidal wetlands in the Back River to access the construction site for the McCoy’s Cut diversion structure. Comments on the draft SEA/FONSI were submitted June 26, 2017. Construction of McCoy’s Cut flow re-routing feature began construction July 2018. It is anticipated to be complete in October 2019.
- 4. Monitoring, Adaptive Management, and Status Reports.** In February 2018 the USACE-Savannah District released a Fiscal year 2017 Construction Monitoring Report for the Savannah Harbor Expansion Project (SHEP). This report covers the third year of construction monitoring. OEP staff are currently reviewing the FY 2017 report. In March 2018, USACE Savannah announced that they have reached the midpoint of the project with the completion of the entrance channel dredging. OEP staff attended a SHEP FY 2017 Monitoring Meeting on October 10, 2018 in Savannah, GA which reviewed the contents of the 2017 Construction Monitoring Report released in February 2018.
- 5. New Savannah Bluff Lock and Dam.** The SHEP mitigation agreements, in compliance with the Endangered Species Act, require the USACE – Savannah District to reduce or mitigate impacts to sturgeon. Removal of New Savannah Bluff Lock and Dam (NSBLD) would benefit sturgeon by providing access to historic spawning areas. The USACE funded DNR Diadromous Fish staff to conduct pre-construction monitoring of sturgeon distribution and movement through the use of telemetry and sonic transmitters. This work was completed in 2014. Construction of the bypass channel originally proposed was not anticipated to occur until 2021. However, in December 2016,

the Water Infrastructure Improvement for the Nation (WIIN) Act was signed into law. The WIIN Act deauthorized the NSBLD and repealed/replaced language in the Water Resources Development Appropriations Act of 2000/2001 with requirements to fulfill fish passage mitigation under the SHEP. The WIIN Act outlines two options:

- A) Repair the NSBLD lock wall and modify the structure such that it is able to:
- Maintain the pool for navigation, water supply and recreational activities, and
 - Allow safe passage over the structure to historic spawning grounds of shortnose and Atlantic sturgeon and other migratory fishes.
- B) Construct at an appropriate location across the Savannah River of a structure that is able to maintain the pool for water supply and recreational activities and remove the NSBLD on completion of construction of the fish passage structure.

The Corps Savannah District presented five alternatives to be considered for the project to the public in June 2018 and plan to release the selected alternative in Fall 2018. OEP Staff attended the public meeting hosted by the Corps Savannah District in North Augusta, SC on November 14, 2018. The recommended plan for replacing the New Savannah Bluff Lock and Dam was announced. Of seven alternatives offered, the recommended plan chosen is a higher fixed crest weir with a dry floodplain bench. The plan involves the demolition of the current lock and dam and construction of a fixed weir with an in-channel fish passage and a floodplain bench that enables the passing of higher flows. With this design, the Corps Savannah District estimates the water level will decrease one to two feet in the downtown Augusta area under average flow conditions. River flows between 5,000 and 8,000 cubic feet per second (cfs) are considered average flows. Flows above 5,000 cfs occur approximately 77% of the time. This is a contentious issue for the community with concerns regarding maintaining the pool created by the current lock and dam for drinking water supply and recreational use. In response to concerns regarding pool height with the recommended plan, the Corps Savannah District conducted a drawdown to exhibit the height of the pool for the tentatively selected plan for local observation in February 11-14, 2019. In conjunction with the drawdown, the Corps Savannah District released the Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI) for public review on February 27, 2019. DNR staff, the public, and other resource agencies and conservation groups will have 60 days to review the details of the tentatively selected plan and provide comment by April 16, 2019. DNR submitted comments on the PAAR and SEA for the NSBLD on March 27, 2019. Additionally, staff also reviewed and provided comments on the Draft Fish and Wildlife Coordination Act Report on the NSBLD to the USFWS on March 26, 2019. On October 29, 2019, the Corps announced its decision on the future of the fish passage at NSBLD. The Corps selected alternative 2-6d, a fixed weir with an in-channel fish passage and a floodplain bench that enables the passing of higher flows. The plan calls for removal of the lock and dam. On November 4, 2019, the South Carolina Attorney General on behalf of the South Carolina Department of Health and Environmental Control and the Savannah River Maritime Commission filed a lawsuit against the United States Army Corps of Engineers Savannah District in regard to the elevation of the pool that should be maintained. DNR OEP staff attended a public meeting held in Augusta on November 13, 2019. On December 6, 2019, the City of Augusta filed a motion to intervene in the lawsuit filed by the State of South Carolina. On January 2, 2020, the Georgia Ports Authority also filed a motion to intervene in the lawsuit. On November 23, 2020, US District Judge Richard Gergel ruled in the Lock and Dam case. Judge Gergel entered an order in favor of the State of South Carolina and the City of Augusta and permanently enjoined the defendants (USACE and Georgia Ports Authority) from tearing down the NSBLD and required a mitigation alternative that keeps the pool level at 114.76 ft. On January 19, 2021, the US Army Corps of Engineers, a federal defendant in the case, filed a notice of appeal to the US Court of Appeals for the Fourth Circuit.

6. **Wetland Mitigation Lands Acquisition.** The USACE-Savannah District released a draft Final Report documenting the acquisition and preservation of two tracts of land in partial fulfillment of

wetland mitigation requirements for the Savannah Harbor Expansion Project (SHEP). Flow-rerouting features within the Savannah River estuary are expected to mitigate most of the impacts to freshwater wetlands due to SHEP (see item on McCoy's Cut below); however, the remaining impacts are required to be mitigated by the acquisition and preservation of 2,245 acres of existing wetlands within the estuary. In the 2012 SHEP Final EIS, the USACE stated it would acquire lands designated as high priority in the Savannah National Wildlife Refuge Acquisition Plan and provide them to the USFWS to manage as additions to the Refuge. The USFWS will manage these properties using funds obtained through the Department of Interior's normal budget process. The first property, a 175-acre mostly upland tract known as SLF III, was acquired by GADOT and transferred to the USFWS in 2015. The second property, Abercorn Island, is a 2,081-acre tract consisting mostly of non-tidal forested wetlands. Abercorn Island was identified by the USFWS as its top priority for acquisition. The GADOT acquired Abercorn Island in February 2017 and comments on the draft Final Report were submitted on May 30, 2017. Abercorn Island was transferred to the Refuge in June 2017.

Savannah River Training Wall Removal Study – Augusta. The U.S. Army Corps of Engineers, Savannah District, has initiated a study regarding a training wall in the Savannah River at Augusta, Georgia conducted under the authority of Section 216 of the Flood Control Act of 1970. The purpose of this type of study is to determine whether a water resources development project operated and maintained by the Corps of Engineers should be deauthorized, and if the associated property should undergo disposal. The training wall was constructed as part of the federally authorized project, Savannah River Below Augusta (SRBA), in the early 1900s. The wall, and associated structures, helped prevent formation of sandbars on the Georgia side of the river which impeded commercial navigation at the time. However, commercial navigation effectively ceased by 1980 and maintenance of the channel in that area was discontinued, the last known maintenance activity having been completed in December 1980.

The study area extends between Augusta's 13th Street Bridge and Palmetto Parkway Bridge (Interstate 520). Currently, the training wall, including underwater portions and those exposed during low flow periods controlled by the J. Strom Thurmond Dam, could be a navigational hazard. The study will determine if there remains Federal interest in this navigational feature of the SRBA project and if not, whether disposal of the wall is feasible. DNR submitted comments on the proposed study on October 28, 2019. On April 6, 2020, the USACE Savannah District released a draft Integrated Disposition Study (IDS)/Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) under the authority of Section 216 of the Flood Control Act of 1970 (Public Law 91-611) for the Savannah River Below Augusta, Training Wall Disposition, Augusta, Georgia and North Augusta, South Carolina. The draft IDS/EA included the evaluation that the Corps performed to determine whether federal interests exist to retain or dispose of the Training Wall and its associated navigation features. The study evaluates three alternatives: (Alternative 1) Future Without Project Condition (FWOP)/No Action Alternative (NAA); (Alternative 2) Removal of the Training Wall; and (Alternative 3) Removal of the Training Wall and Sediment at Gardner's Bar on the South Carolina downstream bank. The recommended plan, Alternative 2, consists of the removal of the training wall and its associated navigation features and would allow for the natural release of sediments accumulated behind the wall back into the river system. DNR staff provided comments on the report on April 30, 2020. DNR provided comments on the Draft Fish and Wildlife Coordination Act Report to the USFWS Georgia Ecological Services Office. The USFWS Georgia Ecological Services Office provided the Final Fish and Wildlife Coordination Act Report on the Training Wall on June 22, 2020. DNR project manager: Stacie Crowe crowes@dnr.sc.gov

Soilutions, LLC - Edge Road Mine, Horry County SCG731593

The proposed project involves a proposed fill dirt mine in Horry County, SC that has requested coverage under the NPDES General Permit for Discharges Associated with Nonmetal Mineral Mines. The borrow pit proposes to discharge mine dewatering and stormwater to Boggy Swamp and eventually to the Waccamaw River. On June 4, 2021, the DNR provided comments to SCDHEC on the proposed mine, noting several records and potential impacts to protected species and/or species of concern near/within the proposed project area, including three state threatened species: the Carolina Pygmy Sunfish (*Elassoma boehlei*), and the Southern hognose snake (*Heterodon simus*), both species of highest

conservation priority as designated by the by the State Wildlife Action Plan (SWAP), and spotted turtle (*Clemmys guttata*), which is also a federal At-Risk species (ARS) and a SWAP species of high conservation priority. The project also has the potential to affect a SWAP species of highest conservation priority, the pine snake (*Pituophis melanoleucus*). DNR also noted that the proposed project is immediately adjacent to the Lewis Ocean Bay Heritage Preserve (LOBHP) and the potential exists for impacts to sensitive LOBHP habitats and associated management resulting from mine construction, operation and the dewatering discharge from the project operations into adjoining wetlands. The DNR expressed concerns that the proposed mining operation may alter hydrology of wetlands that connect from the proposed site to the LOBHP, causing areas to become dryer and increasing wildfire risk and potentially impacting sensitive plant and negatively impacting herptiles that depend on these seasonal wetlands for reproduction. The DNR recommended that appropriate measures were taken to minimize or avoid impacts to LOBHP and the aforementioned species of concern. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Stormwater Infrastructure General Permit, S.C. Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (DHEC OCRM), GP-2019-SW11, GP-2019-SW12 & GP-2019-SW13. DHEC OCRM is proposing to issue a general permit to streamline the authorization process for State Agencies, County Governments and Local Municipalities for public Storm Water Infrastructure improvement projects within DHEC OCRM Direct Permitting Authority (Critical Area), in accordance with the Coastal Zone Management Act (48-39-10 et.seq.). This GP will authorize State agencies, county governments and local municipalities to conduct activities required for the re-establishment, improvement or maintenance of existing public stormwater conveyance systems in the tideland. The purpose of this GP is to provide a simplified and expeditious means to authorize routine public stormwater infrastructure projects undertaken by state agencies, county governments and local municipalities that are similar in nature and result in only minimal individual and cumulative impacts to the tidelands critical area within the State of South Carolina.

In a letter dated April 23, 2019, DNR expressed various concerns regarding the issuance of this GP and the potential significant and cumulative impacts to important estuarine resources. DNR staff provided recommendations for minimizing potential impacts. Staff also participated in a follow-up meeting to further discuss concerns of the various commenting agencies. This GP was officially noticed in August of 2020; OEP staff made additional recommendations for minimizing potential impacts. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Stormwater Management General Permit Tidal Waters, USACE General Permit P/N SAC-2020-00959.

https://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/Aug_2020_PN/SAC-2020-00959_Proposed_Stormwater_Conveyance_General_Permit_PN.pdf?ver=2020-08-14-095638-890 The Charleston District proposes to issue a General Permit (GP) to federal, state, or local government agencies authorizing certain stormwater management activities located in tidal waters within the boundaries of the Critical Area Tidelands of the Coastal Zone of Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper Counties in South Carolina. The GP would authorize the excavation/dredging of existing, maintained stormwater conveyances, expansion of existing, maintained stormwater conveyances, and installation of new stormwater conveyance and/or the re-establishment of non-maintained stormwater conveyances through tidal waters. The GP would also authorize the discharge of dredged or fill material and/or excavation/dredging to facilitate the installation of new and/or the maintenance, repair, replacement and/or extension of existing water control structures, pipes and culverts in tidal waters. In a letter dated September 3, 2020, DNR expressed various concerns regarding the issuance of this GP and the potential significant and cumulative impacts to important estuarine resources and provided recommendations for minimizing potential impacts. DNR project manager: Susan Davis daviss@dnr.sc.gov.

US 278 Corridor Improvements Project, Beaufort County. Federal Project Number P030450. See: <https://www.scdot278corridor.com/>

The Federal Highway Administration (FHWA) in cooperation with the South Carolina Department of Transportation (SCDOT) are preparing an EA for improvements to the US 278 corridor. The purpose of this project is to increase capacity and reduce congestion along US 278 from Moss Creek Drive to Squire Pope Road. As a part of the corridor improvements project, the eastbound Mackay Creek Bridge, which crosses the Intracoastal Waterway, would be replaced as a part of SCDOT's bridge replacement program and the remaining three bridges in the study area would also be studied for potential improvements. In addition, the access to Pinckney Island National Wildlife Refuge and the C.C. Haigh, Jr. boat ramp would also be studied for possible improvements. On April 10, 2019, the DNR accepted an invitation to become a participating agency in the development of an EA for this project. As a participating agency, the DNR will identify, as early as possible, any issues of concern regarding the project's potential environmental impacts. DNR will also be involved in the issue resolution process and provide meaningful and timely input on unresolved issues. In a letter dated September 20, 2018, the DNR has already provided scoping comments on this project, including preliminary comments on potential impacts to natural resources in the study area. In a letter dated April 10, 2019, the DNR accepted the invitation to become a participating agency and asked that the DNR's role in dispute resolution be clarified in the Final ACP. DNR reviewed the Draft Purpose and Need statement and had no comments or concerns. On June 13, 2020, the DNR participated in a meeting to discuss the alternative evaluation criteria, range of alternatives, and provide a coordination point for agencies as required by the EA process. On March 19, 2020, OEP staff participated in a meeting to discuss the following: the reasonable alternatives and revisions since the last agency meeting; the preliminary Essential Fish Habitat assessment; and future mitigation planning. Seventeen preliminary alternatives were developed originally and were narrowed down to six reasonable alternatives. On May 14 staff participated in an ACE meeting to discuss project updates, discuss the alternatives matrix and the recommended preferred alternative. DNR project manager: Susan Davis daviss@dnr.sc.gov

Hydroelectric Energy Projects

Under the Federal Energy Regulatory Commission's (FERC) regulatory authority under the Federal Power Act, natural resource agencies have an opportunity to negotiate and collaborate with utilities to minimize and mitigate impacts to natural resources affected by the operation of hydroelectric facilities. OEP staff serve as the DNR representative as a part of the relicensing process and implementation of the license. DNR FERC Coordinator: Elizabeth Miller millere@dnr.sc.gov

Augusta Canal Hydroelectric Project (FERC Project No. 11810). The City of Augusta, Georgia, filed a license application with FERC on June 20, 2003, which is pending signatures to a Settlement Agreement and the completion of NMFS Section 7 endangered species consultation regarding hydro project impacts to shortnose and Atlantic sturgeon; DNR signed the Settlement Agreement. The Settlement Agreement and the license application propose upstream and downstream fish passage and operations of the Augusta Canal that will provide for seasonal minimum flows that will enhance aquatic habitat and recreational activities in the Savannah River at Augusta Shoals. On July 9, 2014 the City of Augusta submitted a request to DHEC for 401 Water Quality Certification (WQC) of its license application to FERC to which DNR provided comments to DHEC on Sep 11, 2014. On July 8, 2015 DHEC issued a 401 WQC of the City of Augusta's FERC license application, and the WQC is consistent with the DNR stream flow objectives. NMFS and FWS drafted a revised joint prescription for fish passage in November 2017 and again in March 2018. A draft joint fish passage prescription was issued in September 2019, which was also reviewed by DNR staff. On October 23, 2019, the City of Augusta filed for a trial type hear to resolve disputed issues regarding the Second Modified Prescription. In July 2020, the NMFS and the USFWS each filed Reservations of Authority, replacing the Second Modified Prescription for the Project. The agencies are jointly working to file a Third Modified Prescription for the Augusta Canal Project.

Cherokee Falls Hydroelectric Project (FERC Project No. 2880). Cherokee Falls Hydroelectric Project, LLC emailed a draft license application to DNR on March 18, 2019 requesting agency review and

comments by June 17, 2019. DNR submitted comments to the FERC on June 14, 2019. Enel submitted their Final License Application to the FERC on July 31, 2019. The FERC issued Scoping Document 1 for the Cherokee Project on March 6, 2020 and comments were submitted by DNR on April 3, 2020. DNR submitted comments on the Notice for Ready for Environmental Analysis (REA) to the FERC on May 18, 2020. On April 20, 2020 Cherokee Falls Hydroelectric Project, LLC submitted a request to DHEC for 401 Water Quality Certification (WQC) of its license application to the FERC. DHEC issued a public notice on April 30, 2020 requesting comments regarding the proposed application. DNR submitted comments to DHEC for the 401 WQC on June 1, 2020. DNR and DHEC submitted additional questions to the licensee regarding Project operations for clarification before issuance of the WQC. On December 15, 2020, Hydroland Omega LLC. took ownership of Cherokee Falls Hydroelectric Project, LLC and intends to continue to pursue the subsequent license. The ownership change is at the parent company level and the primary licensee of the Project will remain the same. The licensee responded to and addressed DNR and DHEC's additional questions and concerns regarding project operations related to the issuance of the WQC. After consulting with DNR personnel, DHEC issued the WQC to the Cherokee Falls Hydroelectric Project on March 9, 2021. The FERC issued the Environmental Assessment for the Cherokee Falls Project on April 16, 2021 and solicited public comment on the document. The SCDNR submitted agency comments on the EA May 14, 2021.

Coneross Hydroelectric Project (FERC Project No. 6731). Coneross Power Corporation filed a draft license application with the FERC on October 22, 2018. DNR staff reviewed the document and provided comments and recommendations before the January 20, 2019 comment period deadline. The applicant proposed a decrease in the minimum flow requirement of 25 cfs year-round to the bypass reach for the project and stated that it would be an enhancement to the project. DNR disagrees and finds that the change to this new flow regime would be a negative impact for aquatic resources. The current flow requirement in the previous license requires a minimum flow in the bypass reach at 35 cfs from February 1 – May 31 and 25 cfs from June 1 – January 31 or inflow to the Project's impoundment, whichever is less. They are also required to maintain a minimum flow of 36 cfs or inflow, whichever is less, downstream of the confluence between the tailrace and the bypass reach to support navigation. To address DNR's concerns, it was agreed that the applicant would fund studies to determine proper minimum flow requirements for their project. The final license application was submitted to the FERC on February 28, 2019. DNR submitted a follow-up letter in April 2019 to address the study needs required to determine adequate flow downstream of the project. The Project filed the Final License Application on January 23, 2020. The FERC issued the Scoping Document 1 (SD1) for the Project on February 20, 2020. The FERC issued an extension to the SD1's comment period on March 6, 2020 and comments were submitted by DNR staff on April 9, 2020. The FERC issued the Ready for Environmental Analysis for the Coneross Project on April 21, 2020. DNR staff reviewed the request and submitted comments and 10j recommendations on June 19, 2020. DHEC issued a public notice seeking comments on the Coneross Project's application for a 401 Water Quality Certification. DNR staff submitted comments on July 6, 2020 to DHEC recommending measures to provide protection, mitigation and enhancement for fish and wildlife resources affected by the Project. On December 15, 2020, Hydroland Omega LLC. took ownership of the Coneross Power Corporation and intends to continue to pursue the subsequent license. The ownership change is at the parent company level and the primary licensee of the Project will remain the same. DHEC issued a Notice of Department Decision regarding the Coneross Project's 401 Water Quality Certificate (401 WQC) on April 23, 2021. DNR staff identified an inconsistency with DHEC's 401 WQC NODD for the project regarding buffer zone protection and noticed DHEC staff to review the decision. DHEC adjusted the NODD for the 401 WQC and reissued the NODD on May 3, 2021 including DNR's recommendation for buffer zone protection.

Parr-Fairfield Hydroelectric Project (FERC Project No. 1894). The Parr-Fairfield Hydroelectric Project was issued a new license on November 25, 2020. SCDNR staff worked collaboratively with the licensee, federal and state agencies, and other stakeholders throughout the relicensing process that began in September 2012. In June 2018, a Comprehensive Relicensing Settlement Agreement (CRSA) detailing how the Project should be managed under a new FERC license was finalized and signed by SCE&G (now Dominion Energy South Carolina (DESC)) and relicensing stakeholders, including SCDNR. The

FERC incorporated most of the agreed upon terms of the CRSA into license requirements. However, DESC, in good faith and to uphold the agreed upon terms of the CRSA, has agreed to follow through with terms that were not incorporated into the license. DESC will be providing several beneficial services to the state's residents and aquatic resources as part of their new license requirements and CRSA terms. There are a variety of benefits associated with the project including:

- Benefits for aquatic resources with improved flow regimes that will reduce reservoir fluctuations and stabilize flows during fish spawning season.
- Data collected, and information gained, as a part of a freshwater mussel monitoring plan and an American eel Monitoring Plan.
- Improved water quality downstream of the Project with increased minimum flows and the implementation of a Turbine Venting Plan to enhance dissolved oxygen below Parr Shoals Dam.
- Development of a Shoreline Management Plan and Erosion Monitoring Plan to protect the Project's natural, scenic, recreational, and cultural resources over the term of the new license.
- Establishment of a Habitat Enhancement Program to enhance aquatic habitat in addition to the installation of habitat structures in Lake Monticello.
- Existing recreation sites within the Project at Parr and Monticello reservoirs, as well as the Recreation Lake or Sub-Impoundment (a 300-acre lake adjacent to Monticello Reservoir, constructed by the licensee for the sole purpose of recreation) will see enhancements at new and existing recreation sites such as new courtesy docks and fishing piers. A new canoe portage trail around the Parr Shoals Dam will also be formalized.
- Continued protection and public use of approximately 9,000 acres of land and water within the Project boundary in the Wildlife Management Area (WMA) Program.

The project website is <http://parrfairfieldrelicense.com/index.html>.

Saluda Hydroelectric Project (FERC Project No. 516). SCE&G filed with FERC a license application for the Saluda (Lake Murray) Project on August 27, 2008 and a Comprehensive Relicensing Settlement Agreement (CRSA) on July 31, 2009. A new FERC license for this project is pending the completion of NMFS Section 7 endangered species consultation regarding hydro project impacts to shortnose and Atlantic sturgeon. The CRSA and license application propose important protection and enhancement measures for Lake Murray and downstream sections of the Saluda and Congaree rivers. Measures include the establishment of minimum flows and striped-bass spawning enhancement flows, low-inflow drought plan, a plan for dissolved-oxygen enhancement to improve water quality, increased protection of threatened and endangered species, enhancements in fish and wildlife habitat protection and increased recreational opportunities. On January 3, 2019, SCANA/SCE&G merged with Dominion Energy South Carolina, LLC. The project website is <http://www.saludahydrorelicense.com/>.

Santee Cooper Hydroelectric Project (FERC Project No. 199). S.C. Public Service Authority (SCPSA) filed with FERC a license application on Mar 15, 2004 and a Final Settlement Agreement (FSA) on May 24, 2007. The license application and FSA propose flows through the project to enhance aquatic habitat and water quality, a low-inflow/drought plan, fish passage and protection prescriptions, plans to protect sensitive species, shoreline management plan, recreation plan, and enhancements at the Santee National Wildlife Refuge. FERC issued its Final EIS in October 2007. A new FERC license for this project is pending the completion of National Marine Fisheries Service (NMFS) Section 7 endangered species consultation regarding hydro project impacts to shortnose and Atlantic sturgeon. DNR staff continues to participate in the Santee Cooper-NMFS consultation process regarding sturgeon protection measures. DNR provided comments on July 23, 2012 to address a Santee Cooper proposal to NMFS for sturgeon passage at the Project. NMFS resumed consultations with Santee Cooper and DNR staff on April 25, 2017, to address sturgeon passage issues and planned steps for revising the draft biological opinion. In July 2019, DNR staff received a draft of the Biological Opinion and Fishway Prescription from the NMFS Section 7 endangered species consultation for review. DNR staff attended a site visit and meeting on September 30 and October 1 to discuss the NMFS draft Biological Opinion. Staff reviewed the draft Biological Opinion and draft Second Modified Prescription for Fishways and submitted

comments to the FERC on December 17, 2019. NMFS issued the final Biological Opinion on January 22, 2020 and the final Second Modified Prescription for Fishways on January 27, 2020.

Spartanburg Water Proposed Hydroelectric Projects. Spartanburg Water has been granted approval by FERC on July 7, 2014 to begin the licensing process in order to establish hydroelectric facilities at two existing Pacolet River dams on Lakes Blalock and Bowen and restoration of an abandoned hydropower facility at Fingerville on the North Pacolet River. DNR staff are providing input and assistance with study plans being implemented at the project sites. Spartanburg Water has paused its pursuit of these licenses pending resolution of related economic issues. The project website is: <http://www.sws-sssd.org/lakes/index.php>.

Stevens Creek Hydroelectric Project (FERC Project No. 2535). On January 3, 2019, SCANA/SCE&G merged with Dominion Energy. Dominion Energy conducted public outreach meetings on January 10, 2019 to address the upcoming relicense process for Stevens Creek Hydroelectric Project located on the Savannah River downstream of Lake Thurmond in Edgefield County, SC and Columbia County, GA. DNR staff attended a site visit on May 15, 2019 to survey the project area and recreational facilities provided by the project. DNR staff attended a draft Pre-Application Document (PAD) meeting on August 22, 2019. DNR is involved in several Resource Conservation Groups and has attended meetings with the different groups in preparation for the draft PAD. The current FERC license for the Project expires on October 31, 2025. Dominion Energy submitted their Pre-Application Document and request to use the Traditional Licensing Process (TLP) on May 15, 2020. DNR filed a concurrence letter in support of the use of the TLP for the Project. DNR staff participated in the Joint Agency Meeting and virtual site visit on September 3, 2020. DNR submitted comments on the Pre-Application Document and a study request for consideration on November 2, 2020. SCDNR staff participated in a site visit on May 27, 2021 to discuss fish passage and recreation amenities at the Project. The project website is <http://stevenscreekrelicense.com>.

Upper Pelzer (FERC Project No. 10254), Lower Pelzer (FERC Project No. 10253), and Piedmont (FERC Project No. 2428) hydroelectric projects. Enel Green Power North America, Inc. was granted approval by FERC on April 5, 2013 to begin a relicensing process for these 3 run-of-river hydro projects located on the Saluda River in Greenville and Anderson counties. Three Final License Applications were submitted to FERC by Enel in late November and December, and DNR staff reviewed the documents and submitted comments to FERC on January 28 and February 17, 2016, recommending additional studies to address information needs for these projects. DNR also submitted comments and recommendations to DHEC regarding Enel's applications for 401 Water Quality Certification for these three projects. FERC issued a Ready for Environmental Analysis notice in November 2017 and is developing its Draft Environmental Assessment for the three projects. In January 2018, DNR submitted recommendations to FERC on licensing measures for protection, mitigation and enhancement of fish and wildlife resources affected by the Projects. FERC issued a Draft Environmental Assessment (DEA) on the three projects on July 16, 2019. DNR submitted comments to the Commission regarding their findings and recommendations in the DEA on August 30, 2019. The FERC reviewed DNR's comments and did not adopt any of DNR's 10j recommendations in the Final Environmental Assessment issued in October 2013. 10j under the Federal Power Act requires consideration of recommendations by fish and wildlife agencies for the protection, mitigation of damages to, and enhancement of fish and wildlife affected by the development, operation and management of a FERC project. The Piedmont Project license was issued on April 15, 2020. The Upper Pelzer Projects license was issued on June 30, 2020. The Lower Pelzer Project was issued a new license on August 6, 2020. Staff attended a site visit at the Piedmont Project on September 30, 2020 to review the draft Recreation Management Plan (RMP) for the Project. The licensee is required by Article 405 of their license to provide an informal fishing site and a canoe portage around the dam. Staff submitted comments on the draft Piedmont RMP on October 9, 2020, draft Upper Pelzer RMP on December 8, 2020, and draft Lower Pelzer RMP on March 31, 2021.

Natural Resource Damage Assessment (NRDA).

Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or the Oil Pollution Act (OPA), natural resource trustees seek damages for injury to natural resources that are a result of releases of hazardous substances or oil. OEP staff serve as the DNR representative as a part of the Natural Resource Trustees. DNR project manager: Stacie Crowe crowes@dnr.sc.gov

Exxon Mobil Corporation. The NRDA Trustees reached a settlement with the Exxon Mobil Corporation for approximately \$6.6 million for claims related to the release of hazardous waste at nine phosphate fertilizer plant sites located in Charleston, Beaufort and the Greenville area between 1900-1950. Remedial actions started around 2007-2008. The Consent Decree was filed on May 2, 2019 and entered into final judgement on June 26, 2019. Environmental impacts typically associated with phosphate-based fertilizer manufacturing facilities include elevated concentrations of metals, particularly lead and arsenic in soil, groundwater and sediment, as well as acidic pH conditions. The NRDA Trustees will now begin the Restoration Planning process where restoration actions will be designed to return impacted resources to baseline condition. The Trustees signed the funding resolution in January 2020. The settlement funds are anticipated to be used for marsh and oyster restoration projects in the Charleston and Beaufort areas.

Koppers Company Inc. The NRDA Trustees reached a settlement with Beazer East, Inc., the responsible party, for the Koppers Company site for approximately \$3 million. The Consent Decree was filed on January 7, 2019. Starting as early as 1942, wood treatment and fertilizer manufacturing facilities located at Koppers in Charleston released hazardous substances into wetland and riverine habitats in and near the Ashley River. Approximately 140 acres of tidal marsh and creeks were impacted by the contaminants released, which included polycyclic aromatic hydrocarbons (PAHs) and heavy metals. Beazer East, Inc. worked cooperatively with the EPA to clean up the contamination and remedial activities were completed in 2003. The Trustees conducted a NRDA and determined that both intertidal and subtidal habitats were affected by the contamination. Contaminant concentrations would have been toxic to benthic invertebrates (including grass shrimp), and possibly fish, birds and mammals. The Trustees have released the Final Damage Assessment and Restoration Plan, as well as the Environmental Assessment for the Koppers Site, which describes restoration projects focusing on salt marsh restoration at sites on the Ashley River and Long Branch Creek in Charleston. The comment period on the Draft Restoration Plan closed on February 12, 2020 and no public comments were received. A Trustee resolution to accept an oyster restoration project as the preferred alternative was circulated on February 26, 2020. The Trustees signed the Trustee Resolution approving the Final Supplement's release on March 12, 2020. The salt marsh restoration project at Drayton Hall will begin on March 15, 2021.

MV Everreach. On September 30, 2002, the container ship M/V Everreach spilled approximately 12,500 gallons of oil into the waters of the Cooper River in Charleston, South Carolina. While the oil was concentrated in the vicinity of the North Charleston Terminal and the Old Navy Base, oiling occurred in tidal creeks and backwater areas of James Island, Shutes Folly, Crab Bank, Morris Island, Folly Beach, and Sullivan's Island, totaling approximately 30 linear miles of shoreline. NOAA and the Trustees worked with the Responsible Party to restore over 11 acres of salt marsh habitat at the site of the former Charleston Naval Base golf course in North Charleston. The NRDA Trustees reached a settlement with the responsible party for a salt marsh restoration project and an additional \$121,000 for damages to recreational facilities and lost use of natural resources. The Consent Decree was filed on October 24, 2012. The Noisette Creek Restoration Project restored tidal flow through berm breaches and excavation of a tidal creek network and was completed in 2018. To address the lost recreational uses, the Trustees evaluated three restoration alternatives, including a no action alternative. These alternatives were presented in a Draft Restoration Plan and Environmental Assessment, released for public comment June 27 through July 27, 2019. No public comments were received. The Trustees selected one project to compensate the public for the injury to recreational fishing. The selected project will provide additional and improved fishing access through the installation of a fishing pier at the Sol Legare Boat Landing on James Island, South Carolina. Implementation is expected to begin in 2020. The Sol Legare Boat

Landing improvements were completed in June 2020 and include a new floating dock and fixed crabbing and fishing pier.

Mitigation Banks and Interagency Review Team

Under the 2008 Mitigation Rule, natural resource agencies have an opportunity to participate collaboratively with resource and regulatory agencies on the Interagency Review Team (IRT) to oversee and provide feedback on mitigation bank or in-lieu fee development. The IRT process ensures that mitigation banks are sited appropriately and provide ecological value, in addition to functional uplift of aquatic resources to offset the loss of aquatic resources associated with U.S. Army Corps of Engineers Section 404 permits. A majority of the OEP staff serve on the IRT to provide expertise on stream restoration and wetland enhancement during this process. The following are a list of recent banks that are under review; this does not include existing banks that are also reviewed during the monitoring phases of the bank's life.

Audubon Silver Bluff Mitigation Bank Prospectus

The proposed project consists of establishing a 475-acre freshwater stream and wetland mitigation bank in the Middle Savannah River watershed (8-digit HUC 03060106) located in the Southern Outer Piedmont Ecoregion near Spartanburg, Spartanburg County (34.837678, -82.057584). The proposal is to restore 6,036 linear feet of Curry Branch. Approximately 292.8 acres of wetlands will be enhanced or restored through plugging ditches and vegetative enhancements. The bank is owned by the National Audubon Society and sponsored by Audubon South Carolina. The long-term steward will be Audubon South Carolina and the conservation easement holder will be the Lowcountry Land Trust. Prospectus comments were submitted to the USACE by DNR on December 17, 2020. DNR project manager: Tom Daniel

Ben's Creek Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the South Tyger watershed (8-digit Hydrologic Unit Code 03050107) located in the Southern Outer Piedmont Ecoregion near Spartanburg, Spartanburg County (34.837678, -82.057584). The proposed 430-acre mitigation bank includes approximately 28,900 linear feet of stream channels and 103.5 acres of wetlands. The proposal is to preserve 20,550 linear feet of stream, and either enhance or restore 8,350 linear feet of streams by stabilizing stream channels and reconnecting streams to their floodplain. Approximately 99.1 acres of wetlands will be enhanced or restored through removal of fill, berms and roadbeds. Approximately 4.4 acres of wetlands will be preserved on site. The bank is owned by Mr. David Keller of Moore, SC and sponsored by Southern Oaks Land and Water. Southern Oaks Land and Water will be the long-term steward. The conservation easement holder has not yet been identified. Prospectus comments were submitted to the USACE by DNR on February 19, 2020. DNR project manager: Tom Daniel

Big Dutchman Creek Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Catawba watershed (8-digit Hydrologic Unit Code 03050103) located in the Level III Piedmont Ecoregion near the Rock Hill, York County, SC (35.00422, -81.08689). The proposed 106 acre bank site is located within the 800 acre Harper Farm. The proposal is to restore approximately 17,600 linear feet of stream and enhance 3.82 acres of wetlands. The bank owners and long-term stewards are Mr. Richard C. Harper and Mr. Craig Harper and the conservation easement holder is the York County Soil and Water Conservation District. Prospectus comments were submitted to the USACE by DNR on September 6, 2017 and DMBI comments were submitted on April 3, 2020. DNR submitted comments on the Design Plans for the proposed bank on September 10, 2020. DNR project manager: Greg Mixon

Black Gum Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lynches River watershed (8-digit Hydrologic Unit Codes 03040202) located in the Sand Hills Ecoregion

near Bethune, Kershaw County (34.415914, -80.438341). The proposed 654-acre mitigation site includes approximately 616.3 acres of freshwater wetlands, 29,935 linear feet of perennial streams, and 11,066 linear feet of non-wetland waters (manmade ditches). The proposal is to preserve 22,333 linear feet of stream, and either enhance or restore 7,602 linear feet of streams by redirecting flows to a relic channel. Approximately 532.6 acres of wetlands will be enhanced or restored through removal of fill, berms and roadbeds. Approximately 83.7 acres of wetlands will be preserved on site. The bank is owned and sponsored by SCP Black Gum, LLC. In addition, SCP Black Gum, LLC will be the long-term steward. The conservation easement holder has not yet been identified. DNR received the public notice including the prospectus on June 2, 2021 and will provide comments on or around July 2, 2021. DNR project manager: Tom Daniel

Brosnan Forest Coldwater Branch Mitigation Bank Mitigation Banking Instrument

The proposed bank is located in the Four Hole Swamp watershed (8-digit Hydrologic Unit Code 03050205) in the Middle Atlantic Coastal Plain ecoregion. The proposed 1,106 mitigation site is located in Norfolk Southern Railway Company's Brosnan Forest, a 14,405-acre corporate conference center and outdoor recreation facility. The proposal is to restore 299.2 acres of headwater wetlands, 2.3 acres of isolated wetlands, 123.2 acres of streamside wetlands, 21 acres of restored impounded wetlands, and 46.3 acres of formerly impounded wetlands that will be hydrologically enhanced. All wetlands will be protected by a 150-foot average width upland buffer. In addition, 34,488 linear feet of stream will be restored or preserved with 300-foot average width upland buffers. The bank is owned and sponsored by Norfolk Southern Railway Company and will be protected by a conservation easement held by Lowcountry Land Trust, Inc. Prospectus comments were submitted to the USACE by DNR on February 4, 2019 and DMBI comments were submitted on June 2, 2020. DNR staff reviewed a revised DMBI dated September 2020 and submitted comments on October 27, 2020. DNR. Project Manager: Greg Mixon

Catawba Mitigation Bank Prospectus

The proposed bank is located in the Lower Catawba watershed (8-digit Hydrologic Unit Code 03050103). The proposed 623-acre mitigation site includes approximately 28.3 acres of freshwater wetlands and 48,294 linear feet of streams. The proposal is to preserve approximately 38,429 linear feet of streams and 12.47 acres of palustrine forested wetlands. In addition, 15.53 acres of freshwater wetlands will be enhanced through removal of loblolly pine and replanted in native species. 11,766 linear feet of stream will be restored/enhanced through removal of two dams utilizing natural channel design techniques. The bank owner, sponsor and proposed long-term steward is SCP Catawba, LLC. The identity of the conservation easement holder has not been finalized. DNR received the public notice including the prospectus on April 16, 2021 and provided comments on June 2, 2021. DNR project manager: Greg Mixon

Catfish Farm Mitigation Bank Prospectus

The proposed bank is located in in the Little Pee Dee and Great Pee Dee watershed (8-digit Hydrologic Unit Code 03040204 and 03040201) located in the Middle Atlantic Coastal Plain Ecoregion. The proposed 1,199-acre mitigation site would preserve 4,098 linear feet of stream. In addition, 2,418 linear feet of stream will be enhanced by re-routing flow back into relic channels. Approximately 12,807 linear feet of stream will be restored by stabilizing stream channels, reconnecting streams to their floodplain, removal of existing impoundments, and creating new channels where needed. Buffers will be enhanced by planting a mix of native trees to improve vegetative diversity. Approximately 596.69 acres of wetlands will be enhanced by re-establishment of native hardwood species. 252.48 acres of wetlands will be restored by removing exiting pine plantation, restoring hydrology through grading and ditch plugging, and re-establishing forested wetland vegetative communities. Approximately 42.31 acres of wetlands will be preserved on site. The bank owner and proposed long-term steward is Catfish Farm, LLC and the conservation easement holder is anticipated to be Pee Dee Land Trust. Draft Prospectus comments were submitted to the USACE by DNR on May 8, 2017 and final Prospectus comments were submitted on May 5, 2020. DNR project manager: Greg Mixon

Caw Caw Mitigation Bank Draft Mitigation Banking Instrument

The proposal consists of establishing a freshwater wetland mitigation bank in the Stono River watershed (USGS 8-digit Hydrologic Unit Code 03050202) and the Middle Atlantic Coastal Plain ecoregion of South Carolina. The proposed 668.7-acre mitigation site includes 658.8 acres of freshwater wetlands and 9.87 acres of upland roads. The mitigation work plan includes the enhancement/restoration of 197.1 acres of palustrine forested wetlands by the removal of pine species and the planting of bottomland hardwood seedlings; and the preservation of 445.3 acres of palustrine forested and scrub shrub wetlands. The bank will be protected with a conservation easement held by Ducks Unlimited. Prospectus comments were submitted to the USACE by DNR on February 12, 2015 and DMBI comments were submitted on May 14, 2020. Project manager: Susan Davis

Corley Mill Mitigation Bank Final Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Saluda River watershed (8-digit Hydrologic Unit Code 03050109) located in the Level III Piedmont Ecoregion near Lexington, Lexington County, SC (34.0278, -81.1647). The proposed 116.07-acre bank includes the lower portions of both Twelve Mile and Fourteen Mile Creeks approximately 0.65 miles upstream from the confluence with the Saluda River. The site includes 8,234 linear feet of streams and 72.64 acres of wetlands that are proposed to be restored, enhanced and preserved. The bank owners are Mrs. Lenna C. Young and Mrs. Cindy C. Waters. The long-term steward is the Corley Mill Preservation Group LLC and conservation easement holder is Congaree Land Trust. Prospectus comments were submitted to the USACE by DNR on December 17, 2016 and DMBI comments were submitted on May 5, 2020 and again on July 24, 2020 on the MBI document dated June 29, 2020. DNR staff reviewed a revised DMBI dated September 23, 2020 and provided comments dated December 9, 2020. **DNR staff reviewed a proposed final MBI dated May 18, 2021 and provided comments dated June 4, 2021.** DNR project manager: Greg Mixon

Crane Creek Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Broad River watershed (8-digit Hydrologic Unit Code 03050106) located in the Level III Piedmont Ecoregion near Columbia, Richland County, SC (34.076905, -81.038011). The proposed 309.32-acre bank includes restoration and buffering of 12,031 linear feet of Crane Creek, 4,007 linear feet of associated tributaries, and 134.5 acres of palustrine forested, scrub-shrub and emergent wetlands and open water. The bank owner and long-term steward is Crane Creek Mitigation LLC and the conservation easement will be held by Congaree Land Trust. Prospectus comments were submitted to the USACE by DNR on August 24, 2017 and Draft MBI comments were submitted to the USACE by DNR on April 27, 2020. DNR staff reviewed a revised DMBI dated August 12, 2020 and submitted comments October 23, 2020. DNR project manager: Greg Mixon

Daniel Island Saltwater Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a saltwater mitigation bank in the Cooper River watershed (8-digit Hydrologic Unit Code 03050201) in the Sea Island/Coastal Marsh Ecoregion. The 134.76-acre mitigation site is a portion of a former confined disposal facility and prior to 1970 was used to manage dredged material. According to the Prospectus, the mitigation site consists of 25.67 acres of existing salt marsh and 109.09 acres that were used for the placement of dredged material and farming activities. The long-term steward for the proposed mitigation bank will be the property owner SC Ports Authority. The third-party conservation easement holder for the site will be The Lord Berkeley Conservation Trust. Prospectus comments were submitted to the USACE by DNR on January 1, 2017 and DMBI comments were submitted August 11, 2020. DNR project Manager: Susan Davis

French Quarter Creek Mitigation Bank Draft Mitigation Banking Instrument

The French Quarter Creek (FQC) Site is in Berkeley County, South Carolina within the Cooper River Basin (8-digit HUC 03050201). The FQC Site is owned by Environmental Banc & Exchange, LLC a wholly owned subsidiary of Resource Environmental Solutions, LLC (RES) and has an estimated acreage of approximately 445 acres. The proposed bank includes both wetland and stream restoration, enhancement, enhancement by upland buffering, and preservation. In detail, the project proposes to restore approximately 70.5 acres of bottomland hardwood forest by filling ditches and raising the water

table of the affected area; enhance approximately 206 acres of various wetland habitats through planting of native species and land management practices; and approximately 1,200 feet of stream restoration. The DNR has been proposed as the long-term steward of the bank and the site will be protected with a conservation easement held by Lowcountry Land Trust. Prospectus comments were provided to the USACE by DNR on March 7, 2019 and DMBI comments on March 30, 2020. DNR project manager: Susan Davis

Goose Pond Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Congaree watershed (8-digit Hydrologic Unit Code 03050110) located in the Level III Southeastern Plains Ecoregion. The proposed 1,185-acre mitigation site includes approximately 20,076 linear feet (LF) of streams and approximately 676 acres of freshwater wetlands. The proposal is to preserve 11,163 LF of stream and restore 9,940 LF of stream. The proposal would also enhance 437.7 acres of bottomland hardwood wetlands and preserve an additional 238.8 acres of bottomland hardwood wetlands. The bank owner and sponsor are Southern Oaks Land & Water, LLC and the long-term steward is proposed to be Palmetto Environmental Consultants. The conservation easement holder is proposed to be Congaree Land Trust. Prospectus comments were provided to the USACE by DNR on October 8, 2018. A DMBI, dated July 2020, was reviewed and comments submitted on August 28, 2020. Project Manager: Greg Mixon.

Grove Creek Mitigation Bank Phase 3 Restoration Plan

The proposed project consists of designing and constructing Phase 3 at the existing mitigation bank in the Saluda watershed (8-digit Hydrologic Unit Code 03050109) located in the Level III Piedmont Ecoregion. The 512.73-acre site includes a Phase 1 and Phase 2 restoration that have been previously constructed. Phase 3 will consist of the restoration of 4,182 linear feet of the main stem of Grove Creek on approximately 100 acres within the existing bank. The owner and sponsor are Hollingsworth Funds, Inc. and the conservation easement holder is Upstate Forever. DNR previously provided comments on the Phase 3 Restoration Plan on July 20, 2016. DNR staff reviewed the proposed Phase 3 Restoration Plan dated June 2020 and provided comments on September 18, 2020. DNR staff participated in a site visit on October 22, 2020 and provided additional comments dated November 13, 2020. **DNR staff have reviewed a response to agency comments provided by the sponsor on June 4, 2021 and DNR provided comments on June 10, 2021.** Project Manager: Greg Mixon

Halidon Hill Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Cooper River watershed (8-digit Hydrologic Unit Code 03050201) located in the Level III Middle Atlantic Plains Ecoregion. The proposed 1,744.5-acre mitigation site includes approximately 1,074.6 acres of wetlands, 22.8 acres of non-wetland waters, and 647.1 acres of uplands. The proposal is to preserve 175.14 acres of freshwater wetland and 802 linear feet of stream. In addition, 222.93 of freshwater wetlands will be enhanced through removal of loblolly pine and replanted with native hardwood species; 94.36 acres of wetland will be enhanced through filling ditches, breaching/removal of berms, removal of roads and culverts; 418.81 acres of wetland will be enhanced through removal of loblolly pine, replanting native species, and removing hydrological impairments and 16.91 acres of freshwater wetland will be restored by removal of loblolly pine and restoring natural hydrology. In addition, 21,881 linear feet of stream will be restored through removal of undersized culverts, bank stabilization, and construction of a new channel. The bank sponsor, using a conservation easement (Ducks Unlimited), will protect the mitigation bank site. Prospectus comments were provided to the USACE by DNR on October 10, 2019 and DMBI comments were submitted on May 21, 2020. Project manager: Susan Davis

Landsford Canal Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Lower Catawba watershed (8-digit Hydrologic Unit Code 03050103). The proposed 250-acre mitigation site includes approximately 27.18 acres of wetlands and 30,131 linear feet of streams. The project will preserve approximately 16,712 linear feet of streams and 24.91 acres of palustrine, forested wetlands, restore approximately 3,674 linear feet of streams by establishing a new channel and reconnecting the

stream with the abandoned floodplain bench at the current stream elevation, enhance approximately 9,745 linear feet of streams by stabilizing of the existing channel and the creation a floodplain bench at the current stream elevation restoration, and enhance approximately 2.5 acres of freshwater forested wetlands through restoration of a native hardwood community. The bank owner, sponsor and proposed long-term steward is Landsford Mitigation Bank, LLC. The identity of the conservation easement holder has not been finalized. DNR received the public notice including the prospectus on March 8, 2021 and provided comments on April 7, 2021. DNR project manager: Greg Mixon

Lower Broad Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Broad watershed (8-digit Hydrologic Unit Code 03050106) located in the Southern Piedmont Ecoregion. The proposed 259.78-acre mitigation bank includes approximately 28,876 linear feet of stream channels and 2.37 acres of wetlands. The proposal is to preserve 11,167 linear feet of stream, enhance 442 linear feet of stream, and restore 8,994 linear feet of stream by raising streambed elevations, primarily by stabilizing stream channels, grading streambanks and reconnecting streams to their floodplain. Buffers will be enhanced by planting a mix of native trees to improve vegetative diversity. Approximately 2.37 acres of wetlands will be preserved on site. The bank owner, sponsor and proposed long-term steward is SCP Lower Broad, LLC. The identity of the conservation easement holder has not been finalized. DNR received the public notice including the prospectus on March 17, 2021 and provided comments on April 16, 2021. DNR project manager: Tom Daniel

Minkum Creek Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Broad River watershed (8-digit Hydrologic Unit Code 03050105) located in the Level III Piedmont Ecoregion near Gaffney, Cherokee County, SC (34.981895, -81.620860). The proposed 435-acre mitigation site includes approximately 36,600 linear feet of stream channels and approximately 10 acres of freshwater wetlands. The proposal is to restore or enhance 10,010 linear feet of perennial and seasonal streams. All streams within the bank are currently proposed for some level of restoration. The bank is owned by Heritage Preservation Holdings, LLC and sponsored by Sandy Creek Partners, LLC. The property owner, Heritage Preservation Holdings, LLC, will also be the long-term steward. The conservation easement holder has not yet been identified. Prospectus comments were submitted to the USACE by DNR on June 7, 2019. The DMBI, dated July 2, 2020, was reviewed and comments submitted August 25, 2020. DNR project manager: Greg Mixon

Mossy Bend Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater wetland mitigation bank in the Black River watershed (8-digit Hydrologic Unit Codes 03040205). The proposed 722.3-acre mitigation site includes approximately 696.7 acres of freshwater wetlands and 22,000 linear feet (lf) of non-wetland waters (manmade ditches). The proposal is to enhance the hydroperiod of 696.7 acres of freshwater wetlands by plugging/filling 22,000 linear feet of ditches and installing additional culverts and/or breaches (i.e., low water crossings) through elevated roadbeds. Of that area, 129.4 acres will also be enhanced through removal/thinning of loblolly pine and replanted with native wetland hardwoods. Approximately 7.2 acres of upland buffer will also be preserved. The bank sponsor (SCP Mossy Bend, LLC), using a conservation easement, will protect the bank site. DNR project manager: Stacie Crowe

Mountain Bridge Passage Mitigation Bank Prospectus

The proposed bank would consist of three parcels in Greenville County, South Carolina located within the Saluda River watershed (HUC 03050109)., The three parcels encompass approximately 568.72 acres, containing approximately 45,948 linear feet (8.70 miles) of stream channels. The restoration work will occur on only one of the three tracts, the site of the former Holiday Lake/Civitan Camp (35.079475, -82.574669). This work consists of 4,217 linear feet of stream restoration, 3,772 feet of stream enhancement, and 37,959 feet of stream preservation. The bank is owned and sponsored by Naturaland Trust and will be protected using a conservation easement held by Upstate Forever. The property owner, Naturaland Trust, will be the long-term steward. Prospectus comments were submitted to the USACE by DNR on June 12, 2019. DNR project manager: Tom Daniel

Palmetto Umbrella Mitigation Bank: Edisto River Mitigation Site Draft Instrument Modification (DIM)

The proposed bank is located in the Edisto River watershed (8-digit Hydrologic Unit Code 03050206) located in the Middle Atlantic Coastal Plain Ecoregion within the ACE Basin. The proposed 1,291-acre mitigation site includes approximately 12,877 linear feet of stream channels and 429.5 acres of wetlands. The proposal is to preserve 3,911 linear feet of stream and to restore 8,966 linear feet of stream by redirecting flow from channelized portions back into on-site relic channels. Wetland enhancement of 35.4 acres will include establishing native vegetation where commercial pine plantations have encroached or where vegetation has been disturbed. Approximately 395.6 acres of wetlands will be restored by removal of ditches, roads and berms. Native vegetation will be restored in areas that are in commercial pine production. Approximately 359.5 acres of wetlands will be preserved on site. The bank is owned and sponsored by Weyerhaeuser NR Company and will be protected using a conservation easement held by Lord Berkeley Conservation Trust. DIM comments were submitted to the USACE by DNR on March 19, 2020. Project Manager: Susan Davis

Palmetto Umbrella Mitigation Bank: Great Swamp Mitigation Site Draft Instrument Modification (DIM)

The proposed bank is located in the Salkehatchie watershed (8-digit Hydrologic Unit Code 03050210) located in the Coastal Plain Ecoregion. The proposed 3,067-acre mitigation site includes approximately 53,570 linear feet of stream channels and 1,411.5 acres of wetlands. The proposal is to preserve 7,035 linear feet of stream and enhance 1,283 feet of stream by stabilizing stream channels and reconnecting natural hydrology upstream. Restoration of 38,152 linear feet of stream will be achieved by removing spoil piles, utilizing available relic channels, and adding appropriate in stream structures to maintain dimension, pattern, and profile. Wetland enhancement will include establishing native vegetation where commercial pine plantations have encroached or where vegetation has been disturbed. Approximately 848.4 acres of wetlands will be preserved on site. The bank is owned and sponsored by Weyerhaeuser NR Company and will be protected using a conservation easement held by Lord Berkeley Conservation Trust. DIM comments were submitted to the USACE by DNR on February 12, 2020 and again on May 13, 2021 in response to a revised DMBI. Project Manager: Susan Davis

Red Bluff Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater and saltwater wetland and freshwater stream mitigation bank in the Lower Savannah and Calibogue Sound/Wright River watersheds (8-digit hydrologic Unit Codes 03060109 and 03060110). The proposed 5,514.74-acre mitigation site includes approximately 427.63 acres of freshwater wetlands, 4,704.74 acres of tidal wetlands, 5,514.74 linear feet (lf) of non-wetland waters, and 382.37 acres of uplands. The proposal is to preserve approximately 904.9 lf of streams, 163.3 acres of palustrine, forested wetlands, and 4,677.7 acres of tidal wetlands through the permanent protection of a conservation easement. In addition, 151.9 acres of freshwater wetlands will be enhanced through removal of loblolly pine and replanted in native species, 75.6 acres of freshwater wetlands will be enhanced through removal of loblolly pine, replanting native species, and removing hydrologic impairments, 3.9 acres of freshwater wetland will be restored by filling the ditches, removing the roads, and re-planting the area with native wetland species, 0.8 acres of tidal wetlands will be restored or enhanced by increasing tidal flow through breaking or removal of berms to allow for full range of tidal flows, 26.2 acres of tidal marsh will be created in areas that were converted to agricultural lands and 4,139.3 lf of streams will be enhanced through removal of undersized culverts, bank stabilization, and construction of new channels. An upland buffer will be placed around all wetland resources. the Bank is owned by Pelican Capital, LLC and the bank sponsor is Red Bluff Mitigation Bank, LLC. The bank site will be protected using a conservation easement held by the Beaufort County Open Land Trust (BCOLT). **On April 19, 2021, the DNR submitted comments on the Final Prospectus dated November 2, 2020.** DNR Project Manager: Susan Davis

Reedy Run Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Saluda River watershed (8-digit Hydrologic Unit Code 03050109) located in the Piedmont Ecoregion. The proposed 275-acre mitigation bank includes approximately 25,835 linear feet of stream, and 78 acres of

freshwater wetlands. The proposal is to preserve 17.9 acres of palustrine forested and emergent wetlands, enhance 60.1 acres of freshwater wetlands, preserve approximately 10,170 linear feet of Bush River and restore approximately 15,665 linear feet of streams. The bank owner and long-term steward is Mr. Trip Taylor with Reedy Run Real Estate in Greenville, SC and the proposed conservation easement holder is the Newberry Soil and Water Conservation District. The Corps of Engineers public noticed a Prospectus on November 4, 2020 and DNR provided comments on November 30, 2020. DNR project manager: Tom Daniel

Roberts Swamp Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the South Fork Edisto River watershed (8-digit Hydrologic Unit Code 3050204) located in the Level III Southeastern Plain Ecoregion near the Town of Norman, Orangeburg County, SC (33.454108, -81.075959). The proposed 255+ acre bank includes approximately 12,612 linear feet of streams and 165 acres of wetlands. The bank owners are West Stone 123 LLC and Mr. Robert Johnson. The long-term steward will be Roberts Swamp MB, LLC and the (tentative) conservation easement holder is Congaree Land Trust. The USACE public noticed the Prospectus on June 19, and DNR provided comments on July 15, 2020. DNR project manager: Greg Mixon

Rocky Creek Mitigation Bank Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Catawba River watershed (8-digit Hydrologic Unit Code 03050103) in the Piedmont ecoregion. The proposed 131-acre former cattle farm consists of three impoundments, seven unnamed tributaries, two freshwater wetlands, Rock Creek, Little Rocky Creek, upland and riparian buffers and an existing utility easement. The mitigation work plan includes planting existing pasture with hardwood species, restoring natural hydrology in wetlands and restoring channelized and impounded headwater streams on-site. The property owner, Cowland LLC will also be the long-term steward and the conservation easement is proposed to be held by Katawba Valley Land Trust. DNR reviewed a Prospectus dated September 9, 2014 and provided comments dated October 22, 2014. DNR staff reviewed a DMBI dated December 19, 2016 and comments were provided on March 1, 2017. DNR has received a revised MBI dated October 5, 2020 and provided comments dated November 16, 2020. DNR project manager: Greg Mixon

Salkehatchie Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Salkehatchie watershed (8-digit Hydrologic Unit Codes 03050207). The proposed 2,040.85 acre mitigation site includes approximately 1,958.76 acres of freshwater wetlands and 33,206 linear feet (lf) of non-wetland waters. The proposal is to preserve approximately 26,581 lf of streams and 1,212.99 acres of palustrine forested wetlands through the permanent protection of a conservation easement. In addition, 472.59 acres of freshwater wetlands will be enhanced through removal of loblolly pine and replanted in native species. 10,060 lf of stream will be restored/enhanced through removal priority one restoration utilizing natural channel design techniques. This includes channel realignment, construction of new channels, and bank stabilization. An upland buffer will be placed around stream resources. The bank sponsor, using a conservation easement, will protect the entire bank site. The bank owner is WNL Properties, LLC and the sponsor is Palustrine Group, LLC. DNR project manager: Stacie Crowe.

South Carolina Department of Transportation (SCDOT) In-Lieu Fee Program Prospectus

The proposed project consists of establishing a Statewide In Lieu Fee (ILF) Mitigation Program initially in the Lower and Upper Catawba and Wateree River Watersheds (HUCs 3050101, 03050103, and 03050104) in the Piedmont ecoregion. The SCDOT ILF Program proposes to generate freshwater stream compensatory mitigation credit through the replacement of perched or undersized culverts within the SCDOT's transportation system in watersheds that are not currently served or are underserved by existing mitigation banks. The SCDOT will identify projects and provide funding for the ILF Program. Projects will be selected as mitigation needs require and will implemented pending IRT approval. Credits

will only be used for SCDOT transportation projects. It is anticipated that the ILF Program will be used to offset impacts for smaller roadway improvement projects. Prior to submitting the permit application, the SCDOT will determine if the purchase of credits is practicable from an existing mitigation bank in the watershed. If credits are not available, the SCDOT will utilize credits from the ILF Program. The SCDOT will request the use of credits from the ILF Program when the permit application is submitted for the project. The ILF Program will likely be amended to allow additional service areas when Compensation Planning Frameworks are completed for these areas, eventually becoming a statewide ILF program. This ILF program would become South Carolina's first and only ILF program. The Prospectus was public noticed by USACE on October 19, 2020 and DNR provided comments on November 11, 2020. DNR project manager: Tom Daniel

Swamp Thing Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland mitigation bank in the Cooper River watershed (8-digit Hydrologic Unit Code 03050201) located in the Level III Lower Coastal Plain Ecoregion. The proposed 1,018.76-acre mitigation site includes approximately 997.67-acres of freshwater wetlands to be restored, enhanced, and preserved. According to the prospectus, the proposal is to restore 7.29-acres of hardwood forested wetlands that are currently trail roads; enhance 578.67-acres of hardwood forested wetlands that are currently inundated with loblolly pine; and, preserve 412.99-acres of bottomland hardwood forest. The project will be accomplished through the removal of planted pine, grading, planting native species, filling and plugging ditches, and the installation of a weir. The bank sponsor, using a conservation easement, will protect the mitigation bank site. Prospectus comments were submitted to the USACE by DNR on May 17, 2017 and DMBI comments were submitted on June 18, 2020 and again on May 26, 2021 in response to a revised DMBI. Project manager: Susan Davis

Tyger Watershed Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Tyger watershed (8-digit Hydrologic Unit Code 03050107) located in the Level III Piedmont Ecoregion. The proposed 405-acre mitigation site includes approximately 60,308 linear feet of stream channels and 10.89 acres of freshwater wetlands. In addition, 5,987 feet of streams and 0.163 acres of wetlands will be enhanced and restoration of 37,436 linear feet of Cane Creek, Motley Branch, and associated tributaries. The proposal is to preserve 14,397 linear feet of stream, including 12,355 linear feet of the Tyger River and 2,042 linear feet of stable tributary streams and preserve 3.44 acres of functioning forested wetlands. The bank owner and proposed long-term steward is Wiley Fork Legacy LLC and the conservation easement holder is Spartanburg Area Conservancy (SPACE). Prospectus comments were submitted to the USACE by DNR on January 23, 2019 and DMBI comments were submitted on July 20, 2020. DNR project manager: Tom Daniel



Office of Environmental Programs

DNR Board Briefing Document – August 19, 2021

Office of Environmental Programs DNR Board Briefing Document – August 19, 2021

The following document lists ongoing major environmental permitting issues under review by staff of the South Carolina Department of Natural Resources (DNR). These projects have the potential for significant natural resource impacts. Comments submitted to the regulatory agencies since the last DNR Board meetings are attached. **New information is presented below in red.**

Inland Project Proposals

Atlanta to Charlotte Passenger Rail. Anderson, Cherokee, Greenville, Laurens, Oconee, Pickens, Spartanburg, Union and York Counties. See <http://www.dot.ga.gov/IS/Rail/AtlantatoCharlotte>.

The United States Department of Transportation - Federal Railroad Administration (USDOT-FRA) in cooperation with the Georgia Department of Transportation (GDOT) is preparing a Draft Tier 1 Environmental Impact Statement (DEIS) for the Atlanta to Charlotte Passenger Rail Corridor Investment Plan. The purpose of the project is to improve intercity passenger travel between Atlanta and Charlotte by expanding the region's transportation system capacity and improving trip time and reliability through highspeed passenger rail services. GDOT has selected three build alternatives and a no-build alternative for further evaluation in the Tier 1 EIS process. The Southern Crescent Alternative primarily follows the existing Norfolk Southern right-of-way (ROW) across South Carolina. The Interstate 85 Alternative is located primarily within the Interstate 85 ROW. The Greenfield Corridor Alternative is a 274-mile route primarily located on a new alignment across the state. DNR received the project on September 20, 2019 and provided comments on November 4, 2019. The USDOT - FRA and the GDOT reviewed comments received during the Tier 1 DEIS public comment period and selected the Greenfield Corridor Alternative as the Preferred Corridor Alternative. The Greenfield Corridor Alternative is a 274-mile route primarily on a new "greenfield" dedicated high-speed passenger rail alignment between CLT airport and Athens, GA, then following shared railroad ROW in the approaches to the Charlotte and Atlanta termini. This route serves three stations in North Carolina at Charlotte Gateway, CLT airport, and South Gastonia; two stations in South Carolina at GSP airport and Anderson; and five stations in Georgia in Athens, Suwanee, Doraville, downtown Atlanta (Georgia Multi-modal Passenger Terminal), and Hartsfield-Jackson Atlanta International Airport. In South Carolina, this corridor continues along a greenfield alignment for 65 miles passing east of Kings Mountain State Park to a route paralleling I-85, approximately 10 miles to the southeast, then diverging westward to a station near the GSP airport. From the GSP airport, this corridor returns eastward to a route paralleling I-85, approximately 15 miles to the east, for 50 miles to the state line at the Savannah River with a station in Anderson, SC. In addition to general concerns related to species and habitat fragmentation, DNR is particularly concerned that the proposed Greenfield alternative will cross both an existing mitigation bank, a proposed mitigation bank and a scenic river corridor. Portions of the existing Big Generostee Creek Mitigation Bank are located in the project corridor near SC Highway 187 in Anderson County and the project corridor crosses the proposed Minkum Creek Mitigation Bank including the main stem and several tributaries of Minkum Creek in Cherokee County. The Greenfield alternative will cross the Broad Scenic River Corridor approximately one-half mile downstream of the 99 Islands Dam on the Broad River. **The FRA and GDOT issued a combined Tier 1 Final Environmental Impact Statement and Record of Decision (FEIS/ROD) identified and selected the Greenfield Corridor Alternative as the preferred route. DNR submitted comments on the FEIS/ROD on July 23, 2021 for consideration in the development of a Tier 2 EIS.** DNR project manager: Greg Mixon mixong@dnr.sc.gov.

Haile Gold Mine Expansion – OceanaGold, LLC <http://www.hailegoldmineseis.com/>

Haile Gold Mine, Inc., a subsidiary of OceanaGold Corporation, submitted a proposal to the U.S. Army Corps of Engineers to expand operations at the existing Haile Gold Mine facilities near Kershaw, South Carolina. The proposed project would include expansion of surface mining and associated mine pits and overburden storage facilities, initiation of underground mining at the Horseshoe deposit, and increased ore processing through optimization of the mill and related infrastructure including expansion of the water management system and existing tailings storage facility. Proposed mining activities in the expanded

proposed project would focus on areas affected by past mining activities and additional land purchased by Haile to support proposed mining expansion activities.

A Notice of Intent to prepare the DSEIS was published in the Federal Register on December 4, 2018. DNR staff attended an Agency Scoping Meeting on April 8, 2019, in Kershaw, SC. During the scoping meeting, OceanaGold staff described potential environmental impacts and suggested that Permittee Responsible Mitigation would likely be proposed to mitigate for impacts associated with the proposed expansion. A joint public notice for the Mine Modification and Draft Supplemental Environmental Impact Statement (SEIS) was issued on March 3, 2021. The proposed modification consists of increasing the mine plan area by approximately 832 acres to expand surface mining pits and associated facilities, initiate underground mining at the Horseshoe deposit, optimize mill operations and increase ore processing rates, and improve water treatment and storage capabilities. Impacts to Water of the United States (WOTUS) include directly filling 86.22 acres of wetlands and open water and will directly affect 13,124.08 linear feet of streams. The applicant has proposed to mitigate for impacts to wetlands and/or waters of the United States by a permittee-responsible mitigation plan that identifies three separate sites along Flat Creek in the Lynches River watershed for preservation and enhancement/restoration of aquatic resources. The project purpose is to expand gold producing operations from mineralized gold-bearing zones on the Haile property. The USACE and SCDHEC hosted a joint virtual public hearing on April 01, 2021 at 6:30PM on the draft SEIS and the application to modify Haile Gold Mine, Inc.'s Mine Operating Permit. DNR provided comments in response to the noticed mine modification on April 23, 2021. DNR project manager: Tom Daniel danielt@dnr.sc.gov

Haile Gold Mine Modification – Oceana Gold, LLC. I-000601

Oceana Gold, the parent company of the Haile Gold Mine, has requested that the USACE authorize a modification to their current permit (SAC-1992-24122) originally authorized in 2014. Five operational adjustments have been identified and one of these (East PAG-Phase 2) will impact 4.75 acres of jurisdictional freshwater wetlands and open water reservoirs/impoundments. Considering the original permit authorizing approximately 120 acres of wetland fill, the additional 4.75 acres of wetland impact within the existing mine boundary is viewed as a minor modification by the USACE. The proposed mitigation for these impacts is through the perpetual protection of approximately 512 acres of land known as the Blackwell Tract. The referenced mitigation site is located approximately 9 miles northeast of Kershaw, SC adjacent to Old Jefferson Highway. Positioned in the Flat Creek Basin, the tract is a part of larger conservation efforts in the area associated with the protection and enhancement of habitat for the Carolina Heelsplitter. The site contains approximately 29,525 linear feet of stream and 3.4 acres of wetlands as identified by field delineations. Preservation of the site will be accomplished through the fee simple transfer of the land to the Katawba Valley Land Trust. Katawba Valley Land Trust will additionally serve as the Long-term Steward of the property. DNR received the minor modification to the existing Haile Gold Mine permit July 1, 2020 and provided comments to the USACE and DHEC on July 8, 2020 asking that the permit be held in abeyance until additional information regarding the mitigation plan and additional geology data could be provided. DNR received a response to comments on August 4, 2020 and provided follow up comments on August 7, 2020. DNR project manager: Lorianne Riggan RigginL@dnr.sc.gov

SCDOT, Interstate 73. P/N SAC-2008-1333-DIS. See

<http://www.sac.usace.army.mil/?action=publicnotices.pn2011>.

The proposed Interstate-73 (I-73) was public noticed on January 28, 2011 and February 18, 2011 for a high-speed, fully controlled-access roadway with interchanges, frontage roads and overpasses to provide access and maintain existing traffic patterns that begins at the North Carolina state line near Bennettsville and ends at SC Highway 22 near Conway. The project corridor would be approximately 80 mi long and would cross through Marlboro, Dillon, Marion and Horry counties. The roadway would include 4 travel lanes with a grassed median. The right-of-way would be 300 ft wide for most of the project corridor and 400 ft wide where frontage roads are needed. The project would involve 212 separate crossings of streams, wetlands and open water bodies impacting a total of 4,643 linear ft of streams and 342.3 acres of wetlands and open waters. DNR staff served on the Agency Coordination Team (ACT) for I-73 from

June 2004 through December 2009. The ACT determined that I-73 should be evaluated in separate Environmental Impact Statement (EIS) documents covering the southern segment (I-95 to SC Highway 22) and the northern segment (NC state line to I-95). DNR staff provided comments and input throughout the EIS process and consistently stated the primary natural resource concerns associated with the proposed roadway are habitat fragmentation, the crossing of the Little Pee Dee River and adjacent wetlands, and the need for landscape scale mitigation that adequately compensates for all project impacts. On December 3, 2015 the DOT Commission unanimously approved the purchase and use of Gunter's Island for mitigation of the environmental impacts associated with the construction of I-73. A revised mitigation plan focusing on acquisition of Gunter's Island was submitted by DOT to USACE on May 23, 2016 and USACE issued a revised public notice on July 8, 2016 that included Gunter's Island as the proposed PRM plan for the wetland and stream impacts associated with I-73. On August 8, 2016, DNR submitted comments in response to the revised mitigation plan. An interagency site visit took place to evaluate the Gunter's Island Revised Mitigation Plan on November 10, 2016. DNR staff conducted two follow-up site visits along with DOT staff on December 2 and 15, 2016. On March 2, 2017 DNR received the I-73 NEPA Re-evaluation documents for review and comments were submitted April 3, 2017. DHEC issued the 401 Water Quality Certification on April 26, 2017 and the USACE issued the final 404 permit on June 19, 2017. SCDOT closed on the Gunter's Island Property on August 7, 2017. DNR will continue with the necessary external approval processes, including presenting the project to the Joint Bond Review Committee for approval on August 15, 2017. The project posted in the Federal Register for the Federal Highway Administration on August 1, 2017. This marks the beginning of the 150-day period for any claim seeking review of the Federal agency action regarding the Section 404 permit for the project. This period ended on December 29, 2017; however, the Southern Environmental Law Center on behalf of the Coastal Conservation League released a notice of intent to sue over violations of the Clean Water Act related to the approval of the USACE 404 permit on October 13, 2017. For additional information: <http://www.i73innc.com>. DNR project manager: Greg Mixon mixon@dnr.sc.gov.

Coastal Project Proposals

Cainho Plantation Mixed Use Development, Charleston & Berkeley Counties. See

http://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/March2018_PN/SAC_%202016-756_Cainho_Plantation_Development_Berkeley%20County.pdf?ver=2018-03-22-115555-720

The 9,238-acre Cainho Plantation property is being planned and developed as a mixed-use community with homes, public schools, retail shops, restaurants and office space located within the City of Charleston and Berkeley County. The development of this project will result in unavoidable impacts to freshwater jurisdictional wetlands (approximately 200 acres). According to preliminary plans, approximately 50% of the property (4,500 acres) will be preserved property that provides vital habitat and connectivity for plant and animal species, with the centerpiece being the 500+acre Point Hope Nature Sanctuary. OEP staff attended an interagency meeting held on October 18, 2017 to review preliminary plans and provide initial feedback. Overall the project received a very favorable review from the reviewing agencies, including DNR.

On March 21, 2018 the public notice for this project was submitted for review. The proposed master plan would impact 185.25 acres of freshwater jurisdictional wetlands and 2.65 acres of saltwater critical area wetlands. As compensatory mitigation, a Permittee Responsible Mitigation (PRM) Plan has been developed. An approximately 585-acre Point Hope Nature Sanctuary (PHNS) would be the centerpiece of this PRM plan. The PHNS would be placed under a conservation easement held by Lord Berkeley Conservation Trust and would protect the most valuable and sensitive habitats and their associated suite of species. Financial assurances would provide funding for the long-term management of this area. Approximately 268 acres of wetlands that were previously managed for pine production would be restored to a hardwood mix wetland and protected along with the remaining unimpacted wetlands and associated upland buffers. On May 5, 2018 OEP staff submitted comments on the proposed development, highlighting the significance of the natural resources on this site and asking for clarification on various issues including protected species assessments, permit phasing, protections for remainder of property and avoidance and minimization measures. It was recommended that permit issuance be held in

abeyance until issues and concerns were addressed. In August of 2019, the applicant provided a response to DNR's original comments; OEP staff provided additional comments in a letter dated September 25, 2019. The DNR continued to express that the best use for this property, based on the ecological functions and unique resources located here, would be conservation and the need to address several outstanding issues. The DNR again recommended that permit issuance be held in abeyance until outstanding issues and concerns were addressed. On December 8, 2020, OEP staff commented on a revised Mitigation Plan for Cainhoy Plantation dated November 2020. The DNR continued to recommend that additional efforts are made to further avoid and minimize project impacts before consideration for compensatory mitigation. Specific comments regarding protected species and other elements of the plan were also provided. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Carolina Bays Parkway Extension, Horry County. Action ID: SAW-2004-00823. See:

<https://www.ncdot.gov/projects/carolina-bays-parkway/Pages/default.aspx>

The North Carolina Department of Transportation (NCDOT) in cooperation with the South Carolina Department of Transportation (SCDOT) will be preparing a DEIS for the extension of the Carolina Bays Parkway. The project's purpose is to bypass congestion within the areas of Calabash, North Carolina and, in South Carolina, the Little River and Grand Strand areas. The project also intends to improve traffic flow and safety at the intersection of SC Hwy 9 and SC Hwy 57 and provide a more direct route for coastal truck traffic moving through North Carolina. In August of 2017, the DNR accepted an invitation to become a participating agency in the development of an EIS for this project. As a participating agency, the DNR will identify, as early as possible, any issues of concern regarding the project's potential environmental impacts. As decisions are made through the merger process, DNR will have the ability to concur, abstain, or not concur at each concurrence point. In September of 2017, the DNR provided scoping comments on this project, identifying a number of important coastal habitats in the study area, including intertidal marsh, tidal creeks and freshwater wetlands and the Waccamaw River Heritage Preserve (WRHP). Comments were also made on the need for careful consideration to avoiding and minimizing impacts to important natural resources in the selection of alternatives to be considered in the EIS. DNR recommended that project alternatives that encroach on the WRHP eliminated from consideration. DNR staff have participated in three coordination meetings regarding this project. On May 4, 2020, OEP staff participated in a meeting to review preliminary alternatives for the proposed Carolina Bays Parkway Extension project and reach concurrence on the alternatives that will be carried forward for detailed study. Formal concurrence on NEPA/Section 404 Merger Concurrence Point 2 was requested during this meeting. On December 8, 2020, staff submitted comments on a revised mitigation plan. In addition, staff continued to recommend that additional efforts were made to further avoid and minimize project impacts before considering compensatory mitigation and reiterated several concerns regarding the mitigation plan. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Charleston Peninsula Coastal Flood Risk Management Study. See

<https://www.sac.usace.army.mil/Missions/Civil-Works/Supplemental-Funding/Charleston-Peninsula-Study/>

The U.S. Army Corps of Engineers (USACE), Charleston District and City of Charleston are performing a feasibility study to evaluate storm surge risk reduction measures for the Charleston Peninsula. The goal is to reduce risks to health, safety, and economic damages from coastal storm surge inundation on the peninsula. An integrated Draft Feasibility Report (FR)/Environmental Assessment (EA) has been prepared to present the results of the study to date, and to analyze impacts of the proposed measures on the environment. The Draft FR/EA was prepared in accordance with the National Environmental Policy Act (NEPA). It evaluates potential impacts of the alternative actions on the environment, including the no-action alternative. The Tentatively Selected Plan (TSP), which is also the National Economic Development Plan (NED) is Alternative 3. The TSP consists of a storm surge wall along the perimeter of the Peninsula, recreation features, interior drainage facilities, a wave attenuation structure offshore of the Battery, and nonstructural measures. Based on the Environmental Assessment, the USACE has proposed a Draft Finding of No Significant Impact (FONSI). DNR staff have been actively participating in Interagency Coordination Team (ICT) meetings on various aspects of the project since December 10, 2018. The Draft FR/EA and FONSI were placed on public notice on April 20, 2020. DNR submitted formal written comments on June 16, 2020. On September 16, 2020, DNR staff attended a virtual ICT meeting

held by USACE to update agencies on study progress, including outcomes of optimization of the TSP. The project was revised to reduce impacts by 64 acres and eliminate the miter gate and the proposed wave attenuator. The recommended plan is now Alternative 2, perimeter protection plus nonstructural measures. DNR Staff attended a virtual ICT update meeting for natural resource agencies on the Charleston Peninsula Coastal Flood Risk Management Study on January 11, 2021. At the meeting, the USACE announced that after further agency analysis and review of comments on the Draft FR/EA and FONSI, they would be seeking approval to pursue an Integrated Feasibility Report/Environmental Impact Statement (IFR/EIS) with a Record of Decision (ROD) for the study. On March 12, 2021 DNR staff participated in a Cooperating Agency Kick Off Meeting hosted by the Corps to discuss agency roles, project updates and next steps. The Notice of Intent for the Charleston Peninsula CFRM Study was published in the Federal Register on March 23, 2021, which initiates the 30-day scoping period. A virtual public scoping meeting was held on March 30th. DNR staff have been attending standing working group meetings of natural resource agencies and USACE for the project on a bi-weekly schedule. **The USACE released the preliminary Draft Integrated Feasibility Report/Environmental Impact Statement on July 26, 2021, and is currently under review.** DNR Project manager: Stacie Crowe crowes@dnr.sc.gov

I-526 East Lowcountry Corridor Improvements Project, Charleston County. See

<http://www.526lowcountrycorridor.org/>

I-526 Lowcountry Corridor EAST (I-526 LCC EAST), extends from the eastern terminus of the I-526 LCC WEST project (Virginia Avenue) to US 17 in Mount Pleasant. The I-526 LCC EAST project would address current and projected congestion and operational issues along this 9.9 mile segment of I-526. The project consists of two major river crossings that include the Don Holt Bridge (over the Cooper River) and the James B. Edwards Bridge (over the Wando River). The Planning and Environment Linkages (PEL) program will be used to evaluate this project and was developed by FHWA to assist the transportation decisionmakers by encouraging the incorporation of key elements that include environmental resources, community, and economic goals early in project planning and development phases. On January 9, 2020, OEP staff participated in a meeting to discuss the PEL Program and how it will be implemented for this project. On April 15, 2020 DNR accepted an Invitation to Participate on the Planning and Environmental Linkages Study for I-526 Lowcountry Corridor East. **On July 8, 2021, staff participated in an ACE meeting to discuss the project need and the alternatives matrix.** DNR project manager: Maggie Jamison jamisonm@dnr.sc.gov.

I-526 Extension Project (Mark Clark Expressway), Charleston County. See

<http://www.scdotmarkclark.com/>

On August 22, 2019, OEP attended the kick-off meeting for this project. The project history was discussed, including the original FEIS signed in 1977 for the Charleston Inner Belt Freeway, SEIS and eventual construction of the 7-mile section from West Ashley to James Island in 1995, signed DEIS for the 7-mile section from West Ashley to James Island in 2010. The project was stopped in 2010 after the signing of the DEIS. A Re-evaluation of the West Ashley to James Island was prepared and signed by SCDOT and FHWA in 2016. The project was reinitiated in 2019 with the identification of funding through Charleston County and the SIB. Since there have been changes to land use, demographics, population and economic growth within the project area, and the availability of a new BCDCOG CHATS Travel Demand Model, it was determined that a SEIS would be prepared for the project. The project will not include re-scoping or redefinition of the project purpose and need. The 39 alternatives will be reanalyzed with updated and supplemented current data. The project area includes a new location 7-mile roadway from the existing I-526 terminus at US 17 (Savannah Highway) to the James Island Connector (SC 30). On March 26, 2020, OEP attended a meeting to discuss the development of the Supplemental Environmental Impact Statement (SEIS) for the Mark Clark Extension project using the evaluation process originally developed for the 2010 Draft Environmental Impact Statement (2010 DEIS) to reevaluate the 39 preliminary alternatives identified in the 2010 DEIS using current data. The preliminary alternatives were analyzed based on traffic performance and environmental impact criteria. The goal of this process was to screen the 39 alternatives originally presented in the 2010 DEIS to a smaller set of Reasonable Alternatives that will be further evaluated in the SEIS. On April 16,

2020, the DNR submitted comments on the SEIS Alternative Analysis Tier 1 Criteria Evaluation process, developed for the Mark Clark Extension project, stating that the DNR found the proposed approach to be rational in identifying a set of reasonable alternatives to be further evaluated in the SEIS. DNR project manager: Susan Davis daviss@dnr.sc.gov.

I-526 West Lowcountry Corridor Improvements Project, Charleston County. Federal Project Number P027507. See <http://www.526lowcountrycorridor.org/>

The Federal Highway Administration (FHWA) in cooperation with the South Carolina Department of Transportation (SCDOT) are preparing a DEIS for improvements to the I-526 corridor. The purpose of this project is to increase capacity and improve operations at the I-26/I-526 interchange and along the I-526 mainline from Virginia Avenue to Paul Cantrell Boulevard. The project will follow One Federal Decision (OFD) in accordance with Executive Order 13807. On April 10, 2019, the DNR accepted an invitation to become a participating agency in the development of an EIS for this project. As a participating agency, the DNR will identify, as early as possible, any issues of concern regarding the project's potential environmental impacts. As decisions are made through the OFD process, DNR will have the ability to concur, abstain, or not concur at each concurrence point. OEP staff submitted a letter of concurrence, May 3, 2019, on the Agency Coordination Plan (dated May 2019), the Purpose & Need Statement and the Permitting Timetable. DNR had no specific comments or concerns regarding these documents. On September 11, OEP staff participated in a meeting to discuss the mitigation needs assessment developed for the project. The DNR expressed that the protection of natural resources at Cainhoy Plantation would be DNR's priority in mitigating impacts for this project. On October 7, DNR submitted comments on the preliminary range of alternatives being considered and requested further analysis of the designs for avoidance and minimization of impacts such as reduce shoulder width and slopes and construction methods to avoid and minimize impacts. On December 11, 2019, OEP staff participated in a meeting to discuss the revised mitigation report and to further discuss mitigation options being considered. It was the consensus of the group that five options would be further considered, including Cedar Hill for freshwater and Jehossee Farms, a James Island spoil site, Noisette Creek and Filbin Creek for saltwater impacts. On March 11, 2020, OEP participated in a meeting on DOT's update on the mitigation needs assessment for the I-526 LCC West project. The DOT will continue vetting mitigation options including at Cedar Hill, Jehossee, Hermine, Noisette and others. On March 19, OEP sent a letter of concurrence on the proposed alternatives to be carried forward for detailed evaluation for the proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS). On May 13, 2020 OEP staff participated in a meeting discuss the recommended Preferred Alternative. On June 8, 2020, DNR responded with concurrence to a Request for Concurrence on the Proposed Preferred Alternative to be carried forward for detailed analysis in the Proposed I-526 West Lowcountry Corridor Improvements Environmental Impact Statement (EIS). In August of 2020, the SCDOT circulated portions of the DEIS for preview and comment before finalizing the DEIS; OEP staff provided several recommendations. On October 22, 2020, the final DEIS for this project was submitted for review. On November 25, 2020, OEP staff provided comment on the permit request (SAC-2019-00593) for the proposed project with recommendations on construction methods and other BMPs to minimize project impacts. **On June 9, 2021, the SCDOT issued a draft FEIS, ROD and final Section 4(f) Evaluation for this project. The SCDNR provided no additional comments or concerns regarding this document.** DNR project manager: Susan Davis daviss@dnr.sc.gov.

McClellanville 115 kV Transmission Project, Central Electric Power Cooperative, Inc. DEIS April 2014.

Central Electric proposed to construct, operate, and maintain a new 115 kV electrical transmission line (Project) that would bring service to the proposed McClellanville Substation to serve Berkeley Electric members in the McClellanville area. The new transmission line would originate at one of two potential locations near the Winyah Generation Station. The transmission line would terminate at the proposed McClellanville Substation. Approximately 15-20 miles of new 115 kV transmission line is proposed to be constructed along with a new 115 kV substation. The Project area identified encompasses parts of Georgetown and Charleston counties. DNR has been involved in the environmental review of the proposed project for well over a decade, including the submittal of extensive comments during the preliminary planning and scoping stages and most recently with the submittal of comments dated July 2, 2014 in response to the DEIS. Throughout the review process DNR has

maintained a consistent position that any overhead, high voltage transmission line adjacent to US Highway 17 across the Santee-Delta Wildlife Management Area (WMA) would, at a minimum, cause unacceptable and unavoidable impact to wetlands, sensitive species, intensively managed habitat, endangered species, migratory birds and result in avoidable view-shed impacts to a historic and culturally rich corridor. We have consistently recommended that any environmental review for the improved delivery of power to the McClellanville area fully consider alternatives that minimize or eliminate potential impacts to the Francis Marion National Forest, properties titled to the citizens of South Carolina through DNR, private properties protected by conservation easement, sensitive species/habitats and cultural and historic resources. Despite our efforts to emphasize the important of the Santee River Delta and to highlight the potential adverse impacts resulting from new transmission line construction through this sensitive area, all of the alternatives considered for review in the DEIS cross the Santee River Delta. DNR submitted comments on July 2, 2014 outlining fundamental flaws and inadequacies of the DEIS and recommended the existing DEIS be revised and/or supplemented prior to proceeding with the development of a FEIS for the project, including a focused effort to fully reconsider less environmentally damaging alternatives to the McClellanville area. DNR staff met with Central Electric on August 18, 2014 to discuss alternatives that are less environmentally damaging. On April 15, DNR staff attended an interagency meeting to discuss Central Electric's re-evaluation of transmission line route alternatives and to present preliminary findings to the agencies before RUS and the cooperating agencies determine the next steps in the NEPA process. Following the agency meeting held in April 2015, Central Electric is moving forward with having an independent engineering study performed on the project. RUS has provided Central Electric a draft statement of work (SOW). Central Electric is handling the procurement side and will pay for the study. RUS solicited comments on the submitted SOW. No comments on the SOW were submitted by DNR. On February 28, 2017, DNR staff attended a meeting to discuss the results of the independent engineering study conducted for CEC. The results of the study determined that for various reasons the crossing of the Santee Delta was not a viable alternative and that the Jamestown to McClellanville was outlined as the preferred alternative. The Forest Service is initiating the next consultation meeting with Central Electric on March 21, 2017 to discuss survey requirements and initiate discussions on how to avoid impacts to endangered species, other sensitive species and habitats, private protected lands, and the Wilderness Area at Wambaw Creek. There will be a Supplemental DEIS prepared for the project that will focus on the Jamestown to McClellanville route as the preferred alternative. On August 23, 2019, a Supplemental Draft Environmental Impact Statement (DEIS) was published in the Federal Register (<https://www.rd.usda.gov/publications/environmental-studies/impact-statements/mcclellanville-115kv-transmission-line>) The Supplemental DEIS addresses the construction, operation and maintenance of Central Electric's proposed Project. The Project includes the construction of a new 115 kV transmission line needed to energize the new McClellanville Substation located near the McClellanville service area. The Supplemental DEIS considers three alternatives, encompassing three potential corridor locations with one corridor including two different alignments. The overall project area encompasses parts of Berkeley, Georgetown and Charleston counties in coastal South Carolina, and potentially crosses the Francis Marion National Forest. On October 28, 2019, OEP staff submitted comments on the SDEIS. DNR recommended that no alternatives crossing the Santee Delta be considered in the Final EIS (FEIS). DNR also recommended that the FEIS include information that adequately describes and evaluates the potential environmental impacts of the proposed project and provides for a full comparative environmental analysis of alternatives and that the selection of a preferred alternative be based on those alternatives that minimize or eliminate potential impacts to the Francis Marion National Forest (FMNF), private land conservation easement (CE) properties, sensitive species/habitats and cultural and historic resources. The FEIS is anticipated early in 2021. DNR project manager: Susan Davis DavisS@dnr.sc.gov

Riverport Development SAC-2010-00064. See

https://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/May_2020_PN/SAC-2010-00064-Jasper-County-Riverport-Development.pdf?ver=2020-05-27-091515-030.

The proposed work consists of the construction of a mixed-use development including industrial, commercial, civic and residential uses. In detail, the proposed project is a master planned development at the 4,368.81-acre Riverport Tract situated north and south of I-95, with improvements to the existing two-lane Purrysburg Road as well as a new interchange with I-95 at Mile Marker 3. Residential development,

including 3,339 residential dwelling units, would occupy the project area north of I-95, with commercial and civic development situated along both sides of the new interchange and within the southern portion of the site, including over 10.6 million square feet of industrial warehouse space and 2.6 million square feet of commercial space (restaurant and hotel, grocery store, hospital, and office/retail space). The proposed work would require the placement of fill material into 35.17 acres of wetlands to accomplish road crossings for internal project access as well as for improvements to Purrysburg Road and I-95 where Exit 3 is proposed. The applicant has proposed to offset impacts to wetlands and other waters of the United States by implementing an on-site permittee-responsible compensatory mitigation plan, including the buffered preservation of all remaining wetlands on the site and restoration of approximately 150 acres of pine plantation to historic wetland condition. The project purpose is to construct a development in Jasper County, South Carolina, incorporating residential, commercial and industrial uses with direct access to Interstate 95 to meet projected future growth associated with the existing Port of Savannah and Jasper Ocean Terminal. On June 19, 2020, DNR asked that the permit be held in abeyance until comments addressing additional protections for the adjacent Savannah National Wildlife Refuge are addressed and additional information is provided regarding the proposed mitigation plan. On January 29, 2021, a revised notice was issued for this project, including a reduction in wetland impacts, as a result of a reevaluation of the jurisdictional status of wetlands on-site and a revised mitigation plan involving the purchase of mitigation credits from an approved mitigation bank. The SCDNR provided comment on this notice on February 9, 2021 and recommended that all undisturbed, excluded wetlands are included in the acreage to be preserved on-site and that mitigation is provided for all impacts to these areas. The SCDNR asked that the permit not be issued until all previously expressed concerns and recommendations were addressed. On March 23, 2021, a response to comments was submitted by the applicant that addressed all of DNR's previously expressed concerns. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Savannah River below Augusta Restoration Feasibility Study. Under the authority of a resolution passed on 1 August 1990 by the U.S. House of Representatives Committee on Public Works and Transportation and by Section 1201(29) of the Water Resources Development Act of 2016, the SRBA Ecosystem Restoration Study considers modifications to restore hydraulic connectivity for ecosystem restoration to river meanders that were cut off to aid commercial river navigation. Of the 46 cutoff meanders that the study originally identified, the study team used detailed screening criteria to focus on an array of alternatives at seven sites that show potential to provide the greatest ecosystem restoration benefits. The USACE-Savannah District and the Savannah Riverkeeper have initiated a study to evaluate the feasibility of restoring natural bends (oxbows) in the Savannah River below Augusta. DNR staff are serving on the Task Force that will guide the feasibility study and evaluate the environmental impacts of the proposed restoration project. A total of \$12.5 million has been dedicated to this project through the Savannah Harbor Expansion Project (SHEP) Settlement Agreement, but the release of those funds will not occur until dredging begins in the inner harbor. The feasibility study is expected to be completed in 2019, when dredging of the inner harbor is expected to begin. Non-federal matching funds (\$1.5 million) to complete the oxbow restoration project are being solicited from state and local agencies and non-governmental organizations. The Task Force met on March 7, 2017 and identified several issues that should be addressed in the Feasibility Study. These include impacts on upstream migration of sturgeon; impacts on spawning habitat for sturgeon and robust redhorse; impacts on endangered freshwater mussel species; maintenance of stable channel configurations after the initial restoration; effects on sedimentation, geomorphology, hydrology, and water quality; and property ownership issues, including potential flooding. A field trip for Task Force Members to examine potential oxbow restoration sites was conducted April 24, 2017. In February 2019, it was announced that funding had been received to resume the Savannah River Below Augusta study. DNR staff participated in a web conference kickoff meeting held on February 26, 2019. DNR staff attended the Corps Savannah District Charrette Meeting held on March 12, 2019 at the Lower Savannah River Alliance Education Center in Allendale. DNR submitted comments on the proposed restoration study on April 18, 2019. DNR staff attended the Alternatives Milestone meeting May 22, 2019. DNR staff participated in a webinar and conference call for restoration project updates on June 5, 2019. DNR staff conducted a site visit to the seven oxbows being considered for restoration on August 26, 2019. Staff will be attending a stakeholder meeting on March 30, 2021 regarding this project. The USACE study team, with assistance from the National Ecosystem Restoration

Planning Center of Expertise, is in the process of determining costs and benefits of the various alternatives at each site and will perform a cost effectiveness and incremental cost analysis to help determine the National Ecosystem Restoration Plan. Staff attended a stakeholder meeting on March 30, 2021 regarding this project. The USACE study team, with assistance from the National Ecosystem Restoration Planning Center of Expertise, is in the process of determining costs and benefits of the various alternatives at each site and will perform a cost effectiveness and incremental cost analysis to help determine the National Ecosystem Restoration Plan. DNR staff attended a monthly status update meeting on May 24, 2021. DNR project manager: Stacie Crowe crowes@dnr.sc.gov.

Savannah Harbor Navigation Project Mitigation Recovery. A Draft Environmental Assessment (EA), placed on public notice in November 2016, evaluated the potential impacts of the USACE's proposal to make specific improvements to selected wetland impoundments at the Savannah National Wildlife Refuge (SNWR) in order to enhance the effectiveness of those sites as bird habitat. The proposed action is intended to compensate for past and future short-term deficits in mitigation credits for the Savannah Harbor Navigation Project (which addresses long-term operation and maintenance requirements for the Harbor). Mitigation was required due to wetland impacts resulting from the impoundment of Dredged Material Containment Area (DMCA) 14A in 2006. In the Draft EA, USACE evaluated four alternatives for enhancing bird habitat in the SNWR and selected the least cost alternative as their preferred alternative, rather than the alternative recommended by SNWR staff. In our comment letter on the Draft EA (submitted December 8, 2016), DNR supported the selection of the alternative preferred by Refuge staff. DNR project manager: Stacie Crowe crowes@dnr.sc.gov.

Savannah Harbor Expansion Project (SHEP).

<http://www.sas.usace.army.mil/Missions/Civil-Works/Savannah-Harbor-Expansion/>

DNR project manager: Stacie Crowe crowes@dnr.sc.gov

1. Dissolved Oxygen (DO) Injection System. OEP staff attended a stakeholder meeting at the USACE Savannah District Headquarters on September 28, 2017 to discuss the proposed sampling and analysis plan to evaluate the efficacy of the SHEP DO injection systems (Speece Cones). The injection systems are being constructed at two locations on the Savannah River to mitigate for reduced oxygen levels due to harbor deepening. Modeling results indicate that a total of 40,000 lbs. of DO per day needs to be diffused into the Savannah River to compensate for the incremental reduction in DO. Construction began on the DO Injection System in February 2016 and the Hutchinson Island location was completed in March 2019. The first initial test, the Transfer Efficiency Study, which identifies the amount of oxygen being absorbed by the water column for each pound of oxygen introduced into the water, was conducted from February 17-March 3, 2019. The 60-day Water Collection Transfer Efficiency test run data collection occurred from March 17-May 16, 2019 and a data report is expected in mid-July 2019 for public comment and review. The Water Column Transfer Efficiency Report for the Dissolved Oxygen Facility Environmental Testing for the Savannah Harbor Expansion Project report was released August 15, 2019 for public comment. DNR staff reviewed the report and determined that the results of the tests indicate that the Corps met the standards they outlined in the settlement agreement. Water Column Transfer Efficiency Data Collection for the Upper System has been rescheduled to occur from July 6, 2020 – July 10, 2020 and a data report is now expected on August 1, 2020 for public comment and review. This is a slight change due to COVID-19.

As a part of a settlement agreement reached in 2013, prior to commencing the dredging of the Inner Harbor Channel, the USACE will also conduct additional tests to evaluate the downriver DO Injection System located at Hutchinson Island to demonstrate its ability to mitigate DO impacts of the SHEP project. The entire Oxygen Injection System must be operated, and instream DO must be monitored continuously for a period of 59 days (2 lunar cycles), of which at least one 29.5 day testing (one lunar cycle) must occur in July, August, or September immediately following the installation of the Oxygen Injection System. Continuous daily water quality monitoring must be conducted during this period at locations specified in and pursuant to the monitoring plan. This 59-day period of operation is referred

to herein as the “Start-up Run.” The Start-up Run has been rescheduled to begin on July 25, 2020 – September 11, 2020. Due to warranty (mechanical) issues with the Upriver DO plant and the COVID-19 impacts, the USACE has added 14 additional days of data collection to extend the Start-up Run through September 23, 2020. On October 28, 2020, USACE distributed the QAQC’d DO System plant raw data collected from July 13 – September 23, 2020, which includes the Start Up Run data. Only raw data was distributed and a full report summarizing the data is still expected in early 2021.

Following the Start-up Run and analysis of the modeling results and monitoring data, the USACE will provide a report comparing the monitoring data collected during the Start-up Run to the modeling results to the Conservation Groups (including DNR), Commission, and DHEC for review to assess whether the DO Injection System will work to mitigate the impacts of the SHEP project. The Startup Run Data Collection and Modeling Report was made available by the Corps for review on May 3 2021 and **DNR staff submitted comments on June 11, 2021.**

- 2. Excavation and Placement of Cadmium-Laden Sediments.** A Draft Supplemental Environmental Assessment (SEA), placed on public notice in December 2016, proposes to modify the currently authorized plan for handling cadmium-laden sediments as described in the Final Environmental Impact Statement (FEIS) for the Savannah Harbor Expansion Project (SHEP). The purpose of the proposed action is to place cadmium-laden sediments that will be dredged as part of SHEP in a manner that reduces risk to wildlife without causing dike failure in Dredged Material Containment Areas (DMCAs) 14A and 14B. The Draft SEA describes ten alternatives for the disposal of these cadmium-laden sediments. Seven of the ten alternatives were eliminated during the initial screening evaluation due to one or more factors, including a high cost of construction, high cost of mitigation, high risk of dike failure, or unacceptable risk to wildlife from exposure to cadmium-laden sediments. The USACE preferred alternative (Alternative 10) would place cadmium-laden sediments from SHEP into DMCAs 14A and 14B and maintain these sites in a “moist” (saturated) rather than “flooded” (inundated) condition during placement, followed by shallow flooding with 6 to 12 inches of water until the site could be capped with 2 feet of clean dredged material. The currently authorized alternative described in the FEIS would have maintained these DMCAs in a more deeply flooded condition (4 to 6 feet of water) until the cadmium-laden sediments are capped. In our comment letter, dated February 2, 2017, the DNR acknowledged the USACE’s need to develop an alternate plan for disposing cadmium-laden sediments due to the risk of dike failure under the currently authorized plan; however, we recommended that Alternative 9 be implemented rather than Alternative 10 because it would more effectively limit the exposure of birds and other wildlife to cadmium-laden sediments. Alternative 9 would involve the construction of finger dikes within DMCAs 14A and 14B to create smaller impoundments that could be filled and capped more quickly than Alternative 10.
- 3. McCoy’s Cut Flow-Rerouting Plan.** A Draft Supplemental Environmental Assessment (SEA) and Finding of No Significant Impact (FONSI) for proposed modifications to the McCoy’s Cut flow-rerouting feature of the Savannah Harbor Expansion Project (SHEP) was released on May 24, 2017 for public comment. The draft SEA supplements the 2012 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) for SHEP. The proposed modifications would extend the dredging area within the upper Middle River to ensure sufficient freshwater flow to intended areas, as well as save space in the upland Dredged Material Containment Areas (DMCAs) by using some of the dredged sediments to convert open-water manmade cuts (McCoomb’s Cut and Rifle Cut) to freshwater wetlands. These cuts are already planned to be plugged with recycled concrete material (from the former Highway 17 Bridge) and rock in order to prevent saltwater from the Savannah River from flowing into the Back River and adjacent tidal wetlands. The proposed modifications also include increasing the dredging depth at the mouth of Union Creek by four feet to account for potential future shoaling and constructing a temporary pile-supported platform on the edge of existing tidal wetlands in the Back River to access the construction site for the McCoy’s Cut diversion structure. Comments on the draft SEA/FONSI were submitted June 26, 2017. Construction of McCoy’s Cut flow re-routing feature began construction July 2018. It is anticipated to be complete in October 2019.

- 4. Monitoring, Adaptive Management, and Status Reports.** In February 2018 the USACE-Savannah District released a Fiscal year 2017 Construction Monitoring Report for the Savannah Harbor Expansion Project (SHEP). This report covers the third year of construction monitoring. OEP staff are currently reviewing the FY 2017 report. In March 2018, USACE Savannah announced that they have reached the midpoint of the project with the completion of the entrance channel dredging. OEP staff attended a SHEP FY 2017 Monitoring Meeting on October 10, 2018 in Savannah, GA which reviewed the contents of the 2017 Construction Monitoring Report released in February 2018.
- 5. New Savannah Bluff Lock and Dam.** The SHEP mitigation agreements, in compliance with the Endangered Species Act, require the USACE – Savannah District to reduce or mitigate impacts to sturgeon. Removal of New Savannah Bluff Lock and Dam (NSBLD) would benefit sturgeon by providing access to historic spawning areas. The USACE funded DNR Diadromous Fish staff to conduct pre-construction monitoring of sturgeon distribution and movement through the use of telemetry and sonic transmitters. This work was completed in 2014. Construction of the bypass channel originally proposed was not anticipated to occur until 2021. However, in December 2016, the Water Infrastructure Improvement for the Nation (WIIN) Act was signed into law. The WIIN Act deauthorized the NSBLD and repealed/replaced language in the Water Resources Development Appropriations Act of 2000/2001 with requirements to fulfill fish passage mitigation under the SHEP. The WIIN Act outlines two options:
- A) Repair the NSBLD lock wall and modify the structure such that it is able to:
- Maintain the pool for navigation, water supply and recreational activities, and
 - Allow safe passage over the structure to historic spawning grounds of shortnose and Atlantic sturgeon and other migratory fishes.
- B) Construct at an appropriate location across the Savannah River of a structure that is able to maintain the pool for water supply and recreational activities and remove the NSBLD on completion of construction of the fish passage structure.

The Corps Savannah District presented five alternatives to be considered for the project to the public in June 2018 and plan to release the selected alternative in Fall 2018. OEP Staff attended the public meeting hosted by the Corps Savannah District in North Augusta, SC on November 14, 2018. The recommended plan for replacing the New Savannah Bluff Lock and Dam was announced. Of seven alternatives offered, the recommended plan chosen is a higher fixed crest weir with a dry floodplain bench. The plan involves the demolition of the current lock and dam and construction of a fixed weir with an in-channel fish passage and a floodplain bench that enables the passing of higher flows. With this design, the Corps Savannah District estimates the water level will decrease one to two feet in the downtown Augusta area under average flow conditions. River flows between 5,000 and 8,000 cubic feet per second (cfs) are considered average flows. Flows above 5,000 cfs occur approximately 77% of the time. This is a contentious issue for the community with concerns regarding maintaining the pool created by the current lock and dam for drinking water supply and recreational use. In response to concerns regarding pool height with the recommended plan, the Corps Savannah District conducted a drawdown to exhibit the height of the pool for the tentatively selected plan for local observation in February 11-14, 2019. In conjunction with the drawdown, the Corps Savannah District released the Draft Integrated Post Authorization Analysis Report (PAAR) and Supplemental Environmental Assessment (SEA), Fish Passage at New Savannah Bluff Lock and Dam (NSBLD), and Draft Finding of No Significant Impact (FONSI) for public review on February 27, 2019. DNR staff, the public, and other resource agencies and conservation groups will have 60 days to review the details of the tentatively selected plan and provide comment by April 16, 2019. DNR submitted comments on the PAAR and SEA for the NSBLD on March 27, 2019. Additionally, staff also reviewed and provided comments on the Draft Fish and Wildlife Coordination Act Report on the NSBLD to the USFWS on March 26, 2019. On October 29, 2019, the Corps announced its decision on the future of the fish passage at NSBLD. The Corps selected alternative 2-6d, a fixed weir with an in-channel fish passage and a floodplain bench that enables the passing of higher flows. The plan calls for removal of the lock and dam. On November 4, 2019, the South Carolina Attorney General on behalf of the

South Carolina Department of Health and Environmental Control and the Savannah River Maritime Commission filed a lawsuit against the United States Army Corps of Engineers Savannah District in regard to the elevation of the pool that should be maintained. DNR OEP staff attended a public meeting held in Augusta on November 13, 2019. On December 6, 2019, the City of Augusta filed a motion to intervene in the lawsuit filed by the State of South Carolina. On January 2, 2020, the Georgia Ports Authority also filed a motion to intervene in the lawsuit. On November 23, 2020, US District Judge Richard Gergel ruled in the Lock and Dam case. Judge Gergel entered an order in favor of the State of South Carolina and the City of Augusta and permanently enjoined the defendants (USACE and Georgia Ports Authority) from tearing down the NSBLD and required a mitigation alternative that keeps the pool level at 114.76 ft. On January 19, 2021, the US Army Corps of Engineers, a federal defendant in the case, filed a notice of appeal to the US Court of Appeals for the Fourth Circuit.

- 6. Wetland Mitigation Lands Acquisition.** The USACE-Savannah District released a draft Final Report documenting the acquisition and preservation of two tracts of land in partial fulfillment of wetland mitigation requirements for the Savannah Harbor Expansion Project (SHEP). Flow-rerouting features within the Savannah River estuary are expected to mitigate most of the impacts to freshwater wetlands due to SHEP (see item on McCoy's Cut below); however, the remaining impacts are required to be mitigated by the acquisition and preservation of 2,245 acres of existing wetlands within the estuary. In the 2012 SHEP Final EIS, the USACE stated it would acquire lands designated as high priority in the Savannah National Wildlife Refuge Acquisition Plan and provide them to the USFWS to manage as additions to the Refuge. The USFWS will manage these properties using funds obtained through the Department of Interior's normal budget process. The first property, a 175-acre mostly upland tract known as SLF III, was acquired by GADOT and transferred to the USFWS in 2015. The second property, Abercorn Island, is a 2,081-acre tract consisting mostly of non-tidal forested wetlands. Abercorn Island was identified by the USFWS as its top priority for acquisition. The GADOT acquired Abercorn Island in February 2017 and comments on the draft Final Report were submitted on May 30, 2017. Abercorn Island was transferred to the Refuge in June 2017.

Savannah River Training Wall Removal Study – Augusta. The U.S. Army Corps of Engineers, Savannah District, has initiated a study regarding a training wall in the Savannah River at Augusta, Georgia conducted under the authority of Section 216 of the Flood Control Act of 1970. The purpose of this type of study is to determine whether a water resources development project operated and maintained by the Corps of Engineers should be deauthorized, and if the associated property should undergo disposal. The training wall was constructed as part of the federally authorized project, Savannah River Below Augusta (SRBA), in the early 1900s. The wall, and associated structures, helped prevent formation of sandbars on the Georgia side of the river which impeded commercial navigation at the time. However, commercial navigation effectively ceased by 1980 and maintenance of the channel in that area was discontinued, the last known maintenance activity having been completed in December 1980.

The study area extends between Augusta's 13th Street Bridge and Palmetto Parkway Bridge (Interstate 520). Currently, the training wall, including underwater portions and those exposed during low flow periods controlled by the J. Strom Thurmond Dam, could be a navigational hazard. The study will determine if there remains Federal interest in this navigational feature of the SRBA project and if not, whether disposal of the wall is feasible. DNR submitted comments on the proposed study on October 28, 2019. On April 6, 2020, the USACE Savannah District released a draft Integrated Disposition Study (IDS)/Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) under the authority of Section 216 of the Flood Control Act of 1970 (Public Law 91-611) for the Savannah River Below Augusta, Training Wall Disposition, Augusta, Georgia and North Augusta, South Carolina. The draft IDS/EA included the evaluation that the Corps performed to determine whether federal interests exist to retain or dispose of the Training Wall and its associated navigation features. The study evaluates three alternatives: (Alternative 1) Future Without Project Condition (FWOP)/No Action Alternative (NAA); (Alternative 2) Removal of the Training Wall; and (Alternative 3) Removal of the Training Wall and Sediment at Gardner's Bar on the South Carolina downstream bank. The recommended plan, Alternative 2, consists of the removal of the training wall and its associated navigation features and would allow for

the natural release of sediments accumulated behind the wall back into the river system. DNR staff provided comments on the report on April 30, 2020. DNR provided comments on the Draft Fish and Wildlife Coordination Act Report to the USFWS Georgia Ecological Services Office. The USFWS Georgia Ecological Services Office provided the Final Fish and Wildlife Coordination Act Report on the Training Wall on June 22, 2020. DNR project manager: Stacie Crowe crowes@dnr.sc.gov

Soilutions, LLC - Edge Road Mine, Horry County SCG731593

The proposed project involves a proposed fill dirt mine in Horry County, SC that has requested coverage under the NPDES General Permit for Discharges Associated with Nonmetal Mineral Mines. The borrow pit proposes to discharge mine dewatering and stormwater to Boggy Swamp and eventually to the Waccamaw River. On June 4, 2021, the DNR provided comments to SCDHEC on the proposed mine, noting several records and potential impacts to protected species and/or species of concern near/within the proposed project area, including three state threatened species: the Carolina Pygmy Sunfish (*Elassoma boehlei*), and the Southern hognose snake (*Heterodon simus*), both species of highest conservation priority as designated by the by the State Wildlife Action Plan (SWAP), and spotted turtle (*Clemmys guttata*), which is also a federal At-Risk species (ARS) and a SWAP species of high conservation priority. The project also has the potential to affect a SWAP species of highest conservation priority, the pine snake (*Pituophis melanoleucus*). DNR also noted that the proposed project is immediately adjacent to the Lewis Ocean Bay Heritage Preserve (LOBHP) and the potential exists for impacts to sensitive LOBHP habitats and associated management resulting from mine construction, operation and the dewatering discharge from the project operations into adjoining wetlands. The DNR expressed concerns that the proposed mining operation may alter hydrology of wetlands that connect from the proposed site to the LOBHP, causing areas to become dryer and increasing wildfire risk and potentially impacting sensitive plant and negatively impacting herptiles that depend on these seasonal wetlands for reproduction. The DNR recommended that appropriate measures were taken to minimize or avoid impacts to LOBHP and the aforementioned species of concern. **On July 13, 2021, OEP staff submitted additional comments, outlining concerns regarding red-cockaded woodpeckers that were recently observed on the proposed mining site. Given the presence of this protected species on the project site, the DNR stated that the proposed mining project does not qualify for the Mining GP and recommended that the subject mine project be reviewed under an Individual Mining Permit.**

DNR project manager: Susan Davis daviss@dnr.sc.gov.

Stormwater Infrastructure General Permit, S.C. Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (DHEC OCRM), GP-2019-SW11, GP-2019-SW12 & GP-2019-SW13. DHEC OCRM is proposing to issue a general permit to streamline the authorization process for State Agencies, County Governments and Local Municipalities for public Storm Water Infrastructure improvement projects within DHEC OCRM Direct Permitting Authority (Critical Area), in accordance with the Coastal Zone Management Act (48-39-10 et.seq.). This GP will authorize State agencies, county governments and local municipalities to conduct activities required for the re-establishment, improvement or maintenance of existing public stormwater conveyance systems in the tideland. The purpose of this GP is to provide a simplified and expeditious means to authorize routine public stormwater infrastructure projects undertaken by state agencies, county governments and local municipalities that are similar in nature and result in only minimal individual and cumulative impacts to the tidelands critical area within the State of South Carolina.

In a letter dated April 23, 2019, DNR expressed various concerns regarding the issuance of this GP and the potential significant and cumulative impacts to important estuarine resources. DNR staff provided recommendations for minimizing potential impacts. Staff also participated in a follow-up meeting to further discuss concerns of the various commenting agencies. This GP was officially noticed in August of 2020; OEP staff made additional recommendations for minimizing potential impacts. DNR project manager: Susan Davis daviss@dnr.sc.gov.

Stormwater Management General Permit Tidal Waters, USACE General Permit P/N SAC-2020-00959.

https://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/Aug_2020_PN/SAC-2020-00959_Proposed_Stormwater_Conveyance_General_Permit_PN.pdf?ver=2020-08-14-095638-890

The Charleston District proposes to issue a General Permit (GP) to federal, state, or local government agencies authorizing certain stormwater management activities located in tidal waters within the boundaries of the Critical Area Tidelands of the Coastal Zone of Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper Counties in South Carolina. The GP would authorize the excavation/dredging of existing, maintained stormwater conveyances, expansion of existing, maintained stormwater conveyances, and installation of new stormwater conveyance and/or the re-establishment of non-maintained stormwater conveyances through tidal waters. The GP would also authorize the discharge of dredged or fill material and/or excavation/dredging to facilitate the installation of new and/or the maintenance, repair, replacement and/or extension of existing water control structures, pipes and culverts in tidal waters. In a letter dated September 3, 2020, DNR expressed various concerns regarding the issuance of this GP and the potential significant and cumulative impacts to important estuarine resources and provided recommendations for minimizing potential impacts. DNR project manager: Susan Davis daviss@dnr.sc.gov.

US 278 Corridor Improvements Project, Beaufort County. Federal Project Number P030450. See:

<https://www.scdot278corridor.com/>

The Federal Highway Administration (FHWA) in cooperation with the South Carolina Department of Transportation (SCDOT) are preparing an EA for improvements to the US 278 corridor. The purpose of this project is to increase capacity and reduce congestion along US 278 from Moss Creek Drive to Squire Pope Road. As a part of the corridor improvements project, the eastbound Mackay Creek Bridge, which crosses the Intracoastal Waterway, would be replaced as a part of SCDOT's bridge replacement program and the remaining three bridges in the study area would also be studied for potential improvements. In addition, the access to Pinckney Island National Wildlife Refuge and the C.C. Haigh, Jr. boat ramp would also be studied for possible improvements. On April 10, 2019, the DNR accepted an invitation to become a participating agency in the development of an EA for this project. As a participating agency, the DNR will identify, as early as possible, any issues of concern regarding the project's potential environmental impacts. DNR will also be involved in the issue resolution process and provide meaningful and timely input on unresolved issues. In a letter dated September 20, 2018, the DNR has already provided scoping comments on this project, including preliminary comments on potential impacts to natural resources in the study area. In a letter dated April 10, 2019, the DNR accepted the invitation to become a participating agency and asked that the DNR's role in dispute resolution be clarified in the Final ACP. DNR reviewed the Draft Purpose and Need statement and had no comments or concerns. On June 13, 2020, the DNR participated in a meeting to discuss the alternative evaluation criteria, range of alternatives, and provide a coordination point for agencies as required by the EA process. On March 19, 2020, OEP staff participated in a meeting to discuss the following: the reasonable alternatives and revisions since the last agency meeting; the preliminary Essential Fish Habitat assessment; and future mitigation planning. Seventeen preliminary alternatives were developed originally and were narrowed down to six reasonable alternatives. On May 14 staff participated in an ACE meeting to discuss project updates, discuss the alternatives matrix and the recommended preferred alternative. **On July 7, 2021, a Notice of Availability of the Environmental Assessment for the US 278 Improvements was submitted and is currently under review by OEP staff.** DNR project manager: Maggie Jamison jamisonm@dnr.sc.gov

Hydroelectric Energy Projects

Under the Federal Energy Regulatory Commission's (FERC) regulatory authority under the Federal Power Act, natural resource agencies have an opportunity to negotiate and collaborate with utilities to minimize and mitigate impacts to natural resources affected by the operation of hydroelectric facilities. OEP staff serve as the DNR representative as a part of the relicensing process and implementation of the license. DNR FERC Coordinator: Elizabeth Miller millere@dnr.sc.gov

Augusta Canal Hydroelectric Project (FERC Project No. 11810). The City of Augusta, Georgia, filed a license application with FERC on June 20, 2003, which is pending signatures to a Settlement Agreement and the completion of NMFS Section 7 endangered species consultation regarding hydro project impacts to shortnose and Atlantic sturgeon; DNR signed the Settlement Agreement. The Settlement Agreement and the license application propose upstream and downstream fish passage and operations of the Augusta Canal that will provide for seasonal minimum flows that will enhance aquatic habitat and recreational activities in the Savannah River at Augusta Shoals. On July 9, 2014 the City of Augusta submitted a request to DHEC for 401 Water Quality Certification (WQC) of its license application to FERC to which DNR provided comments to DHEC on Sep 11, 2014. On July 8, 2015 DHEC issued a 401 WQC of the City of Augusta's FERC license application, and the WQC is consistent with the DNR stream flow objectives. NMFS and FWS drafted a revised joint prescription for fish passage in November 2017 and again in March 2018. A draft joint fish passage prescription was issued in September 2019, which was also reviewed by DNR staff. On October 23, 2019, the City of Augusta filed for a trial type hear to resolve disputed issues regarding the Second Modified Prescription. In July 2020, the NMFS and the USFWS each filed Reservations of Authority, replacing the Second Modified Prescription for the Project. The agencies are jointly working to file a Third Modified Prescription for the Augusta Canal Project.

Cherokee Falls Hydroelectric Project (FERC Project No. 2880). Cherokee Falls Hydroelectric Project, LLC emailed a draft license application to DNR on March 18, 2019 requesting agency review and comments by June 17, 2019. DNR submitted comments to the FERC on June 14, 2019. Enel submitted their Final License Application to the FERC on July 31, 2019. The FERC issued Scoping Document 1 for the Cherokee Project on March 6, 2020 and comments were submitted by DNR on April 3, 2020. DNR submitted comments on the Notice for Ready for Environmental Analysis (REA) to the FERC on May 18, 2020. On April 20, 2020 Cherokee Falls Hydroelectric Project, LLC submitted a request to DHEC for 401 Water Quality Certification (WQC) of its license application to the FERC. DHEC issued a public notice on April 30, 2020 requesting comments regarding the proposed application. DNR submitted comments to DHEC for the 401 WQC on June 1, 2020. DNR and DHEC submitted additional questions to the licensee regarding Project operations for clarification before issuance of the WQC. On December 15, 2020, Hydroland Omega LLC. took ownership of Cherokee Falls Hydroelectric Project, LLC and intends to continue to pursue the subsequent license. The ownership change is at the parent company level and the primary licensee of the Project will remain the same. The licensee responded to and addressed DNR and DHEC's additional questions and concerns regarding project operations related to the issuance of the WQC. After consulting with DNR personnel, DHEC issued the WQC to the Cherokee Falls Hydroelectric Project on March 9, 2021. The FERC issued the Environmental Assessment for the Cherokee Falls Project on April 16, 2021 and solicited public comment on the document. The SCDNR submitted agency comments on the EA May 14, 2021. **The Cherokee Falls Hydroelectric Project was issued a new license on July 22, 2021, for a period of 40 years. SCDNR staff worked collaboratively with the licensee, federal and state agencies, and other stakeholders throughout the relicensing process that began in June 2016. The new license will be providing environmental protection measures for instream flows, vegetative buffers, and endangered species as well as improving recreational access at the Cherokee Falls Hydroelectric Project.**

Coneross Hydroelectric Project (FERC Project No. 6731). Coneross Power Corporation filed a draft license application with the FERC on October 22, 2018. DNR staff reviewed the document and provided comments and recommendations before the January 20, 2019 comment period deadline. The applicant proposed a decrease in the minimum flow requirement of 25 cfs year-round to the bypass reach for the project and stated that it would be an enhancement to the project. DNR disagrees and finds that the change to this new flow regime would be a negative impact for aquatic resources. The current flow requirement in the previous license requires a minimum flow in the bypass reach at 35 cfs from February 1 – May 31 and 25 cfs from June 1 – January 31 or inflow to the Project's impoundment, whichever is less. They are also required to maintain a minimum flow of 36 cfs or inflow, whichever is less, downstream of the confluence between the tailrace and the bypass reach to support navigation. To address DNR's concerns, it was agreed that the applicant would fund studies to determine proper

minimum flow requirements for their project. The final license application was submitted to the FERC on February 28, 2019. DNR submitted a follow-up letter in April 2019 to address the study needs required to determine adequate flow downstream of the project. The Project filed the Final License Application on January 23, 2020. The FERC issued the Scoping Document 1 (SD1) for the Project on February 20, 2020. The FERC issued an extension to the SD1's comment period on March 6, 2020 and comments were submitted by DNR staff on April 9, 2020. The FERC issued the Ready for Environmental Analysis for the Coneross Project on April 21, 2020. DNR staff reviewed the request and submitted comments and 10j recommendations on June 19, 2020. DHEC issued a public notice seeking comments on the Coneross Project's application for a 401 Water Quality Certification. DNR staff submitted comments on July 6, 2020 to DHEC recommending measures to provide protection, mitigation and enhancement for fish and wildlife resources affected by the Project. On December 15, 2020, Hydroland Omega LLC. took ownership of the Coneross Power Corporation and intends to continue to pursue the subsequent license. The ownership change is at the parent company level and the primary licensee of the Project will remain the same. DHEC issued a Notice of Department Decision regarding the Coneross Project's 401 Water Quality Certificate (401 WQC) on April 23, 2021. DNR staff identified an inconsistency with DHEC's 401 WQC NODD for the project regarding buffer zone protection and noticed DHEC staff to review the decision. DHEC adjusted the NODD for the 401 WQC and reissued the NODD on May 3, 2021 including DNR's recommendation for buffer zone protection.

Saluda Hydroelectric Project (FERC Project No. 516). SCE&G filed with FERC a license application for the Saluda (Lake Murray) Project on August 27, 2008 and a Comprehensive Relicensing Settlement Agreement (CRSA) on July 31, 2009. A new FERC license for this project is pending the completion of NMFS Section 7 endangered species consultation regarding hydro project impacts to shortnose and Atlantic sturgeon. The CRSA and license application propose important protection and enhancement measures for Lake Murray and downstream sections of the Saluda and Congaree rivers. Measures include the establishment of minimum flows and striped-bass spawning enhancement flows, low-inflow drought plan, a plan for dissolved-oxygen enhancement to improve water quality, increased protection of threatened and endangered species, enhancements in fish and wildlife habitat protection and increased recreational opportunities. On January 3, 2019, SCANA/SCE&G merged with Dominion Energy South Carolina, LLC. The project website is <http://www.saludahydrorelicense.com/>.

Santee Cooper Hydroelectric Project (FERC Project No. 199). S.C. Public Service Authority (SCPSA) filed with FERC a license application on Mar 15, 2004 and a Final Settlement Agreement (FSA) on May 24, 2007. The license application and FSA propose flows through the project to enhance aquatic habitat and water quality, a low-inflow/drought plan, fish passage and protection prescriptions, plans to protect sensitive species, shoreline management plan, recreation plan, and enhancements at the Santee National Wildlife Refuge. FERC issued its Final EIS in October 2007. A new FERC license for this project is pending the completion of National Marine Fisheries Service (NMFS) Section 7 endangered species consultation regarding hydro project impacts to shortnose and Atlantic sturgeon. DNR staff continues to participate in the Santee Cooper-NMFS consultation process regarding sturgeon protection measures. DNR provided comments on July 23, 2012 to address a Santee Cooper proposal to NMFS for sturgeon passage at the Project. NMFS resumed consultations with Santee Cooper and DNR staff on April 25, 2017, to address sturgeon passage issues and planned steps for revising the draft biological opinion. In July 2019, DNR staff received a draft of the Biological Opinion and Fishway Prescription from the NMFS Section 7 endangered species consultation for review. DNR staff attended a site visit and meeting on September 30 and October 1 to discuss the NMFS draft Biological Opinion. Staff reviewed the draft Biological Opinion and draft Second Modified Prescription for Fishways and submitted comments to the FERC on December 17, 2019. NMFS issued the final Biological Opinion on January 22, 2020 and the final Second Modified Prescription for Fishways on January 27, 2020.

Spartanburg Water Proposed Hydroelectric Projects. Spartanburg Water has been granted approval by FERC on July 7, 2014 to begin the licensing process in order to establish hydroelectric facilities at two existing Pacolet River dams on Lakes Blalock and Bowen and restoration of an abandoned hydropower

facility at Fingerville on the North Pacolet River. DNR staff are providing input and assistance with study plans being implemented at the project sites. Spartanburg Water has paused its pursuit of these licenses pending resolution of related economic issues. The project website is: <http://www.sws-sssd.org/lakes/index.php>.

Stevens Creek Hydroelectric Project (FERC Project No. 2535). On January 3, 2019, SCANA/SCE&G merged with Dominion Energy. Dominion Energy conducted public outreach meetings on January 10, 2019 to address the upcoming relicense process for Stevens Creek Hydroelectric Project located on the Savannah River downstream of Lake Thurmond in Edgefield County, SC and Columbia County, GA. DNR staff attended a site visit on May 15, 2019 to survey the project area and recreational facilities provided by the project. DNR staff attended a draft Pre-Application Document (PAD) meeting on August 22, 2019. DNR is involved in several Resource Conservation Groups and has attended meetings with the different groups in preparation for the draft PAD. The current FERC license for the Project expires on October 31, 2025. Dominion Energy submitted their Pre-Application Document and request to use the Traditional Licensing Process (TLP) on May 15, 2020. DNR filed a concurrence letter in support of the use of the TLP for the Project. DNR staff participated in the Joint Agency Meeting and virtual site visit on September 3, 2020. DNR submitted comments on the Pre-Application Document and a study request for consideration on November 2, 2020. SCDNR staff participated in a site visit on May 27, 2021 to discuss fish passage and recreation amenities at the Project. The project website is <http://stevenscreekrelicense.com>.

Natural Resource Damage Assessment (NRDA).

Under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) or the Oil Pollution Act (OPA), natural resource trustees seek damages for injury to natural resources that are a result of releases of hazardous substances or oil. OEP staff serve as the DNR representative as a part of the Natural Resource Trustees. DNR project manager: Stacie Crowe crowes@dnr.sc.gov

Exxon Mobil Corporation. The NRDA Trustees reached a settlement with the Exxon Mobil Corporation for approximately \$6.6 million for claims related to the release of hazardous waste at nine phosphate fertilizer plant sites located in Charleston, Beaufort and the Greenville area between 1900-1950. Remedial actions started around 2007-2008. The Consent Decree was filed on May 2, 2019 and entered into final judgement on June 26, 2019. Environmental impacts typically associated with phosphate-based fertilizer manufacturing facilities include elevated concentrations of metals, particularly lead and arsenic in soil, groundwater and sediment, as well as acidic pH conditions. The NRDA Trustees will now begin the Restoration Planning process where restoration actions will be designed to return impacted resources to baseline condition. The Trustees signed the funding resolution in January 2020. The settlement funds are anticipated to be used for marsh and oyster restoration projects in the Charleston and Beaufort areas.

Koppers Company Inc. The NRDA Trustees reached a settlement with Beazer East, Inc., the responsible party, for the Koppers Company site for approximately \$3 million. The Consent Decree was filed on January 7, 2019. Starting as early as 1942, wood treatment and fertilizer manufacturing facilities located at Koppers in Charleston released hazardous substances into wetland and riverine habitats in and near the Ashley River. Approximately 140 acres of tidal marsh and creeks were impacted by the contaminants released, which included polycyclic aromatic hydrocarbons (PAHs) and heavy metals. Beazer East, Inc. worked cooperatively with the EPA to clean up the contamination and remedial activities were completed in 2003. The Trustees conducted a NRDA and determined that both intertidal and subtidal habitats were affected by the contamination. Contaminant concentrations would have been toxic to benthic invertebrates (including grass shrimp), and possibly fish, birds and mammals. The Trustees have released the Final Damage Assessment and Restoration Plan, as well as the Environmental Assessment for the Koppers Site, which describes restoration projects focusing on salt marsh restoration at sites on the Ashley River and Long Branch Creek in Charleston. The comment period on the Draft Restoration Plan closed on February 12, 2020 and no public comments were received. A Trustee resolution to accept an oyster restoration project as the preferred alternative was

circulated on February 26, 2020. The Trustees signed the Trustee Resolution approving the Final Supplement's release on March 12, 2020. **The salt marsh restoration project at Drayton Hall began on March 17, 2021, and was completed on May 10, 2021. Trustees reviewed the post-construction report in July 2021.**

Mitigation Banks and Interagency Review Team

Under the 2008 Mitigation Rule, natural resource agencies have an opportunity to participate collaboratively with resource and regulatory agencies on the Interagency Review Team (IR) to oversee and provide feedback on mitigation bank or in-lieu fee development. The IRT process ensures that mitigation banks are sited appropriately and provide ecological value, in addition to functional uplift of aquatic resources to offset the loss of aquatic resources associated with U.S. Army Corps of Engineers Section 404 permits. A majority of the OEP staff serve on the IRT to provide expertise on stream restoration and wetland enhancement during this process. The following are a list of recent banks that are under review; this does not include existing banks that are also reviewed during the monitoring phases of the bank's life.

Audubon Silver Bluff Mitigation Bank Prospectus

The proposed project consists of establishing a 475-acre freshwater stream and wetland mitigation bank in the Middle Savannah River watershed (8-digit HUC 03060106) located in the Southern Outer Piedmont Ecoregion near Spartanburg, Spartanburg County (34.837678, -82.057584). The proposal is to restore 6,036 linear feet of Curry Branch. Approximately 292.8 acres of wetlands will be enhanced or restored through plugging ditches and vegetative enhancements. The bank is owned by the National Audubon Society and sponsored by Audubon South Carolina. The long-term steward will be Audubon South Carolina and the conservation easement holder will be the Lowcountry Land Trust. Prospectus comments were submitted to the USACE by DNR on December 17, 2020. DNR project manager: Tom Daniel

Ben's Creek Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the South Tyger watershed (8-digit Hydrologic Unit Code 03050107) located in the Southern Outer Piedmont Ecoregion near Spartanburg, Spartanburg County (34.837678, -82.057584). The proposed 430-acre mitigation bank includes approximately 28,900 linear feet of stream channels and 103.5 acres of wetlands. The proposal is to preserve 20,550 linear feet of stream, and either enhance or restore 8,350 linear feet of streams by stabilizing stream channels and reconnecting streams to their floodplain. Approximately 99.1 acres of wetlands will be enhanced or restored through removal of fill, berms and roadbeds. Approximately 4.4 acres of wetlands will be preserved on site. The bank is owned by Mr. David Keller of Moore, SC and sponsored by Southern Oaks Land and Water. Southern Oaks Land and Water will be the long-term steward. The conservation easement holder has not yet been identified. Prospectus comments were submitted to the USACE by DNR on February 19, 2020. DNR project manager: Tom Daniel

Big Dutchman Creek Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Catawba watershed (8-digit Hydrologic Unit Code 03050103) located in the Level III Piedmont Ecoregion near the Rock Hill, York County, SC (35.00422, -81.08689). The proposed 106 acre bank site is located within the 800 acre Harper Farm. The proposal is to restore approximately 17,600 linear feet of stream and enhance 3.82 acres of wetlands. The bank owners and long-term stewards are Mr. Richard C. Harper and Mr. Craig Harper and the conservation easement holder is the York County Soil and Water Conservation District. Prospectus comments were submitted to the USACE by DNR on September 6, 2017 and DMBI comments were submitted on April 3, 2020. DNR submitted comments on the Design Plans for the proposed bank on September 10, 2020. DNR project manager: Greg Mixon

Black Gum Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lynches River watershed (8-digit Hydrologic Unit Codes 03040202) located in the Sand Hills Ecoregion near Bethune, Kershaw County (34.415914, -80.438341). The proposed 654-acre mitigation site includes approximately 616.3 acres of freshwater wetlands, 29,935 linear feet of perennial streams, and 11,066 linear feet of non-wetland waters (manmade ditches). The proposal is to preserve 22,333 linear feet of stream, and either enhance or restore 7,602 linear feet of streams by redirecting flows to a relic channel. Approximately 532.6 acres of wetlands will be enhanced or restored through removal of fill, berms and roadbeds. Approximately 83.7 acres of wetlands will be preserved on site. The bank is owned and sponsored by SCP Black Gum, LLC. In addition, SCP Black Gum, LLC will be the long-term steward. The conservation easement holder has not yet been identified. **DNR received the public notice including the prospectus on June 2, 2021 and provided comments on July 8, 2021.** DNR project manager: Tom Daniel

Brosnan Forest Coldwater Branch Mitigation Bank Mitigation Banking Instrument

The proposed bank is located in the Four Hole Swamp watershed (8-digit Hydrologic Unit Code 03050205) in the Middle Atlantic Coastal Plain ecoregion. The proposed 1,106 mitigation site is located in Norfolk Southern Railway Company's Brosnan Forest, a 14,405-acre corporate conference center and outdoor recreation facility. The proposal is to restore 299.2 acres of headwater wetlands, 2.3 acres of isolated wetlands, 123.2 acres of streamside wetlands, 21 acres of restored impounded wetlands, and 46.3 acres of formerly impounded wetlands that will be hydrologically enhanced. All wetlands will be protected by a 150-foot average width upland buffer. In addition, 34,488 linear feet of stream will be restored or preserved with 300-foot average width upland buffers. The bank is owned and sponsored by Norfolk Southern Railway Company and will be protected by a conservation easement held by Lowcountry Land Trust, Inc. Prospectus comments were submitted to the USACE by DNR on February 4, 2019 and DMBI comments were submitted on June 2, 2020. DNR staff reviewed a revised DMBI dated September 2020 and submitted comments on October 27, 2020. **This bank will be approved soon by the USACE.** DNR. Project Manager: Greg Mixon

Catawba Mitigation Bank Prospectus

The proposed bank is located in the Lower Catawba watershed (8-digit Hydrologic Unit Code 03050103). The proposed 623-acre mitigation site includes approximately 28.3 acres of freshwater wetlands and 48,294 linear feet of streams. The proposal is to preserve approximately 38,429 linear feet of streams and 12.47 acres of palustrine forested wetlands. In addition, 15.53 acres of freshwater wetlands will be enhanced through removal of loblolly pine and replanted in native species. 11,766 linear feet of stream will be restored/enhanced through removal of two dams utilizing natural channel design techniques. The bank owner, sponsor and proposed long-term steward is SCP Catawba, LLC. The identity of the conservation easement holder has not been finalized. DNR received the public notice including the prospectus on April 16, 2021 and provided comments on June 2, 2021. DNR project manager: Greg Mixon

Catfish Farm Mitigation Bank Prospectus

The proposed bank is located in in the Little Pee Dee and Great Pee Dee watershed (8-digit Hydrologic Unit Code 03040204 and 03040201) located in the Middle Atlantic Coastal Plain Ecoregion. The proposed 1,199-acre mitigation site would preserve 4,098 linear feet of stream. In addition, 2,418 linear feet of stream will be enhanced by re-routing flow back into relic channels. Approximately 12,807 linear feet of stream will be restored by stabilizing stream channels, reconnecting streams to their floodplain, removal of existing impoundments, and creating new channels where needed. Buffers will be enhanced by planting a mix of native trees to improve vegetative diversity. Approximately 596.69 acres of wetlands will be enhanced by re-establishment of native hardwood species. 252.48 acres of wetlands will be restored by removing exiting pine plantation, restoring hydrology through grading and ditch plugging, and re-establishing forested wetland vegetative communities. Approximately 42.31 acres of wetlands will be preserved on site. The bank owner and proposed long-term steward is Catfish Farm, LLC and the conservation easement holder is anticipated to be Pee Dee Land Trust. Draft Prospectus comments were submitted to the USACE by DNR on May 8, 2017 and final Prospectus comments were submitted on May

5, 2020. **DNR staff are currently reviewing a Draft MBI, dated June 15, 2021, and will provide comments by August 20, 2021.** DNR project manager: Greg Mixon

Caw Caw Mitigation Bank Draft Mitigation Banking Instrument

The proposal consists of establishing a freshwater wetland mitigation bank in the Stono River watershed (USGS 8-digit Hydrologic Unit Code 03050202) and the Middle Atlantic Coastal Plain ecoregion of South Carolina. The proposed 668.7-acre mitigation site includes 658.8 acres of freshwater wetlands and 9.87 acres of upland roads. The mitigation work plan includes the enhancement/restoration of 197.1 acres of palustrine forested wetlands by the removal of pine species and the planting of bottomland hardwood seedlings; and the preservation of 445.3 acres of palustrine forested and scrub shrub wetlands. The bank will be protected with a conservation easement held by Ducks Unlimited. Prospectus comments were submitted to the USACE by DNR on February 12, 2015 and DMBI comments were submitted on May 14, 2020. Project manager: Susan Davis

Corley Mill Mitigation Bank Final Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Saluda River watershed (8-digit Hydrologic Unit Code 03050109) located in the Level III Piedmont Ecoregion near Lexington, Lexington County, SC (34.0278, -81.1647). The proposed 116.07-acre bank includes the lower portions of both Twelve Mile and Fourteen Mile Creeks approximately 0.65 miles upstream from the confluence with the Saluda River. The site includes 8,234 linear feet of streams and 72.64 acres of wetlands that are proposed to be restored, enhanced and preserved. The bank owners are Mrs. Lenna C. Young and Mrs. Cindy C. Waters. The long-term steward is the Corley Mill Preservation Group LLC and conservation easement holder is Congaree Land Trust. Prospectus comments were submitted to the USACE by DNR on December 17, 2016 and DMBI comments were submitted on May 5, 2020 and again on July 24, 2020 on the MBI document dated June 29, 2020. DNR staff reviewed a revised DMBI dated September 23, 2020 and provided comments dated December 9, 2020. DNR staff reviewed a proposed final MBI dated May 18, 2021 and provided comments dated June 4, 2021. DNR project manager: Greg Mixon

Crane Creek Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Broad River watershed (8-digit Hydrologic Unit Code 03050106) located in the Level III Piedmont Ecoregion near Columbia, Richland County, SC (34.076905, -81.038011). The proposed 309.32-acre bank includes restoration and buffering of 12,031 linear feet of Crane Creek, 4,007 linear feet of associated tributaries, and 134.5 acres of palustrine forested, scrub-shrub and emergent wetlands and open water. The bank owner and long-term steward is Crane Creek Mitigation LLC and the conservation easement will be held by Congaree Land Trust. Prospectus comments were submitted to the USACE by DNR on August 24, 2017 and Draft MBI comments were submitted to the USACE by DNR on April 27, 2020. DNR staff reviewed a revised DMBI dated August 12, 2020 and submitted comments October 23, 2020. DNR project manager: Greg Mixon

Daniel Island Saltwater Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a saltwater mitigation bank in the Cooper River watershed (8-digit Hydrologic Unit Code 03050201) in the Sea Island/Coastal Marsh Ecoregion. The 134.76-acre mitigation site is a portion of a former confined disposal facility and prior to 1970 was used to manage dredged material. According to the Prospectus, the mitigation site consists of 25.67 acres of existing salt marsh and 109.09 acres that were used for the placement of dredged material and farming activities. The long-term steward for the proposed mitigation bank will be the property owner SC Ports Authority. The third-party conservation easement holder for the site will be The Lord Berkeley Conservation Trust. Prospectus comments were submitted to the USACE by DNR on January 1, 2017 and DMBI comments were submitted August 11, 2020. DNR project Manager: Susan Davis

French Quarter Creek Mitigation Bank Draft Mitigation Banking Instrument

The French Quarter Creek (FQC) Site is in Berkeley County, South Carolina within the Cooper River Basin (8-digit HUC 03050201). The FQC Site is owned by Environmental Banc & Exchange, LLC a wholly

owned subsidiary of Resource Environmental Solutions, LLC (RES) and has an estimated acreage of approximately 445 acres. The proposed bank includes both wetland and stream restoration, enhancement, enhancement by upland buffering, and preservation. In detail, the project proposes to restore approximately 70.5 acres of bottomland hardwood forest by filling ditches and raising the water table of the affected area; enhance approximately 206 acres of various wetland habitats through planting of native species and land management practices; and approximately 1,200 feet of stream restoration. The DNR has been proposed as the long-term steward of the bank and the site will be protected with a conservation easement held by Lowcountry Land Trust. Prospectus comments were provided to the USACE by DNR on March 7, 2019 and DMBI comments on March 30, 2020. DNR project manager: Susan Davis

Goose Pond Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Congaree watershed (8-digit Hydrologic Unit Code 03050110) located in the Level III Southeastern Plains Ecoregion. The proposed 1,185-acre mitigation site includes approximately 20,076 linear feet (LF) of streams and approximately 676 acres of freshwater wetlands. The proposal is to preserve 11,163 LF of stream and restore 9,940 LF of stream. The proposal would also enhance 437.7 acres of bottomland hardwood wetlands and preserve and additional 238.8 acres of bottomland hardwood wetlands. The bank owner and sponsor are Southern Oaks Land & Water, LLC and the long-term steward is proposed to be Palmetto Environmental Consultants. The conservation easement holder is proposed to be Congaree Land Trust. Prospectus comments were provided to the USACE by DNR on October 8, 2018. A DMBI, dated July 2020, was reviewed and comments submitted on August 28, 2020. Project Manager: Greg Mixon.

Grist Mill Mitigation Bank Prospectus

The proposed work consists of establishing a freshwater wetland and stream mitigation bank in the Lynches River watershed (8-digit Hydrologic Unit Codes 03040202) located in the Level III Middle Atlantic Coastal Plain Ecoregion. The proposed 1,182.5 acre mitigation site includes approximately 81.06-acres of freshwater wetlands and 39,345 linear feet of streams. The proposal is to preserve 10,822 LF of stream and restore 13,269 LF of stream. The proposal would also enhance 591.5 acres of wetlands and preserve and additional 44.42-acres of palustrine forested wetlands. The bank owner and sponsor are FLO Fund Domestic, LLC and the long-term steward has yet to be determined. The conservation easement holder is proposed to be Congaree Land Trust. Project Manager: Tom Daniel

Grove Creek Mitigation Bank Phase 3 Restoration Plan

The proposed project consists of designing and constructing Phase 3 at the existing mitigation bank in the Saluda watershed (8-digit Hydrologic Unit Code 03050109) located in the Level III Piedmont Ecoregion. The 512.73-acre site includes a Phase 1 and Phase 2 restoration that have been previously constructed. Phase 3 will consist of the restoration of 4,182 linear feet of the main stem of Grove Creek on approximately 100 acres within the existing bank. The owner and sponsor are Hollingsworth Funds, Inc. and the conservation easement holder is Upstate Forever. DNR previously provided comments on the Phase 3 Restoration Plan on July 20, 2016. DNR staff reviewed the proposed Phase 3 Restoration Plan dated June 2020 and provided comments on September 18, 2020. DNR staff participated in a site visit on October 22, 2020 and provided additional comments dated November 13, 2020. DNR staff have reviewed a response to agency comments provided by the sponsor on June 4, 2021 and DNR provided comments on June 10, 2021. Project Manager: Greg Mixon

Halidon Hill Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Cooper River watershed (8-digit Hydrologic Unit Code 03050201) located in the Level III Middle Atlantic Plains Ecoregion. The proposed 1,744.5-acre mitigation site includes approximately 1,074.6 acres of wetlands, 22.8 acres of non-wetland waters, and 647.1 acres of uplands. The proposal is to preserve 175.14 acres of freshwater wetland and 802 linear feet of stream. In addition, 222.93 of freshwater wetlands will be enhanced through removal of loblolly pine and replanted with native hardwood species; 94.36 acres of wetland will be enhanced through filling ditches, breaching/removal of berms, removal of roads and culverts; 418.81 acres of wetland will be enhanced through removal of loblolly pine, replanting

native species, and removing hydrological impairments and 16.91 acres of freshwater wetland will be restored by removal of loblolly pine and restoring natural hydrology. In addition, 21,881 linear feet of stream will be restored through removal of undersized culverts, bank stabilization, and construction of a new channel. The bank sponsor, using a conservation easement (Ducks Unlimited), will protect the mitigation bank site. Prospectus comments were provided to the USACE by DNR on October 10, 2019 and DMBI comments were submitted on May 21, 2020. Project manager: Susan Davis

Landsford Canal Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Lower Catawba watershed (8-digit Hydrologic Unit Code 03050103). The proposed 250-acre mitigation site includes approximately 27.18 acres of wetlands and 30,131 linear feet of streams. The project will preserve approximately 16,712 linear feet of streams and 24.91 acres of palustrine, forested wetlands, restore approximately 3,674 linear feet of streams by establishing a new channel and reconnecting the stream with the abandoned floodplain bench at the current stream elevation, enhance approximately 9,745 linear feet of streams by stabilizing of the existing channel and the creation a floodplain bench at the current stream elevation restoration, and enhance approximately 2.5 acres of freshwater forested wetlands through restoration of a native hardwood community. The bank owner, sponsor and proposed long-term steward is Landsford Mitigation Bank, LLC. The identity of the conservation easement holder has not been finalized. DNR received the public notice including the prospectus on March 8, 2021 and provided comments on April 7, 2021. DNR project manager: Greg Mixon

Lower Broad Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Broad watershed (8-digit Hydrologic Unit Code 03050106) located in the Southern Piedmont Ecoregion. The proposed 259.78-acre mitigation bank includes approximately 28,876 linear feet of stream channels and 2.37 acres of wetlands. The proposal is to preserve 11,167 linear feet of stream, enhance 442 linear feet of stream, and restore 8,994 linear feet of stream by raising streambed elevations, primarily by stabilizing stream channels, grading streambanks and reconnecting streams to their floodplain. Buffers will be enhanced by planting a mix of native trees to improve vegetative diversity. Approximately 2.37 acres of wetlands will be preserved on site. The bank owner, sponsor and proposed long-term steward is SCP Lower Broad, LLC. The identity of the conservation easement holder has not been finalized. DNR received the public notice including the prospectus on March 17, 2021 and provided comments on April 16, 2021. DNR project manager: Tom Daniel

Minkum Creek Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Broad River watershed (8-digit Hydrologic Unit Code 03050105) located in the Level III Piedmont Ecoregion near Gaffney, Cherokee County, SC (34.981895, -81.620860). The proposed 435-acre mitigation site includes approximately 36,600 linear feet of stream channels and approximately 10 acres of freshwater wetlands. The proposal is to restore or enhance 10,010 linear feet of perennial and seasonal streams. All streams within the bank are currently proposed for some level of restoration. The bank is owned by Heritage Preservation Holdings, LLC and sponsored by Sandy Creek Partners, LLC. The property owner, Heritage Preservation Holdings, LLC, will also be the long-term steward. The conservation easement holder has not yet been identified. Prospectus comments were submitted to the USACE by DNR on June 7, 2019. The DMBI, dated July 2, 2020, was reviewed and comments submitted August 25, 2020. DNR project manager: Greg Mixon

Mossy Bend Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater wetland mitigation bank in the Black River watershed (8-digit Hydrologic Unit Codes 03040205). The proposed 722.3-acre mitigation site includes approximately 696.7 acres of freshwater wetlands and 22,000 linear feet (lf) of non-wetland waters (manmade ditches). The proposal is to enhance the hydroperiod of 696.7 acres of freshwater wetlands by plugging/filling 22,000 linear feet of ditches and installing additional culverts and/or breaches (i.e., low water crossings) through elevated roadbeds. Of that area, 129.4 acres will also be enhanced through

removal/thinning of loblolly pine and replanted with native wetland hardwoods. Approximately 7.2 acres of upland buffer will also be preserved. The bank sponsor (SCP Mossy Bend, LLC), using a conservation easement, will protect the bank site. **The Prospectus, dated December 81, 2020, was reviewed and comments submitted July 8, 2021.** DNR project manager: Stacie Crowe

Mountain Bridge Passage Mitigation Bank Prospectus

The proposed bank would consist of three parcels in Greenville County, South Carolina located within the Saluda River watershed (HUC 03050109)., The three parcels encompass approximately 568.72 acres, containing approximately 45,948 linear feet (8.70 miles) of stream channels. The restoration work will occur on only one of the three tracts, the site of the former Holiday Lake/Civitan Camp (35.079475, - 82.574669). This work consists of 4,217 linear feet of stream restoration, 3,772 feet of stream enhancement, and 37,959 feet of stream preservation. The bank is owned and sponsored by Naturaland Trust and will be protected using a conservation easement held by Upstate Forever. The property owner, Naturaland Trust, will be the long-term steward. Prospectus comments were submitted to the USACE by DNR on June 12, 2019. DNR project manager: Tom Daniel

Palmetto Umbrella Mitigation Bank: Edisto River Mitigation Site Draft Instrument Modification (DIM)

The proposed bank is located in the Edisto River watershed (8-digit Hydrologic Unit Code 03050206) located in the Middle Atlantic Coastal Plain Ecoregion within the ACE Basin. The proposed 1,291-acre mitigation site includes approximately 12,877 linear feet of stream channels and 429.5 acres of wetlands. The proposal is to preserve 3,911 linear feet of stream and to restore 8,966 linear feet of stream by redirecting flow from channelized portions back into on-site relic channels. Wetland enhancement of 35.4 acres will include establishing native vegetation where commercial pine plantations have encroached or where vegetation has been disturbed. Approximately 395.6 acres of wetlands will be restored by removal of ditches, roads and berms. Native vegetation will be restored in areas that are in commercial pine production. Approximately 359.5 acres of wetlands will be preserved on site. The bank is owned and sponsored by Weyerhaeuser NR Company and will be protected using a conservation easement held by Lord Berkeley Conservation Trust. DIM comments were submitted to the USACE by DNR on March 19, 2020. Project Manager: Susan Davis

Palmetto Umbrella Mitigation Bank: Great Swamp Mitigation Site Draft Instrument Modification (DIM)

The proposed bank is located in the Salkehatchie watershed (8-digit Hydrologic Unit Code 03050210) located in the Coastal Plain Ecoregion. The proposed 3,067-acre mitigation site includes approximately 53,570 linear feet of stream channels and 1,411.5 acres of wetlands. The proposal is to preserve 7,035 linear feet of stream and enhance 1,283 feet of stream by stabilizing stream channels and reconnecting natural hydrology upstream. Restoration of 38,152 linear feet of stream will be achieved by removing spoil piles, utilizing available relic channels, and adding appropriate in stream structures to maintain dimension, pattern, and profile. Wetland enhancement will include establishing native vegetation where commercial pine plantations have encroached or where vegetation has been disturbed. Approximately 848.4 acres of wetlands will be preserved on site. The bank is owned and sponsored by Weyerhaeuser NR Company and will be protected using a conservation easement held by Lord Berkeley Conservation Trust. DIM comments were submitted to the USACE by DNR on February 12, 2020 and again on May 13, 2021 in response to a revised DMBI. Project Manager: Susan Davis

Red Bluff Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater and saltwater wetland and freshwater stream mitigation bank in the Lower Savannah and Calibogue Sound/Wright River watersheds (8-digit hydrologic Unit Codes 03060109 and 03060110). The proposed 5,514.74-acre mitigation site includes approximately 427.63 acres of freshwater wetlands, 4,704.74 acres of tidal wetlands, 5,514.74 linear feet (lf) of non-wetland waters, and 382.37 acres of uplands. The proposal is to preserve approximately 904.9 lf of streams, 163.3 acres of palustrine, forested wetlands, and 4,677.7 acres of tidal wetlands through the permanent protection of a conservation easement. In addition, 151.9 acres of freshwater wetlands will be enhanced through removal of loblolly pine and replanted in native species, 75.6 acres of freshwater wetlands will be enhanced through removal of loblolly pine, replanting native species, and

removing hydrologic impairments, 3.9 acres of freshwater wetland will be restored by filling the ditches, removing the roads, and re-planting the area with native wetland species, 0.8 acres of tidal wetlands will be restored or enhanced by increasing tidal flow through breaking or removal of berms to allow for full range of tidal flows, 26.2 acres of tidal marsh will be created in areas that were converted to agricultural lands and 4,139.3 lf of streams will be enhanced through removal of undersized culverts, bank stabilization, and construction of new channels. An upland buffer will be placed around all wetland resources. the Bank is owned by Pelican Capital, LLC and the bank sponsor is Red Bluff Mitigation Bank, LLC. The bank site will be protected using a conservation easement held by the Beaufort County Open Land Trust (BCOLT). On April 19, 2021, the DNR submitted comments on the Final Prospectus dated November 2, 2020. DNR Project Manager: Susan Davis

Reedy Run Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Saluda River watershed (8-digit Hydrologic Unit Code 03050109) located in the Piedmont Ecoregion. The proposed 275-acre mitigation bank includes approximately 25,835 linear feet of stream, and 78 acres of freshwater wetlands. The proposal is to preserve 17.9 acres of palustrine forested and emergent wetlands, enhance 60.1 acres of freshwater wetlands, preserve approximately 10,170 linear feet of Bush River and restore approximately 15,665 linear feet of streams. The bank owner and long-term steward is Mr. Trip Taylor with Reedy Run Real Estate in Greenville, SC and the proposed conservation easement holder is the Newberry Soil and Water Conservation District. The Corps of Engineers public noticed a Prospectus on November 4, 2020 and DNR provided comments on November 30, 2020. DNR project manager: Tom Daniel

Roberts Swamp Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the South Fork Edisto River watershed (8-digit Hydrologic Unit Code 3050204) located in the Level III Southeastern Plain Ecoregion near the Town of Norman, Orangeburg County, SC (33.454108, -81.075959). The proposed 255+ acre bank includes approximately 12,612 linear feet of streams and 165 acres of wetlands. The bank owners are West Stone 123 LLC and Mr. Robert Johnson. The long-term steward will be Roberts Swamp MB, LLC and the (tentative) conservation easement holder is Congaree Land Trust. The USACE public noticed the Prospectus on June 19, and DNR provided comments on July 15, 2020. DNR project manager: Greg Mixon

Rocky Creek Mitigation Bank Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Lower Catawba River watershed (8-digit Hydrologic Unit Code 03050103) in the Piedmont ecoregion. The proposed 131-acre former cattle farm consists of three impoundments, seven unnamed tributaries, two freshwater wetlands, Rock Creek, Little Rocky Creek, upland and riparian buffers and an existing utility easement. The mitigation work plan includes planting existing pasture with hardwood species, restoring natural hydrology in wetlands and restoring channelized and impounded headwater streams on-site. The property owner, Cowland LLC will also be the long-term steward and the conservation easement is proposed to be held by Katawba Valley Land Trust. DNR reviewed a Prospectus dated September 9, 2014 and provided comments dated October 22, 2014. DNR staff reviewed a DMBI dated December 19, 2016 and comments were provided on March 1, 2017. DNR has received a revised MBI dated October 5, 2020 and provided comments dated November 16, 2020. DNR project manager: Greg Mixon

Salkehatchie Mitigation Bank Prospectus

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Salkehatchie watershed (8-digit Hydrologic Unit Codes 03050207). The proposed 2,040.85-acre mitigation site includes approximately 1,958.76 acres of freshwater wetlands and 33,206 linear feet (lf) of non-wetland waters. The proposal is to preserve approximately 26,581 lf of streams and 1,212.99 acres of palustrine forested wetlands through the permanent protection of a conservation easement. In addition,

472.59 acres of freshwater wetlands will be enhanced through removal of loblolly pine and replanted in native species. 10,060 lf of stream will be restored/enhanced through removal priority one restoration utilizing natural channel design techniques. This includes channel realignment, construction of new channels, and bank stabilization. An upland buffer will be placed around stream resources. The bank sponsor, using a conservation easement, will protect the entire bank site. The bank owner is WNL Properties, LLC and the sponsor is Palustrine Group, LLC. **DNR staff reviewed a Prospectus dated May 27, 2021 and comments were provided July 27, 2021.** DNR project manager: Stacie Crowe.

South Carolina Department of Transportation (SCDOT) In-Lieu Fee Program Prospectus

The proposed project consists of establishing a Statewide In Lieu Fee (ILF) Mitigation Program initially in the Lower and Upper Catawba and Wateree River Watersheds (HUCs 3050101, 03050103, and 03050104) in the Piedmont ecoregion. The SCDOT ILF Program proposes to generate freshwater stream compensatory mitigation credit through the replacement of perched or undersized culverts within the SCDOT's transportation system in watersheds that are not currently served or are underserved by existing mitigation banks. The SCDOT will identify projects and provide funding for the ILF Program. Projects will be selected as mitigation needs require and will implemented pending IRT approval. Credits will only be used for SCDOT transportation projects. It is anticipated that the ILF Program will be used to offset impacts for smaller roadway improvement projects. Prior to submitting the permit application, the SCDOT will determine if the purchase of credits is practicable from an existing mitigation bank in the watershed. If credits are not available, the SCDOT will utilize credits from the ILF Program. The SCDOT will request the use of credits from the ILF Program when the permit application is submitted for the project. The ILF Program will likely be amended to allow additional service areas when Compensation Planning Frameworks are completed for these areas, eventually becoming a statewide ILF program. This ILF program would become South Carolina's first and only ILF program. The Prospectus was public noticed by USACE on October 19, 2020 and DNR provided comments on November 11, 2020. DNR project manager: Tom Daniel

Swamp Thing Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland mitigation bank in the Cooper River watershed (8-digit Hydrologic Unit Code 03050201) located in the Level III Lower Coastal Plain Ecoregion. The proposed 1,018.76-acre mitigation site includes approximately 997.67-acres of freshwater wetlands to be restored, enhanced, and preserved. According to the prospectus, the proposal is to restore 7.29-acres of hardwood forested wetlands that are currently trail roads; enhance 578.67-acres of hardwood forested wetlands that are currently inundated with loblolly pine; and, preserve 412.99-acres of bottomland hardwood forest. The project will be accomplished through the removal of planted pine, grading, planting native species, filling and plugging ditches, and the installation of a weir. The bank sponsor, using a conservation easement, will protect the mitigation bank site. Prospectus comments were submitted to the USACE by DNR on May 17, 2017 and DMBI comments were submitted on June 18, 2020 and again on May 26, 2021 in response to a revised DMBI. Project manager: Susan Davis

Tyger Watershed Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Tyger watershed (8-digit Hydrologic Unit Code 03050107) located in the Level III Piedmont Ecoregion. The proposed 405-acre mitigation site includes approximately 60,308 linear feet of stream channels and 10.89 acres of freshwater wetlands. In addition, 5,987 feet of streams and 0.163 acres of wetlands will be enhanced and restoration of 37,436 linear feet of Cane Creek, Motley Branch, and associated tributaries. The proposal is to preserve 14,397 linear feet of stream, including 12,355 linear feet of the Tyger River and 2,042 linear feet of stable tributary streams and preserve 3.44 acres of functioning forested wetlands. The bank owner and proposed long-term steward is Wiley Fork Legacy LLC and the conservation easement holder is Spartanburg Area Conservancy (SPACE). Prospectus comments were submitted to the USACE by DNR on January 23, 2019 and DMBI comments were submitted on July 20, 2020. DNR project manager: Tom Daniel

Monthly Division Reports

EXECUTIVE OFFICE

OFFICE OF THE DIRECTOR

JUNE 2021 HIGHLIGHTS

Director Robert Boyles participated in Governor Henry McMaster's last conference call on the COVID-19 pandemic on June 2. He also participated in daily telephone conversations and meetings with staff, Deputy Directors, Board Members, legislators, and constituents. Director Boyles chaired the monthly meeting of the Deputy Directors-Senior Staff and later chaired the monthly meeting with the Deputy Directors in preparation for the June Board Meeting.

Director Boyles talked with Sara Goldsby, Director of the Department of Alcohol and other Drug Abuse Services, about legislation.

Director Boyles, Col. Chisolm Frampton, Senior Legal Advisor to Law Enforcement Craig Jones and Law Enforcement Investigations staff met with Shayne and Sabria Phillips at their request to talk about the death of their son Jaden Corwin-Ray Phillips who died in a boating accident in Richland County on May 20, 2020.

Director Boyles participated in Directors' conference call of the Association of Fish and Wildlife Agencies (AFWA) for a Legislative/Administrative Update. Director Boyles later participated in another AFWA Directors' conference call to wish AFWA staff member Jen Mock Schaffer well upon leaving AFWA.

Director Boyles participated in the kick-off of SC Boating and Fishing Week held at Pure Fishing headquarters in Columbia with Governor Henry McMaster, members of the General Assembly and the SC Boating and Fishing Alliance in attendance.

While the SC General Assembly was in session on June 8, Director Boyles, Board Chairman Norman Pulliam and Kevin Ryan met with legislators in the State House lobby to answer questions on legislation, budget and constituent concerns. Director Boyles and Board Chairman Norman Pulliam attended the Budget Conference Committee meeting on June 15 representing SCDNR.

Director Boyles and senior staff participated in the virtual Everything DiSC Workplace Workshop Session 1 and Session 2 coordinated by Shannon Bobertz for leadership training for senior staff.

Director Boyles participated in the Environmental Awareness Award (EAA) Ceremony held in the State House Lobby honoring Jane Hiller, the 2020 EAA recipient, and the other nominees with Governor Henry McMaster speaking at the event and attending the reception following the ceremony. The EAA nominations and ceremony were coordinated by Bill Marshall of our Land, Water and Conservation Division.

Director Boyles participated in the "Discovery at Deveaux" screening/presentation at the Charleston Museum about Felicia Sanders' discovery of 20,000 whimbrel confirmed roosting at night at the Deveaux Bank Seabird Sanctuary during their annual journey north.

Director Boyles participated in the SCDNR Board Meeting held in person in Columbia on June 17. Director Boyles participated in the monthly AFWA meeting held virtually for agency directors to gather and exchange information.

Director Boyles and Lorianne Riggan met with Corps of Engineers-Charleston District outgoing commander LTC Rachel Honderd and incoming commander LTC Drew Johannes at the Cohen Campbell Fisheries Center to tour the hatchery facility and talk about what goes on there for fish and where we are with mussel propagation and to welcome the new commander who will come on board on July 15.

Director Boyles participated virtually in the Law Enforcement Training Council monthly meeting.

Director Boyles, Deputy Director Ken Rentiers and Deputy Director Phil Maier met with Dean Moss and Chris Marsh at Mr. Moss' request to discuss a national estuary project in the Port Royal Sound.

Director Boyles participated in a "Coffee & Conversation with Director Boyles" event with Boat Titling and Licensing staff at the State Farmers Market during which staff could talk with the Director about anything and to facilitate discussion and communication among staff.

Director Boyles attended the send off event for BethAnn Reeves, Col. Frampton's assistant, to wish her well as she leaves SCDNR to move out of state with her family and thank her for her many years at the agency.

Director Boyles met with Chief of Fisheries Ross Self and Fisheries staff Brian Boyleston for a tour of the Barnwell Fish Hatchery in Barnwell.

Director Boyles attended the Wildlife and Freshwater Fisheries Advisory Committee meeting. Director Boyles met with Kevin Ryan, Deputy Director Emily Cope and Will Dillman to discuss the Tegu surrender incentive program. Director Boyles participated in the virtual NOAA ACE Basin program review.

Director Boyles, Deputy Director Maier and Ken Prosser met with Duane Parrish and Paul McCormack of SCDPRT at Mr. Parrish' request to discuss the May Forest property in Charleston County.

Director Boyles traveled to Clemson to attend an early morning tour of the Brasstown Creek property with Wildlife and Freshwater Fisheries staff Austen Attaway and Wildlife Technician Kollby Taylor, and to later view the High School Fishing World Finals and National Championship at the Green Pond Landing in Anderson County.

EXECUTIVE OFFICE

OFFICE OF THE DIRECTOR

JULY 2021 HIGHLIGHTS

During the month of July, Director Robert Boyles participated in daily telephone conversations and meetings with staff, Deputy Directors, Board Members, legislators, and constituents.

Director Boyles, Deputy Director Emily Cope, Shannon Bobertz, Kevin Ryan and Brad Floyd of Marine Resources participated in a Marsh Island bird tour with Felicia Sanders and Janet Thibault of Wildlife & Freshwater Fisheries.

Director Boyles, Deputy Director Phil Maier, Deputy Director Emily Cope and Kevin Ryan met at the Marine Center in Charleston with Charles River Labs Executive Vice-President Foster Jordan, at their request, to discuss horseshoe crabs.

Director Boyles, Senior Legal Advisor to Law Enforcement Craig Jones and Law Enforcement staff met in Columbia with Nadia Rutherford, Richland County Coroner, at her request, to discuss establishment of a Water Death Task Force and boating safety.

Director Boyles met with Trip King and Julie Dietz of Audubon South Carolina, at their request, to discuss partnership opportunities and future plans.

Director Boyles and Kevin Ryan and Law Enforcement staff participated in a boat tour of Crab Bank with Congresswoman Nancy Mace and her Washington and District staff and discussed and answered questions about the Crab Bank restoration project.

Director Boyles spoke about doing business well at the monthly DNR Business Coordinators Meeting in the Board Room and thanked them for their hard work doing these tough times.

Director Boyles participated in the Governor's Informal Cabinet luncheon meeting. Later, he and General Counsel Shannon Bobertz met with outside legal counsel regarding pending litigation.

Director Boyles toured the May Forest property with Board Members, Senator Chip Campsen and DNR staff before participating in the Board Workshop held at the Marine Center in Charleston. Following the Board Workshop, he met with staff to discuss acquisition of the May Forest property. That evening, Director Boyles and Lorianne Riggan attended the Corps of Engineers-Charleston District 150th Anniversary Celebration held at Founders Hall at the Charles Town Landing, and they presented outgoing District Engineer LTC Rachel Honderd with an Honorary Shorebird Biologist Certificate for her leadership in the Crab Bank restoration project during her tenure as District Engineer. The next day, Director Boyles attended the Corps of Engineers-Charleston District Change of Command Ceremony saying goodbye to outgoing LTC Rachel Honderd and welcoming incoming LTC Andrew C. Johannes at the Holliday Alumni Center at The Citadel in Charleston.

Director Boyles talked with partners and DNR staff about the Slater Tract Forest Legacy application and later talked with Congressman Jim Clyburn's staff on the Slater Tract acquisition.

Director Boyles attended and represented SCDNR at the annual American Sportfishing Association ICAST Trade Show in Orlando, FL, on July 20-23. While in Orlando, Director Boyles participated virtually in the Law Enforcement Training Council Quarterly Meeting. While returning from Orlando, Director Boyles talked to Senator Lindsey Graham's staff about Federal Legislation and Infrastructure package.

Director Boyles met with the State-winning Envirothon team from Spartanburg High School during their breakfast meeting and spoke to the group and wished them well as they participated in the virtual National Envirothon competition. The State Envirothon Team representing Spartanburg High School placed third in the nation during the National Competition.

Director Boyles met with the Deputy Directors, Kevin Ryan and Scott Speares to discuss the Fiscal Year 2023 Budget.

Director Boyles attended the last of four Public Meetings on Sunday Hunting on SCDNR WMAs held at the Seawell's Restaurant in Columbia, and spoke to Representative Dennis Moss, who was also in attendance, about constituent issues.

Director Boyles and Legal Office staff along with David Avant of the Department of Administration and Emory Smith of the Attorney General's Office participated in a Marsh Island bird tour with Wildlife and Freshwater Fisheries staff.

Director Boyles participated in a conference call with Clemson University Provost Bob Jones regarding the SC Sea Grant Consortium.

Director Boyles signed the May Forest property closing documents at the Charleston attorney's office. That evening, he participated in a phone interview by Phillip Gentry, host of Outdoor Radio show out of Abbeville about DNR agency issues.

Director Boyles and Kevin Ryan met with Senator Stephen Goldfinch and Representative Lee Hewitt and several of their constituents in Murrell Inlet to discuss constituent issues.

Director Boyles attended an informal retirement celebration for Wally Jenkins and Mike Denson in Charleston and said a few words thanking them for their long careers protecting and conserving our marine resources.

On Saturday, July 31, Director Boyles traveled to Greensboro, GA, to attend the visitation service for Sam Chappellear's mother.

Marine Resources Division

Marine Resources Research Institute (MRRI)

Grant Proposals

Awarded: Joy Young, Jim Whittington, Philip Stevens, Robert Ellis, Nancy Brown-Peterson, Jim Franks & Tanya Darden. Reproductive characteristics and spawning migrations of Gulf of Mexico Cobia (*Rachycentron canadum*) along the Florida peninsula. MARFIN 3 years, \$523,119 total, \$59,736 to SCDNR.

Submitted: Physiological effects of age and temperature on blood chemistry, metabolism, and mortality of harvested horseshoe crabs, *Limulus polyphemus*. Daniel Sasson (PI), Jody Beers (CofC), Fabio Casu & Brad Floyd. FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$158,480 requested (\$83,329 match).

Submitted: Refining assessments of reproductive activity in white shrimp (*Penaeus setiferus*) to improve management decisions. Michael Kendrick (PI), Peter Kingsley-Smith, Jeff Brunson, Chris McDonough, & Graham Wagner. FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$149,594 requested (\$81,860 match).

Submitted: Determining the seasonal prevalence of the invasive American eel (*Anguilla rostrata*) swimbladder parasite (*Anguillicola crassus*) to inform fisheries and aquaculture impacts. Aaron Watson (PI), Peter Kingsley-Smith, Michael Kendrick & Joseph Ballenger. FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$153,271 requested (\$77,809 match).

Submitted: Assessment of stormwater pond performance and connectivity to estuarine habitats under varying development and precipitation scenarios. Andrew Tweel (PI), Denise Sanger & Norm Shea (SCDNR). FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$131,176 requested (\$73,521 match).

Submitted. Characterization of the impact of environmental stressors on the metabolic profiles of the eastern oyster, *Crassostrea virginica* in the Charleston coastal area using NMR-based metabolomics. Fabio Casu & Denise Sanger. FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$128,084 requested (\$64,078 match).

Submitted. Investigation of the effects of prebiotic supplementation on metabolic profiles of juvenile cobia fed diets containing high levels of soybean meal and soybean oil by NMR-based metabolomics. Fabio Casu, Aaron Watson, Mike Denson & G. Gaylord (USFWS). FY2022-2024 South Carolina Sea Grant Consortium invited submission, 1-year project, \$79,250 requested (\$39,626 match).

Submitted: Evaluating the extensive production potential of sheepshead *Archosargus probatocephalus* for food fish and stock enhancement purposes. Jason Broach, Mike Denson, Aaron Watson & Erin Levesque. FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$132,582 requested (\$66,295 match).

Submitted: Development of a critical population genetic tool for Southern Flounder. Larry L. Bowman Jr, Matt Walker & Tanya Darden. FY2022-2024 South Carolina Sea Grant Consortium invited submission, 2-year project, \$110,229 requested (\$55,182 match).

Submitted: W.J. Buble and T. Smart. Spatial, Habitat, and Ecosystem Dynamics during the Invasion of Lionfish through the Southeast U.S. Atlantic Coast. 2021 Aquatic Nuisance Species RFP. Funds requested: \$44,350. No match required.

Submitted: PI: A. Watson (SCDNR); Co-PIs: P. Kingsley-Smith (SCDNR), Michael Kendrick (SCDNR), J. Ballenger (SCDNR). "Determining the seasonal prevalence of the invasive American eel (*Anguilla rostrata*) swimbladder parasite (*Anguillicola crassus*) to inform fisheries and aquaculture impacts." GSMFC-ANS 2021 RFP, 1 year 10/1/2021-9/30-2022, \$75,871.86.

Funded: Developing genetic sequences for benthic prey resources of migratory Piping Plover and Red Knot. Denise Sanger, Larry L. Bowman Jr. & Andrew Tweel. USFWS State Wildlife Grants Program Funds (internal). 1-year project, \$44,000 awarded (\$24,428 match).

Funded: Understanding salt marsh loss through investigation of periwinkle fronts and other causes across multiple spatial scales. Andrew Tweel (PI). USFWS State Wildlife Grants Program Funds (internal). 1-year project, \$43,265 awarded (\$23,297 match).

Funded: Determining the importance of the South Carolina coast to the overwintering survival and reproductive output of the monarch butterfly (*Danaus plexippus*). Michael Kendrick, Peter Kingsley-Smith &

Billy McCord. USFWS State Wildlife Grants Program Funds (internal). 1-year project, \$48,101 awarded (\$29,221 match).

Funded: Determining the effects of human disturbance on the ecology and conservation status of populations of at-risk crayfish in the genus *Distocambarus*. Michael Kendrick, Tanya Darden, Zanethia Barnett (USDA/USFS) & Zac Loughman (West Liberty University). USFWS State Wildlife Grants Program Funds (internal). 3-year project, \$131,160 awarded (\$57,060 to the SCDNR); \$71,325 match provided (across all partners).

Funded: Early growth and maturity data collection for blueline tilefish along the U.S. Atlantic. Jiao, Y. *et al.* at Virginia Tech. with David Wyanski as collaborator. Full project \$189,973 with SCDNR subcontract \$9,541.

Funded: T. Smart and W. Bubley. Development of a Juvenile Survey and Recruitment Indices in the U.S. South Atlantic. Funded by MARFIN (NOAA). A 3-year project with a total funding of \$504,310. Year 1 was awarded: \$170,100 (No Match requirements).

Funded: D. M. Glasgow, M.J.M. Reichert, W.J. Bubley, and T. Switzer, with N. Bacheler (NOAA collaborator). "Investigating chevron trap selectivity; a collaborative effort to compare trap, underwater stereo camera, and hook and line gears in SE US waters." Funded by MARFIN (NOAA). A 3-year project with a total funding of \$513,044. Year 1 was awarded: \$ 173,148 (NoMatch requirements).

Publications

Published: Carnegie, R.B., Ford, S.E., Crockett, R.K., Kingsley-Smith, P.R., Bienlien, L.M., Safi, L.S.L. & Whitefleet-Smith, L.A. A rapid phenotype change associated with increased virulence caused a historically significant marine disease emergence in the eastern oyster. *Scientific Reports* 11:12872 [www.nature.com/articles/s41598-021-92379-6].

Submitted: Arendt, M.D., Webster, R.P., & Schwenter, J.A. Neritic recruitment dynamics of Kemp's ridley (*Lepidochelys kempii*, Garman 1880) sea turtles into the South Atlantic Bight (SAB) since 1990 as determined from two coastal trawl surveys. *Endangered Species Research*.

Re-submitted: Arendt, M.D., & Schwenter, J.A. Dynamic population structure of loggerhead sea turtles (*Caretta caretta*; Linnaeus, 1758) in neritic habitats under stable population oscillations. *Population Ecology*.

Resubmitted: Nash, C., P. Darby, B.S. Frazier, J. Hendon, J. Higgs, E.H. Hoffmayer & T.B. Daly-Engel. Multiple paternity in two populations of finetooth sharks *Carcharhinus isodon* with varying reproductive periodicity. *Ecology and Evolution*.

Accepted: Barker, A.M., B.S. Frazier, D.H. Adams, C.N. Bedore, C.N. Belcher, W.B. Driggers III, A.S. Galloway, J. Gelsichter, R.D. Grubbs, E.A. Reyier & D.S. Portnoy. Distribution and relative abundance of scalloped (*Sphyrna lewini*) and Carolina (*S. gilberti*) hammerheads in the western North Atlantic Ocean. *Fisheries Research*.

Submitted: Kim, S. Hooten, M., Darden, T., Y. Kanno. Linking male reproductive success to effort within and among nests in a co-breeding stream fish. *Oecologia*.

Presentations

Michael Kendrick. Black gill in white shrimp. Marine Advisory Committee, MRRI Auditorium. June 25, 2021.

Justin Yost gave an EFR weekly meeting presentation on the potential for using sidescan sonar to evaluate relative abundance of cobia in the Broad River. 20 minutes, 20 attendees, technical audience.

Outreach

Aaron Watson participated in a Steering and Program committee meeting on June 7, 2021 for the upcoming Aquaculture America 2021 conference.

Erin Levesque gave a DNR Overview presentation for a local group on Lady's Island: 30 people, general audience, garden club "Stewards of the sound and beyond".

The next DISTEM meeting will be on July 13 at 12:30pm, and the topic to be discussed will be Age/Generational differences in the workplace. This meeting will coincide with the REU program at the Grice Marine Laboratory.

Marcel Reichert was interviewed by Chaira Eisner (State Newspaper) on June 23. He provided information on the scientific aspects of the fishery independent Reef Fish Survey, Coastal Trawl Survey, and In-Water Turtle Survey, such as the regional nature, survey design, collected species and data, data use, and vessels used for these surveys. Marcel highlighted how critical both the R/V *Lady Lisa* and the R/V *Palmetto* are for monitoring research and provided Chiara the public link to the SEAMAP database (SEAMAP.org).

Erin Levesque and Jason Broach met with four SeaGrant staff to discuss current projects and opportunities for future collaboration and support.

Tanya Darden was interviewed by Chloe Johnson (Post and Courier) on June 23. She provided information on the development of the southern flounder stocking program.

Progress Report and Activities

Coastal Research Section

Brandon Reding started as an hourly employee with the section. Brandon is a College of Charleston graduate student and will be investigating natural mortality in reef fishes. Walter Buble is his major advisor and Marcel Reichert is a committee member.

The new 5-year MARMAP and SEAMAP grants are nearing completion of the review by NOAA. We provided additional information upon request. The new grants are scheduled to start July 1. We are also awaiting the final approval of the new Letters of Acknowledgement (LOA) for the Reef Fish Survey (MARMAP & SEAMAP), the Trawl Survey (SEAMAP) and the new Deep Water Longline Survey (SADLS). The current LOAs expire June 30, but NOAA staff assured us that we will have the new LOAs in hand before we resume sampling on July 12.

Mike Arendt reviewed (and coordinated reviews as Associate Editor) a manuscript on green sea turtle egg relocation practices in Malaysia for *Herpetological Conservation and Biology*.

Dawn Glasgow participated in the South Atlantic Blueprint 2021 workshop on June 1 and attended the Pew webinar: The role of adaptive capacity in enhancing climate-resilient fisheries on June 9.

Several staff participated in a planning meeting for the Southern Division of the American Fisheries Society annual meeting on June 15. This meeting will be held in Charleston on January 19-23 of next year.

Wally Buble, Tracey Smart, Marcel Reichert, Dawn Glasgow, Kevin Spanik, and several other Section staff attended parts of the South Atlantic Fisheries Management Council's meeting that was held via webinar June 14 through 18. Among other things, the council discussed the recently completed stock assessments for Red Snapper, Golden Tilefish, and Gag Grouper (see SAFMC.net for details). The Council noted that "The Red Snapper assessment shows that abundance of Red Snapper is at an all-time high, reflecting what fishermen are seeing on the water. However, the stock remains listed as overfished and undergoing overfishing based on stock biomass. Overfishing is primarily due to the high number of Red Snapper that are released by fishermen year-round and do not survive. Council members recognize that these issues are an effect of regulations and the high number of interactions expected when a stock is abundant" and "The Council's Scientific and Statistical Committee will meet later this summer to provide fishing level recommendations for Red Snapper after reviewing alternative recruitment scenarios and considering the use of descending devices and other best practices in the fishery. The Council will develop an amendment to address the SSC recommendations and agreed to work to address short-term and long-term measures to help meet Red Snapper management challenges". The Council also approved management measures for Dolphin and Wahoo fishery and discussed proposed Rock Shrimp fishery access in the Oculina Bank Coral Habitat Area of Particular Concern. They will address this again at the September meeting, which is scheduled to be held in person in Charleston, SC. The Council also appointed Kevin Spanik as the at-large research member of the SAFMC Habitat Protection and Ecosystem Based Management Advisory Panel.

Reef Fish Survey (MARMAP and SEAMAP-SA): Leg 3 of the RFS conducted 8 days of sampling following departure on June 1 and return on June 10. Sampling occurred off SC, GA, and FL and consisted of 160 chevron traps and 18 short bottom longline deployments, both with habitat cameras. Leg 3 was the first long cruise using the reduced 6-person scientific crew design and went overall very smoothly. The RFS team is especially thankful for the assistance of the R/V *Palmetto's* crew, which was short-handed with only 5 on board, and for Jon Richardson jumping in as substitute deckhand.

Leg 4 of the Survey departed June 17 following delays due to weather and needed repairs to the R/V *Palmetto's* steering pump. The decision was made to return after 2 successful days of trap sampling due to the forecasted approach of Tropical Storm Claudette. Unfortunately, the weather did not improve enough to resume Leg 4 prior to the end of the cruise window. During Leg 4, Bo Von Harten, Michelle Willis, and Tracey Smart shared some of the cook responsibilities, for which we were very grateful.

Walter Buble and Brandon Reding attended an on-line workshop on Natural Mortality on June 14-18. The presentations of this international workshop were recorded and are available on-line.

Michelle Willis has begun development of a Life History database for the Reef Fish Survey. The goal of this database is to streamline the process for reading both age and reproductive samples by allowing readers access to the most up-to-date QA/QC'd sample data, preventing accidental entry errors, and the automatic generation of consensus reading files.

Kevin Spanik and Tracey Smart submitted requested edits to figures and text for the accepted manuscript "Reducing Diet Uncertainty of red snapper (*Lutjanus campechanus*) along the U.S. Southeast Atlantic Coast using DNA barcoding" in *Fishery Bulletin*.

Tracey Smart assisted Amy Dukes and Elizabeth Gooding with examining marlin otoliths collected during Governor's Cup tournaments to develop a storage protocol.

David Wyanski and Kevin Kolmos were among 12 participants from the southeast region in a series of five SEDAR Best Practices webinars in spring 2021 to update and improve the template for reproductive data submitted for stock assessments. Having all data providers use this updated template will shorten the time required for data compilation and analysis.

Evan Ashe continues to make progress on his thesis examining the life history of White Grunt, prior to his defense on July 1, 2021.

Southeast Deep-water Longline Survey (SADLS): Walter Buble had several conference calls with Blake Price, Todd Kellison and program fieldwork observers. Field sampling in Florida was postponed due to mechanical vessel issues of the collaborating fisher. The current PO will expire on June 30, and we will likely request a new round of solicitations in early July to complete the sampling efforts and start sampling in the other regions.

Short Bottom Longline Expansion: As part of the RFS Leg 3, 12 short bottom longlines with deepwater habitat cameras were deployed and catches were good. Catches included Snowy Groupers, Amberjacks, a Blue-line Tilefish and a red Porgy, and several Red Snappers, including a ≈ 30 lb fish. Stephen Long made some slight adjustments, and in the end, we obtained some good bottom habitat footage.

Coastal Trawl Survey (SEAMAP-SA): Pearse received notification on June 2 that a 67cm (straight carapace length) loggerhead sea turtle tagged by the Survey in May 2011 stranded dead on Patuxent River Beach, MD in mid-June 2021. The turtle had grown 25cm in just over 10 yrs and had developed into a mature male.

As of June 17, Keilin Gamboa-Salazar joined the Coastal Trawl Survey team to help manage our life history efforts.

Amy Zimney and Jonathan Jones assisted with In-water Turtle cruises on June 7 and 8, and Jonathan further assisted with cruises on June 9 and 23. Amy also participated in the Bluefish Plan Review Team meeting on June 23 and has largely been working on preparing data for upload to the online database. Jonathan has been conducting age and edge type validation reads on 2011-2017 Spanish Mackerel otoliths for the upcoming SEDAR 78 report. He also met with MRRRI's VWR representative to discuss lab supply needs in the future. Pearse Webster has been working on review of two manuscripts and design of a new weather station mount for data acquisition on the R/V *Lady Lisa*.

In-water sea turtle research: Three day-trip sea days (6/7 to 6/9) were completed aboard the RV *Lady Lisa*; however, inclement weather reduced sea days scheduled for the final week (21-25 June) of seasonal vessel use by one sea day. Since 11 May, 53 trawling events completed during eight field days netted eight loggerhead and five Kemp's ridley sea turtles. Christopher Evans was the chief scientist for all field days, and numerous personnel from multiple groups assisted with field days: Homer Hiers, Wiley Sinkus, Jonathan Jones, Amy Zimney (Coastal Fisheries); Evan Cook (GIS); Julie Dingle, Amy Dukes (OFM); and Perry Fennell, Jeffrey Schwenter, Michelle Pate (CRO).

Mike Arendt completed, edited, and submitted two manuscripts to scientific journals. Mike Arendt also began preparing a manuscript on Kemp's ridley neritic distribution (capture locations & satellite telemetry); this is a companion paper to the one submitted to Marine Ecology Progress Series on neritic recruitment patterns, and we plan to submit to the same journal by the end of August.

After three months of residence in Cumberland Sound, GA, “Richard” the green sea turtle initiated a southerly movement on 12 June and 10 days later was at her release latitude from seven months prior. A stranding report was received (9 June) for a loggerhead sea turtle in central Florida that was tagged as a young juvenile (and possibly a new recruit) during research trawling operations in the shipping entrance channel to Port Canaveral, FL in April 2006.

Diamondback Terrapin Research: Twenty-nine citizen scientist reports were received through 23 June, most (20) of which involved terrapins on land with four additional confirmed nesting reports. One of five in-water reports referenced a terrapin in the mud at low tide, a behavior which has previously been documented in SC and elsewhere. **A female terrapin first tagged by a citizen-scientist in spring 2017 (and seen again in multiple subsequent years) was intercepted by a second citizen-scientist while the tagged terrapin crossed a small bridge on Wappoo Creek, approximately one creek mile from where it was last seen nesting on 17 May.**

Coastal Acoustic Receivers (DJ): No fieldwork was completed during the first two weeks of June due to inclement weather and/or fieldwork needs for other grants (i.e., turtle trawling).

Mitigation Reef Monitoring: Acoustic transmitters for August field work arrived. Homer Hiers and Wiley Sinkus continued to review diver transect video from May (n = 6 of 12 sites), which is now approximately 75% complete.

Stock Assessment activities: SEDAR 78 Spanish Mackerel: Amy Zimney and Tracey Smart participated in a Data Scoping call on June 2. The Coastal Trawl Survey will be providing life history data and an age 0 index of abundance for this operational assessment.

Ecosystem Research Section

SCECAP/NCCA: Staff sampled 42 sites in the summer of 2020 and samples are being processed. Catharine Parker conducted internal QA on the sorting and identifications. Joe Cowan has completed the photovouchering component-- this may serve as a useful resource beyond this specific project. Catharine Parker has completed her review of the vouchers as part of an internal QA. Field prep has begun for the SCECAP 2021 field season, with sampling starting the second week of July. The final NCCA macrobenthic invertebrate dataset, metadata, voucher photo collection, and identification literature list from the summer 2020 sampling season have been readied for submission to the EPA. Highlights follow: (1) 14,580 individual organisms were identified from 33 benthic grab samples from 31 distinct estuarine sites (2 of which were revisited for comparison purposes); (2) organisms represented 162 unique taxa and 94 families (as well as subclasses Echiura and Oligochaeta); and (3) the 2020 NCCA benthic samples had higher than typical sample-level abundances and species richness with the highest ever abundance in a sample: 2,361 individuals, the highest ever annual mean abundance per sample: 402 individuals/sample vs the 1999-2019 mean of 170, and the 2nd highest annual mean number of distinct taxa per sample: 23.6 taxa/sample vs the 1999-2019 mean of 17.6.

Shorebird Habitat Project: This project aims to quantify shorebird (piping plover, red knot) foraging habitat requirements through the assessment of benthic prey resources, fecal DNA analysis of diet (in collaboration with the SCDNR Genetics group), and other geomorphic attributes. We have also added a citizen science component to the project, as Mark Andrews from Seabrook Island has volunteered to collect fecal samples and monitor the salinity of a popular foraging lagoon. A total of 84 usable fecal samples have been collected for diet analysis, and USFWS has received additional funding to supplement the costs of genetic analysis of these samples. Piping plover and red knot fecal samples, collected for the purpose of genetically identifying prey species present in their diet, have been prioritized for analysis. Sarah Liss and Gabi Tutelo began sorting this week and have already sorted thirty of the samples collected on Seabrook Island have been sorted and have passed QA.

Kiawah Pond Project: Routine water quality monitoring is now occurring twice a month from May thru October. Catharine Parker and Denise Sanger sampled last on June 8. Temperature continues to increase in all of the ponds and there was a fair amount of biomass at the sites, but no blooms were visibly present. DO levels were low at some ponds, but varied, ranging from 0.88 to 5.30 mg/L. Most of the phytoplankton community was comprised of diatoms and dinoflagellates, although pond K109 exhibited near-bloom abundances of *Cryptophyte* sp.. We will look to see if a bloom occurs at the end of the month. Kim Sitta continued to train Catharine Parker and Joe Cowan on phytoplankton identifications-- we are thankful to Kim and CRMS for their flexibility to help this transition. All data for the May 25, 2021 and June 8, 2021 sampling events has been entered and QA'd by Joe Cowan and Catharine Parker. Denise Sanger and Catharine Parker sampled water quality last on June 24,

2021. Sharleen Johnson was trained to filter the chlorophyll samples so stepped in to do that while Joe Cowan and Catharine Parker completed the phytoplankton screens. Kim Sitta will QA Joe and Catharine when she returns to the office next week.

Salinity Impacts to Benthic Community SWG: Benthic community analysis has revealed some interesting trends, some of which are consistent with previous assessments, along with some new findings. Species richness and the abundances of certain sensitive species were reduced in the highly impacted sites, which included altered salinity structure and increased pesticide loads. Norm Shea is nearly complete in determining the benthic biomass for key taxonomic groups at the 16 study sites. Sharleen Johnson has adapted the M-AMBI (index of integrity) for the benthic community analysis.

Myrtle Beach Reach 2 Area Monitoring: Sample processing and analysis are complete and the draft final report was submitted on April 15, 2021. We received comments from the USACE and have begun addressing those. There were several interesting findings resulting from the dredging monitoring. A shift from sand to finer material was observed, and this was followed by a large increase in opportunistic polychaetes, a decrease in community diversity, and a reduction in bivalve abundance. The bivalve abundance was reduced through the end of the project, 21 months following impact. Community analysis followed a similar pattern, and the overall community indicators were similar across the impact and reference areas by the end of the study. USACE comments on the draft report have been addressed and the final report is ready for submission.

SECOORA: The Fort Johnson water quality site continues to collect high quality data. The datasonde will be swapped the first week of May by Saundra Upchurch. Catharine Parker planned the May sampling event. Norm Shea, Joe Cowan, and Sharleen Johnson conducted the spatial data collection on May 28, 2021. The data can be viewed real-time here: <https://cdmo.baruch.sc.edu/dges/>. A semi-annual report was submitted to SECOORA. Catharine Parker planned the June sampling event which occurred on June 16th. The field crew was Catharine Parker, Sharleen Johnson, and Joe Cowan.

ACE Basin NERR: Norm Shea and Denise Sanger collected the June swaps, grabs, and ISCO deployment on June 7. Norm Shea and Lauton Sutley retrieved the ISCO and swapped the deployment tubes at Fishing Creek and St. Pierre on June 8, 2021. Saundra Upchurch calibrated and post-calibrated the datasondes for the swaps. Saundra filtered and read chlorophylls from both the grabs and ISCO. Data management for the ACE is up to date. The annual submission of nutrient data is in the process of being completed and is due on June 15. Saundra Upchurch pre-calibrated and post-calibrated the six datasondes for deployment by Lauton Sutley and Denise Sanger in the ACE on June 24th. The field event was successful. Saundra Upchurch is preparing the quarter 2 water quality data and metadata submissions which are due in mid-July.

Denise Sanger, Saundra Upchurch, and Lauton Sutley participated in the 312 NOAA review that occurred the week of June 21-25, 2021. This included a 15 minute presentation summarizing the ACE research program as well as numerous stakeholder meetings.

Miscellaneous: Paperwork has been submitted to hire two hourlies to assist with sample processing and summer fieldwork. Both candidates are currently graduate students at the College. The guide bunks on the *R/V Rosie* and *R/V Vic* trailer were replaced. Denise Sanger summarized an *Estuaries and Coast* article for CESN. Denise Sanger participated on the Margaret Davidson award selection committee for Coastal and Estuarine Research Federation. Catharine Parker has been training two new hourlies, Sarah Liss and Gabi Tutelo, who started on June 21st. Sarah is in her last year of the MES/MPA program and Gabi will be starting her first year with Grice. Their primary duties are sorting and field work help but will also be helping with various lab-related tasks as needed, such as data entry/QA, acid washing, porewater analysis, and YSI handheld calibration. Sorting training has gone very well and they will be sorting “on their own” (on a regular QA schedule) soon. Sharleen Johnson participated in an ASMFC Habitat Committee meeting on June 24th. Catharine Parker and Norm Shea participated in a dolphin photo-ID survey on June 17, 2021.

Estuarine Finfish Research Section

Age and Growth: Staff are beginning final analyses for the SK bonnethead life history final report (grant closed 5/31).

Atlantic Menhaden: Reports of Menhaden mortality events have been occurring sporadically along the Atlantic Coast. Back during late 2020 the first reports were from New Jersey waters. Recently, both Massachusetts and Maine are reporting similar events in their waters. The events coincide with fish erratic

behavior (whirling, but confirmed not whirling disease) and efforts to identify the causal agent is still ongoing. No reports have come from South Carolina. Beyond this, several New England states (Maine, Massachusetts, & Rhode Island) have begun opting into the Episodic Event Set Aside Program due to their state's quota being met and an abundance of menhaden in their state's waters. Staff have been reviewing requests and approving as necessary.

Bonnethead Post-Release Mortality Study: One day was completed in June for stress physiology, which resulted in the capture of 5 individuals for blood and tissue sampling. A post-release mortality sampling day is scheduled with a charter fisherman for the last week of June.

COASTSPAN: To date 6 of the 8 scheduled field days this month have been completed.

Diamondback Terrapins: Five female terrapins were collected from the Wando River and placed in a holding tank on property. Two additional terrapins were collected during sampling in the ACE Basin on 6/10 and a few additional terrapins were retained from Ashley River sampling on June 11. This concludes the female terrapin sampling for 2021. Twelve more nests with temperature loggers have been "planted" in Charleston and on Botany Island over the past 2 weeks. A total of 41 females were collected by Inshore Fisheries for this nesting project; 23 clutches have been successfully collected and "planted". Staff have completed an inventory of our genetic tissue and isolation holdings for diamondback terrapins.

Dolphin Project: Michelle Taliercio conducted 2 dolphin surveys in May. Liz Vinyard assisted in one of the surveys.

Electrofishing Survey: All five electrofishing strata were scheduled for sampling during July, and all have been completed successfully.

Laboratory Safety: Michelle Taliercio developed an SOP for formalin neutralization, approved by the Lab Safety Officer and to be discussed at the Safety Committee meeting. She also fixed the O₂ transfer hose, and is sending out the O₂ tank for a hydro test. She is also acquiring formalin buffering chemicals and Ph test strips to test on chemical waste and ensured that the AED, eyewashes and showers were checked.

Largemouth Bass/Bowfin: To date, 42 fin clips and 4 whole largemouth bass samples have been collected as well as 8 bowfin fin clips.

Microplastic Studies: Menhaden, Mummichogs, and Spot were collected from the Edisto River during Electrofishing and menhaden, spot and southern flounder were collected from the ACEBasin during trammel net activities.

Red Drum Stock Assessment: The Simulation Assessment is ongoing, with regular updates from the lead analysts with preliminary results of various assessment approaches becoming available hopefully later this month. However, we were informed during our most recent progress call that one of the lead analysts, Thom Tears (NCDMF) has accepted a new position in New Caledonia effective early August. This will necessitate a transition of his responsibilities for the traffic light analysis to other members of the stock assessment sub-committee.

Hammerhead Complex Stock Assessment: Staff have been working on receiving, cleaning, sectioning and aging scalloped hammerhead vertebrae for the upcoming stock ID workshop. Preliminary life history data is due 6/28, data will be used to help determine if the Gulf of Mexico and Atlantic are separate stocks.

Reproductive Studies: Michelle Taliercio is finalizing second reads for 2018 and 2019 spotted seatrout to wrap up histology on this species for these calendar years.

Trammel Net Survey: Three (Wando River, ACE Basin, & Ashley River) of the four scheduled trammel net strata scheduled for June sampling have been completed. The final strata (Muddy & Bulls Bay) will be sampled on June 25.

Red Drum Natural Feeds Metabolomics: Processing and NMR-based metabolomic analysis of red drum liver samples collected over the course of the 12-week natural diet component feeding trial (David Klett's thesis project) is ongoing. Sample homogenization of the remaining samples from T9 and T12 is ongoing. The results will be summarized in a manuscript for submission later this year.

Bartram's Bass: Staff have completed the genetics portion of our 1 year progress report for the USFWS multistate grant.

Black Banded Sunfish: Staff are collaborating with USFS personnel in the Francis Marion Forest to utilize our eDNA sampling tool to survey forest habitats to continue to improve our understanding of black banded sunfish distribution.

Cobia CRP/ASMFC: Staff have collected samples offshore from 3 juvenile cobia for histological and aging which will help fill in the gap on age 1- and 2-year-olds. Five larger fish were implanted with an acoustic tag and 5 additional fish were externally tagged, fin clipped and released. No fish were captured that were large enough for a satellite tag. Staff will continue to collect samples as weather permits until the final 2 satellite tags are deployed. Collaborators in NC successfully satellite tagged and released two fish offshore NC. FL, GA, and NC still have additional satellite tags to deploy, and efforts are ongoing to complete this process this summer. The satellite tag that was deployed in May within the Broad River was recaptured and harvested at the Betsy Ross. This fish was at liberty for exactly 1 month. All tags were returned to DNR and data processing will begin once the tag makes it back to Charleston. Staff are preparing our interim annual report for the ASMFC project.

Cobia: Fish in the new wet lab volitionally spawned for the third time this season. Larvae were taken to WMC but not stocked due to pond availability and an additional later spawn at WMC which was used to stock ponds. Staff with the assistance of Ryan Yaden took a tow behind sidescan sonar unit down to the Broad River to evaluate the feasibility of this tool to determine relative abundance of cobia within the river. Images were collected and analyzed. Imaging was not great due to the choppy water so an additional trip may be scheduled in the near future. 4 cobia ponds have been harvested during the 2021 season so far. We have released 15,397 cobia from a single family and currently have brought about 3,000 cobia into the wet lab at WMC. 5 ponds remain stocked with cobia and have not been harvested yet. A third cobia family spawned naturally on June 9 and may be stocked on June 12 into at least one pond. 29 cobia carcasses have been collected from captains and anglers so far this year. Approximately 3,500 juvenile cobia from pond harvests on 6/23/2021 have been transported to MRRI for potential future feeding trial projects. One pond was stocked with approximately 200,000 larvae from a new genetic family. Three ponds were harvested on June 23 from the same genetic family that has been released this year and are being retained for upcoming experimental studies.

Cobia Tournaments: The Waddell group collected cobia samples from the Food and Beverage tournament on Hilton Head on June 2 and will collect additional samples at another tournament hosted out of the Boat House on Hilton Head on June 11. To date in 2021, 42 cobia carcasses have been donated from the north end HHI charter fishing fleet. Four cobia were sampled at a tournament on June 11.

Tripletail: Broodstock held in two, 10-ft tanks at Waddell appear to be showing signs of abdominal swelling and hopefully oocyte maturation. Tanks are being monitored for eggs daily. 34 were collected near Stuart, FL by cooperating anglers and brought to WMC for future spawning investigations testing various hormone treatments. We will also try to fish for tripletail locally to acquire more broodfish.

SC Sea Grant Brewery By-Product Evaluation: The final 6 months' worth of samples from the 3 partner breweries have been sent off for proximate composition, amino acid, and fatty acid profiles. Data has been received and analysis is underway. A sub-set of samples was sent to Clemson for mineral analyses and these data have also been received and will be utilized in the formulation of graded inclusion level diets for the second feeding trial associated with this project.

Cobia Sex Determination: Sequencing is now in the final QA/QC stages and should be returned to us soon for analyses from one set of samples; DNA from the other set has been successfully amplified and is ready for sequencing.

Cobia eDNA: Staff are continuing to process the eDNA filters from the accumulation / degradation tank experiment in HML (December 2020) along with control filters and environmental samples taken in February 2021. All field sampling days have been completed for the 2021 season and filters are now being processed. Additional eDNA sampling was conducted in our WMC production ponds to further develop our sensitivity testing of the new tool.

Red Drum: 2020 genetic field samples report is in the final review stage.

Robust Redhorse: Staff have completed the design of several potential eDNA markers for robust redhorse and have completed the first assessment of amplification efficiencies with the putative markers. We will be selecting the top ones for further testing to confirm species specificity. Staff have been receiving, compiling, and archiving this spring's field collection fin clips from all systems and will begin genotyping shortly. We also received genetic samples from the early sampling and stocking program in the Altamaha systems in Georgia; staff will assess, rehydrate, and archive these samples prior to attempting to genotype them with our standardized microsatellite marker set. This represents critical baseline data for this decreasing population.

Striped Bass: Genetics staff have completed and submitted the NCWRC report. Genotyping has begun on winter gillnet samples.

White Seabass Genetics: Staff are continuing to isolate DNA from otoliths and genotyping field samples.

Crayfish Genetics: Genotyping of field samples with the new microsatellite marker panel is ongoing. The microsatellite panel for the invasive red swamp crayfish, *Procambarus clarkii*, unfortunately, was not successful for *Distocambarus* spp.

Snakehead eDNA Tool Development: Staff have begun working on the development of an eDNA tool for detecting presence of multiple invasive snakehead species. Testing of the proposed eDNA tool is continuing.

White spot syndrome virus (WSSV): Genetics staff received priority samples of crayfish to be screened for WSSV. Results are complete for shrimp samples from local supermarkets and a report was completed. Additional crayfish samples from Louisiana were screened for WSSV.

Metabarcoding: Genetics staff have received fecal samples from Piping Plover and Red Knot that they will begin isolating to be sequencing for metabarcoding in order to determine prey taxa of these endangered shorebirds. ERS continues to collect known species that will be barcoded (COI) and added to the metabarcode database. An additional set of samples was received and staff are coordinating with A. Tweel to prioritize samples to process first.

Carolina Heelsplitters: Coordination is continuing with Clemson collaborators on a new project to genetically identify mussel species from glochidia for host identification for Carolina heelsplitters. Testing of methodologies will begin shortly.

Forensic Sturgeon Analyses: Staff provided a scope and cost estimate to local engineering firms for services to genetically identify potential sturgeon mortalities from dredging activities.

Genetics reagents: Staff have begun testing new Taq polymerase alternatives and have identified two promising candidates that have been tested on Red Drum and Striped Bass; additional species are now being evaluated.

HML Safety Committee: Genetics staff continue to update the SDSonline chemical inventories to ensure all listed chemicals have current (<5 years) safety information represented. HML monthly safety reports have officially resumed and staff submitted the report for May 2021.

MRRRI Safety: Staff are coordinating among groups to more effectively store and dispose of hazardous chemicals.

HML: Mike Denson and Tanya Darden attended the biweekly HML Science Boarding meetings; NOAA has paused all requests to transition to Phase II covid reopening, access is remaining at 25% until further notice.

SDAFS: Staff are continuing to plan for an in-person meeting for the 2022 Southern Division American Fisheries Society (SD AFS) Meeting in Charleston next January.

Staff: A new summer intern from USCB has started at Waddell. Staff conducted interviews and offered our Wildlife Biologist II position to Liz Vinyard who accepted and began her new role on June 17. Staff conducted interviews for the Inshore Fisheries Wildlife Biologist I position. Staff are working with HR to offer the position to our top candidate. Mariculture has received the packet for the open Bio I position and interviews will be conducted shortly. Larry Bowman will be leaving the Genetics team at the end of July to pursue an academic position at the University of North Georgia this fall. We have greatly appreciated all of Larry's contributions to our genetics program and wish him the best in his new adventure. We will be posting a position for his replacement ASAP.

Shellfish Research Section

Unoccupied Aerial Vehicle (UAV) research: Gary Sundin completed purchasing and received a consumer grade UAV with an additional near infrared (NIR) sensor that will be used to map marsh condition at an experimental site in the ACE Basin for a project that ACE Basin NERR staff are participating in. Molluscan Research and Monitoring Section (MRMS) staff will provide the SCDNR mapping services for this effort. The MRMS, with significant help from Corey Hilton, Evan Cook, and Greg Sorg, hosted a SCiDUC (SC Interagency Drone Users Consortium) practical work day in Charleston on June 11. The event was well attended by around 25 participants, primarily from civil air patrol, public safety, law enforcement, and academic fields from the southern part of the state. Flying was conducted at the Bayview Soccer complex on Fort Johnson Road (with written

permission from City of Charleston) and the desktop processing portion was conducted at the MRD Outdoor Classroom. The event was very successful.

South Carolina Oyster Demographic Assessment (SCODA) survey: Biologist Graham Wagner ordered supplies for the upcoming oyster disease study. Graham finalized lab SOPs for the upcoming lab work and those documents were reviewed by Group Safety Officer Dr. Michael Kendrick. He acquired necessary glasswork and prepared growth media. Staff made observations on experimental oyster recruitment panels installed near Fort Johnson in May.

They also initiated a small pilot project exploring methods of marking individual oysters for “mark-recapture” growth studies.

NMFS Community-Based Restoration project: MRMS staff completed pre-installation monitoring at Big Bay Creek and Lockwood Boulevard sites. MRMS staff prepared materials, built and monitored a 160-unit manufactured wire reef (MWR) and derelict crab trap (DCT) restoration reef at the Lockwood Boulevard site. Gary Sundin and Graham Wagner assisted staff with the SCORE Program with a bagged shell reef installation at Patriots Point.

Peter Kingsley-Smith participated in the NOAA 312 evaluation of the ACE Basin NERR, providing remarks as to how ACE Basin staff at the MRD provided valuable contributions to the 2012-2015 NERRS Science Collaborative-funded living shorelines research project.

Dingell-Johnson (DJ) / SRFAC funding: As part of an annual exchange, SCDHEC shared with SCDNR staff their annual shellfish water quality layer, indicating which areas will be restricted for shellfish harvest due to water quality for the 2021-22 season. Gary Sundin shared with SCDHEC a non-PII version of the current shellfish management boundary GIS layer. Gary updated the current shellfish GIS map projects with the new data and prepared a summary of the changes which he shared with shellfish management staff. MRMS staff repaired an MWR reef completed at Ashpoo-Coosaw Cutoff in 2016.

Estuarine trawl survey: The monthly Estuarine Trawl Survey (ETS) aboard the *R/V Silver Crescent*, sampling four stations in the Charleston Harbor and Ashley River, was conducted on June 21. The catch of brown shrimp was above average at all stations, although the brown shrimp were smaller than normal. The catch of white shrimp was above average, as has generally been the case in recent years. Although white shrimp were generally larger than average, a higher than average number of young-of-year shrimp were collected at the Upper Ashley station. No black gill was detected in shrimp during this sampling event. Blue crab catch was below the long-term mean at all stations. The catch of croaker and spot was higher than the long-term mean. However, the catch of weakfish was below average while the catch of whiting was similar to the long-term mean. Water temperatures were similar to the long-term mean while salinity was below average.

Creek trawl survey: Creek trawl sampling in the Wando and Ashley Rivers was conducted on June 17 and 18, respectively. The catch of brown shrimp was above average, although their size was below average. The catches of both white shrimp and blue crabs were below average, although only slightly so for white shrimp.

Blue crab (adult and juvenile) salinity gradient potting survey: The blue crab salinity transect sampling was completed on June 3-4 by Jeff Brunson and Kim Sitta. Overall adult blue crab abundances were lower for this month (16 crabs) than last month (28 crabs), and lower this year than previous June sampling events. Only one juvenile *C. sapidus* was collected in the Juvenile Crab Survey, however a number of other juvenile portunids were collected in the pots.

Invasive species: Kim Sitta has started gathering supplies and creating data sheets for a new SIANSMMP project looking at the prevalence of non-native portunid crabs in coastal SC using morphological and genetic tools. Sampling will start in July with specimens being collected from the Estuarine Trawl Survey and the Juvenile Crab Survey.

Through his role as Chair of the Gulf and South Atlantic Regional Panel on Invasive Species, Peter Kingsley-Smith participated in the following two meetings this month: 1) Regional Panel Principals Meeting, June 24, 2021; 2) Aquatic Nuisance Species Task Force Meeting, June 28-30, 2021. Both of these meetings were held virtually.

SERTC: Staff fulfilled a teacher’s request for copies of the Guide to the Salt Marsh book.

Horseshoe crabs: Staff completed the fieldwork for the first season of the C-SWG grant. Fieldwork this season focused on the use of beach and marsh habitat for horseshoe crab spawning and the viability of using egg surveys as an alternative method to measure the prevalence of spawning crabs. Spawning surveys were conducted at beach and marsh areas at three sites on three different nights around the full and new moons. Egg transects were

then conducted at each site the following week. Overall, staff saw more crabs on the beach than in the marsh during spawning surveys (410 vs 241), but found eggs in more samples taken from the marsh (77 out of 360 samples) than taken from the beach (26 out of 360 samples). Staff are now working on enumerating the eggs found in these samples.

Staff finished sampling for the internal SWG horseshoe project. As part of this project, they have been digging for the presence of eggs at randomly selected points on the beach and in the marsh around Edisto and Otter and Pine Islands. Eggs were found at 5 out of 50 beach sites and 7 out of 50 marsh sites. As part of this project, staff also conducted two spawning surveys on Grice Beach.

Daniel Sasson met with Dr. Jody Beers and a CofC REU student to show how horseshoe crabs can be aged. This method will be used as part of the REU student's summer project.

Jeff Brunson worked with OFM and SEAMAP staff to compile the 2020 ASMFC Horseshoe Crab Compliance Report and sent it to Wally Jenkins for final review. The report was subsequently submitted to ASMFC staff in advance of the July 1 deadline.

White Spot Syndrome Virus: Staff received the results of the screening for WSSV in live crayfish purchased at local seafood markets. Overall, WSSV was detected at high rates in crayfish imported from Louisiana from two suppliers (86.7% and 100% positive), but was not detected in any crayfish imported from Louisiana from another supplier nor in samples of locally sourced, native crayfish.

Crayfish: Jeanette Huber continues to update the crayfish databases. She has also summarized data for the upcoming State Wildlife Grant report for the project entitled "Investigating dispersal of the invasive red swamp crayfish (*Procambarus clarkii*) and its effects on the distribution and status of native crayfish populations."

Michael Kendrick met with some of the project co-PIs (Drs Zanethia Barnett and Zac Loughman) and graduate students associated with the new SWG project related to the ecology and conservation status of at-risk crayfish in the genus *Distocambarus*.

Miscellaneous: Graham Wagner and Greg Rothman have continued to assist CRMS with horseshoe crab monitoring, conducting egg surveys at multiple locations in the South Edisto area. Greg Rothman has been accepted to the CofC EVSS graduate program for fall semester. The section fully supports Greg's intent to pursue a Master of Science degree while continuing in his current Wildlife Biologist I position in the section. Greg also submitted paperwork to gain access to HML laboratories and attended the online Chesapeake Oyster Science Symposium. Daniel Sasson reviewed a manuscript submitted to *PeerJ* on the activity patterns of dung beetles. Michael Kendrick is serving on GPMB student Elizabeth Bullard's committee (major advisor Joey Ballenger) and participated in her oral exam on June 3. Jeff Brunson rewired and replaced the bilge pump on the R/V McKee. Graham Wagner completed driver training.

Personnel: Jeff Good, current GPMB student, has been hired as an hourly employee with CRMS to assist with the section's fieldwork. A request has been submitted to HR to hire recent CofC student Erica Schmidt as an hourly employee with CRMS.

The Wildlife Biologist I position within the Molluscan Research and Monitoring Section closed on June 2; three internal applications were received and all three applicants were interviewed on June 15-16. Only one of the applicants was deemed sufficiently experienced for this position, but subsequently withdrew her application for personal reasons. The section is requesting that this position be re-posted externally. In addition, the Wildlife Biologist I position within the Crustacean Research and Monitoring Section closed. Three internal applications were received for this position as well, and interviews were completed by the end of the month.

Jeanette Huber announced that she has accepted a fisheries biologist position with the Florida Fish and Wildlife Conservation Commission's Research Institute. We are grateful for all of Jeanette's hard work in our section and wish her all the best in this next chapter in her research career. Her last day with the Agency will be June 29, 2021.

Office of Fisheries Management (OFM): Culture Permits and State Grounds

8 permit holders requested verification of legally required shellfish culture permit plantings for 10 permits during June. Through calendar year 2021, permit holders have requested planting verifications on 43 permits with 30 completing planting quotas for 2021. A total of 69,060 U.S. bushels (45,948.3 U.S. bushels for credit & 23,111.7 in overages) of shellfish seed, green oyster shell, clam cover or approved cultch, cultivation, or equivalent has been planted (1646 BU on state or public grounds). The assessed

planting quota for the state's 102 culture permits is 94,645.4 U.S. bushels after taking into consideration permit cancellations, acreage reductions or increases, boundary modifications and approved variances, leaving 48,697.2 BU (51%) left to be planted in 2021. Shellfish seed may be planted throughout the calendar year; however, by S.C. law (§ 50-5-940), cultch must be placed between 01 May and 31 August to receive planting credit.

13 more SSG's were assessed for commercial status. 11 requests for variances to plant artificial cultch were received in June and processed. 2 were received after the deadline (prior to June 15th) to the permittees were notified their request could not be approved. 1 culture application for multiple areas is on hold pending a request for additional information from the applicant to show commercial knowledge and intent.

Mariculture/Importation

Mariculture staff received the votes from the SPC for recommendations for non-approval for a floating oyster mariculture proposal in Toogoodoo Creek. SPC did not approve the application because of the new water quality designation of Restricted for the proposed area. With final decision by OFM Director, a non-approval letter was sent to the applicants. There has been no further action or response from applicants.

Compliance checks were conducted on permits M-298, M-299 and found them both to be in good, working order.

Mariculture staff had meetings with 3 potential floating gear applicants and disseminated all application information associated with the permitting process.

Permits were received from the other mariculture permitting agencies for the floating permit application in Privateer Creek. DNR during review found some discrepancies/concerns with these permits. This has warranted DNR to conduct further review of the application before granting conditional approval and putting the application out for public notice.

SCORE – South Carolina Oyster Recycling and Enhancement

Shell recycling and planting; Recreational management

Shell Recycling

In the June recycling period, 2,295.75 bushels were recycled. The public drop off sites at Gilligan's Seafood - Goose Creek, Port Royal, and the Greenville were emptied totaling 1,542 bushels. Caterers contributed 9 bushels. The restaurant route contributed 745 bushels across 23 partner restaurants. No oyster roast events were scheduled in June. The restaurants 167 Raw and Obstinate Daughter have discontinued recycling for the summer months due to livability issues. They will resume recycling in the fall. Staff are working with Leon's (Charleston) to test new composting cans and cleaning techniques to address shell recycling livability issues that most participating downtown restaurants are experiencing. One new partner restaurant was added to the restaurant route. The new Locals location in Mt. Pleasant is planning to open in July and will commence oyster shell recycling as soon as they open. They were taken recycling cans and partner stickers and were given the option of a staff training once they complete the hiring process.

Equipment maintenance continued during this recycling period. The restaurant service route trailer had a support-beam and upgraded leaf springs installed to reinforce the trailer for heavy loads. The section's bobcat S250 was taken into Bobcat of Charleston for a regular 250-hour service and repairs to seals in the chain case and front axle. The Ford F350 had a PM performed, and the Ford F250 was sent to the dealership again with a warranty issue. A service appointment was made for the John Deere tractor for 7/13.

Volunteer Oyster Shell Recycling Program (Beaufort, Charleston, Greenville, Columbia)

One Charleston volunteer donated 5.5 hours of time recycling 12 bushels from Chaleston area restaurants. Five Beaufort volunteers donated 52 hours recycling 138 bushels from 7 Beaufort area restaurants. Six Greenville volunteers donated 24 hours recycling shell from local Greenville restaurants. Greenville shell amounts are not available at the time of this report. Staff held a volunteer recycling program meeting to discuss direction of the program, including pathways and barriers to success. Staff plan to meet quarterly to plan upcoming volunteer recycling business.

Shell Planting for State Managed Grounds

Staff scouted several sites (N = 9) for large-scale plantings of recycled shell as cultch material for new growth on State Shellfish Grounds in the Folly River (n = 2) and Sewee Bay (n = 7).

The push boat Indigo Princess had several new hydraulic and transmission lines repaired. Two new high pressure water pumps, a wooden side plank and upgraded fittings for the high-pressure hose were installed on the barge.

Planting of recycled oyster shell (N = 4,800bu) occurred at two sites (N = 1,700m²) within two State Shellfish Grounds (206E & 206W) located in creeks off the Folly River (Charleston County) 6/15 – 6/18. Approximately 2,880bu were planted over 1,140m² (2.52bu/m²) at a site in Rat Island Creek (S206E); and another ~1,920 bushels (bu) planted on approximately 550m² (3.49bu/m²) at a site in Folly Creek (S206W). These sites were planted over the course of four days out of the Folly Beach Public Boat Landing. Preparations, including moving the push boat Indigo Princess and barge from the Veteran's Terminal (Cooper River) to its anchorage in the Folly River, and moving two loaders, the barge ramp and about 4,800bu of shell were performed the prior to planting.

Staff have made preparations to plant 7 sites totaling about 3,650m² in Sewee Bay using Garris Landing operated by the U.S. Fish and Wildlife Service. The landing will be closed for about an hour per day the weeks of 7/12 – 7/16 and 7/26 – 7/30. Signage, including dates and times, was posted at the entrance to the boat landing and the entrance of Bull Island Rd. The push boat Indigo Princess was moved from the Folly River to the USFWS pier at Garris Laning on 7/1. Staff are preparing to plant about 9,800bu of combined recycled shell (8,000bu) and limestone (1,800bu) at 7 sites in State (S272) and Recreational (R274) Shellfish Grounds in Sewee Bay in the Cape Romain National Wildlife Refuge. Site visits to mark planting boundaries with PVC poles were conducted at the two planting sites in the state shellfish grounds off the Folly River.

Oyster shell has continued to be delivered to the holding area at the SCSA Veterans Terminal from our vendor in North Carolina. Shell is being delivered by Piedmont Freight and Logistics. Due to lack of available shell for purchase, SCDNR will be supplementing oyster substrate with limestone at the Beaufort and Sewee Bay planting sites. Limestone has continued to be delivered to the holding area at the SCSA Veterans Terminal from SC Rock in Loris, SC. Limestone is being delivered by SC Hauling. Staff staked 4 planting areas on 2 SSG's in Murrells Inlet. Two sites were located within the boundaries of S357 and another two sites within S358. A total of 4,700 bushels of oyster shell was planted across these areas. Shell for these plantings was delivered to Nance's Creekfront Restaurant in Murrells Inlet.

Grant and Contract-funded Projects

Community Based Restoration

SCORE hosted nine volunteer events, during this reporting period, with 119 volunteers totaling 352 volunteer hours. These events included manufactured wire reef deployment, marsh grass plantings, fish sampling, and oyster reef construction. Approximately 1,542 stalks of marsh grass were planted at the Wise Property with volunteers from the NMFS Community Science listserv. Approximately 7,633 stalks of marsh grass were planted at Maryville with volunteers from South Carolina Aquarium and the SCORE listserv. Six bagged shell reefs were constructed across multiple sites. These sites included Big Bay Creek, Patriots Point, Turn of River, Bears Bluff, and Coosaw Cut. One MWR construction event was cancelled with the Poplar Grove Fish Club. A total of 1,850 shell bags and 23 MWR's were deployed at these events. Volunteers included Americorps, Charleston Waterkeeper, Patriots Point staff, South Carolina Aquarium, Surftrider Charleston, Ocean and Coastal Resource Management, and Georgia Southern University's Research Experiences for Undergraduates. Participants from GSU REU were from Coastal Carolina University, College of Coastal Georgia, USC Columbia, Christopher Newport University, Bates College, Rutgers University, University of South Florida, Ogeechee Technical College, Carleton College and Duke University

Quadrat sampling completion goal was pushed back until mid-July. Michael Hodges gave an educational talk, on the benefit of living shorelines, to the Kiawah Conservancy to a total of 15 people.

Mitigation

Staff staked two planting areas for the Koppers project, totaling 0.95 acres. Both sites are in Charleston Harbor, one adjacent to Memorial Waterfront Park and another adjacent to James Island Creek.

A total of 3,200 bushels of oyster shell/limestone were planted at the site adjacent to Memorial Waterfront Park. Approximately 15,600 bushels of material is scheduled to be planted in 2021.

Miscellaneous

The oyster recreational harvesting survey conducted by DNR contractor, Southwick Associates ended this month. A full report is scheduled to be sent to DNR by the end of July.

Paperwork was submitted to hire two new hourly workers for the SCORE Program, Kelly Lambert and Mathew McDonald.

Interviews were conducted for a Wildlife Biologist I position and a Natural Resource Tech II position with the SCORE Program. Paperwork was submitted for the hire of the 2 most qualified candidates.

Meetings:

Henry Davega and Ben Dyar attended a webinar for the State Mariculture Coordination Network which included mariculture regulators and extension personnel from other South Eastern States in order to facilitate communication and networking among State regulators.

Michael Hodges participated in a conference call with staff from Charleston Water Systems to discuss a potential project adjacent to Plum Island. External funding will need to be pursued to cover the projected \$75,000 cost of the project.

Henry Davega and Ben Dyar attended a virtual meeting with Katie Hill from UGA to discuss a wide range of topics involving the oyster industry to get ideas, insight and experience from us as Georgia is beginning to develop their oyster mariculture industry.

Michael Hodges, Stevie Czwartacki, Holly Kight-Somers, Ann Clark Little, Barry Sturmer and Ben Dyar met to discuss the volunteer recycling program and ways to coordinate efforts and troubleshoot barriers for growth.

Ben Dyar presented to the Marine Advisory Committee on two topics: MRD and Regulations: MRD's venture into creation of regulations and Reactive to Proactive: A Goal for Sustainable Management of State Managed Shellfish Grounds.

Ben Dyar attended a two day virtual training for DiSC Workplace Profile Workshop. Ben Dyar attended virtually the one day Chesapeake Oyster Science Symposium.

Finfish:

STOCK AND HABITAT ENHANCEMENT PROGRAM ARTIFICIAL REEF MANAGEMENT AND DEVELOPMENT

Two artificial reef deployments took place this month:

A load of 26 concrete culvert pipes (36 and 48-inch diameters) was deployed on PA-15, Georgetown Nearshore Reef.

Three experimental concrete Sea Caves™ were deployed on Area 51, one of MRD's federally protected Spawning Special Management Zones. The Sea Caves were designed and built by the Fish Reef Project, an environmental non-profit organization attempting to help create marine habitat in various locations around the world. Artificial Reef Program personnel will monitor the structures over time, and results will be reported on the Fish Reef Project website.

SCDNR's Marine Artificial Reef Program was included as part of the recently published *Update to ASMFC'S Profiles of State Artificial Reef Programs and Projects*. This document provides a summary of each state's artificial reef program and features highlights that have occurred since the release of the first edition of the publication in 1988.

Statistics:

- Delinquent letters for late submission of May 2021 mandatory logbooks were mailed on June 17th, 2021 (240 letters) to license holders for Wholesale Seafood Dealers and For-Hire Charter Vessels for May 2021 reports not yet received by the June 10th, 2021 deadline. The affidavit list and action list for May was provided to Law Enforcement on July 2nd, 2021.
- Several data requests were completed during this month for commercial data including the following annual species summaries: Overall landing by species grouping, and specifically on oysters, shrimp, horseshoe

crabs, blue crabs, spiny dogfish, red drum, gag grouper, spanish maceral, and black drum. comprehensive reports were submitted to ASMFC associated with various projects that summarized the previous calendar and/or fiscal year commercial and recreational landing and ex-vessel value for fisheries landed in SC. SCDNR charter database also had data requests including specific species catch and effort for spiny dogfish and red drum catch and effort.

- Staff continue to gain information to determine eligibility for the second allocation for the CARES Act funds. The agency had great success with the first allocations of funds, which were distributed to the state's commercial fishermen, wholesale seafood dealers and for-hire fishermen if the qualified for hardship during the COVID-19 pandemic. The draft allocation plan was reviewed by OFM and Legal Counsel and will be submitted to NMFS for final review and acceptance.
- Staff continue to work diligently to increase electronic data collections and efficiency for both recreational for-hire and commercial data. This will improve data quality and timeliness.

Commercial Trip Interview Program

- During the month of June, OFM Port Agents intercepted 8 commercial trips and collected 137 length frequencies along with obtaining 134 associated age structures from primarily snapper grouper species. Fishing activity continued to be hindered by weather, and the beginning of July will be a first tropical system to really impact fishing activities.

Recreational Statistics Section Summary

- In the month of June 2021, OFM staff completed 55 APAIS assignments resulting in 714 interviews with recreational anglers.
- OFM staff continued monitoring/sampling horseshoe crabs at Charles River Labs to collect data for the ASMFC compliance report.
- OFM staff sampled commercial shrimp landings to collect data and make observations on species, size, black gill occurrence and abundance.
- Additional activities during the reporting period included: working closely with commercial seafood dealers to ensure compliance with reporting, assisting the SCDNR oyster shell recycling, distributing rules & regulations books and fish rulers to coastal businesses as requested.

Coastal Reserves & Outreach (CRO):

Coastal Reserves and Outreach -

The Marine Division's Coastal Reserves and Outreach (CRO) Section provides anglers and boaters, teachers and students, decision-makers, marine industry partners and the public, the information, tools and recreation opportunities to enhance stewardship of South Carolina's marine resources.

Public Outreach

Outreach to Coastal Residents and Visitors

- The Diversity Outreach Section focuses on the inclusion of underrepresented populations through translating and interpreting existing material, event planning and promotion to build relationships with these communities. In June, diversity staff archived messages and posts from the public, and provided content on the SCDNR's Diversity Facebook pages for 2021. Staff translated marine education animations to facilitate online learning. Staff assisted stewardship, and saltwater outreach with 4 outreach programs, including a migrant program on the Discovery.
- 45 South Carolina Aquarium members participated in a Discovery estuary exploration in June.
- 15 community volunteers restored eroded salt marsh at Fort Johnson to finish the year long From Seeds to Shoreline Project.
- Five Saltwater Family Fishing Clinic Volunteers answered fishing related questions at the James Island County Park fishing dock and Jason's Lake. They reached 32 people.
- Five Saltwater Family Fishing Clinics were hosted in June. In total, 38 attendees participated and 11 certified SCDNR Family Fishing Instructors volunteered 28 hours. Clinics took place at the McKenzie Field Station, North-Inlet Winyah Bay National Estuarine Research Reserve, Palmetto Island County Park, Huntington Beach State Park and Ralph M. Hendricks Park.
- Pier Outreach Program: In June, 12 fishing instructors walked the Springmaid Pier volunteering 34 hours and helped answer fishing related questions to 511 people. Volunteers also participated in the weekly "Kids Free Fishing Night" on the pier.

- Saltwater fishing outreach staff contacted 28 fishing-related businesses along the coast to provide information about changes in flounder regulations and license fees.
- Staff updated online and printed rules and regulations and the Fish Rules App to reflect changes for 2021-2022.
- Through the Marine Game Fish Tagging Program, 28 active participants tagged and released 232 fish, primarily red drum and flounder. Additionally, 81 anglers reported 90 recaptures. Of these recaptures, 83% were re-released. Staff processed the tagging and recapture data, and rewards were mailed to anglers who reported recapture(s).
- One angler was awarded a Master Angler Certificate for his outstanding southern flounder catch.

Media and Communications

- Staff provided design, multimedia, and writing/editing services for seven projects, including the whimbrel announcement and additional revisions of Sea Science publications.
- Staff assisted with the execution of two events related to the announcement of the world's largest whimbrel night roost at Deveaux Bank: an in-person film screening/panel and a virtual screening/panel.
- Staff published one press release with accompanying social media ("New flounder regulations take effect July 1") and fielded numerous public calls about the changing flounder regulations.
- Staff stepped in to help ease the transition to a new OMO social media coordinator by taking over social media campaigns on clean boating and shorebird awareness.
- Staff responded directly to 20 media inquiries on topics ranging from flounder regulation changes to cownose ray schools.
- One hundred and fifty-four clips referencing SCDNR MRD programs, staff or issues were published in June 2021, on topics ranging from volunteer oyster builds to manatee sightings to flounder regulations.

Students and Teachers

- The Carolina Coastal Discovery Programs focus on conservation of the state's coastal natural resources, as well as relevant science standards. Aboard the Educational Vessel (E/V) *Discovery*, and on land, staff provide science investigations using field sampling techniques and equipment that echo current research methods. In June, 376 summer camp and school children participated in field trips, off site, and/or virtual marine science programs. Students also helped restore eroded areas of salt marsh with marsh grass plants that they grew in school all year as part of the From Seeds to Shoreline Project.
- 34 teachers participated in teacher training this month, ranging from Discovery estuary explorations, stewardship project planning, and outdoor science lesson training.

Support for Coastal Communities and Partners

- The Boating Infrastructure Grant (BIG) Program is a competitive US Fish and Wildlife Service program providing competitive funding for marina infrastructure to serve large transient recreational boats and provides access to recreational, historic and natural resources. Projects are considered public/private partnerships between the SCDNR, the US Fish and Wildlife Service, and the marina. With the FY21 funding cycle, SCDNR was awarded its 51st project since 2001 to help develop boater opportunities in the state. Staff is currently working with potential applicants to prepare their FY22 funding proposals for submission to SCDNR on July 2nd.
- The Clean Vessel Act (CVA) provides USFWS funding to install and operate marine sanitary pumpout programs as outlined in the US Clean Water Act to divert overboard discharges and protect water quality. A total of 27 projects were funded by SCDNR in the state this year, and partners are currently preparing their proposals for the FY22 season.
- Postcards were sent out to 64 inland marinas across the state to increase awareness for the SC CVA program and available funding opportunities. So far, two new marinas have reached out expressing interest in partnering with the program to install new pumpout equipment at their facilities.
- The SC Monofilament Recovery and Recycling Program established a new partnership with the Catawba Riverkeeper to install six new monofilament recycling bins within Chester and Lancaster counties.

- Staff continues to provide support and consult on Motus Wildlife Tracking Systems for various federal, state and private partners. In March, SCDNR assisted the Nemours Foundation, Harbor Island, Fort Moultrie, and Port Royal Sound Maritime Center, Spring Island Trust, Edisto Beach State Park, Audubon, Daufuskie Island, and Fripp Island with the construction, maintenance and data collection of Motus towers.
- In June, staff participated in the South Carolina Adopt-A-Stream program for tidal saltwater systems, a pilot community science project through SCDHEC and Clemson Extension to engage volunteers in water quality monitoring.
- The Coastal Training Program which connects coastal decision makers with scientific information about water quality, habitat conservation, community resilience and public access, partnered with Clemson Extension and SC SeaGrant to provide the webinar Healthy Pond Series: The Ups and Downs of Dredging to 40 residents and pond managers from the Charleston and Beaufort areas.
- The Coastal Training Program Coordinator was trained to be a facilitator for The Watershed Game, a water quality and resilience exercise for local leaders.

Coastal Reserves

- Stewardship staff assisted the NOAA Margaret A. Davidson Fellow's project to characterize visitor use in the ACE Basin to better understand impacts on natural resources.
- ACE Basin NERR staff continue to maintain South Fenwick Island to provide habitat management and public access opportunities. Trails and fields were mowed, sprayed and cleared of invasive species. Staff continued to build firebreaks and prepare for controlled burning.
- Staff continue to monitor Chinese Tallow within the St. Helena Sound WMA and South Fenwick Island WMA.
- In June, staff distributed 1 camping permit for South Fenwick Island.
- In June Campers saw 160 campers over 34 permits. A work day was conducted with 10 staff and volunteers attending and they were able to clear the beach trail for the tractor, repair damaged electrical infrastructure (wiring), and remove several hundred pounds of garbage and marine debris. Turtle nesting season is in full swing, and 5 nests have been documented with one un-predated at time of survey. The dyke trail connecting to the south dock was cut and cleared for the first time since hurricane Matthew in 2016 and access to the full trail system has been restored.
- In June, 11,956 people visited Botany Bay Plantation HP/WMA. Volunteers provided 319 hours of service, performing maintenance activities on the office building and property, participating in the Biodiscovery program, maintaining blue bird boxes, posting the beach to protect the shorebird nesting area, hosting fishing clinics and providing public outreach.
- NOAA conducted a formal program evaluation of the ACE Basin National Estuarine Research Reserve from June 21st – 25th, 2021 as required by the Coastal Zone Management Act. Multiple staff provided information ahead of the evaluation and participated in virtual meetings with the evaluation team.

Protected Species

- Twenty nine sea turtle stranding events were reported (3 adults, 1 unknown and 25 juveniles); four greens, 17 Kemp's ridley, 8 loggerheads. Twelve live events and 17 dead. Eight events are associated with the recreational hook and line gear and six with watercraft injuries.
- Staff members continue to provide 24 hour on-call coverage of sea turtle hotline during the week, weekends and on holidays, as well as, picking up live turtles and carcasses.
- Coordinator continues to work on QA/QC and data entry of historical nesting data into the database as time allows.
- Biologist tagged four turtles as part of pre-release protocol for turtles undergoing rehab and expected to be released to the wild.
- Coordinator and Biologist flew a coastal survey with Law Enforcement. Coordinator flew with LE to survey the coast line.
- Biologist reviewed/edited revised manuscript drafts for three separate manuscripts from DNR in-water survey on which he is a co-author. 1) Theoretical manuscript that relates in-water size and neritic abundance, recruitment age, and survival to simulated nest counts; 2) Kemp's ridley catch

- dynamics in the SEAMAP and in-water turtle surveys; and 3) loggerhead sex ratio in the in-water survey and modeling examining potential lack of males w/ climate change
- Staff participated in an outreach event - Turtle Fest - hosted by Edisto Beach State Park.
 - Staff conducted 13 ground surveys on barrier islands, one survey on Raccoon Key, part of Cape Romain National Wildlife Refuge, three survey days at Botany Plantation and Island .
 - Staff picked up genetic samples from all volunteer projects along the coast on two collection pickup days and coordinated pickup with University of Georgia researcher.
 - Staff generated weekly online content for SCDNR MTCP Sea Turtle Volunteer Facebook group.
 - Staff conducted two necropsies; one associated with recreational hook and line gear where the turtle was brought to a rehab facility where it died the next day and the other a boat strike.
 - Coordinator and Biologist completed a survey day aboard R/V Lady Lisa assisting in-water turtle trawl survey.
 - Coordinator worked extensively with subcontractor company and Army Corps for Morris Island monitoring project associated with beach renourishment; Parris Island Marine Base regarding new nest monitoring project for turtles and marine mammals, DOT and USFWS regarding road widening project in Jasper County and negative impacts to Diamondback terrapins.
 - Eagle Biologist provided technical assistance through emails and calls for eagle nest territories.

Marine Resources Division

Marine Resources Research Institute (MRRI)

Grant Proposals

Awarded: Darden, T. SCDNR Blackbanded Sunfish eDNA Sampling in the Francis Marion Forest. USFS. 3 years; \$21,591 federal, \$5,853 match.

Publications

Submitted: Kim, S. Hooten, M., Darden, T., Y. Kanno. Linking male reproductive success to effort within and among nests in a co-breeding stream fish. *Oecologia*.

Accepted: Nash, C., P. Darby, B.S. Frazier, J. Hendon, J. Higgs, E.H. Hoffmayer, and T.B. Daly-Engel. Multiple paternity in two populations of finetooth sharks (*Carcharhinus isodon*) with varying reproductive periodicity. *Ecology and Evolution*.

Published: Poersch, L., Brunson, J., Gaona, C. A. P., Stokes, A., Richardson, J., Pitts, K. & Leffler, J. (2021). Pacific white shrimp, red drum, and tilapia integrated in a biofloc system: Use of tilapia as a consumer of total suspended solids. *Journal of the World Aquaculture Society* <http://doi.org/10.1111/jwas.12832>.

Published: Kyzar, T., Safak, I., Cebrian, J., Clark, M. W., Dix, N., Dietz, K., Gittman, R. K., Jaeger, J., Radabaugh, K. R., Roddenberry, A., Smith, C. S., Sparks, E. L., Stone, B. W., Sundin, G. W., Taubler, M. & Christine Angelini C. (2021). Challenges and opportunities for sustaining coastal wetlands and oyster reefs in the southeastern United States. *Journal of Environmental Management* 296:113178.

Submitted: Broach, J., Ohs, C. & Breen, N. Natural spawning of pigfish *Orthopristis chrysoptera* in captivity and predictors of egg and larval quality. *Journal of Fish Biology*.

Submitted: Shopnitz, F., Ohs, C., Silvy, E., Broach, J., DiMaggio, M., Patterson, J. & Collins, A.. 2021. Anesthesia protocols for handling of hogfish *Lachnolaimus maximus* using tricaine methanesulfonate and AQUI-S 20E®. *North American Journal of Aquaculture*.

Presentations

Tanya Darden. Current applications of genetic tools to aquatic nuisance and invasive species in South Carolina. Aquatic Nuisance Species Task Force Meeting (Team virtual platform), June 30, 2021.

Matt J. Walker. Crayfish Genetics Update. EFR presentation. June 28, 2021. 30 attendees, technical audience.

Bryan Frazier gave an online presentation to the Palmetto Bluff Seminar series (7/1) titled “The Diversity of Sharks in South Carolina’s Estuarine and Nearshore Waters.” Number of attendees is unknown.

Cameron Doll. Red Drum 2019YC update. EFR presentation. 19 July 2021. 30 attendees, technical audience.

Outreach

Preparations are well underway for the triennial meeting of the World Aquaculture Society, National Shellfisheries Association, and American Fisheries Society - Fish Culture Section, to be held in San Diego on February 28 - March 4, 2022. Abstracts will be due by October 15, 2021.

The Molluscan Research and Monitoring Section hosted Dr. Mercer Brugler and a group of 5 undergraduates from the USC Beaufort campus on a tour of the MRRI and of the oyster-based living shorelines installed on the Fort Johnson peninsula.

Mike Arendt gave an overview presentation on a recently accepted (see above) manuscript at the Manager’s meeting on 9 July.

Mike Arendt was interviewed by phone by Roger Druin on 7 July on Diamondback terrapins in an upcoming (quarterly) issue of Coastal Heritage magazine.

Peter Kingsley-Smith provided a tour of the MRRI to staff from the State Climate Office (led by Hope Mizzell) on July 14. This group is interested in learning how they can ‘plug in’ to research efforts across the MRRI, including working towards a charter of critical temperature thresholds for species that we research, particularly so that Frank Strait, new contact for extreme weather events can be prepared and engaged.

Peter Kingsley-Smith provided a tour of the MRRI to Dr. Mercer Brugler (USC-Beaufort) and his lab group of undergraduate students on July 22. Mercer is currently working on an eDNA-based approach to characterizing oyster reef communities and has been drawing on the oyster expertise of the Shellfish Research Section.

Bryan Frazier appeared on a Discovery Channel Shark Week Show, “MotherSharker.” Footage included scenes on the R/V Silver Crescent and Captain Bo Von Harten made a brief appearance as well.

Aaron Watson gave a tour to Pam Corwin and a SCDNR summer intern from the Dennis Wildlife Center on July 21.

Aaron Watson attended the final planning meeting for Aquaculture America 2021 on July 1-3 in San Antonio, TX.

Aaron Watson reviewed a manuscript for the *Journal of Applied Aquaculture*.

Progress Report and Activities

Coastal Research Section

We received the new 5-year SEAMAP-SA grant approval from NOAA and account numbers are being set up. We are still awaiting the MARMAP grant approval from NOAA. Dawn Glasgow and Tracey Smart attended the Ecological Connectivity of Live/Hard-Bottom Habitats in the South Atlantic Bight hosted by the Gray's Reef National Marine Sanctuary on July 13-15. Tracey also served as a plenary speaker and panelist for the Marine Protected Area session.

Amy Zimney and Jeanne Boylan continued to correct and import corrected historic Coastal Trawl Survey data into the online database based on the new in-house survey database.

Wally Bubleby provided reproductive life history information regarding Bank Sea Bass to Drs. Brendan Runde and Kyle Shertzer at the SEFSC Beaufort Lab for a project examining poor recruitment trends across several reef fish species in the South Atlantic Region. The Reef Fish Survey is one of the only sources of these data in the region.

Marcel Reichert participated in a conference call on July 13 to discuss a recently funded Southeast Fisheries Science Center project looking at recruitment failure of several reef fish species in the region. Several modelling approaches will be investigated to explore explanations of recruitment patterns.

Marcel Reichert had a conference call with Roger Pugliese, SEAMAP-SA Committee Chair, to prepare for the Annual SEAMAP meeting to be held on July 26 and 29.

Reef Fish Survey: The Palmetto is still 3 vessel crew short, including a cook. The Reef Fish Survey provided a deck hand and section staff prepared meals prior to departure to assist with legs 5 and 6. Leg 5 was a successful 4.5-day cruise on July 12 – 17. Sampling was conducted off South and North Carolina and we deployed 120 Chevron video traps, and 20- CTD casts, and collected additional samples during 3 hook-and-line efforts. We sampled 2,455 fish of which 310 were worked up to collect life history data. Dawn Glasgow, Margaret Finch, Wally Bubleby, and Tracey Smart assisted with planning and preparation of meals for this leg.

Leg 6 of the Reef Fish Survey on board the R/V Palmetto departed at 18: 30 on JULY 21 after a 12-hour delay to ensure sufficient Vessel Ops staff and meals were on board. Dawn Glasgow, Margaret Finch, and Tracey Smart assisted with preparation of meals for this leg. We donated about 300 lbs of fillets to 180 Place homeless shelter and about 80 lbs of small fish to Charlestown Landing State Park's zoo this month.

South Atlantic Deepwater Longline Survey (SADLS): The first trip of the year by collaborating fishers departed from Port Orange, FL on July 22, and is expected to arrive back on July 25. This is planned as a short trip to ensure that the fishers and observers understand the sampling and data recording methodology prior to longer cruises. The bid package for sampling in the other regions was prepared and posted.

Life History Project (MARFIN): Staff continue to process and examine archived samples.

Coastal Trawl Survey: The Coastal Trawl Survey started its summer cruise season on July 12 and resumed overnight trips for the first time since the fall 2019. So far, 7.5 sea days have been logged over three trips, with 33 stations completed from Winyah Bay, SC down to the GA/FL border. Catches have been variable, but generally light, with total biomass so far tallying to only 1,437 Kg for 34,730 individuals. The most abundant species has been the Atlantic Croaker (8,407 individuals, 446 Kg), followed by Brown Shrimp (7,732 individuals, 90 Kg), Butterfish (3,858 individuals, 69 Kg), Atlantic Bumper (2,826 individuals, 67 Kg), and Spot (2,561 individuals, 104 Kg). Large White Shrimp also still regularly appeared in catches, but in lower numbers (1,187 individuals, 37 Kg). White shrimp are still showing indications of spawning, and black gill was noted in most catches of Brown Shrimp, but not in White Shrimp.

In-water sea turtle research: Field research aboard the R/V Georgia Bulldog was cancelled for July 6-8 due to Tropical Storm Elsa. A new Telonics GPS-tag was received and tested by a FL researcher; deployment on "Asparagus", a second rehabilitated green sea turtle at the UF Whitney Sea Turtle Hospital (St. Augustine, FL) is slated for July 20. "Richard" traveled south of Cape Canaveral in early July and is now located in the Indian River Lagoon southwest of Sebastian Inlet, FL, and the track duration has surpassed 8 months. Christopher Evans entered and completed (with Homer Hiers) QA/QC of R/V Lady Lisa trawling data for the 2021 season, after which Mike Arendt reformatted and uploaded data to the project database. Mike Arendt met online with Nicole Bonine (USACE) to discuss in-water sea turtle data sets pertinent to the seasonal and spatial distribution of sea turtles in coastal waters and shipping channels to assist with evaluating contemporary seasonal dredging windows. Mike Arendt, Wiley Sinkus, and Jeffrey Schwenter (CRO) traveled to Brunswick, GA on July 19 for the final sea turtle trip aboard the R/V Georgia Bulldog for the 21-year NMFS-funded survey.

Diamondback terrapin research: Nine citizen scientist reports were received during the first half of July, seven of which involved adult female terrapins with two confirmed nesting reports but unfortunately also two road mortality reports; two additional reports pertained to nests (one accidentally excavated, the other a successful hatching). Mike Arendt notified State Herpetologist Andrew Grosse of a two terrapin road mortality incident associated with a bridge construction project, who coordinated with the Department of Transportation (SCDOT) to install "Terrapin Crossing" signage to help minimize further mortality at project-directed 'crosswalks'. Two requests (from June) were received to install Bycatch Reduction

Devices (BRDs) in recreational crab traps, and Christopher Evans prepared BRD packets and mailed them to the respective requestors (note: these were the first online requests in two years).

Coastal acoustic receivers (DJ): No fieldwork was completed during the first week of July, but Christopher Evans prepared a diver roster through mid-August which will hopefully be sufficient to complete the 'spring 2021' field season. Mike Arendt uploaded 27 acoustic receiver files (April 8 - June 30) to the FACT Node in advance of the July 8 data provision request.

Mitigation Reef Monitoring: Mike Arendt completed QA/QC of baited frame and diver survey data review prior to importing data into the project database. Mike Arendt conversed with Matt Perkinson (CRO), Dr. Aaron Watson (Mariculture), and Dr. Shane Boylan (DVM – SCA) to shore up protocols and seasonal schedule for evaluating surgical procedures (September) and catching/tagging (acoustic and conventional) black seabass (and other game fishes) in October. On July 14-15, five scientific divers (Joe Evans, Kevin Spanik, Mike Arendt; Ryan Yaden-OFM; Ellen Waldrop-Diadromous) completed diver surveys as acoustic receiver swaps at the six sites were not able to be surveyed in mid-May. Recent scientific diving completes annual diver surveys at this location for CY2021; however, diving to establish multiple 'beacon' acoustic transmitters remains, which will help evaluate influences on signal reception quality prior to acoustically tagging black sea bass in the fall. During the second deployment cycle (August 2020 to July 2021), only 1512 detections were recorded for 91 acoustic transmitters (12 species), comparable to deployment one (August 2019 to July 2020) with respect to detections ($n = 1456$) and species diversity ($n = 12$), but with 30% fewer transmitter codes detected overall (i.e., $n = 130$ total during deployment one).

Stock Assessment Activities: Wally Bublely and Tracey Smart attended the SEDAR Procedural Workshop 8: Combining Indices webinar on July 19. Discussion focused on overviews of surveys, indices, and methods to be used in the workshop. Marcel Reichert reviewed and provided comments to the SEDAR 68 Scamp Research Track final reports.

Ecosystem Research Section

SCECAP: Six sites have been sampled, ranging from the North Edisto to Winyah Bay. New staff have integrated well and sampling has gone relatively smoothly. Regarding the previous year's data, the final NCCA macrobenthic invertebrate dataset, metadata, voucher photo collection, and identification literature list from the summer 2020 sampling season have been readied for submission to the EPA. Highlights follow: (1) 14,580 individual organisms were identified from 33 benthic grab samples from 31 distinct estuarine sites (2 of which were revisited for comparison purposes); (2) organisms represented 162 unique taxa and 94 families (as well as subclasses Echiura and Oligochaeta); and (3) the 2020 NCCA benthic samples had higher than typical sample-level abundances and species richness with the highest ever abundance in a sample: 2,361 individuals, the highest ever annual mean abundance per sample: 402 individuals/sample vs the 1999-2019 mean of 170, and the 2nd highest annual mean number of distinct taxa per sample: 23.6 taxa/sample vs the 1999-2019 mean of 17.6. *Shorebird Habitat Project:* This project aims to quantify shorebird (piping plover, red knot) foraging habitat requirements through the assessment of benthic prey resources, fecal DNA analysis of diet (in collaboration with the SCDNR Genetics group), and other geomorphic attributes. We have also added a citizen science component to the project, as Mark Andrews from Seabrook Island has volunteered to collect fecal samples and monitor the salinity of a popular foraging lagoon. A total of 84 usable fecal samples have been collected for diet analysis, and USFWS has received additional funding to supplement the costs of genetic analysis of these samples. Piping plover and red knot fecal samples, collected for the purpose of genetically identifying prey species present in their diet, have been prioritized for analysis. Sarah Liss and Gabi Tutelo began sorting this week and have already sorted thirty of the samples collected on Seabrook Island have been sorted and have passed QA.

Kiawah Pond Project: Routine water quality monitoring is now occurring twice a month from May thru October, with sampling for this cycle occurring on June 30, July 8, and July 23. On June 30, Catharine Parker analyzed the Kiawah chlorophyll a samples from the two sampling events in June. High concentrations were detected, resulting in over half of the samples needing dilution to get readings. Catharine Parker and Denise Sanger sampled again on July 8th. Temperature at all ponds remained similar to what was recorded at the end of June. Dissolved oxygen levels ranged from 1.86 (K1) to 6.04 (TCPE) mg/L. No consistent pattern of increasing or decreasing DO was observed post-Tropical Storm Elsa when comparing the 6/24 readings to the 7/8 readings. As expected though, salinity decreased significantly in each pond after the rainfall event, dropping from an average of 13 ppt on 6/24 to 9 ppt on July 8. Surface biomass was minimal at most ponds. Most of the phytoplankton community was comprised of diatoms, dinoflagellates, and chlorophytes. Catharine Parker filtered the chlorophyll samples and Joe Cowan and Catharine Parker completed the phytoplankton screens. We are thankful for Kim Sitta's continued input on this project while we transition staff roles.

Salinity Impacts to Benthic Community SWG: A final report was submitted to Anna Smith. Benthic community analysis has revealed some interesting trends, some of which are consistent with previous assessments, along with some new findings. Species richness and the abundances of certain sensitive species were reduced in the highly impacted sites, which included altered salinity structure and increased pesticide loads.

SECOORA: The Fort Johnson water quality site continues to collect high quality data. The datasonde was swapped in July by Nicole King. The data can be viewed real-time here: <https://cdmo.baruch.sc.edu/dges/>. A semi-annual report was submitted to SECOORA. .

ACE Basin NERR: ACE Basin NERR: Nicole King and Lauton Sutley did July's second sonde swap and deployed ISCO on July 20; the ISCO was retrieved on July 21. Jehossee Island SETs were measured on July 16, and Edisto Island SETs were measured on July 21. Nicole King calibrated and post-calibrated the data sondes for the swaps. Saundra filtered and read chlorophylls from the ISCO samples, and Catharine Parker will ship the nutrient samples on July 26. Saundra Upchurch has prepared a draft of the quarter 2 water quality data and metadata, and Nicole King is checking for transcription errors and omissions in the logs, datafiles and metadata; a draft report will be submitted to Denise next week. Jessica Kinsella downloaded and checked the weather station at Bennetts Point. Saundra Upchurch has taken over preparing the weather quarter 2 report that is due on August 2

Miscellaneous: Sharleen Johnson participated in an ASMFC Habitat Committee meeting on June 24. Andrew Tweel participated in the Atlantic Coastal Fish Habitat Partnership Steering Committee meeting on June 29-30. ERS staff examined water collected in association with two fish kills, one on James Island and one in Winyah Bay. Neither site showed indication of algal blooms, and the likely cause is believed to be low dissolved oxygen. Andrew Tweel is attending the Coastal GIS Users Group meeting on July 23, held in person for the first time in over a year.

Estuarine Finfish Research Section

Alligator survey: Ashley Shaw and Liz Vinyard volunteered time to assist Morgan Hart with an alligator eye shine survey overnight on Lake Marion on July 6.

Cobia: 540 cobia juveniles were released last Thursday at Trasks landing. Roughly 3,200 juvenile cobia were transported from ponds at the WMC to the MRRI for a potential feeding trial. Fish have adapted to their new tanks and are growing rapidly. The last spawn from cobia broodfish at WMC occurred on July 20. That spawn was small and unfertile. But any future spawns from cobia broodfish at WMC will be used to obtain preliminary data to support other proposals such as the heat shock project. Cobia harvest on July 21 yielded <50 individuals. All were retained for sample work-up and to reserve that family for available use in 2022. Field samples are being genotyped to evaluate stocking contribution and will be incorporated into our stock structure analyses.

Cobia CRP: Staff continue efforts to satellite and acoustically tag cobia. Staff went out once over the past two weeks due to poor weather and sharing of the Regulator. Four fish were captured with one being large enough for a satellite tag, one small male was also tagged with an acoustic tag, and two other small females were sacrificed for histological sampling. Since the spring, 9 fish have been acoustically tagged, 2 fish tagged with a satellite tag, and 5 fish have been sacrificed and histological samples taken from undersized cobia. The satellite tagged cobia that was captured and harvested by a recreational fisherman was returned. Tag data was not able to be downloaded due to error message, so tag was shipped back to Wildlife Computers for evaluation. A manuscript on cobia movement along the eastern coast of the US is nearing completion. Final edits are being made before the draft will be sent to co-authors for review.

Flounder: Efforts continue to develop a group of anglers that will assist in collecting flounder genetic samples. Fin clip kits have been made and sent out to those who have expressed interest. Mudminnows have been harvested from ditches on Waddell property to begin a population for reproducing them for bait and a food source for flounder broodstock. Underwater lights have also been constructed for night excursions to capture flounder via dipnets once space is available for holding broodstock. Staff are preparing proposals and workplans to begin the new flounder stock enhancement program.

Red Drum: All red drum broodstock systems have been prepared for the upcoming spawning season. Plans to manipulate temperatures will begin July 19th, with hopes to begin stocking ponds at the beginning of August. Ponds at WMC are being prepared for red drum production season. Broodstock systems at the MRRI and HML have begun their temperature manipulations to induce volitional spawning

Red Drum Natural Feeds Metabolomics: Processing and NMR-based metabolomic analysis of red drum liver samples collected over the course of the 12-week natural diet component feeding trial is ongoing. Homogenization of all 300 liver samples has been completed. NMR spectra (1Ds and 2Ds) have been recorded on samples from 4 of the 5 time points. The results will be summarized in a manuscript for submission later this year.

NIST Collaborations: Justin Yost helped a NIST Post-Doc, Erin Legacki, collect red drum blood for a hormone biomarker study. In the past, mariculture staff have helped Erin collect fish mucus for similar studies, and future studies with flounder may also be considered as NIST looks to work on biomarker development for ovulation and elevated fertility.

SRAC Artemia Replacement: The fiscal cycle for the first year of the project ends on August 31 so last-minute charges for supplies to support the project during year 2 and 3 are being made.

SCSG Brewery By-product Evaluation: Digestibility diets are beginning to be made. So far the base diet has been completely manufactured and staff are currently working on the first of three diets made with brewery by-product material.

Terrapins: Four more terrapin nests were recovered from Charleston and are incubating at WMC until hatch.

NWL4 cobia sampling: Infected cobia in NWL4 compared with uninfected cobia were sampled to look for potential differences in tissue metabolic profiles (liver, kidney, whole body) that can be used to develop a pre-screening tool prior to fish harvest and release.

Cooperating Angler Programs: 52 cobia carcasses and 1 tripletail carcass have been collected from charter fisherman and anglers to date

Bartram's Bass: Staff have completed the genetics portion of our 1 year progress report for the USFWS multistate grant. A recent data of black bass samples from across the state were processed and genetically identified; a report was prepared and submitted to WFF collaborators to identify waters with pure and hybrid Bartram's Bass

Black Banded Sunfish: Staff are collaborating with USFS personnel in the Francis Marion Forest to utilize our eDNA sampling tool to survey forest habitats to continue to improve our understanding of blackbanded sunfish distribution.

Carolina Heelsplitters: Coordination continues with Clemson collaborators on a new project to genetically identify mussel species from glochidia for host identification for Carolina heelsplitters. Testing of methodologies will begin shortly.

Cobia eDNA: Staff are compiling data and beginning annual report preparation.

Cobia Sex Determination: DNA from a male cobia has been successfully prepared and is currently being sequenced. Illumina (short) reads have been obtained from genewiz for both the female and male pooled samples. We should be receiving both completed genome assemblies soon which can then be analyzed for marker identification.

Crayfish Genetics: Genotyping of field samples with the new microsatellite marker panel is ongoing.

Red Drum Natural Feeds Metabolomics: Processing and NMR-based metabolomic analysis of red drum liver samples collected over the course of the 12-week natural diet component feeding trial (David Klett's thesis project) is ongoing. Sample homogenization of the remaining samples from T9 and T12 is ongoing. The results will be summarized in a manuscript for submission later this year.

Robust Redhorse: Staff have completed the design of several potential eDNA markers for robust redhorse and have completed the first assessment of amplification efficiencies with the putative markers. We will be selecting the top ones for further testing to confirm species specificity. Staff have been receiving, compiling, and archiving this spring's field collection fin clips from all systems and will begin genotyping shortly. We received a collection of genetic samples from the early sampling and stocking program in the Altamaha systems in Georgia; staff will assess, rehydrate, and archive these samples prior to attempting to genotype them with our standardized microsatellite marker set. This represents critical baseline data for this decreasing population.

Snakehead eDNA Tool Development: Staff have begun working on the development of an eDNA tool for detecting presence of multiple invasive snakehead species. Testing of the proposed eDNA tool is continuing.

Spotted Seatrout: Field collections from 2020 continuing to be genotyped to evaluate contribution from our experimental stocking program.

Striped Bass: Genotyping has begun on the SC winter gillnet samples.

White Seabass Genetics: Staff are continuing to isolate DNA from otoliths and genotyping field samples. Staff met with collaborators at Hubbs SeaWorld to discuss next steps for their stocking program and potential genetic roles going forward.

Genetics Tissue Archive: Staff are continuing to curate and accession genetics sample sets; efforts to return completed samples sets back into the HML collection room are ongoing.

Age and Growth: 2020 trout nearly finished processing. Only flounder otoliths remain of 2020 samples. Staff are also working on processing and ageing 2018 Atlantic Croaker samples provided by NMFS.

Bonnethead Post-Release Mortality Study: Ten bonnetheads were captured and tagged in the North Edisto on June 28, bringing the total to 48. The final 12 tags will be deployed in the coming weeks as water temperatures approach and exceed 30°C.

COASTSPAN: Seven survey days were completed in June (2 days in the ACE Basin, 3 days in Bulls Bay and 2 days in the North Edisto River). Six out of the 8 days scheduled for July have been completed. On July 6 we used the McKee (original COASTSPAN boat owned and shared by Diadromous group) and continued breaking in the new motor. We plan to use that boat for the rest of the summer in lieu of the Privateer. The two additional scheduled July COASTSPAN days are planned for next week.

Dive Operations: Staff were scheduled for two dive days in July; both were cancelled.

Dolphin Project: Staff completed two Dolphin surveys in July in support of the SC Aquarium Dolphin Photo ID and tracking project. The August survey schedule will be finalized soon.

Electrofishing Survey: All four strata (Combahee, Ashley, Edisto, and Winyah Bay) planned for July surveys were successfully completed.

Hammerhead Complex Stock Assessment: 200 vertebrae were received from the University of Florida museum archives. Vertebrae were processed, ages estimated, and growth curves were generated for the stock ID workshop (July 20). To date, 1,070 vertebrae have been processed and aged.

Inshore Survey Abundance Updates: Staff are working on the development of monthly reports for our fisheries-independent surveys, paralleling those provided by the Estuarine Trawl Survey. Initial efforts are focused on the development of a report for the trammel net survey, with draft versions now in production.

Largemouth Bass/Bowfin Genetics: Initial fin clips collected for largemouth bass have been shipped to our collaborators. Additional vials for further collections will be available soon.

NIR Spectroscopy and Fish Ageing: Michelle Taliercio is finished with the first runs of scanning the 2018 Red Drum with cap for comparison to without cap.

Red Drum Stock Assessment: Bi-weekly meetings of the stock assessment subcommittee continues with recent work focused on finalizing results from the traffic light analysis assessment approach for comparison to the simulated populations. Efforts have focused on identifying optimum performance metrics, reference periods, % red thresholds, and lags (where appropriate) to minimize errors in stock status determinations. Unfortunately, the lead assessment scientist for this analysis has accepted a position in New Caledonia starting on August 1 and will no longer be available for the Red Drum stock assessment.

Reproductive Studies: Michelle has updated our Histology flow chart, processing log, and database, and finished reading and entering 2019 Trout, 2019 spot and 2019 miscellaneous species.

Trammel Net Survey: Tropical Storm Elsa led to the cancellation of Wando sampling on July 8, with it being the only strata scheduled for sampling in July not completed to date. The Wando sampling has been rescheduled for July 26.

Tripletail: Forty-three tripletail have been brought up from Florida. Unfortunately, a disease outbreak has brought the total number of new tripletail down to 21 but fish have now gone over a week with no mortalities and copper and antibiotic treatments appear to be working. Prostaglandin F-2 alpha has now been added to both 10-ft tanks of older tripletail broodfish on three separate occasions at concentrations of 0.2, 0.4, and 4.0 nM with each dose administered weekly. No changes in behavior or spawning has occurred. Those fish will be injected with Ovaprim within the next two weeks to induce spawning and obtain eggs for intensive and extensive studies.

HML: Several staff attended the virtual HML Town Hall meeting on June 30. Due to a recent NIST staff shortage, Fabio Casu helped NIST personnel with cryogen fills of 700 MHz and 800 MHz NMR spectrometers at HML. Augustus Snyder (CofC Master's student) completed all required HML NIST trainings to start working on the metabolomics part of his thesis project on the effects of *Kudoa inornata* infection in spotted seatrout. Coordination with new NOAA freezer managers was completed for use of one of the shared walk-ins for a portion of our Genetics Tissue Archive. Tanya Darden and Mike Denson attended both HML Science Board meetings this month. HML remains in a Phase I status, with 25% occupancy continuing.

HML Safety Committee: Jackie Allen and Fabio Casu attended the quarterly HML Safety Committee meeting. HML monthly safety reports have officially resumed and staff submitted the report for June 2021.

MRRS Safety: While preparing for Tropical Storm Elsa, staff were checking the emergency oxygen system when the NWL blower failed. Oxygen was provided to the affected tanks until a new blower was installed. All fish were healthy and showed no signs of stress throughout the time period. Fume hoods were down in the Inshore Finfish Laboratories, but have been tested and are now back in working order. Lab safety walk-throughs will be scheduled for new employees when the new Inshore Wildlife Biologist I starts. The EPRB was tested and is in working order. 5 gallons of formalin has been neutralized using a newly acquired chemical, Formalex, to determine if it is safe to use for disposal down the drain.

SDAFS: EFR section staff continue to be involved with the planning of the 2022 SDAFS meeting being held in Charleston, SC. Formal committees have been formed and budget and registration details are being finalized. First calls for symposia, continuing education workshops, and technical committee meetings will be sent in the coming weeks.

Staff: Interviews for the Wildlife Biologist I positions in the Mariculture and Inshore Fisheries sections at the MRRS have been completed. Inshore offered its Biologist I position to Ms. Claire Benson, a current hourly of the Diadromous Research Group. Claire will be starting with Inshore on August 2, and we are happy to welcome her to our Inshore family. The desired candidate for the Mariculture position has been selected and paperwork is currently with HR for approval. The Genetics team has posted two Assistant Marine Scientist positions that will be open through August 9. Evan Bowman will begin as a SCDNR hourly at WMC on July 26.

Shellfish Research Section

Unoccupied Aerial Vehicle (UAV) research: Staff registered a new consumer-grade UAV, with near infrared sensor, with the FAA, procured insurance and conducted basic airworthiness tests. The drone operates as expected in terms of airworthiness. The next steps will be to test the additional NIR sensor and the resulting vegetation indices. This new piece of equipment will be used to assess marsh health in the ACE Basin NERR.

Gary Sundin prepared several graphics for potential inclusion in a video about the section's use of drones to monitor shoreline change that is in preparation by DNR videographer Danielle Kent.

South Carolina Oyster Demographic Assessment (SCODA) survey: Staff, assisted by CRMS hourly Trap Puckette, collected oyster disease samples from Winyah Bay, South Santee River, North Inlet, Cape Romain, Grice Cove, Folly River,

Stono River, and Tolers Cove. Staff completed the first round of laboratory processing on all these samples and Graham Wagner and Greg Rothman, with assistance from Matt Walker, prepared Ray's Fluid Thioglycollate Media and completed full *Perkinsus marinus* (Dermo) disease assessments on 4 of the samples. This project will assess the prevalence of common oyster diseases in SC oysters. In addition to Dermo, staff will also assess the prevalence of infections of *Haplosporidium nelsoni* (MSX) in South Carolina oysters. Staff conducted monitoring of recruitment panels as part of a small additional oyster demographic study initiated at Fort Johnson.

NMFS Community-Based Restoration project: MRMS staff monitored the Patriots Point A bagged shell reef site following the completion of the 260-ft. bagged shell reef by SCORE. Gary Sundin assisted SCORE staff and 9 volunteers to complete a bagged reef build on Big Bay Creek. Graham Wagner and Gary Sundin assisted SCORE and around 20 volunteers to complete the final annual *Spartina* planting at the Maryville Site. This planting deployed all the remaining seedlings in the SCORE greenhouse, making it the last planting event of the year. MRMS and SCORE staff met to discuss a general shortage in the availability of shucked oyster shells needed to complete the loose shell planting portion of the project. The shortage results in part from pandemic-related impacts on the industries that produce and ship loose oyster shell. To address the current shortage, some shell planting will necessarily be conducted in Year 3 of the project.

Dingell-Johnson (DJ) / SRFAC funding: To assist with monitoring, staff completed a UAV map of the derelict crab trap reef constructed in the Ashpoo-Coosaw Cutoff in 2018. CRMS hourly Trap Puckette digitized 13 drone-mapped shorelines from Ashpoo-Coosaw Cut, Fenwick Island, Big Bay Creek, and Fort Johnson. These digitized shorelines will be used for AMBUR (Analyzing Moving Boundaries Using R) analyses for these sites that are not captured in other formal analyses funded by NMFS or SCDHEC 309 sources. Section staff met with staff from the Coastal Conservation League (CCL) to discuss living shoreline options for a shoreline at Heritage Shores Nature Preserve in North Myrtle Beach. The site was originally assessed by the section in March 2020, but no build was completed due to pandemic restrictions.

Estuarine trawl survey: The monthly Estuarine Trawl Survey (ETS) aboard the *R/V Silver Crescent*, sampling four stations in the Charleston Harbor and Ashley River, was completed on July 21. The catch of brown shrimp was slightly above average at stations in the Ashley River, but well above average at the Charleston Harbor stations. Brown shrimp were generally smaller than average. The catch of white shrimp was above average. Although white shrimp size varied by station relative to long-term means, they were smaller than average overall. Black gill prevalence in shrimp was below average. Blue crab catch was similar to the long-term mean in the Ashley River but below average in the Charleston Harbor, where no crabs were collected. The catch of spot was lower than normal, except at the Anchorage station, while the catch of croaker was above average except at the Fort Johnson station. The catch of whiting was lower than average overall. No weakfish were collected during this sampling event. Overall, temperature and salinity were below long-term means.

Additional sampling was conducted at two stations off of Morris Island. Sampling approximately ¼ mile of the Morris Island beach yielded 6.2 kg of 80 count (head off) brown shrimp and a small number of 47 count (head off) white shrimp. Sampling at the Morris Island Slough (Dynamite Hole) yielded 4 kg of 76 count (head off) brown shrimp and a small number of 25 count (head off) white shrimp. All of the female white shrimp collected at the slough had late developing ovaries, indicating that spawning is still occurring in this area. Since sampling at the Morris Island stations is typically not conducted in the summer, comparison of these catches to historical averages is not possible.

Creek trawl survey: Creek trawl sampling in the Ashley and Wando Rivers was completed on July 19 and 20, respectively. Results from this month's creek trawl survey found white shrimp catch and size to be slightly above average compared to long term means. Brown shrimp and blue crab catch and size were both slightly below average. Overall, temperature and salinity were below long-term means. New hourly Erica Schmidt is entering and conducting QA/QC of historical creek trawl data.

Blue crab (adult and juvenile) salinity gradient potting survey: Sampling for blue crabs along a salinity gradient in the Ashley River occurred on July 8 and 9. Overall catch was below the 2016-2021 July average at all 6 blocks. Blue crab carapace width was above average at 3 of the 6 sampling blocks and at or below average for the remaining 3. Kim Sitta is working on analyzing the entire salinity transect data set.

Horseshoe crabs: SCDNR has received a FOIA from the Defenders of Wildlife requesting all data and emails about horseshoe crab and rufa red knot locations and populations dating back to 2010. Daniel Sasson has been coordinating the effort across the Institute to find files, emails, and photos with the relevant information.

Staff retrieved the temperature loggers placed in the sediment of spawning beaches and marshes. Trap Puckette finished enumerating the eggs from core samples taken from the beach and marsh as part of the Competitive State Wildlife Grant (C-SWG)-funded project. He has now begun working on conducting sediment grain size analyses. Gary Sundin used several data sources to extract the elevation of sites sampled as part of the internal SWG horseshoe crab project.

White Spot Syndrome Virus: Jeff Good prepared an SOP and genetic sample kits for upcoming white spot syndrome virus (WSSV) tissue collections from wild-caught shrimp and blue crabs. Staff collected gills from white and brown shrimp and the legs of blue crabs during this month's harbor trawl. In total, they collected 51 white shrimp samples, 60 brown shrimp samples, and 23 blue crab samples. These samples will be passed to the genetics group to screen for WSSV.

Crayfish: Staff conducted sampling on July 12 to compare the catchability of the invasive red swamp crayfish *Procambarus clarkii* and key native crayfish species of conservation concern using dip nets and electrofishing sampling gear. Sampling was conducted at sites in the Pee Dee Basin that were previously sampled as part of the State Wildlife Grant Program-funded *P. clarkii* project.

Invasive species: Through his role as Regional Panel Chair, Peter Kingsley-Smith represented the Gulf and South Atlantic Regional Panel on Invasive Species at the Aquatic Nuisance Species Task Force Meeting held virtually on June 28-30, 2021.

Staff met to plan this summer's island apple snail (*Pomacea maculata*) surveys. Rather than resample areas where apple snails have previously been found, they will conduct surveys of retention ponds and creeks bordering these areas which might be paths to their introduction into larger bodies of water (e.g. the Ashley and Stono rivers). Staff conducted their first two apple snail surveys of the year and found evidence of apple snails in previously unrecorded retention ponds and creeks in West Ashley. Staff have been asked to present about apple snails at the SCAPMS (South Carolina Aquatic Plant Management Society) meeting in October.

Kim Sitta finished an SOP for the SIANSMP juvenile portunid (swimming crab) project. Sample collection started this week while on the Estuarine Trawl Survey where juvenile portunids were collected at 3 of the 6 sites sampled. Genetic tissue samples will be collected from the crabs and the project will focus on documenting the distribution of native and non-native portunid crab species in estuarine waters of South Carolina.

Personnel: Jeanette Huber worked her last day for the Crustacean Research and Monitoring Section on June 29, 2021, leaving the Agency to accept a fisheries position with the Florida Fish and Wildlife Conservation Commission. The section is grateful to Jeanette for all of her hard work over the past two years and wishes her the best in this next chapter in her career.

Having been unable to identify a suitable qualified applicant internally for a Wildlife Biologist I position, the Molluscan Research and Monitoring Section have re-posted this position externally. This position will primarily assist with living shorelines and oyster restoration research projects. This posting will close on July 27.

Interviews were completed for a Wildlife Biologist I position within the Crustacean Research and Monitoring Section (CRMS), to replace Stephen Czwartacki, and current hourly Jeff Good has accepted the position. His first day will be August 17, once he returns from personal travel. As part of his duties, Jeff Good is developing a plan to manage the section's small vessel navigation data.

Additionally, a Wildlife Biologist II position within the CRMS, to replace Elizabeth Gooding, is currently open. This position is posted simultaneously for internal and external applicants, which is the new norm. This posting will close on July 26. Erica Schmidt was hired as an hourly employee in the section, effective July 6. The section is moving quickly to rebuild after several staff departures ahead of a busy field season this summer and fall.

Miscellaneous: Peter Kingsley-Smith reviewed four Sustainable Fisheries and Aquaculture topic full proposals for Florida Sea Grant in advance of the review deadline on July 15, 2021. Peter also reviewed an oyster reef restoration proposal submitted to New Jersey Sea Grant Consortium and submitted this well in advance of its August deadline.

Michael Kendrick participated in a meeting on June 30 related to collaborative species distribution modeling to improve conservation outcomes, a partnership between the U.S. Fish and Wildlife Service and NatureServe in the southeastern region of the U.S. A central objective of the project is to develop decision-quality models of the distribution of suitable habitat for 27 focal species.

Kim Sitta has worked to compile the Estuarine Trawl Survey data from 2019-2021 to be imported into the new database that Tim Snoots has helped to create.

Daniel Sasson prepared and uploaded a talk about horseshoe crab use of salt marsh for spawning habitat. This talk will be given at the Ecological Society of America's virtual conference later this summer. He also presented this talk at the July Manager's Meeting.

Peter Kingsley-Smith and Daniel Sasson have begun the MAT course "Visionary Leadership". This course will run for six weeks. Jeff Brunson has begun the MAT course "Emotional Intelligence", which will run for four weeks. Jeff Brunson compiled information for GPMB professor Dr. Bob Podolsky's REU student to aid in her identification of juvenile crabs in the genus *Callinectes* for her summer project.

Jeff Brunson had a Zoom meeting with Georgia Department of Natural Resources staff to discuss recent blue crab commercial catches and fishery independent sampling indices in SC and GA. He also spoke with Daniel Zapf at the North Carolina Department of Environmental Quality about those blue crab trends in NC.

Gary Sundin has corresponded with Dr. Erik Sotka and agreed to share and provide a brief "refresher course" on the use of the section's survey-grade Trimble GNSS for continued use in a vegetation project.

Gary Sundin assisted geologist Katie Luciano with monitoring of shoreline erosion at Pockoy Island in the Botany Bay Plantation Heritage Preserve and WMA. Katie prepared a draft report on the results of a shoreline analysis of the beachfront from 2011-2021 and Gary and Evan Cook provided edits on the draft.

Office of Fisheries Management (OFM):
Shellfish Management & Permits:

Culture Permits and State Grounds

7 permit holders requested verification of legally required shellfish culture permit plantings for 6 permits during July. Through calendar year 2021, permit holders have requested planting verifications on 47 permits with 33 completing planting quotas for 2021. A total of 81,915 U.S. bushels (51,814.5 U.S. bushels for credit & 30,100.5 in overages) of shellfish seed, green oyster shell, clam cover or approved cultch, cultivation, or equivalent has been planted (1646 BU on state or public grounds). The assessed planting quota for the state's 103 culture permits is 94,655.9 U.S. bushels after taking into consideration permit cancellations, acreage reductions or increases, boundary modifications and approved variances, leaving 42,841.6 BU (45%) left to be planted in 2021. Shellfish seed may be planted throughout the calendar year; however, by S.C. law (§ 50-5-940), cultch must be placed between 01 May and 31 August to receive planting credit.

SSG assessments for commercial status were completed for the 2021 season. 7 SSG's were assessed this month bringing the total assessed grounds up to 35. 1 culture application for multiple areas is on hold pending a request for additional information from the applicant to show commercial knowledge and intent. Staff met with applicant and are awaiting further info on a qualified manager.

An additional applicant identified an undesignated area (approx. 0.5 acres) between Sullivans Island and Mt. Pleasant. The shellfish permit committee (SPC) recommended designating this area a culture permit area which was approved by OFM director. The SPC subsequently recommended approval of the resulting culture permit application which was approved by OFM director. The conditional approval will proceed. Staff met with Parris Island to discuss updating the shellfish management agreement.

Mariculture/Importation

A compliance check was conducted on M-705F. During the visit the operation was found to be in good working order.

A seed inspection was conducted of oysters from the UGA skidaway hatchery. Staff found the seed to be clean and pass inspection.

Henry Davega and Ben Dyar met with the interagency mariculture working group and applicant Ryan Groeschel to discuss discrepancies found in engineered drawings that he submitted for his proposed floating gear farm in Privateer Creek. OCRM and Army Corps both have put permits on a stay until we have revised engineer drawings. If the revisions satisfy the other agencies they will then issue a new permit with updated drawings and DNR will continue with the public notice portion of the DNR permitting process.

Investigator Tyler Livezy from Department of Labor, Licensing and Regulation was escorted out to permit M-705F for a site visit so he could see a floating mariculture permit in person. There has been a complaint filed with the LLR from an undisclosed member of the public that the LLR will soon begin investigating.

SCORE – South Carolina Oyster Recycling and Enhancement

Shell recycling and planting; Recreational management

Shell Recycling

In the July recycling period, 1,013.75 bushels were recycled. The public drop off site at Fort Johnson was emptied totaling 57.5 bushels. Caterers contributed 2 bushels. The restaurant route contributed 877.5 bushels across 35 partner restaurants. No oyster roast events were scheduled in July. One new partner, LoLA, was added to the restaurant route. They have estimated a weekly contribution of 5 bushels and will contribute all year. They were taken cans and partner stickers. Equipment maintenance continued during this recycling period. The John Deere tractor was taken to Sparrow and Kennedy for maintenance. The dump truck "Rusty" had the exhaust system repaired and shocks reattached. The Beaufort and Charleston volunteer trailers were swapped for maintenance purposes. The Charleston trailer had tires rotated and hubs greased. The Beaufort trailer had hubs and leg stand greased. It also had tires rotated and the SCORE sign was reattached with better hardware. The deck-over 185 had a new solenoid installed and a flat tire replaced. The restaurant service route trailer had a flat tire replaced. The two high pressure water pumps were disassembled, rust was removed from the interior, and both were flushed with fresh water between plantings. The R/V Shorebird was rescued from the woods at Ft. Johnson and cleaned up in preparation for use. The section's 75hp Evinrude will be installed in the near future.

Volunteer Oyster Shell Recycling Program (Beaufort, Charleston, Greenville, Columbia)

Beaufort volunteers donated 31.5 hours recycling 75.5 bushels from Beaufort restaurants. Greenville volunteers donated 30.5 hours recycling 59 bushels from local Greenville restaurants.

Shell Planting for State Managed Grounds

Planting of recycled oyster shell and limestone (N = 9,536bu) occurred at seven sites (N=2,112m²) within one State Shellfish Ground (S272) and one Recreational Shellfish Ground (R274; n=1279m²) located in creeks in Bulls Bay (Charleston County) 7/12-7/16; 7/26-8/1. Approximately 3,776bu were planted over 833m² (\bar{x} =4.53bu/m²) at four sites in Anderson Creek (S272); and another ~5,760bu were planted on approximately 1,279m² (\bar{x} =4.50bu/m²) at three sites in Bull Creek (R274). These sites were planted over the course of ten days out of Garris Landing. Preparations, including moving the push boat Indigo Princess and barge its anchorage in the Folly River to the pier at Garris Landing, and moving a loader, the barge ramp and about 10,000bu of shell and limestone were performed the prior to planting. About 500bu of shell and 225bu of limestone were left in the quarantine area at Garris.

Recycling and Planting staff with the help of Kevin Swain (Community-Based) measured recent shellfish ground replanting footprints on S206E, S206W (Folly River) and S272 (Anderson Creek – Bulls Bay). Recent plantings in R274 (Bull Creek – Bulls Bay). Footprint acreages are currently being assessed and are unavailable at the time of this report.

Grant and Contract-funded Projects

Community Based Restoration

SCORE hosted nine volunteer events, during this reporting period, with 147 volunteers totaling 437.5 volunteer hours. These events included manufactured wire reef fabrication, marsh grass plantings, and oyster reef construction. Approximately 2,329 stalks of marsh grass were planted at the Wise Property with volunteers from the NMFS Community Science listserv and approximately 12,472 stalks at Maryville with volunteers from South Carolina Aquarium, SC Recreational Fishing license listserv and the SCORE listserv. Five bagged shell reefs were constructed across multiple sites. These sites included Big Bay, Patriots Point, Broad Creek, and Elliot Cut. One MWR construction event was held with the Florence Blue Water Fishing Club. Roughly 1,750 shell bags and were deployed at these events. Volunteers included Americorps, Charleston Waterkeeper, Volvo, South Carolina Aquarium, Crescent Exchange Club, and The Outside Foundation.

Two builds scheduled with the Coastal Conservation league, and SC state parks were cancelled due to inclement weather. Quadrat sampling is halfway completed. The Natural Resource Technician II and Biologist I positions have been filled. Christian Sergent and Holly Kight-Sommers assisted the Seeds to Shorelines workshop with South Carolina school teachers.

Mitigation

Three sites were staked within the Charleston Harbor, for planting oyster shell related to the Koppers project. Approximately 13,300 bushels of shell and limestone (50/50 mix) were planted.

Grant Funding

Approximately 3000 bushels of shell was planted at the Wise Property for the NMFS project. Due to a lack of shell availability this was a portion of the loose shell planting proposed in year two of the three year grant. The remaining loose shell to be planted will be completed in summer of 2022, in year three of the grant.

Miscellaneous

Kevin Swain was hired as the new Wildlife Biologist I position and Christian Sergent was hired as the new Natural Resource Tech II position with the SCORE Program.

Two new hourlies were hired for the SCORE Program, Kelly Lambert and Mathew McDonald.

Henry Davega assisted Angel Brown with interviews for the opening in the commercial licensing office. Barry Sturmer and Stephen Czwartacki attended the MRD driving class. Stephen Czwartacki completed the SCEIS trainings, “Central Resources for All Managers” and “Central Additional Resources for All Managers”.

Meetings

Henry Davega and Ben Dyar attended a webinar for the State Mariculture Coordination Network which included mariculture regulators and extension personnel from other South Eastern States in order to facilitate communication and networking among State regulators. Ben Dyar gave a presentation on South Carolina’s molluscan shellfish indigenous importation regulations and guidelines.

Ben Dyar and Lee Taylor, along with Brad Floyd and Michael Kendrick, met with a representative from Parris Island Military Depot to discuss updating the shellfish management agreement and to potentially include other species such as horseshoe crabs and blue crabs.

Lee Taylor, Henry Davega and Ben Dyar attended conference call with Tom Brice Hall to discuss his applications for culture permit areas in Beaufort area.

Michael Hodges and Ben Dyar attended a conference call with Rachel Hawes of the CCL to discuss potential funding opportunities from Toadfish Conservation Coalition for shellfish habitat creation and restoration.

Finfish:

STOCK AND HABITAT ENHANCEMENT PROGRAM

ARTIFICIAL REEF MANAGEMENT AND DEVELOPMENT

Artificial reef personnel met with representatives of Mount Pleasant Waterworks to plan the deployment of an historic water tower that is scheduled to be taken down. The tower will be taken down in sections and trucked to a dockside loading facility where it will be loaded onto a barge for offshore deployment on an artificial reef off Edisto.

The reef program has received another small tugboat for sinking as an artificial reef. The vessel is a donation from a local Charleston contractor. The tug has been towed to a marine contractor for cleaning and preparation and will be deployed on an artificial reef next month with financial assistance from CCA South Carolina.

Statistics:

- Delinquent letters for late submission of June 2021 mandatory logbooks were mailed on July 19th, 2021 (254 letters) to license holders for Wholesale Seafood Dealers and For-Hire Charter Vessels for June 2021 reports not yet received by the July 10th, 2021 deadline. The affidavit list and action list for June was provided to Law Enforcement on July 28th, 2021.
- Several data requests were completed during this month for commercial data including the following annual species summaries: Overall landing by species grouping, and specifically on shrimp, red snapper, and coastal sharks were provided to MRD staff. Comprehensive reports were submitted to ASMFC associated with various projects that summarized the previous calendar and/or fiscal year commercial and recreational landing and ex-vessel value for fisheries landed in SC. SCDNR charter database also had data requests including specific species of red snapper for catch and effort.
- The mini federal red snapper season occurred in July, with OFM staff participating with the collection of red snapper carcasses and related biological information. Outreach efforts were focused on recreational and for-hire fishermen to assist in providing fish carcasses throughout the state in a freezer fish program. The carcasses gathered were later processed to collect fish length, age (otolith extraction), gonad tissue, DNA and other samples were taken for further analysis.
- Staff continue to gain information to determine eligibility for the second allocation for the CARES Act funds. The agency had great success with the first allocations of funds, which were distributed to the state's commercial fishermen, wholesale seafood dealers and for-hire fishermen if the qualified for hardship during the COVID-19 pandemic. The draft allocation plan was reviewed by OFM and Legal Counsel and will be submitted to NMFS for final review and acceptance.
- Staff continue to work diligently to increase electronic data collections and efficiency for both recreational for-hire and commercial data. This will improve data quality and timeliness.

Commercial Trip Interview Program

- During the month of July, OFM Port Agents intercepted 18 commercial trips and collected 297 length frequencies along with obtaining 277 associated age structures from primarily snapper grouper species. Fishing activity continued to be hindered by weather, and the beginning of July will be a first tropical system to really impact fishing activities.

Recreational Statistics Section Summary

- In the month of July 2021, OFM staff completed 52 APAIS assignments resulting in 581 interviews with recreational anglers.
- OFM staff conducted post-season inspections of horseshoe crab holding ponds.
- OFM staff sampled commercial shrimp landings to collect data and make observations on species, size, black gill occurrence and abundance.
- Additional activities during the reporting period included: working closely with commercial seafood dealers to ensure compliance with reporting, assisting the SCDNR oyster shell recycling, distributing rules & regulations books and fish rulers to coastal businesses as requested.

Coastal Reserves & Outreach (CRO):

Public Outreach

Outreach to Coastal Residents and Visitors

- The Diversity Outreach Section focuses on the inclusion of underrepresented populations through translating and interpreting existing material, event planning and promotion to build relationships with these communities. In July, diversity staff archived messages and posts from the public, and provided content on the SCDNR's Diversity

Facebook pages for 2021. Staff translated marine education animations to facilitate online learning. Staff assisted stewardship, and saltwater outreach with 4 outreach programs.

- 60 community volunteers restored eroded salt marsh at Fort Johnson to finish the year long From Seeds to Shoreline Project.
- Three Saltwater Family Fishing Clinic Volunteers answered fishing related questions at the James Island County Park fishing dock and Jason's Lake. They reached 33 people.
- One Saltwater Family Fishing Clinic was hosted in July. In total, 12 attendees participated and 2 certified SCDNR Family Fishing Instructors volunteered 12 hours. Clinics took place at the Isle of Palms Recreation Center.
- A surf fishing clinic was held at Huntington Beach State Park with 10 attendees.
- 12 fishing instructors walked the Garden City Pier volunteering 19 hours and helped answer fishing related questions for 212 people as part of the Pier Outreach Program.
- Through the Marine Game Fish Tagging Program, 19 active participants tagged and released 96 fish, primarily red drum, flounder, and cobia. Additionally, 95 anglers reported 106 recaptures. Of these recaptures, 88% were re-released. Staff processed the tagging and recapture data, and rewards were mailed to anglers who reported recapture(s).

Media and Communications

- Staff spent five staff days in the field capturing multimedia for the sea turtle nesting program as the first steps toward a revised volunteer training video.
- Staff presented an introduction to interacting with the media to approximately forty students in July 2021: the College of Charleston summer REU students and the SCDNR Archaeology internship program's students.
- Staff provided design, multimedia, and writing/editing services for eight projects, including additional revisions of Sea Science publications and oyster shell recycling trailer updates.
- Staff stepped in to help ease the transition to a new OMO social media coordinator by taking over social media campaigns on clean boating and shorebird awareness.
- Staff responded directly to 25 media inquiries on topics ranging from sea turtle nesting to shark research featured on the Discovery Channel's Shark Week programming.
- One hundred and fifty clips referencing SCDNR MRD programs, staff or issues were published in July 2021, on topics ranging from sea turtle harassment to shrimp eel sightings.

Students and Teachers

- The Carolina Coastal Discovery Programs focus on conservation of the state's coastal natural resources, as well as relevant science standards. Aboard the Educational Vessel (E/V) *Discovery*, and on land, staff provide science investigations using field sampling techniques and equipment that echo current research methods. In July, 687 summer camp and school children participated in field trips, off site, and/or virtual marine science programs.
- 65 teachers participated in teacher training this month, ranging from Discovery estuary explorations, stewardship project planning, and outdoor science lesson training.

Support for Coastal Communities and Partners

- The Boating Infrastructure Grant (BIG) Program is a competitive US Fish and Wildlife Service program providing competitive funding for marina infrastructure to serve large transient recreational boats and provides access to recreational, historic and natural resources. Projects are considered public/private partnerships between the SCDNR, the US Fish and Wildlife Service, and the marina. With the FY21 funding cycle, SCDNR was awarded its 51st project since 2001 to help develop boater opportunities in the state. For the FY22 funding cycle, SCDNR received 5 proposals by the deadline of July 2. These included proposals from The SHM Port Royal Marina, St Johns Yacht Harbor, Lady's Island Marina, Dataw Marina, and the Water River Marina. These will be presented to the SCDNR BIG Advisory Committee on 7/11 for review and scoring.
- The Clean Vessel Act (CVA) provides USFWS funding to install and operate marine sanitary pumpout programs as outlined in the US Clean Water Act to divert overboard discharges and protect water quality. We have closed out our FY21 grants, and are preparing our FY22 programs. We are developing agreements with 19 marina partners, which includes the installation of 3 new pumpout boats, and the installation of an integrated pumpout system at Isle of Palms Marina. Six of these partners are from inland marinas, and the CVA program is also working with SCDHEC staff to assist two prospective inland partners who are interested in receiving funding for new pumpout systems.
- The SC Clean Boater Program collaborated with SC Sea Grant Consortium staff to explore opportunities to integrate Clean Marina Program messaging into outreach and education efforts for CVA partners and the general public. The SC Clean Boater Program also continued to develop content for this year's social media outreach campaign.

- The SC Monofilament Recovery and Recycling Program continued working with the Catawba Riverkeeper to recruit new volunteers and install 6 new monofilament recycling bins at boat landings and popular fishing locations within Lexington County. The programs are also collaborating to develop new educational signage to accompany installed bins.
- Staff continues to provide support and consultation on Motus Wildlife Tracking Systems for various federal, state and private partners. In July, SCDNR assisted the Nemours Foundation, Harbor Island, Fort Moultrie, and Port Royal Sound Maritime Center, Spring Island Trust, Edisto Beach State Park, Audubon, Daufuskie Island, and Fripp Island with the construction, maintenance and data collection of Motus towers.
- In July, staff participated in the South Carolina Adopt-A-Stream program for tidal saltwater systems, a pilot community science project through SCDHEC and Clemson Extension to engage volunteers in water quality monitoring. The Stewardship Coordinator partnered with Clemson Water Resources Extension to host the very first Adopt-A-Stream Volunteer Training for tidal saltwater systems. There were 11 attendees.
- The Coastal Training Program (CTP) connects coastal decision makers with scientific information about water quality, habitat conservation, community resilience and public access. In July, the CTP partnered with Clemson Extension, SC SeaGrant and the North Inlet-Winayah Bay NERR to provide three out of four webinars in the Flooding 411 series. Aimed at coastal SC residents, this four-part series (final webinar scheduled for August 4) covers information residents need to know about all types of flooding. Each session was attended by over 100 people and was eligible for 1.5 credit hours of SCPEAC continuing education for planning commissioners.

Coastal Reserves

- Stewardship staff assisted the NOAA Margaret A. Davidson Fellow's project to characterize visitor use in the ACE Basin to better understand impacts on natural resources.
- ACE Basin NERR staff continue to maintain South Fenwick Island to provide habitat management and public access opportunities. Trails and fields were mowed, sprayed and cleared of invasive species. Staff continued to build firebreaks and prepare for controlled burning.
- Staff continue to monitor Chinese Tallow within the St. Helena Sound WMA and South Fenwick Island WMA.
- In July, Capers saw 156 campers on 26 permits. 10 sea turtle nests have been documented. Unfortunately none of the nests have survived due to coyote predation. The full trail system and access to the dyke trail was maintained.
- Staff trained 30 Botany Bay Volunteers to lead the new "Education Station" kiosk at Botany Bay.
- In July, 14,693 people visited Botany Bay Plantation HP/WMA. Volunteers provided 478 hours of service, performing maintenance activities on the office building and property, participating in the Biodiscovery program, maintaining blue bird boxes, hosting fishing clinics and providing public outreach.

Protected Species

- Thirty two sea turtle stranding events were reported (12 adults, 1 unknown and 16 juveniles); three greens, eight Kemp's ridley, 21 loggerheads. Nine live events and 23 dead. Ten events are associated with watercraft injuries. Staff conducted three necropsies.
- Biologist tagged three turtles as part of pre-release protocol for turtles undergoing rehab and expected to be released to the wild.
- Staff members continue to provide 24 hour on-call coverage of sea turtle hotline during the week, weekends and on holidays, as well as, picking up live turtles and carcasses.
- Coordinator continues to work on QA/QC and data entry of historical nesting data into the database as time allows.
- Coordinator and Biologist flew a coastal survey with Law Enforcement.
- Coordinator reviewed manuscript draft for paper (co-author) on how weak site fidelity to a focal nesting/tagging site can affect demographic estimates in marine turtle estimates.
- Staff participated in an annual outreach event - SCDNR's Camp Wildwood and conducted nighttime survey with Botany volunteers.
- Staff conducted 18 ground surveys on barrier islands including convent beach, Raccoon Key (Cape Romain National Wildlife Refuge) and one on Turtle Island WMA (may be first surveys for this area).
- Staff conducted four site visits to project beaches.
- Staff picked up genetic samples from all volunteer projects along the coast on two collection pickup days and coordinated pickup with University of Georgia researcher.
- Staff generated weekly online content for SCDNR MTCP Sea Turtle Volunteer Facebook group, Coordinator worked with Media group to get content for updated sea turtle program nest protection training video and Biologist met with MRD Connections Committee.
- Biologist participated with the MRD in-water turtle trawl survey aboard R/V Bulldog.
- Staff attended NOAA sea turtle disentanglement webinar training.

- Coordinator continued to work with subcontractor company for ongoing Morris Island monitoring project associated with beach renourishment; completed Annual NOAA Section 6 agreement documentation for agency, worked with UGA genetics researcher to institute new genetic study with diamondback terrapins.

WILDLIFE AND FRESHWATER FISHERIES

ASSISTANT DEPUTY DIRECTOR'S OFFICE

Completed administrative and budgetary tasks. Prepared special use permit for DNR property in Lancaster County and temporary license agreement for use of DNR property in Lexington County. Reviewed press release of joint OSI/DNR property acquisition project. Prepared letter to Greenville County legislative delegation requesting approval of pending property acquisition. Prepared summary of real estate matter for consideration by the DNR Board. Compiled due diligence items for two pending property acquisitions and submitted to State Conservation Bank as part of compliance with grant awards. Submitted documentation to federal Forest Legacy Program concerning grant award. Received title work and closing documents for property purchase in Colleton County. Hired attorney for property acquisition in Charleston County. Hired attorney for property acquisition in Greenville County. Contracted for building condition assessment of property in Charleston County and examined site with consultants. Examined property for sale in Chester County. Continued work on 10 other real estate projects. Engaged in conversations with Naturaland Trust, The Conservation Fund, Open Space Institute, and The Nature Conservancy about potential/ongoing property acquisitions. Consulted with WFF staff on matters concerning Forest Legacy and State Wildlife Grants. Meetings and events attended: DNR Board meeting, WFF Advisory Board meeting, SC Conservation Bank meeting, WFF staff retreat, SC Environmental Awareness Award ceremony, Forest Legacy Southern Region meeting, meeting with SCPRT regarding property acquisition on James Island, and meeting with legal staff concerning conservation easement violations on property in Charleston County.

SWG/Forest Legacy Coordinator

State Wildlife Action Plan (SWAP) Implementation & State Wildlife Grants (SWG) Coordination [Anna Smith]

Smith participated in the SALCC Blueprint Landscape Scale Working Group and provided comments on the most recent draft of the Blueprint. A FY21 White-nosed Syndrome grant was edited and submitted to Grant Solutions on behalf of the PI. In addition, Smith made a site visit on 6/9/21 to and wrote and submitted a National Coastal Wetlands Conservation grant for the Cowpens Tract and submitted it to the USFWS for consideration. Partners engaged during the writing of support letters included the USFWS, OSI, DU, TNC, SCCB, and the NWTF. The Weatherwax Tract and Willow Bend tracts were considered for funding sources as they too are found in the same Waccamaw River corridor. Smith read the DoD Integrated Natural Resource Management Plan Annual Report for Joint Base Charleston (JBC) and participated in the annual conference call with JBC/SCDNR/USFWS to discuss the report and make recommendations to the Base. Prior to this meeting, SCDNR and NBCI staff had a conference call to discuss the potential for quail management on the Base. Other taxa team members were consulted for priority species lists and methodology citations that should be used by a consultant to update JBC's species surveys in anticipation of the next iteration of the INRMP. Smith will be writing a prospectus that JBC and the USFWS will consider for funding with DoD funds in FY22. Smith reviewed the SCDNR's response to the Migratory Bird Treaty Act proposed rule and passed along the agency's comments to the SEAFWA-WDC. Select portions of the draft SC Dam Removal Handbook, namely the Aquatic Biodiversity and Resource sections, were read and edited for Riggins. A presentation was created in anticipation of an upcoming meeting of the SECASC Climate Change in SWAPs Working Group. It will cover uses of state SWAPs (NC, SC, TN). Smith is a member of the SEAFWA-WDC's SWAP Standardization Subcommittee, reviewing current SWAP layouts and determining ways to standardize the language, habitats, threats, etc. across the Southeastern states in anticipation of the 2025 SWAP revision. A survey that will go out to Southeastern states was reviewed and edited. Smith and Grosse read and edited a news release on RAWA for the SCWF. Interim and final reports for various SWG and C-SWG grants were reviewed, edited as needed, and uploaded into Grant Solutions. Final reports were added to the SWG Final Reports page on the SCDNR website. A conference call was had with PIs Small and Tegeler about a potential Common Ground Dove SWG project. Smith read and edited a proposal by Bradley for database plant upgrades using USFWS discretionary funds. All active (29) NCWC, SWG, CSWG, and WNS grants were reviewed in Grant Solutions for reporting date changes generated by their flawed system. PIs were notified.

Forest Legacy Program (FLP) Coordination [Anna Smith]

A presentation was created by Smith for the SCFC to use in an upcoming meeting that compares the Forest Action Plan, SC State Wildlife Action Plan, and Sustainable Forestry Initiative (SFI). This presentation was used by Russell Hubright, Forest Management Chief, at a meeting with WestRock foresters on 6/16/21. A site visit was conducted on 6/14/21 to the Mead (“private easement”) property and the report generated. New divisions have necessitated a review of deeds, management plans, and plats. The SCDNR GIS department is working on creating new shapefiles for the USFS FLP program to designate these new divisions and ownerships. Smith attended portions of the Forest Legacy Southern Region Summer Meeting, co-presenting on the use of the SALCC Blueprint in grants, etc. with Hillary Morris (SALCC support services). Smith also moderated the morning session.

Other Activities / USFWS Liaison [Anna Smith]

Smith assisted the SEAFWA secretary and treasurer with reviewing all invoices for the FY17 C-SWG Hellbender grant and closing out the fiscal part of the grant. Smith cast her vote for TWS national leadership. The SCDOT/SCDNR Agreement for the database upgrade was revised to extend the project until 2022. Smith, Grosse, and Hart gave a reptile presentation to ~50 Vacation Bible School (VBS) children (preschool-5th grade) and adults at Palmetto Presbyterian Church (PPC) on Saturday, 6/26/21. Live snakes and turtles, bones, shells, sheds, and other materials were used. Smith assisted Hart with alligator night surveys on the Santee Cooper Lakes on 6/30/21. A total of 47 alligators were observed during this particular route.

Summary of meetings attended / conference calls / webinars watched / training programs or workshops:

- SALCC Blueprint Landscape Scale Working Group (6/1/21)
- Lunch and Learn: “Protecting SC’s Native Reptiles and Amphibians” (6/2/21)
- Annual INRMP Report review with JBC, SCDNR, and USFWS (6/15/21)
- SWAP Standardization Subcommittee Virtual Meeting (6/7/21)
- Forest Legacy Southern Region Summer Meeting – select sessions (6/15/21-6/17/21)
- Watched 2020 recorded TWS Talks: “The Crisis Continues: Reflections of the First 20 Years of 21st Century Wildlife Conservation” [John Kanter, NWF] (6/15/21)
- Audubon/Cornell University live stream of “Discovery at Deveaux” in regards to whimbrel (6/22/21)
- PPC VBS herp presentation with Smith, Grosse, and Hart (6/26/21).

Natural Heritage Database Program / GIS Manager [Joe Lemeris]

Meetings:

- 6/1 – Lemeris attended NatureServe’s (NS) Habitat Modelling in the Network webinar series, focused on the improved model review tool. NS has expressed that SC may be able to use this tool on our own infrastructure to facilitate internal models.
- 6/2 – Lemeris attended Andrew Grosses’ Lunch and Learn webinar on Protecting SC’s Reptiles and Amphibians.
- 6/3 – Lemeris attended a Natureserve webinar discussing improvements to their Survey123 observations form, QA/QC methods, etc.
- 6/7 – Lemeris had a follow-up interview with Esri’s staff writer for clarifications/follow up questions about an upcoming blog/newsletter piece about Heritage database improvements/species reviewer tools.
- 6/8 – Lemeris attended SCDNR’s monthly GIS webinar hosted by Tanner Arrington.
- 6/9 & 6/16 – Lemeris met with Esri staff for follow-up discussions on improvements/tweaks to some of the modelling workflows.
- 6/10 – Lemeris met with staff from KY Nature Preserves to discuss how SC created a reviewer tool using ArcGIS Enterprise products.
- 6/11 – Lemeris, Arrington and Thachik met with Esri Advantage Program staff for biweekly updates, discussion of technical issues/challenges, new technologies, trainings, etc.
- 6/15 – Lemeris and Arrington met with Esri change management staff to discuss next steps for implementing progress toward creating executive sponsorship of GIS technology changes in WFF.
- 6/17 – Lemeris attended a Data Manager topic call to discuss the application of certain fields in Biotics, as well as a network topic call to hear from the lead of the USFWS Species Range Project.

- 6/18 – Lemeris, Thachik and Arrington met with Esri staff to go over the most recent updates to an upcoming public fishing access web application.
- 6/22 – Lemeris, Smith, Tegeler and Small met to discuss changes to the S-rank for Common Ground Dove, and potential opportunities for researching abundance estimates in SC through a SWG grant.
- 6/24 – Lemeris, Arrington and Thachik met with Esri Advantage Program staff for biweekly updates, discussion of technical issues/challenges, new technologies, trainings, etc., and allotted extra time to discuss best practices for installing/federating an ArcGIS image server license.
- 6/30 – Lemeris, Arrington, and Thachik met with Riggan, Whitehead and Prosser to discuss ideas to improve land management/acquisition documents through GIS applications.

Training/Field:

- 6/9 & 6/10 – Lemeris volunteered with the SCDNR bat netting team at Wateree WMA/HP.
- 6/23 – Lemeris attended the Fleet Safety Drivers Training half-day refresher for 3-year recertification.

Project Progress Updates:

- Esri Enterprise Advantage Program Update:
 - Arrington and team are continuing to compile GIS data from across WFF to incorporate into a managed lands database. Continued tweaks/improvements have been made to the demo managed lands hub sites/applications.
 - Fishing/Boat Access data have been pulled into a web format, and applications are continuing to be developed by SCDNR and Esri to help the public find locations for boating/fishing access.
 - Distribution Modelling Workflows: all 5 modelling scripts have been converted to Python and ensemble modelling scripts have also been created. Lemeris has validated all scripts to ensure functionality – a few tweaks to some of the parametric models are in the process of being updated.
- SCDNR/SCCB Joint position update:
 - SCCB and SCDNR have signed an MOU to begin the process of hiring a joint GIS Analyst! The Position Description is ready to be posted by HR, upon receipt of all documentation/approvals from state admin. SCCB and SC Heritage Trust are in the process of assembling an interview panel and forming interview questions.
- **The Natural Heritage Hub Site has been viewed 860 times in June (12,230 all time since April 2020), and 20 new users (total of 301 since April 2020)** from state/federal/local agencies, land trusts, and private environmental consultants have requested/gained access to review species data and generate reports.
- **130 of 465** Users accessed the Heritage Trust GIS Portal in June, compared with 95 in May.
- **Over 230** new records were added to the database in June, comprising of a mix of herps, freshwater fish, and plants.
- **113 species reviews were completed automatically** using the new species reviewer tool for environmental professionals in June, compared with 111 in May.
- Lemeris created an additional creel survey for Lake Greenwood at the request of the creel biologist.
- Lemeris assisted various staff in the development of maps for projects, informational documentation, advisory board materials, etc.
- Turner (hourly intern) has been assisting work with creating a bat identification key on Survey123 and pulling historic museum records for invertebrate species we currently have no records for. Turner also volunteered to net bats at Wateree WMA/HP on 6/9.

FRESHWATER FISHERIES

Highlights

Staff completed standardized state lakes sampling on Star Fort Pond, Lakes Long, Johnson and Thicketty. Staff assisted Region II with sampling on Jonesville Reservoir.

Staff expended 5 days of electrofishing effort on the Waccamaw River cataloguing the fish population's recovery from a devastating fish kill following Hurricane Florence in 2018.

A study monitoring the seasonal distribution and summer habitat use of adult Striped Bass in the Edisto River continued. Acoustic receivers in the North and South Forks of the Edisto River were downloaded.

Staff partnered with the USFS to sample five of the 15 ponds on the Francis Marion National Forest with a focus on the sport fish communities in those ponds.

Staff continued data collection for the development of a Stream Quantification Tool (SQT) for South Carolina. Fish sampling was completed at 12 sites in June 2021, bringing the study total to 66 sites completed.

This month 6,260 grass carp were processed for sterility testing at Cohen Campbell Fisheries Center.

A total of 42,883 trout were stocked during the month of June.

Efforts this month included: downloading acoustic receivers and manual tracking in Charleston Harbor, Lake Marion, the Rediversion and Diversion Canals, and the Congaree, Wateree, Cooper, Santee, Edisto, Waccamaw, Great Pee Dee, and Savannah Rivers; gillnetting for Atlantic and shortnose sturgeon in the Great Pee Dee, Waccamaw, Edisto, and Savannah Rivers; monitoring elver ingress at Goose Creek Reservoir and St. Stephen Dam; fulfilling telemetry data requests; maintaining the comprehensive telemetry database and cleaning up false detections and duplicate station names; submitting telemetry data to the FACT network; submitting monthly, quarterly, and annual reports to fulfill obligations such as the ASMFC shad and herring annual compliance report and the annual ESA Section 6 Cooperative Agreement summary.

Held 4 clinics open to the public: High Falls County Park, Table Rock State Park, South Cove County Park, and Dreher Island State Park

Coordination (Chief's Office)

Staff conducted Section Coordinator meetings by phone and in-person to review project activities and discuss administration issues.

Staff reviewed operations and plans for the Freshwater Mussel Management program

Review potential future activities associated with the Santee Cooper re-licensing with Diadromous Fish staff

Participated in the monthly fish chief call with AFWA

Staff inspected state lakes and project activities in Region 1

Staff attended virtually the June meeting of the Lake Paul Wallace Authority

Staff participated in a review of the upcoming rules and regulations publication

Staff assisted with the TBF High School World Finals Bass tournament at Lake Hartwell.

Region 1

Staff completed standardized state lakes sampling on Star Fort Pond, Lakes Long, Johnson and Thicketty. Staff assisted Region II with sampling on Jonesville Reservoir.

Staff assisted the USACOE in planting water willow on Lake Thurmond.

Staff assisted with High School bass tournament on Lake Hartwell.

Staff conducted interviews for a part-time admin in the Abbeville field office.

Staff participated in a mandatory defensive driver training course.

Staff drained a pond in preparation for restoration efforts.

Staff delivered trout samples to Auburn University disease lab.

Staff participated in tour of upstate stream sites and state lakes with Fisheries leadership.

Staff repaired canoe and utility trailers.

Staff cleared vegetation from fishing trail along Middle Saluda River at Jones Gap State Park.

Staff worked on federal aid report write up.

Staff prepared and read otoliths from standardized electrofishing and gill net sampling on Lake Keowee, Lake Hartwell, Lake Thicketty, and Lake Jocassee.

Staff assisted research unit with stream sampling.

Staff assisted with Camp Wildwood activities.

Staff prepared backpack electrofishing units and batteries for upcoming Chattooga River sampling.

Staff maintained the Russell Ponds bank fishing area.

Continued work on the new Hartwell Fish Habitat Project permit. Interviews conducted for the FTE open position.

The Saluda River Creel survey was completed in June. Creel schedules were prepared for the upcoming Lake Greenwood creel survey beginning July 1. Staff worked with Joe Lemeris with the design of a new creel survey, through GIS Survey123 for Lake Greenwood creel. Staff completed SAS reports, started analyzing data and summarizing for 2020 Keowee Creel report. Reviewed historical Keowee data. Staff assisted Aaron Bunch, Clemson student, with obtaining historic creel data containing zip codes for his Clemson PhD research project.

Trout stocking was conducted on schedule. Staff conducted reconnaissance at trout streams in Greenville and Pickens Counties.

Region 2

Staff prepared and submitted the May 2021 activity report, daily work reports, mileage & purchasing card logs to HQ as required.

Staff welcomed Francis Marion University Intern Robert Harper Jackson to the Florence Office for the summer.

Region 2 staff held a planning meeting for June & July activities.

Staff submitted the Region 2 FY22 Annual Work Plan in TRACS format to Assistant Fisheries Chief Lynn Quattro.

Staff expended 1 day of electrofishing on the Little Pee Dee River looking for flathead catfish (FCF) over 750 mm to augment an historical dataset.

Staff expended 5 days of electrofishing effort on the Waccamaw River cataloguing the fish population's recovery from a devastating fish kill following Hurricane Florence in 2018. This is the third & final year of the post hurricane study.

Staff expended 2 day's effort sampling six oxbow lakes on the Waccamaw River for a special project by Florence Summer Intern Dean Wrobel of Coastal Carolina University. The special project is a comparison of main stem river fish assemblages to oxbow lake fish species assemblages.

Staff spent considerable time processing LMB/BLC otoliths for age/growth studies and computerization of that data. Also, considerable time was expended processing & ageing otoliths from winter gill net sampling.

Staff conducted spring electrofishing on DNR Fishing Lakes Ashwood, Jonesville and Oliphant where a LMB removal project is being conducted, at Lancaster Reservoir, Mountain Lakes 1 & 2, Sunrise Lake, Lake Paul Wallace, & Lake York at King's Mountain State Park.

Staff reviewed one Scientific Collection Permit Application.

Staff attended a ribbon cutting ceremony at Springs Park Landing on Fishing Creek Lake.

Staff conducted 0.66 miles of trail maintenance at Draper WMA ponds.

Summer Intern Aiden Maddux assisted with a fishing clinic at DNR's Camp Wildwood, Kings Mountain State Park.

Staff participated in 2 conference calls & 1 in-person coordinator meeting.

Region 2 Summer Interns attended a required Driver Training Course.

Staff changed an impeller on the Rock Hill electrofishing boat's motor.

Florence's staff hosted a catfish otolith processing & ageing workshop for Region 3 personnel.

Staff participated in a Duke Energy Catawba-Wateree Shoreline Management Workgroup Teams Meeting.

Florence's intern staff assisted Cheraw Hatchery with redear sunfish harvest and received an operations tour.

There were no weed identifications nor water quality tests performed in Rock Hill during the month. In Florence, 1 weed identification and 1 water quality test was performed for a pond owner.

Two telephone pond consults were conducted at the Rock Hill Office (1 general pond management & 1 weed inquiry), but no fisheries information requests were received from the public. 33 calls regarding fisheries information were received at the Florence Office with 10 of those calls being pond related. Constituents seeking fisheries information were served by Ginger Ridgill, Jason Marsik, or Gatlin Edge in Florence and by Robert Stroud, Preston Chrisman, or Alex Michaeli at the Rock Hill Workstation. Recommendations and pertinent pond management literature was disseminated as necessary via telephone, in-person, through the US Postal Service, or by email to pond owners.

Contact with NGOs: Two.

Region 3

A study monitoring the seasonal distribution and summer habitat use of adult Striped Bass in the Edisto River continued. Acoustic receivers in the North and South Forks of the Edisto River were downloaded. Four transmitter implanted Striped Bass entered the South Fork for summer residence, none have entered the North Fork. To identify discrete locations and habitats 60 Km of the South fork were floated to manually locate Striped Bass. Two Striped Bass were located during the three-day effort.

Standardized boat electrofishing was conducted at 8 sites in the Lower Saluda River to assess the trout population. Eleven Rainbow Trout and 13 Brown Trout were collected. Rainbow Trout and Brown Trout stocked

during winter 2021 currently average 13.5- and 9.6-inches, respectively. One 21-inch holdover Rainbow Trout was collected. Trout stocked into the lower Saluda River continue to have excellent growth and poor survival.

Summer-time Striped Bass habitat monitoring in Lake Murray was initiated by collecting temperature and dissolved oxygen profiles at five sites. Dissolved oxygen below the thermocline, where temperatures are optimal for Striped Bass, were mostly above 4 mg/L. Fifty-six percent of measurements in the lower lake had quality habitat indicating there is an abundance of Striped Bass habitat to start the summer; last year only 7% of the June measurements in the lower lake had quality Striped Bass habitat.

A public water fish kill on Duncan Creek in Lexington County was investigated on June 15th. A sewage overflow at the Batesburg-Leesville Waste Water Treatment Plant (WWTP) resulted in fish mortality in a short stream reach below the WWTP discharge. Forty-six dead fish, mostly sunfishes and bullheads, were collected from a 218 m stream reach below the sewage discharge.

Water quality monitoring in Lake Brown was continued to assess the presence and likelihood of a summer-time blue green algae (cyanobacteria) bloom.

Staff estimated the ages of 301 fish utilizing otoliths. The Largemouth Bass and Black Crappie otoliths were collected as part of routine sampling in Lake Murray, Parr Shoals Reservoir and Lake Brown. Staff also worked with Region 2 to learn to process Flathead Catfish otoliths for age estimation.

Staff provided pond management assistance to 9 pond owners involving queries on vegetation control (4), fish kills (1) and general management (4). Staff responded to 24 calls or emails seeking information on boat titling, regulations, fishing licenses, fish parasites, potential fish kills and Lake Murray buoys among other things.

Code was developed in the statistical software program R to calculate standard fisheries metrics (e.g., W_r , size structure, CPUE, etc.). The statistical analysis program will be used to analyze data collected during routine sampling of Largemouth Bass and Black Crappie in Regional water bodies and should expedite analysis and reporting.

One staff member lead the 2nd year campers at Camp Wildwood held at Walhalla.

Region 4

Technical/Meetings

Federal Aid report

Staff continued analysis and write up for the FY21 Federal Aid in Sportfish Restoration report. Content will include all sport fish related program activities completed during the fiscal year and will be submitted to the division's executive office in August.

Field Work

Fish Collections

Staff made a second collection for the Horry County Museum. Species included various sportfish native to the region and are currently on display at the museum's aquarium.

Francis Marion National Forest Sampling

Staff partnered with the USFS to sample five of the 15 ponds on the Francis Marion National Forest with a focus on the sport fish communities in those ponds. Starting in 2019 Region IV staff began sampling five ponds/year with each pond being visited on a three-year rotation. Sampling these systems on a semi-annual basis helps inform stocking decisions on the FMNF.

Goose Creek Reservoir

Goose Creek Reservoir was sampled a second time in June applying the state lake's protocol for sampling sunfish. Although GCR is not a state lake, it is a 600-acre publicly accessible reservoir within the Charleston metro area that is heavily utilized by local anglers, particularly for its bass and bream fisheries. To our knowledge, SCDNR has not performed any sportfish population surveys on this system in over ten years and it was determined that gathering baseline data would be of value.

Grass Carp

Staff have continued to collect GCP from various locations on the Santee Cooper system. These collections help determine the condition of the current GCP population. Collecting them throughout the year and from areas not previously visited has helped account for temporal and spatial differences in condition. Additionally, FWF staff from Region I also made a collection while on the Santee Cooper system bowfishing, which has significantly increased the size of the dataset. Data gathered through these collections are used to help inform GCP stocking decisions made by the South Carolina Plant Management Council.

Lab Work

Otolith Sectioning

Staff have begun mounting, sectioning, and ageing otoliths collected from the Goose Creek Reservoir sunfish survey. Data will be analyzed and results included in the Federal Aid report.

Statewide Research

We continued data collection for the development of a Stream Quantification Tool (SQT) for South Carolina. Fish sampling was completed at 12 sites in June 2021, bringing the study total to 66 sites completed (study total target of 100). This study will provide the data for development of biological indicators to evaluate the effectiveness of stream restoration and mitigation activities in South Carolina.

We continued field collections for the C-SWG Bartram's Redeye Bass conservation study, focusing on distribution and occupancy modeling for this species. Ten Bartram's Redeye Bass were observed at a historic locality and tissue samples were obtained for genetic analysis by the SCDNR Population Genetics Lab.

Interim report for the C-SWG was completed and submitted.

We met with collaborators at Clemson University to discuss analysis of Bartram's Redeye Bass population structure in relation to environmental factors and human-induced fragmentation of river networks.

Workplans for FY22 Sportfish Restoration were completed and submitted.

Staff completed revisions as coauthor on a manuscript submitted for peer review to the journal *Science of the Total Environment* titled "Quantifying Flow–Ecology Relationships across flow regime class and ecoregions in South Carolina".

Hatcheries and State Lakes Activities

Coordination

This month 6,260 grass carp were processed for sterility testing at Cohen Campbell Fisheries Center.

Two (2) vendor permits were issued for grass carp distribution statewide.

Dennis Wildlife Center (DWC) and Bayless Hatchery

One (1) Santee Cooper strain striped bass pond was harvested, and 143,641 fingerlings were stocked in Lake Murray. Two (2) Savannah strain Striped Bass ponds were harvested, and 137,379 fingerlings were stocked in Lake Thurmond. Two (2) fingerling Striped Bass ponds were harvested and relocated to the fish house to be trained on feed. These fish were later redistributed to eight (8) 1-acre ponds for grow out to Phase II size.

Ten (10) ponds at DWC were stocked with approximately 36,000 channel catfish fingerlings for grow out. The fingerlings were purchased from Hopper-Stephens Hatchery in Arkansas.

Redeye bass that were being held for a production study in the fish house did not spawn this spring. The 16 broodfish were relocated to a ½-acre pond at the Dennis Wildlife Center until next year.

Five (5) ponds were stocked with Bluegill delivered from the Spring Stevens Hatchery. Approximately 4,900 Robust Redhorse fry were stocked in a pond for grow out. All remaining ponds at the Dennis Wildlife Center were filled and stocked with tilapia.

Staff assisted Cheraw Hatchery with the harvest and distribution of Largemouth Bass from Cheraw Hatchery, as well as the redistribution of a fingerling Redear Sunfish Pond.

Staff spent a week teaching a fisheries course at Camp Wildwood.

Staff exchanged two (2) trucks at the STYX receiving compound in Columbia, and the Hatchery Intern successfully completed the AAA Driver Improvement Program.

Fish food was ordered to feed the Striped Bass, Bluegill, Channel Catfish, and Robust Redhorse on site. Automatic feeders were programmed and set up on 24 ponds.

Staff completed and submitted daily staff reporting logs, monthly reports, mileage sheets, fuel logs, procurement statements, and purchase requisitions.

Staff performed routine water quality monitoring, fish feeding, as well as maintenance of grounds, buildings, and equipment.

Walhalla State Fish Hatchery

A total of 42,883 trout were stocked during the month of June.

Staff continued to rear fingerlings and began moving fish into outside raceways.

As both air and water temperatures have continued to rise and cause concern for fish health, staff have worked to mitigate stressors (where feasible) in attempt to reduce high mortalities.

Visitors skyrocketed after public visitation was reinstated.

Cohen Campbell Fisheries Center/Barnwell Substation

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Performed general maintenance and upkeep at both Cohen Campbell and Barnwell substation.

Staff traveled to Lonoke, AR for organizational cross training with private and state entities and transported approximately 170,000 Channel Catfish fry back to Cohen Campbell for production.

Staff traveled to Dearing, GA to transport approximately 70,000 Channel Catfish fry back to Cohen Campbell for production.

Received and stocked approximately 40,000 Channel Catfish Fingerlings into ponds for summer grow out.

Constructed new aluminum walk board and valve set up for pond 3.

Met with a representative from Ventrac for a demonstration and equipment walkthrough.

Tested two (2) grass carp loads.

Performed Close of fiscal year activities.

Cheraw State Fish Hatchery

May production included Smallmouth, Largemouth, and Striped Bass. The Smallmouth Bass were trained to accept commercial feed and restocked into rearing ponds for Phase II or were stocked as fingerlings in the Broad River system. The Largemouth Bass were harvested and stocked in public waters (i.e., the Waccamaw River system).

Redear Sunfish were trained on commercial feed and restocked into rearing ponds for Phase II production. Fingerling Redear were harvested and redistributed into rearing ponds at predetermined densities to produce advanced fingerlings (3"-4").

Interviews for Assistant Hatchery Manager were conducted, and a candidate was selected.

Staff continued to perform routine maintenance services for water quality, feeding, and disease control.

Spring Stevens State Fish Hatchery

Redbreast brood were stocked into ponds for summer production.

Bluegill were extracted and stocked into Dennis Wildlife Center ponds for summer cultivation and grow out.

Facility Maintenance (i.e., Grass Cutting) was performed by State Lakes Crew.

Manager resigned; position has been posted for re-hire.

State Lakes

Assisted with harvest and distribution of Striped and Largemouth Bass at Cheraw Fish Hatchery.

Assisted with stocking of brood Redbreast at Springs Stevens Hatchery.

Fertilized Lakes Star Fort, Johnson, Jonesville Reservoir, Cherokee, Long, Oliphant, Sunrise, and Mountain Lakes 1&2.

Stocked 150 Grass Carp in Lake Paul Wallace.

Performed aquatic weed spraying at Lake Warren and Sunrise.

Contractors tapped and bore into an old existing pipeline and found out that the pipe was full, but the plug was working (why no new water was coming into the line).

Met with department litter control, DNR Law Enforcement, and Local Law Enforcement to brainstorm ideas on reducing vandalism and littering.

Had on-site visits with Fisheries Regional Staff and Upper Management.

Mowed the Springs Stevens facilities.

Routine maintenance (i.e., grass cutting, litter control, and terrestrial weed spraying) at all 18 State Lakes.

"Fresh Eyes" Program

Made multiple site visits during the month and wrote reports on site visits made.

Assisted with the daily operations and care of the Spring Stevens Hatchery. Daily trips and duties included filling ponds, spraying pond for water net, spraying 250 gallons of Glyphosate on areas that cannot be reached with mowing equipment, working on broken equipment, and other activities.

Attended several impromptu meetings with Hatchery Coordination's Leo Rose and Nicole Kish.

Worked with Georgia DNR on Channel Catfish fry for the Cohen Campbell Hatchery.

Outreach and Training

Staff attended a coordinator meeting at the Barnwell State Fish Hatchery.

Administration

Cohen Campbell Hatchery, Dennis Wildlife Center, Cheraw Hatchery, Walhalla, and Spring Stephens Hatchery executed all COVID-19 safety protocols.

Weekly trout stocking reports continue to be updated on the SCDNR website.

Diadromous

Activities—Summary

Efforts this month included: downloading acoustic receivers and manual tracking in Charleston Harbor, Lake Marion, the Rediversion and Diversion Canals, and the Congaree, Wateree, Cooper, Santee, Edisto, Waccamaw, Great Pee Dee, and Savannah Rivers; gillnetting for Atlantic and shortnose sturgeon in the Great Pee Dee, Waccamaw, Edisto, and Savannah Rivers; monitoring elver ingress at Goose Creek Reservoir and St. Stephen Dam; fulfilling telemetry data requests; maintaining the comprehensive telemetry database and cleaning up false detections and duplicate station names; submitting telemetry data to the FACT network; submitting monthly, quarterly, and annual reports to fulfill obligations such as the ASMFC shad and herring annual compliance report and the annual ESA Section 6 Cooperative Agreement summary.

Breakdown of Project Activities

Great Pee River Sturgeon Project

This month's focus was on sampling for shortnose sturgeon, and 13 trips were made. Five days of sampling were cancelled because water temperature exceeded the sampling requirements for implanting acoustic transmitters. Sampling efforts took place between RKM 13 and 20 on the Waccamaw River, with most of the effort taking place at the confluence of Thoroughfare Creek and the Waccamaw River. Five shortnose sturgeon were captured, all of which were transmitted with acoustic transmitters. One-hundred and three Atlantic sturgeon were caught, of which 17 were recaptures. Five of these recaptures were initially captured in the Winyah Bay River System, six of them were initially captured in the Savannah River, and one was initially captured in the Edisto River. The other five fishes' initial capture locations have yet to be determined.

Winyah Bay Juvenile Sturgeon Project

Twenty-six sampling trips between two boats were conducted in the Winyah Bay System this month for a total of 77.77 100-yard net hours. One hundred and forty-seven total sturgeon were captured: 21 recaptures and 126 virgin captures. Fifty-three sturgeon were of target size: eight recaptures and 45 virgin captures. All first capture fish received a PIT tag and the standard work up. Fin rays were subsampled from sturgeon under 700 mm fork length. Sampling nets were repaired and maintained on a weekly schedule, and one 2.5-inch mesh set net was built. The truck received an oil change and four camshaft variable sensor replacements.

Savannah River Sturgeon Egg Project

The Savannah Egg Project downloaded the Charleston Harbor array and sections of the Cooper River. Personnel also assisted with sampling on the Edisto and Waccamaw Rivers as well as the Goose Creek Reservoir eel ramp. Staff assisted with picking up new vehicles and completing fiberglass work done to reinforce the deck on the project boat.

Savannah Harbor Expansion Project (SHEP)

Savannah Harbor Expansion Project (SHEP) manual tracked for transmitted fish to better identify fish locations between receivers. All receivers on the Savannah River were downloaded, cleaned, and batteries were replaced as needed for upcoming quarter 3 report to USACE.

Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA)

This month, project ACFCMA completed seven trips to the Edisto River for sturgeon sampling. Fish were PIT tagged, measured, and genetic fin clip samples were collected. Edisto sturgeon genetics sheets were prepared and submitted for completed genetics kits. Field equipment maintenance was completed for net repairs and minor boat trailer repairs. The eel ramp at Goose Creek Reservoir was monitored twice a week, every week this month.

Santee Accord Juvenile American Shad Study

Electrofishing surveys targeting juvenile American shad (AMS) began on June 1st and a total of 425 American shad (AMS) were collected. Two trips to the Diversion Canal were made and 26 AMS were captured; four trips to the Congaree River with 41 AMS captured; five trips to the Santee River with 357 AMS captured, and two trips to the Wateree River with one AMS captured. All juvenile AMS were collected from sampling and fin clips will be taken for genetic analysis.

Rediversion Project

American eel passage at the St. Stephen dam continued without pause this month, totaling 102 eels measured and passed upstream (n=317 for 2021). Eels were stocked directly into Lake Moultrie, aside from 53 eels, which were transported to the Wateree River, and stocked by Duke Energy staff in the tailrace below the spillway. St. Stephen Dam discharge continued to follow periods of peak and no power generation, with longer periods of no-flow becoming more frequent. Downstream water levels have dropped to normal summer conditions. Project staff continued to aid other Diadromous field work along with assisting with data management. Annual compliance report data was gathered, a summary of fish lift operations—with emphasis on work orders, causes, and documentation—

was composed and submitted to federal partners, and staff continued communications with Duke Energy concerning elver transport and stocking in the Wateree system. A vehicle transfer was completed, and two vehicles remain slotted for replacement when new vehicles become available. Focus will now shift to managing and analysis of rediversion project data, and the writing process for annual reports.

Meetings and Outreach

Staff participated multiple meetings and conference calls regarding:

- A River Herring Watershed Prioritization Exercise,
- Discussions with NMFS grant personnel,
- The annual Yadkin-Pee Dee Resource Management Team meeting,
- Discussion with NMFS and FWS regarding St Stephens Fishway issues,
- ASMFC shad and river herring mixed stock analyses,
- An annual sturgeon needs discussion with the Protected Resources Division of NMFS,
- A sturgeon ageing workshop planning meeting with ASMFC,
- The annual summer FACT meeting,
- A ASMFC River Herring Steering Committee meeting,
- A project update with partners from Clemson University,
- And two theses' defenses regarding sturgeon research.

Mussels

Participated in DISC profile training.

Conducted 1 Broodstock collection trip at Barnwell Hatchery.

Collected Bluegill from Spring Stevens Fish Hatchery.

Performed inoculation of Bluegill with *Villosa delumbis* and *Utterbackia imbecillis*.

Performed 2 CPUE surveys.

Gave tour of mussel culture operation.

Continued maintenance of mussels in the classroom program example tanks.

Continued stage 1 culture of *Alasmidonta varicosa* 2103AvA-O and 2106VdA and 2106UiA.

Continued pond culture of *V. delumbis* and *U. imbecillis* cohort 2019VdA and 2019UiA.

Aquatic Education

Family Fishing Clinics & Certified DNR Fishing Instructors

Continued communicating schedule changes to volunteers and the public

Held 4 clinics open to the public: High Falls County Park, Table Rock State Park, South Cove County Park, and Dreher Island State Park

Held 3 clinics for closed groups: Cherokee county 4H20, Newberry Soil and Water, and Camp Wildwood

Fishing Rodeos

On-going participant survey data collection

Responding to inquires about schedule

Fishing Tackle Loaner Program

Site user logs collected for data collected for input

Collecting follow up surveys from participants

Provided new equipment to Greenwood State Park

Loaned fly fishing gear to Boy Scout group

Requested all loaner sheets for FY21 from host sites

Trout in the Classroom (TIC)

Met with Trout Unlimited to plan for 2021-2022 school year

Youth Bass Fishing Club

Continued to field questions and provide assistance to schools creating clubs for the first time

Beginning to plan for 2022 by discussing with relevant counties and tourism council

Black Bass Slam

Posted information on Social Media to promote the program

Conducted interview with Augusta WRDW news station

Received 2 slam completions

Other

Sat on Diversity Outreach interview panel

Aquatic Education summer intern working with Mussel program to conduct filtration experiments and developing educational curriculum

Submitted and posted an article to the SCDNR blog

Provided macroinvertebrate field lab and fish ID lab to summer camp group

Assisted Lake Murray Charter captains in providing a fishing outing for Newberry Boys Home

Met with USC professor to discuss speaking engagement with Environmental History and Environmental Studies classes

Hosted Camp Barstow twice at Cohen Campbell to assist and oversee Boy Scout groups in pursuit of merit badges

Installed new phone prompts to Aquatic Education main line to help direct public calls to appropriate offices

Planning meeting with LE, Diversity Outreach, and NWTf to hold a Hispanic Heritage Celebration event at NWTf

Held a cross training with MRD-CRO staff to learn more about Saltwater fishing initiatives and methods

Outreach materials provided to: 5 members of the public and 6 phone interactions

WILDLIFE SECTION STATEWIDE PROGRAMS

Coordination and Administration

Participated in numerous meetings with Deputy Director Cope, Chief Dukes and Assistant Chiefs Swaynham and Chappellear on various topics including, coordinating staff work schedules, activities, field operations, implementation of regulations, and budgets. Supervision of Statewide Programs staff continued. Meet with senior staff of Wildlife and Freshwater Fisheries at Donnelly to discuss budget planning and other topics. Provided review and edits to SCDNR Rules and Regulations document. Attended virtual presentation of the Deveaux Bank Whimbrel film. Attended Wildlife and Freshwater Fisheries Advisory committee meeting in Columbia. Attended virtual meeting of SC Rabbit task Force to discuss RHDV2 occurrence in Georgia. Assisted LE on wildlife possession and importation investigation. Reviewed Clemson Sunday Hunting Survey.

Big Game Program

General Activities

Responded to 56 phone calls and 64 emails from the public related to new or proposed hunting regulations, deer/turkey tagging, sick or nuisance animals, urban deer, and other general deer, turkey, and black bear related topics.

Law Enforcement related activities involved answering questions from the public concerning legal issues related to deer, turkey, bears, hogs, weapons, and hunting (9 calls and 11 e-mails approximately 1.7 hours). Consulted directly with field officers (5) related to deer depredation, wildlife rehabilitation, birds of prey, and pet deer.

Conducted the fourth edit of the annual Hunting and Fishing Regulations Guide and participated in the page by page edit with agency staff.

Complied with a Freedom of Information Act (FOIA) request.

Participated in 3 virtual meetings with Brandt who is the new customer service enterprise portal provider for the agency. These meetings were for information sharing related to electronic harvest reporting, tagging systems, and permitting.

Attended the Wildlife and Freshwater Fisheries Advisory Committee Meeting and provided an update on the results of year one of electronic harvest reporting for wild turkeys.

Coordinated with OMO on news releases, social media posts, etc. related to turkey harvest infographic and the 2021 Summer Turkey Survey.

Participated in 2 virtual meetings related to Rabbit Hemorrhagic Disease (RHDV2) with SCWDS/SEWHTG and the SC RHDV2 Task Force.

Mileage logs/receipts were scanned and forwarded to appropriate staff. PCard statements/receipts were scanned and forwarded to the PCard email address.

Provided one public speaking engagement with 35 in attendance.

Participated in 2 interviews with the media.

Completed 3 surveys from other agencies/entities.

Deer Research and Management Project

The Deer Quota Program (DQP) required effort primarily related to data entry and update from the application process that began in May. Approximately 567 applications were entered during the month bringing the total to 1,031 entered to date. Approximately 796 of these applications have been scanned for record keeping purposes. Applications were forwarded to DQP biologists for their action in setting quotas.

Coordinated with The Sourcing Group and IT on final edits to 2021 deer tags and informational inserts related to chronic wasting disease that will be included with tags that go to all deer hunters. The initial fulfillment of tags will begin the second week in July.

The Antler Records Program required effort with ongoing data entry associated with successful entries. Antler Records Program Certificates were generated and mailed to successful entrants (222). Records data for 2020 and 2021 was downloaded and analyzed. This revealed 222 new records including 211 typical and 11 nontypical sets of antlers.

Continued working with Cornell University on a project to develop a Chronic Wasting Disease Risk Assessment and Surveillance Plan. Participated in a virtual meeting related to the project with Cornell, and staff from Georgia DNR, Alabama DCNR, and Virginia DWR who are also participating in the project.

Work on the cooperative deer and coyote study with Clemson University Department of Forestry and Environmental Conservation was ongoing during the month. Fawning continued during the month with a total of approximately 18 fawns captured and fitted with GPS units to date. Continued to monitor does for birthing events.

Continued coordination and communication with the PhD student from University of Georgia on the cooperative research project entitled "Use of fecal genotyping and spatial capture-recapture modeling to investigate coyote abundance in South Carolina. Year 3 sampling was completed during the month thus ending field work on this 3-year study. A total of 193 samples were taken this cycle and DNA extractions for species identification is now underway.

Deer Depredation Permits were entered as they were received.

Measured 2 sets of antlers in the office by appointment.

Wild Turkey Research and Management Project

The 2021 Turkey Hunter Survey required ongoing effort as completed surveys continue to be received, sorted, and boxed-up for shipment to the data entry company which will occur the first week in July. At months end steps were taken to develop a purchase order for data entry. The survey was executed to 30,000 randomly selected turkey tag recipients following the close of the season on May 10.

Completed a legislative report related to wild turkeys and forwarded up the chain of command for editing. The 2019 turkey legislation (Act 51) requires an annual report on turkeys to be provided to the chairman of the Senate Fish, Game, and Forestry Committee and the House Agriculture and Natural Resources Committee. This report fulfills the mandate.

Attended the quarterly meeting of the NWTFC Board of Directors and provided an update on deer, turkey and bear issues.

Worked with the NWTFC and NWTFC District Biologist to rollout information and request project proposals for the new South Carolina Wild Turkey Public Lands Habitat Enhancement Program. This cooperative program will combine funds from NWTFC and a portion of turkey tag revenue to help fund habitat management projects on public lands open to hunting in the state.

The annual Summer Turkey Survey was executed during the month. This required updating, printing, and mailing of survey materials to approximately 424 individuals who are on the permanent survey list. Additionally, steps were taken to notify numerous conservation entities and the public, via email and social media, of the survey and provide links to information and reporting forms.

The wild turkey gobbling chronology study with Clemson University Department of Forestry and Environmental Conservation continued during the month. Autonomous Recording Units (ARUs) were deployed in early March on public and private land in the mountains/foothills. Units were serviced during the month with batteries and SD cards. Data analysis from the 2019 and 2020 field seasons is ongoing.

Continued coordination and communication related to the study entitled “Reproductive Ecology of Wild Turkeys in an Unhunted Population.” This is a cooperative study between SCDNR, USDA Forest Service-Southern Research Station, University of Georgia, Louisiana State University, and University of Missouri. The objectives focus on determining reproductive parameters in turkeys that are not hunted. Currently 45 birds (12 males, 33 females) are being monitored. Nest initiation has been 92 percent, nest success 36 percent, and brood success 21 percent. Thirty-five percent of unsuccessful hens have re-nested.

Black Bear Research and Management Project

Upstate - Staff handled 42 bear complaint calls/sightings. Bears are very active right now and regularly getting into bird feeders and trash or outdoor food sources. There were 6 road kills this month. Blackberries are starting to ripen and will provide natural food sources so the call numbers should start to decline. The GPS collar on the yearling bear in Oconee timed out and was released. Staff will search for the deployed collar and return it to ABR in Tennessee. Staff also provided technical assistance this month with installing electric fencing around fruit orchard and garden in Oconee County.

Furbearer and Alligator Program

Furbearer Project

Responded to twenty-three nuisance wildlife complaints. Eighty-six other technical assistance contacts were also made during this time via phone and email.

Participated in the Multistate Conservation Grant Technical Review Team virtual meeting to discuss the scoring and ranking of grant proposals.

An update of coyote harvest trends and the coyote harvest incentive program was presented to the Wildlife and Freshwater Fisheries Advisory Committee.

Assisted DNR Law Enforcement with an action that took place this month in Lee County in regard to a wildlife rehabilitator on the SCDNR Wildlife Rehabilitators’ list. This individual was in possession of over 200 animals in a double wide trailer in being kept in very poor conditions. The environment in which the wildlife and domestic animals were being held inside the home led Lee County Animal Control to file animal abuse charges against the two individuals that lived there. All animals were removed from the home that day.

Information from another wildlife rehabilitator not doing what they should was sent to the DHEC Rabies Control Program after pictures surfaced online of them taking raccoons and skunks to a bar and letting patrons these handle rabies vector species.

The annual Commercial Furharvest Brochure was sent and received from the printers and copies forwarded to DNR Licensing as well as wildlife offices throughout the state.

Alligator Project

Alligator surveys begin this month. To date, five survey routes have been completed. A new GIS surveying data recording tool is being tested alongside our traditional waypoint recordings.

Other

The Tegu Access database began production this month with the first issuance of tegu permits after the filed regulations became permanent. All tegu owners will either have to get rid of the tegus in their possession or register and receive a permit to keep any they currently possess.

Met with the new licensing vendor on multiple occasions to discuss lottery hunts, tag issuance, and wildlife permitting.

All copies of Access databases developed by the Furbearer Program were given to the new licensing vendor to get a better idea of their permitting functions.

Permitting and Lottery Hunt Program

During the month of April, Biologist Kearse continued to review, and process permits. These permits consisted of 17 field trial permits, 1 falconry permit, 1 migratory bird permit, 3 bird banding permits, 7 scientific collection permits, 29 Canada goose depredation permits, 10 predator management permits, 8 furbearer depredation permits, 1 temporary special use permit, and any fox/coyote enclosure permits that arrived. Continued working on new native turtle permits following the new law that provides protection of South Carolina’s native reptiles and amphibians (Act 177).

The alligator lottery closed on June 15th. A total of 8,380 individuals applied for the public lands alligator hunt, a new all-time record number of applicants.

The Multi-site and Webb Deer Lottery Hunts were set up and a Gov Delivery email prepared and scheduled to be sent on July 1, the opening date of the application period. The deer lotteries will remain open until August 15th. Assistance was provided by email or phone concerning lottery hunts, permits, and other general wildlife questions.

Herpetology Conservation Program

General Activities and Accomplishments

- Participated in Florida Pine Snake SSA expert meetings
- Participated in filming episode of Coastal Kingdom Nature Show for ETV – Turtle Conservation
- Article published in Friends of Lake Keowee Society Newsletter
 - “All Copperheads are Snakes but not all Snakes are Copperheads”
- Lunch and Learn Presentation – Protecting SC Native Reptiles and Amphibians
 - Virtual presentation given to SCDNR staff
- Palmetto Presbyterian Church Kids Summer Camp Reptile and Amphibian Presentation
- Media Interview – Tegu Regulations
 - WSPA Channel 7 news – Spartanburg
 - WLTX news – Columbia
 - Post and Courier
- Participated in Alligator Eyeshine Surveys - Santee River/Pee Dee/Waccamaw River
- Participated in National Horizon Scan Exotic/Invasive Species Monthly Meeting
 - Rapid Assessment for 20 non native species with invasive potential

McCrary Herpetological Surveys - McCrary surveys are underway

Catawba-Wateree Herp Surveys - Surveys underway at Liberty Hill, Wateree, and Carolina Sandhills NWR

River Frog Survey and Genetics

- Processed Froglogger data from Woodbury WMA, Webb WMA
- Genetic samples to NC NHM for genetic analysis

Multi-State Sandhills Restoration Project – Tillman – No activity during the month

Multi-State Wetland Restoration Project – Webb

- Submitted Annual Interim Report Year 1
- Restoration work has been packaged and is ready for public notice
- Three wetland perimeters flagged for restoration work

Gopher Frog Population Augmentation and Headstarting - ~483 (97% success) metamorphs released to - FMNF

Camera Fence Surveys - Processed photos from the Santee Coastal Reserve, Marsh, Woodbury, Lewis Ocean Bay, Tillman, Hamilton Ridge and Groton Plantation (~19,500 Photos)

Gopher Tortoise Population Augmentation with Waifs – Aiken Gopher Tortoise HP

- Picked up, transferred 1 captive gopher tortoise from Brookgreen Gardens to SRS/AGTHP pen 15
- Captured, transferred 1 gopher tortoise from Webb Wildlife Center to SRS/AGTHP pen 15
- One gopher tortoise transported from Wisconsin Humane Society to SRS/AGTHP pen 15

State Wildlife Grant – Conservation of Coastal Reptiles and Amphibians

-Herpetology Program Awarded State Wildlife Grant for Research, Survey and Monitoring of Coastal Pain Reptiles and Amphibians – 2021-2023

- Processed Froglogger data from Groton Plantation and Tillman Sand Ridge
- Completed/Submitted Groton Plantation Annual Report

Green Salamander Population Assessment across Forest Disturbance Gradient (Clemson) - Genetics samples being processed and analyzed

Patchnose Salamander Environmental DNA (Clemson) - Field surveys being conducted by Clemson

Pine Snake Movements Lewis Ocean Bay (Coastal Carolina)

- Currently tracking 6 adult snakes – 3 females/3 males
- Helped Alan Jones for two days releasing and tracking snakes
- Nest location/excavation

Box Turtle Movements (Savannah River Ecology Lab, University of Georgia)

- Picked up/transferred 4 box turtles from Alligator Adventure to SRS to be used in movement/survival study

-Currently tracking 24 of the Chester Seized turtles, 10 wild turtles from the area and will be tracking an additional 24 long term captives

Statewide Bat Program

Submitted WNS Grants to States; received award for \$45,000 requested. No *Pd* found on bats at Santee Coastal Reserve WMA or Bonneau Ferry WMA HP. Six weeks of statewide NABat surveys completed. A deer hit Ky Miller's vehicle on 6/24 resulting in a moderate dent on driver's side door; no injuries, vehicle collision packet submitted, vehicle currently being assessed for repair. Summer bat netting project finished 5th week of netting at Wateree HP, began netting at McCrady Training Center. At Wateree HP, large maternity roost with 50-60 state endangered Rafinesque's big-eared bats was discovered through 2 radio-tagged bats, and 3 more maternity roost trees consequently located. Worked with Kleinschmidt Associates to conduct SCDNR acoustic surveys for Northern long-eared bats (NLEB) in Blair Bottoms Timer Management Tract, for Parr Hydroelectric project FERC no 1894, Dominion Energy South Carolina – no NLEB calls identified through KPro bat acoustic program or through manual vetting.

Statewide Bat Monitoring (Bat Biologist, Jennifer Kindel, WNS and SWG grants)

- June 2: Attended South Atlantic Blueprint workshop
- June 2-7: Blair Bottoms acoustic bat surveys
- June 3-4: WNS webinar
- June 8: Bat grants check in/review with Carmen Addison.
- June 9: Assisted with Wateree HP bat netting.
- June 14 – 18: Annual leave
- June 17: WNS call
- June 21: SC ACT Culvert Subcommittee call; call with Dr. Susan Loeb regarding statewide bat work.
- June 23: SBDN Executive Committee call; Listening session/discussion - WNS National Response Revision call. Assisted with Wateree HP bat netting; 4 Rafinesque's captured, 2 lactating females radio tagged.
- June 25: Meeting with Dr. Allen Kurta and Cara Rogers regarding potential MS research on coastal SC NLEB. Worked on budget, discussed project scope, funding opportunities.
- June 28 – 29: Assisted with McCrady bat netting.
- June 30: Called WNS FWS coordinator Pete Pattivina about WNS research grant for Cara Rogers project. Discussed with Anna Smith any potential options with SWG funding for project if we can't obtain funding through WNS research grant.
- Submitted WNS Grants to States and received award for \$45,000 requested. Objectives in 2021/22 are to continue hibernacula surveys and WNS surveillance in known hibernacula and survey coastal culverts; continue to run statewide NABat monitoring in 2022; continue to ship bat samples from rabies-negative bats submitted to SCDHEC to SCWDS for WNS testing; and participate in WNS partner calls, workshop, and SBDN meeting.
- Shipped WNS samples to NWHC from early spring netting: no *Pd* found on swabbed bats at Santee Coastal Reserve WMA or Bonneau Ferry WMA HP.
- Statewide NABat acoustic project continues with Ky Miller, 6 weeks of surveys completed. A deer hit Ky's vehicle on 6/24 resulting in a moderate dent on driver's side door; no injuries, vehicle collision packet submitted, vehicle currently being assessed for repair. Managed NABat permits, contacted more partners, solidified final housing for Ky. Met Ky to attempt to equalize problem Anabats, trade vehicles, have paperwork signed, etc. Schedule appt for 2020 F150 check up, taillight repair.
- Worked with Kleinschmidt Associates to conduct no-cost SCDNR acoustic surveys for Northern long-eared bats (NLEB) in Blair Bottoms Timer Management Tract, for Parr Hydroelectric project, FERC no 1894, Dominion Energy South Carolina. Though the project was outside known NLEB range, we wanted to obtain additional acoustic data since NLEB surveys in that area were lacking. Calls from 10 total acoustic survey nights were processed through Kaleidoscope Pro software, and bat species detected were Rafinesque's big-eared, big brown, Eastern red, hoary, Seminole, evening, tri-colored, Brazilian free-tailed, Southeastern, and little brown. The latter two species can have calls very similar to NLEB, so they were manually vetted by Jennifer Kindel. No NLEB calls were confirmed.
- Continued to manage netting surveys at Wateree HP and McCrady Training Center. Summer bat netting

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project finished 5th week of netting at Wateree HP, began netting at McCrady Training Center. At the end of June a large maternity roost with 50-60 state endangered Rafinesque's big-eared bats was discovered through 2 radio-tagged bats, and 3 more maternity roost trees were consequently located at Wateree HP.

- Provided necessary bat info for Anna Smith for DoD plan update.
- Completed and submitted 7 internal budget for all FY22 bat projects.
- Communicating with Michael Small about schedule for intern Cooper Butfiloski.
- Links added to SCDNR bat webpage ([Rabies in Bats](#), [Bats in Buildings](#), [Bats of South Carolina](#), [Creatures of the Night](#) video).
- Looked into WNS research grant for coastal NLEB MS with Cara Rogers; Pete Pattavina call, budgets, proposal etc.
- Managed account charges on and between all projects.
- Responded to bat nuisance and information calls when able.

Hourly technician, Maria Monarchino

- Conducted 11 mistnet surveys at Wateree HP/WMA, each lasting 5 hours per survey.
- Conducted 2 mistnet surveys at McCrady Training Center, each lasting 5 hours per survey.
- Captured 6 eastern red bats, 2 big brown bats, 4 Seminole bats, 1 tricolored bat, 5 Rafinesque big-eared bats, and 3 southeastern bats at Wateree HP/WMA.
- Captured 5 evening bats, 1 big brown bat, 1 Rafinesque big-eared bat, and 1 eastern red bat at McCrady Training Center.
- Deployed 5 acoustic detectors at Wateree HP/WMA to better inform locations for mistnet surveys.
- Radio-transmitted 4 lactating female Rafinesque big-eared bats and tracked them to 4 maternity roost trees housing between 20-60 bats at Wateree HP/WMA.
- Attended National White Nose Syndrome Webinar

Temp hourly technician, Cara Rogers

- Conducted netting surveys for bats at both Wateree HP/WMA and McCrady Training Center
- Read through recently released research on successful netting / maternity areas for our target species.
- Caught 6 Rafinesque's Big Eared Bats, which have a special state focus
- Helped transmitter 3 of the Raf's (one's not transmitted were due to being males)
- Tracked Raf's and found a maternity colony of about 55 bats on Wateree HP/WMA
- Caught a Tricolored bat- a bat facing declines in population.
- Replenished cleaning supplies in daily cleaning kit
- Sanitized all used nets and equipment.
- Set up and took down acoustics to analyze most effective netting spots.
- Attended National White Nose Syndrome Webinar

Temp hourly technician, Ky Miller

- Maintained and managed NABat gear
- Collected and managed weekly NABat data
- Contacted partners for surveys and managing logistics
- Ran weeks 3-6 surveys for survey GRTS cells in the upper coastal and sandhills ecoregions.

SWG: NABat Project (Clemson MS student/Dr. Susan Loeb)

Anna Siegfried and Dr. Susan Loeb manually vetting calls past bat calls and submitting to NABat online.

Small Game Program

General Small Game Program Activities and Accomplishments

Responded to a minimum of 17 phone calls and numerous emails requesting technical assistance.

Program Leader Hook reviewed and edited the 2021-22 SCDNR Rules and Regulations brochure.

Program Leader Hook met virtually with Ruffed Grouse Society Southern Appalachian Forest Conservation Director Nick Biemiller to discuss forest operations in the upstate of SC.

Program Leader Hook assisted SCDNR Office of Media Outreach staff by participated in the Social Media Manager interviews.

Program Leader Hook presented information to the Abbeville Forest Landowners group on Southern Fox Squirrels.

Program Leader Hook and Assistant Program Leader Small participated in a virtual SC Rabbit Hemorrhagic Disease Virus 2 Task Force meeting with SCDNR Assistant Chief Dillman, Assistant Big Game Program Leader Cantrell, Clemson State Veterinarian Office Staff and USDA APHIS staff.

SCBI Biologist Carmichael completed a 4-hour Driver Improvement Training class conducted virtually by SC State Fleet Management.

Assistant Leader Small compiled and analyzed 2002-21 rabbit hunter survey data.

Quail call count packets were sent to cooperators.

Turkey/Quail brood survey packets were distributed to 424 cooperators.

Mileage logs/receipts were scanned and forwarded to Lindsay Wood. PCard Statements were scanned and forwarded to the PCard email address.

Issued 2 new bird dog training area licenses and 14 shooting preserve licenses. Deposits associated with shooting preserve renewals were delivered to Accounting.

Three new shooting preserved applications were processed for properties located in Dorchester, Kershaw, and Jasper/Hampton counties. LE safety inspection requests were submitted and all three properties passed inspection. Packets were submitted for each property to their designated legislative delegation requesting approval.

Legislative approval was received for two new shooting preserves located in Beaufort and Anderson counties.

Posted 1 social media post on SCDNR Facebook page: Bobwhite Quail/Ruffed Grouse Public Survey Request (6/14).

Mourning Dove Project

Assistant Leader Small updated mourning dove band recovery information from bi-weekly reports and completed quality control for accuracy on reward bands entered.

Assistant Leader Small provided a reminder notice to annual pre-season mourning dove survey participants to complete the survey and submit data.

Assistant Leader Small participated in a virtual call with SCDNR staff to discuss designating an S rank for the Common Ground Dove for SC's State Wildlife Action Plan.

Assistant Leader Small uploaded the 2021 Mourning Dove bands into the Bandit database.

Assistant Leader Small compiled and analyzed data for the annual state-wide Mourning Dove survey report.

Bobwhite Quail Project

Program Leader Hook participated in one virtual meeting with SCDNR State Wildlife Action Plan Coordinator Smith and National Bobwhite Conservation Initiative Executive Director Morgan to discuss possible cooperative monitoring efforts on species of concern on Department of Defense installations in SC.

Program Leader Hook and SCBI Biologist Carmichael continued reviewing and revising the DNR Bobwhite Quail booklet, originally part of the "Game On Your Land Series".

Program Leader Hook, SCBI Biologist Carmichael participated in a virtual meeting of the Indian Creek Joint Chief's Committee to develop a proposal for the Joint Chiefs Landscape Restoration program 2022.

SCBI Biologist Carmichael, Program Leader Hook, and Assistant Leader Small participated virtually in the monthly Indian Creek Partnership Committee meeting in Newberry, SC (first in person IC meeting since March 2020).

Assistant Leader Small completed the annual quail hunter survey report.

Program Leader Hook and USC Herbarium Curator Emeritus John Nelson conducted a botanical survey on the Long Cane District of the Sumter National Forest.

SCBI Biologist Carmichael and Program Leader Hook participated virtually in the Natural Resources Conservation Service State Technical Advisory Committee, Forestry and Wildlife Subcommittee.

Program Leader Hook reviewed Sadler's Creek State Park Management plan and provided comments on early successional habitat and piedmont prairie management protocol for the USACE and SCPRT Forester Snuggs.

Program Leader Hook conducted a bobwhite whistling cock and grassland bird survey on a focal area that extends across Kings Mountain National Military Park and Kings Mountain State Park.

Program Leader Hook presented information on the status of bobwhite quail and the SC Bobwhite Initiative to a group of volunteers conducting whistling cock surveys in the Indian Creek area of the Sumter National Forest hosted by Ty Holland at Gunrise Farms in Newberry, SC.

Program Leader Hook fulfilled duties as National Bobwhite Technical Committee Chair Elect and met with NBCI Chair Lisa Potter and Arkansas NBCI Quail Coordinator Marcus Asher to prep for the annual NBTC meeting in Bentonville, AR.

Program Leader Hook fulfilled duties as National Bobwhite Technical Committee Chair Elect and met with the NBTC Steering Committee to plan for the summer Steering Committee meeting to be held at the NBTC annual meeting in Bentonville, AR.

SCBI Biologist Carmichael conducted site visits and technical assistance was provided on tracts in Fairfield, Chester and York counties and written habitat management recommendations were provided for 1,050 acres.

SCBI Biologist Carmichael updated the member rosters for the SC Quail Council Steering and Technical committees were updated.

SCBI Biologist Carmichael wrote two articles for the Indian Creek Summer Newsletter and a draft of the complete newsletter was reviewed.

SCBI Biologist Carmichael reviewed two management plans prepared by Clemson University students for property in McCormick County at the request of DNR Big Game Program Leader Ruth.

SCBI Biologist Carmichael participated in the annual SCDNR Small Game Program, SCDNR Region III and SC Forestry Commission staff meeting to discuss wildlife management activities on Manchester State Forest held at Manchester State Forest headquarters in Sumter County.

SCBI Biologist Carmichael conducted site visits to the Angelus WMA Bird Dog Training Area and the McBee WMA in Chesterfield county to assess habitat conditions accruing from herbicide applications and timber thinning, respectively.

SCBI Biologist Carmichael conducted a bobwhite quail whistling cock survey was conducted in Orangeburg county.

Assistant Leader Small met with SCDNR Region III staff and toured Oak Lea WMA.

Assistant Leader Small investigated using Program R Distance package and its use to analyze annual state-wide Mourning Dove survey data.

Assistant Leader Small initiated annual mourning dove banding survey by providing dove bands and associated paperwork to banding cooperators.

Assistant Leader Small completed a management plan for bobwhite quail for Oak Lea management plan.

Assistant Leader small reviewed the interim report regarding ARU data submitted by Small Game Program hourly employee Emma DeLeon.

Farm Bill/Ag Liaison Activities

Farm Bill Biologist Krieg completed 2 site visits in Lee County and wrote a management plan for potential EQIP and CSP applicants.

Farm Bill Biologist Krieg met with farm bill participants in Lee County to discuss future CSP possibilities.

Farm Bill Biologist Krieg visited and made herbicide recommendations for the beneficial insect/pollinator habitat on Samworth and Santee Coastal WMA's in Charleston and Georgetown Counties.

Farm Bill Biologist Krieg completed 2 EQIP certifications in Lee County.

Farm Bill Biologist Krieg completed 4 Spring Breeding Bird Surveys on Carolina Sandhills National Wildlife Refuge in Chesterfield County.

Farm Bill Biologist Krieg completed a Spring Breeding Bird Surveys on Hamilton Ridge WMA in Hampton County.

Farm Bill Biologist Dan Peeples assisted Calhoun, Clarendon, Richland and Orangeburg County Natural Resources Conservation Service offices with program applications and planning. He completed 7 contracts, certified 4 landowner practices, and created 3 management plans.

Farm Bill Biologist Peeples has fielded several phone calls concerning application status, schedule site visits, and one for wildlife removal. Two landowners called to report quail heard and seen on the property after the absence of quail over several years.

Farm Bill Biologist Peeples attended two meetings one for the South Atlantic Blueprint.

Farm Bill Biologist Peeples attended a Calhoun County Soil and Water District Board Meeting.

Farm Bill Biologist Peeples scored two deer antlers one will make the State Typical Record Book.

Farm Bill Biologist Peeples attended Camp Wildwood of SC at Kings Mountain State Park for one week. He taught the Wildlife class to 76 high school-aged students. Topics discussed was the importance of Habitat, Predator/Prey relationships and its importance, trapping and surveying techniques, dart gun and radio telemetry, track identification and track casting, orienteering, and a rocket net demonstration.

Farm Bill Biologist Peeples completed the Oak Lea Reference Area and Focal Area Spring Quail Survey.

Nongame Bird Conservation Program

Migratory Landbird Project

Collaborated with Coastal Carolina University on project researching reproductive success and survivorship of loggerhead shrike in coastal SC as part of an international work group efforts to conserve the species.

Collaborated with Clemson University project researching high elevation early successional bird communities.

Organized and hosted virtual meetings to help determine Atlantic Flyway landbird priorities and compiled solar resources from Atlantic Flyway states as chair of the Landbird Committee.

Worked with heritage database staff to update the bald eagle nest reporting form and develop a loggerhead shrike survey123 monitoring form.

Assisted the National Partners in Flight coordinator with developing work priorities for his seasonal staff.

Attended virtual meetings to develop a logistical plan to host the next Atlantic Flyway Meeting.

Developed and compiled 2022 and 2023 fiscal year budgets for all accounts that will be used by the bird conservation program.

Reviewed SCDNR comment letter submitted to FWS regarding changes to the interpretation of the Migratory Bird Treaty Act.

Attended an in-person event and a virtual event to promote a new motus tower placed at a South Carolina State Park.

Worked with furniture stores to begin the process of purchasing furniture for new offices.

Served as SC state coordinator and recruited SC volunteers for the USGS Breeding Bird Survey.

Reviewed the Managed Tidal Impoundment General Permit.

Reviewed and provided comments on recommendation to support aa Eastern Partners in Flight Conservation Delivery Specialist position.

Assisted a graduate student that wanted information on the purple martin roost on Lake Murray.

Developed a list of bird species that potentially occur on a DoD property.

Attended annual virtual Loggerhead Shrike Working Group meeting.

Approved 1 permits to further bird research in South Carolina.

Attended outreach event to inform the public about a whimbrel roost on one of our seabird sanctuaries.

Conducted 7 breeding bird survey route.

Provided technical assistance on 3 bald eagle nests.

Monitored loggerhead shrike on 20 days to contribute to a full annual cycle model to help determine conservation priorities for the species.

Participated in International Loggerhead Shrike Working Group calls.

Continued MAPS banding project at SC Army National Guard McCrady Training Center. Conducted 3 bandings sessions and netted 16 species & 53 birds. Also, tallied 32 species on site.

Conducted a breeding bird survey route & a summer season raptor survey for SC Army National Guard McCrady Training Center.

Conducted point counts for SC Army National Guard McCrady Training Center, at the Clarks Hill site.

Continued developing a more efficient way to organize and maintain past and future landbird data sets. Made changes to the relational database, began creating a spreadsheet to more easily import data from different databases, and submitted banding data to the Bird USGS Bird Banding Lab.

Conducted routine activities for the Atlantic Coast Joint Venture, Partners in Flight, Atlantic Flyway, and other committees.

Directed activities of landbird, wading bird, marshbird, shorebird, and seabird SCDNR staff by providing guidance on projects, developing grant proposals, and managing budgets.

Answered over 200 calls and emails related to technical assistance and other bird conservation efforts.

Red-cockaded Woodpecker Project

Conducted weekly nesting surveys of 54 RCW clusters on 7 SCDNR properties throughout the state – currently: 38 clusters have successfully fledged young (87 fledglings), 3 active nests remain.

Conducted weekly nesting surveys of 4 RCW clusters on 2 SC State Park properties in Aiken and Georgetown Counties.

Conducted site visit to Safe Harbor property in Calhoun County with Longleaf Alliance staff.

Discussed with SCDNR/USFWS/Longleaf Alliance staff potential sites for Fall 2021 RCW translocations.

Completed process of filling vacant RCW Bio II position.

Continued training one SCDNR employee on RCW nesting season monitoring.

Revised and finalized 2 draft Safe Harbor Agreements.

Sent 2 original Safe Harbor Agreements to landowners for signing.

41 phone calls and 29 emails were received and responded to regarding Safe Harbor and wildlife assistance and information.

Waterbird Project

Completed aerial surveys of Wood Stork colonies to determine if the storks nested successfully. We completed aerial surveys at approximately 25 stork colonies during June.

Monitored Wood Stork nesting at seven index colonies. DNR staff monitored 5 colonies and volunteers monitored 1 colony.

Conducted call-playback surveys for Black Rails at two SCDNR properties.

Installed experimental solar-powered irrigation system in potential Black Rail habitat with the goal of determining if this approach could be used to increase Black Rail breeding success during dry conditions.

SCDNR's extensive ARU (autonomous recording unit) dataset from wetlands occupied by Black Rails is being used for testing the capabilities of two types of automated call recognizers (BirdNET/Cornell and MATLAB/Adam Smith, USFWS I&M). Manual validation of recognizers by SCDNR is underway. If the recognizers produce accurate results, they may be used to analyze past and future recordings to determine site occupancy and improve the accuracy and efficiency of Black Rail monitoring.

Assisted colleagues in other states who have initiated or are planning projects to monitor Black Rails. Advised colleagues about equipment SCDNR uses to study and monitor Black Rails – automated playback unit design, autonomous recording unit models and scheduling, and camera models and techniques.

Posted pre-print of manuscript currently in review for publication in the Waterbirds journal. The manuscript provides the first chick development information for the species in addition to new information about breeding and molt phenology. This information will enable other researchers to determine approximate hatch dates if they successfully capture photographs of Black Rail chicks.

Participated in monthly virtual meeting for the Firebird Project (Gulf Coast rails), which included the discussion of survey protocols and acoustic sampling. Shared protocols used by SCDNR's Black Rail Project.

Installed and maintained arrays of research equipment for Black Rail monitoring. Reviewed and updated IDs for camera trap photos. These data will be used to compare detection methods and ensure future Black Rail monitoring is as efficient and effective as possible.

Deployed/maintained water level loggers at field sites to learn about fine-scale habitat conditions in wetlands occupied by Black Rails. Collected water level and rainfall data in wetlands where Black Rails have been consistently detected during recent surveys.

Responded to data requests. Provided rookery and stork banding data to other natural resource professionals.

Continued weekly assessments at 12 alternative sites (pebbled roofs, parking lots, etc.) and 12 ground sites for nesting Least Terns in Charleston, Berkeley, Georgetown, and Horry Counties; tracked colony progression and determined nesting success. Site visit at 2 new flat gravel roofs. Management of SC Least Terns nesting sites will increase nesting success of this state threatened seabird.

Continued posting of seabird and shorebird nesting sites on Bulls Island, Deveaux Bank, Isle of Palms, Botany Bay, Little Capers and other sites across the coast. Posting involves placement of signs, string, and flagging around and near nesting areas for seabirds and for shorebirds. Signage alerts the public to the presence of nesting birds and keeps detrimental disturbance to a minimum. Maintained posted areas across the state and replaced down signs and string at closed nesting areas.

Placed cameras in the Black Skimmer colony at Deveaux Bank to monitor the colony.

Spent weekends at important nesting sites such as Deveaux Bank and Cape Romain Region. Prevented boat landing in closed areas and presence of dogs. Large nesting colonies of Brown Pelicans, Black Skimmers, and terns are present, and stewarding minimizes disturbance. Collected information regarding numbers of dogs, visitors, boats, and activities at these sites to inform future management for seabirds and shorebirds. Attended several "Beach Drops" that Coastal Expeditions held on Bulls Island to protect nesting and hatched Wilson's Plovers. Mentored intern from Coastal Foundation every Saturday.

Organized an event at the Charleston Museum with multiple partners about the Whimbrel Discovery at Deveaux. Event highlighted the importance of conserving SC's shorebirds and seabirds and the extreme importance of the SC coastal habitats and sanctuary islands. A similar virtual event was offered and had over 1000 people registered from across the globe.

Published a manuscript about Whimbrel at Deveaux Bank. Over 11 local, national, and international media/journals covered this news.

Conducted nest census of Gull-billed Terns and Black Skimmers at sites in Cape Romain region and Deveaux Bank; both species are high conservation priority.

Collaborated with Audubon SC to prepare for 4th of July Stewarding regionwide. Organized additional Bird Stewards for the holiday weekend.

Assisted Michelle Pate with collection of specimens of Diamond Back Terrapins from Cape Romain's Raccoon Key.

Continued effort to communicate and create a good working relationship with USFWS LE and DNR LE.

WILDLIFE SECTION

Regional Operations Activity Summary

Wildlife technical guidance was provided to 391 contacts along with 22 technical guidance site visits. Two (2) hunt club data analyses were conducted. Six (6) management plans were written. Other agencies were assisted on 37 occasions requiring 50 person-days. Eight hundred seventy-one (871) nuisance wildlife complaints (including 89 bear and 295 alligator calls) were handled. Nineteen (19) nuisance site visits were made and there were 5 alligator site visits. Field studies required 126 person-days and data analysis required 49.5 person-days. Fifty-seven (57) quail surveys, 6 black bear surveys, 74 bat surveys, and 17 other surveys were conducted. RCW Nest surveys were conducted checking 25 nests and 21 clusters. Nine (9) neotropical bird counts were conducted. Thirty-seven (37) other birds were banded and 1 bat was banded. Thirteen (13) antlers were scored. Two (2) news releases were submitted, 6 interviews were granted and 1 environmental review was conducted. Seven (7) programs/presentations were given with 248 in attendance. There were a total of 93 water level management days.

Heritage Preserve (HP) Habitat Management Summary

Heritage Preserve staff conducted 387 site visits. One (1) field trip was conducted. Exotic control occurred on ten (10) heritage preserves. Forest herbicide occurred on 31 acres. Sixty-nine (69) miles of trails were maintained, 5 miles of firelanes were disced, 10 miles of roads were mowed, 12 miles of roads were scraped and 50 acres were mowed/bushhogged.

Wildlife Management Area Habitat Management Summary

Field agricultural activities on WMAs included 265 acres mowed/bushhogged, and 801 field/agriculture acres were disced. Sixty-five miles (65) miles of roads were scraped, 149.5 miles of roads were mowed, and 15 miles of roads were graveled. Prescribed burning occurred on 885 forest acres. Agricultural herbicide occurred on 730.2 acres. Forty-eight (48) miles of trails were mowed, 60.5 miles of dikes were mowed, 0.5 mile of dikes were retopped, and 9 miles of firelanes were disced. Five hundred forty-five (545) acres of annuals were planted, and 11 acres of perennials were planted. One (1) water control structure was installed. One hundred thirty-five (135) WMA signs, 138 HP boundary signs and 7 other signs were posted. Thirteen (13) gates were refurbished or installed. Two hundred twenty-two (122) WMA phone calls were answered.

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WMA Hunts and Visitation

Marsh WMA – 3 visitors, all of which were fishing.

Woodbury WMA – 16 visitors, all of which were fishing.

Pee Dee Station Site – NA

Great Pee Dee HP – 19 visitors (9 fishing and 10 sightseeing/wildlife viewing)

McBee WMA - 2 visitors hiking.

Draper WMA - NA

Worth Mtn. WMA - 47 users (14 hiking, 17 fishing, 15 scouting, 1 checking HAM radio)

Broad River WMA - NA

Liberty Hill WMA - 79 visitors, including 31 hiking, 18 sightseeing, 11 fishing, 8 swimming, 3 horseback riding, 3 scouting, 1 camping, 2 hunting, 1 biking, and 1 observing wildlife.

Landsford Canal FLA Bird Dog Training Area - No activity during the month.

Angelus Bird Dog Training Area - No visitors

Crackerneck Wildlife Management Area was closed to the public in June

Hamilton Ridge/Palachucola/Webb WMA: Hog Hunt- 3 days, 34 hunter days of effort, 6 hogs harvested.

34 hunters, 145 Non-Consumptive WMA users, 303 range users, 25 other users

Wildlife Regional Operations – Chief

Meetings attended during the month included the monthly DNR Board meeting, the quarterly Wildlife and Freshwater Fisheries Advisory Committee meeting, a WFF senior staff meeting, a Wildlife Section Region 4 staff meeting, the *Discovery at Deveaux* exposition and film viewing, an Atlantic Flyway Council planning meeting, a meeting of the AFWA Duck Stamp Modernization Task Force, a public meeting regarding potential Sunday hunting on WMAs, a meeting with SEAFWA President and staff to discuss Southeastern Wild Turkey decline, a partner meeting with interested parties to discuss spraying of invasive exotic plant species on Lake Marion, and various meetings with Deputy Director, Assistant Chiefs, and staff to discuss administrative, budget and personnel issues.

Prepared and submitted one grant application to Department of Energy for operation of the Crackerneck WMA. Received approval for two grants for Wildlife Restoration (P-R) funding for operations and maintenance of the Wildlife Section and Wildlife Management Areas.

Worked with Assistant Chiefs to finalize budget allocations for FY22 and FY23.

Considerable time was spent assisting Deputy Director Cope and Clemson University researchers with development of a survey to assess public attitudes toward Sunday hunting on WMA lands.

Responded to a minimum of 10 miscellaneous technical guidance calls during the month.

Administrative duties related to the migratory bird program and maintaining agency bird banding permit included: Distribution of band recovery records to appropriate banding personnel and assisting the Bird Banding Lab with data requests.

Regions 1 & 3 Assistant Chief Activities

Completed administrative activities including budgeting, purchasing, personnel and correspondence.

Covid-19 related activities continued including coordinating with staff on work schedules and questions. Made 3 trips to Columbia to meet with senior staff and perform administrative duties. Attended WFF senior staff meeting for 2 days at Donnelley. Helped conduct a retirement luncheon for Jimmy Kluge at Jocassee. Attended on-line Rules and Regs final meeting. Attended a public meeting on WMA Sunday hunting in Pickens. Met with Jocassee Gorges staff twice on management issues. Attended two budget meetings with wildlife senior staff in Columbia. Met with an adjacent landowner to Jocassee on road issues.

Checked road conditions and needs on Jocassee. Revised final draft of the Rules and Regs brochure and submitted it to graphics. Continued substantial budget work for FY22 and FY23. Compiled WMA landowner's payment info and forwarded to Chief Dukes. Coordinated Intern Drivers training at Styx. Completed an Other Funds request for operating funds increase and forwarded to Chief Dukes. Completed a budget summary document for all wildlife projects and forwarded to Will Dillman and Chief Dukes. Completed FY23 State Funds request and forwarded to Chief Dukes. Completed FY22 PR Grant spreadsheet and forwarded to Denise Froehle.

Reviewed DLEO requirements and authority, budget balances, personnel actions, purchasing requisitions, purchasing card submissions, media releases, travel requests, WMA map revisions, facility and equipment insurance coverage, duck stamp requests, drugs testing list, hurricane land reversal IAP, and proposed acquisitions. Checked

WMAs including Clemson, Nine Times, Fant's Grove, Keowee, and Jocassee. Checked HPs including Laurel Fork, Eastatoee Creek and Wadakoe Mountain.

Regions 2 & 4 Assistant Chief Activities

Met with and/or conducted multiple conference calls with Chief Dukes, Deputy Director Cope and Assistant Chiefs Swaynham and Dillman on various topics. Attended WFF senior staff meeting hosted by Deputy Director Cope at Donnelley for two days. Attended Region 4 senior staff meeting at Donnelley. Participated in the virtual migratory bird committee meeting. Attended WFF Advisory Board meeting in Columbia. Met with Wildlife Section assistant chiefs and Chief Dukes on FY 22 budgets and FY 23 budget authority issues. Met with Biologist Treptow and Regional Coordinator Farrell on various topics. Met with Director Boyles, Deputy Director Cope and OEP Director Riggins concerning activities adjacent to Lewis Ocean Bay Heritage Preserve. Significant time was spent assisting Lorianne Riggins with commenting on the rezoning for the hospital along International Drive.

Inspected potential property acquisition in Horry County with other DNR staff. Inspected Lower and Upper Middleton renovations with Biologist Kneece. Inspected Canal WMA dove fields and Sandy Beach waterfowl area. Attended luncheon and staff meeting recognizing Ryan Tyler as Technician of the Year at Bonneau Ferry. Proofed and submitted a copy of the 2021-2022 Rules and Regs. Submitted paperwork to begin replacing the boat ramp at Santee Coastal Reserve. Significant time was spent submitting extension requests and tracking sheets for various FEMA projects that are ongoing as well as those we are trying to recoup funds from. Significant time has been spent updating and correcting the insurance coverage on DNR buildings and equipment. Begin baiting and trapping fox squirrels for relocation. Worked to set up various training classes for staff to participate in. Reviewed DLEO lane reversal duties, proofed WMA map revisions, updated drug testing list, ordered supplies for waterfowl banding, and commented on proposed land acquisitions.

Wildlife Region 1

Summary

Staff handled 41 nuisance wildlife investigations, made eight site visits, and issued four depredation permits. Received 81 bear calls, six road kills, and made 10 bear site visits. Gave Director Boyles a tour of the Brasstown Creek HP addition. Conducted interviews and submitted a hiring packet for the vacant Jocassee Gorges biologist position. Installed a dedication sign on Stumphouse HP to acknowledge the previous owners and their commitment to conservation and stewardship. Assisted the Southeast Cooperative Wildlife Disease Study in conducting tick research on Jocassee Gorges. Pre-baited dove and wood duck trapping sites for the upcoming banding season. Monitored logging operations on Thurmond WMA through completion of pine stand thinning.

Region 1 Coordinator

Completed administrative activities including budgeting, purchasing, personnel actions, correspondence, special use permits, and daily staff status reports. Conducted interviews and submitted a hiring packet for the vacant Jocassee Gorges biologist position. Continued posting Grassy Knob WMA lease boundary. Reviewed and submitted revisions for the 2021-22 rules and regulations brochure and WMA maps. Attended a virtual DiSC workshop, a MGBC meeting to review waterfowl permit fund requests, and a public meeting on WMA Sunday hunting in Pickens. Reviewed and revised Region 1 wildlife facility and equipment insurance coverage. Delivered specimens from Lee Co. investigation to SCWDS. Participated in the Clemson University Animal Care and Use Committee meeting and reviewed 2 research protocols. Checked WMAs including Beaverdam, Fant's Grove, Jocassee Gorges, and Sumter National Forest. Checked Glassy Mountain HP

Nuisance Wildlife Activities

Conducted 41 nuisance wildlife investigations, and made eight site visits. Issued four depredation permits. Checked and maintained hog trapping sites, trapped seven hogs on Fant's Grove WMA. Assisted landowners with complaints on deer damage, snakes in flowerbeds, raccoons, beaver issues, coyote problems, and squirrel damage.

Upstate Bear Report

Handled 81 black bear calls, conducted ten site visits pertaining to bears, and six road kills. The GPS collar on the yearling bear in Oconee County timed out and was released. Provided technical assistance with installing electric fencing around fruit orchard and garden in Oconee County.

Unit 1A (Anderson, Greenville, Oconee & Pickens)

Worked on maintaining proper water levels in the waterfowl areas. Monitored hog damage sign and baited trap sites. Nine hogs were trapped and removed. Dove fields planted in sunflowers last month are in good condition. Millet, small grain mix, and corn were planted in strips on the dove fields. Pre-baited seven dove trapping sites and

four wood duck trapping sites. Constructed new traps to for dove banding. Attended a planning meeting for National Hunting and Fishing Day event to be held September 25th.

Property Management Activities:

Beaverdam Waterfowl Area – Worked on maintaining proper water levels and worked on stabilizing dikes. Two beavers trapped and removed. Repaired water pump. The portable diesel pump was moved there and set up temporarily to help control water levels. Mowed and disked areas within the WFA and planted corn and chiwapa millet. Duck banding trap sites were set up and pre-baited at the sub-impoundment.

Tall Pines WMA – Remaining dove field strips were planted in millet. Repaired cable gates and worked on improving signage around fields.

Caesars Head WMA – Monitored boundaries on WMA and reposted signs as needed.

Clemson Waterfowl Area – Monitored water levels and removed beaver dams from tributary creek. Monitored hog activity and baited trap. Repaired dike from previous storm events. New water control structure was delivered, and the contractor began installation. Disked the drier areas of the WFA.

Fant's Grove WMA – Monitored wildlife food plot and road conditions. Two hog trap sites were monitored. Nine hogs were trapped and removed. Dove fields were plowed and planted in sunflowers. Corn, millet and small grain mix was planted in strips on the dove fields. Electric fencing was installed on several of the fields. Dove banding traps were set up and pre-baited.

Gravelly WMA – Wildlife openings are being monitored for condition and hog damage signs. Cable gates at Causey Farm were repaired.

Keowee WMA – Boundary signs were reposted as needed. Monitored hog damage on area.

Long Creek Tracts WMA – Monitored field conditions. Planted millet and small grain mix. Dove banding trap sites were set up and pre-baited.

Pickens Rifle Range Dove Field – Monitored field conditions. Planted millet and small grain mix. Dove banding trap sites were set up and pre-baited.

Ross Mountain Dove Field – Monitored fields for condition and hog damage signs. Four hogs were trapped and removed. Planted millet and small grain mix. Dove banding trap sites were set up and pre-baited.

Sumter NF - Andrew Pickens WMA – Worked with USFS staff on wildlife openings as needed. WMA signs are being reposted as needed. Assisted with hog trapping.

Unit 1B (Abbeville, Edgefield, Greenwood & McCormick)

Met with National Deer Alliance (NDA) Director of Hunting and NDA Lakelands Branch President to prepare rifles, which were stored in TOMO safes at Abbeville field office, for return to manufacturer. Watched “Lunch and Learn: Protecting SC Native Reptiles and Amphibians”. Completed fiscal year-end budget monitoring, purchase order closeouts, etc. Interviewed for Administrative Specialist position at the Abbeville field office. Conducted a Breeding Bird Survey and began pre-baiting for mourning dove trapping/banding and wood duck trapping/banding.

Property Management Activities:

Bordeaux Dove Field – Planted sunflowers, millet, and sesame. Applied herbicide, mowed, maintained electric fences, spread milorganite, and removed two hogs.

Plum Branch Dove Field – Applied herbicide to sunflowers, maintained electric fences, and baited hog trap.

Parksville Dove Field – Applied herbicide to sunflowers, planted millet, and maintained electric fences.

Russell Creek Waterfowl Area – Planted Egyptian wheat, millet, and rice. Masticated dikes.

USACE-owned “unnamed” WMA – Applied herbicide, planted millet and iron-and-clay cowpeas, and removed three hogs from Greenoaks. Prescribed burned and applied herbicide to forest understory at Bordeaux.

Unit 1C (Cherokee, Laurens, Spartanburg, Union)

Established baiting sites for trapping and banding wood ducks and doves. Met with Indian Creek Focal Area committee at Newberry Forestry Commission office. Cooperated with Duke Energy and Clemson Extension to provide wildlife presentation to 4-H young naturalists group at London Creek WMA. Monitored logging operations on Thurmond WMA through completion of pine stand thinning. Spoke with applicants in first round packet of DQP applications to adjust quotas for 2021 deer season. Worked with staff to finish out the fiscal year and close all open POs. Worked with staff to complete planting all warm season dove field crops.

Property Management Activities:

Cliff Pitts Bird Dog Training Area – Disked, fertilized, and planted warm season crops for bird dog training cover.

Cliff Pitts WMA – Applied post-emergent herbicide to control noxious weeds in sunflowers. Mulched area around dove field off of Hood Creek Rd.

Gaffney Dove Field – Disked, fertilized, and planted browntop millet. Applied post-emergent herbicide to control noxious weeds in sunflowers.

Gray Court Dove Field – Planted and fertilized browntop millet.

Herbert Dove Field – Planted and fertilized browntop millet. Applied post-emergent herbicide to control noxious weeds in sunflowers.

Santee Cooper Dove Field – Planted and fertilized browntop millet. Applied post-emergent herbicide to control noxious weeds in sunflowers.

Sedalia Dove Field – Planted and fertilized browntop millet.

Sumter NF – Dunaway WMA – Monitored water levels.

Sumter NF – Duncan Creek WMA – Monitored water levels.

Sumter NF - Tyger WMA – Installed six new wood duck boxes. Applied herbicide to burn down in preparation for planting. Planted corn in impoundment.

Thurmond Tract Dove Field – Planted and fertilized browntop millet. Applied post-emergent herbicide to control noxious weeds in sunflowers.

Thurmond Tract WMA – Completed timber thinning in pine stands.

Jocassee Gorges

Completed administrative activities including correspondence and purchasing. Closed out active Purchase Orders. Conducted a staff meeting on June 7th. Assisted Duke Power contractors with Right of Way access. Corresponded with Dr. Bates concerning ongoing forestry soil research, N.C. State University staff on hemlock research project, and the Prescribed Fire Training Exchange (TRES) concerning controlled burns to be conducted on the property in the late fall for training purposes. Assisted the Fire Learning Network with previous year control burn data. Attended a public meeting in Pickens concerning Sunday hunting on WMAs. Assisted the Southeast Cooperative Wildlife Disease Study employee conducting research on the property with tick collection. Assisted Duke Power and Devil's Fork State Park with a nuisance bear situations. Held retirement luncheon for Jimmy Kluge at Jocassee.

Property Management Activities:

Jocassee WMA – Spread mulch around the Sassafras observation tower. Conducted feral hog trapping. Seven females and two males have been removed. 10 miles of roads were scrapped, regraded, and graveled. Repaired previous slide area to facilitate better drainage. An additional 41 tons of gravel was delivered for future use. Repaired bathrooms and alarm system at Sassafras. Removed several fallen trees from roads on the property. Conducted maintenance on two vehicles and farm tractor.

Heritage Preserve Activities

Completed the final draft of the Chestnut Ridge HP management plan and continued working on the Brasstown HP management plan. Discussed Stumphouse HP road easement issues with Ken Prosser and Van Whitehead. Worked with landowner adjacent to Bunched Arrowhead HP regarding closing off the property at night to deter on-going illegal activities. Met state forester at Stevens Creek HP to discuss timber sales. Visited a property in Travelers Rest to consider for potential acquisition. Conducted maintenance on trailers, gators, skidsteer, and vehicles. Spent considerable time spreading straw and seed to complete roadwork at Upper Brasstown Creek. Installed a dedication sign on Stumphouse HP to acknowledge the previous owners and their commitment to conservation and stewardship. Took Director Boyles on a property tour of the new GA Power addition to Brasstown HP.

Property Management Activities:

Ashmore HP – Picked up trash. Checked gate and trails.

Bald Rock HP – Picked up trash.

Belvue Springs HP – Checked property and led research group to bunched arrowhead colonies.

Blackwell HP – Checked gate and inspected property.

Brasstown Creek HP – Conducted exotic control, picked up trash, spread straw and seed on roads. Trapped hogs. Gave the director a tour.

Buzzard Roost HP – Checked property.

Bunched Arrowhead HP – Inspected trail, picked up trash, mowed, and installed temporary cable gate to close property at night.

Chandler HP – Checked property and inspected trail.

Chestnut Ridge HP – Checked gates and inspected trails/roads.

Eastatoe Creek HP – Checked trail and removed trees.

Glassy Mountain HP – Checked property and inspected trail.

Laurel Fork HP – Checked road.

Stevens Creek HP – Looked at loblolly stands with state forester to discuss harvest options.

Stumphouse HP – Installed gate, installed dedication sign, and cleared trails.

Watson-Cooper HP – Inspected roads and checked gates.

Wildlife Region 2

Summary

Region 2 staff spent significant time improving roads and access within the WMA. Staff continued work on dove fields throughout the region. Cockman, Stokes and Oates assisted LE in Lee County with a significant operation involving illegal importation of wildlife and animal cruelty. Staff adhered to SCDNR C-19 emergency protocols in field work and office work, following social distancing and sanitation measures. The department has continued to provide personal protective equipment and sanitation supplies to staff to help us work safely and productively. Heritage preserve management staff worked on endangered species and ecosystem monitoring, restoration and management; on longleaf and shortleaf pine, piedmont savanna and prescribed fire management, outreach, policy and education; on management plans; on conservation planning, and on maintaining and improving access and other preserve attributes. Staff worked to close out FY2021 matters.

Regional Operations Activities

Unit 2A

Biologist Oates completed the bobwhite quail whistling call count routes in Marsh WMA and at Pee Dee. Nine bobwhite quail were detected. Biologist Oates reviewed 89 Deer Quota Applications from Williamsburg County. Biologist Oates conducted two NABat mobile survey routes in Marion County. Biologist Oates assisted Unit 2C technician Lowder in building an office within the newly constructed building at McBee WMA. Biologist Oates and technicians Parsons and Parsons planted 11 acres of native grasses and pollinators at Marsh WMA. Biologist Oates and technicians Parsons pre-baited 13 dove banding sites at Marsh WMA. Biologist Oates pre-baited 2 wood duck banding sites in Marion County. Biologist Oates assisted LEOs with the Lee County animal cruelty investigation. Technician Fitts disked and planted 6 acres of browntop millet at Lake Wallace dove field. Technician Fitts spread 45 acres of fertilizer at Lake Wallace DF. Technician Parsons mowed 12 acres of wheat at Lake Wallace DF. Technician Parsons mowed 20 acres at Lake Wallace DF and 20 acres at Pee Dee Station DF. Technician Parsons disked 12 acres at Lake Wallace and Pee Dee Station DF. Technician Parsons disked 3 acres and planted 3 acres of millet in Marsh WMA. Technician Alston hauled 12 loads of rock in Woodbury WMA to repair roads. Technician Alston scraped 7 miles of roads at Woodbury WMA. Technician Parsons daylighted 2 miles of roads in Woodbury WMA. Technician Parsons completed a quail whistling call count in Woodbury. Region staff had 162 technical assistance contacts (mostly phone calls) pertaining to wildlife, regulations, and WMA lands and 53 nuisance calls (2 alligator, 3 bears).

Unit 2B

Unit 2B staff continued preparations of WMA public dove fields in York, and Chester County for planting. Unit 2B staff maintained agricultural equipment for planting, and field maintenance.

Unit 2B staff planted millet at Draper WMA, Landsford Canal WMA, Worthy Bottoms and Worth Mountain WMA public dove fields. Unit 2B staff sprayed herbicide on corn and sunflowers across all properties. Unit 2B staff planted soybeans in food plots at Draper and Broad River Waterfowl Area.

Technician Smith, Technician Scales, and Biologist Kesler monitored water levels, and beaver activity in ditches and water control structures at BRWMA. 8 days were spent pumping to drain ditches.

Unit 2B staff performed road maintenance and improvements at Broad River WMA, Draper WMA, and Worth Mountain WMA.

Unit 2C

Biologist Cockman completed the final round of edits to the regulations and WMA maps for the upcoming hunting season. Biologist Cockman completed the first round of edits for the Deer Quota Permits. Biologist Cockman scored one deer head at the Camden office. Biologist Cockman responded to a deer nuisance call in Lee County on June 7. Biologist Cockman assisted law enforcement with a wildlife rehabilitator case on June 29. Loggers began a 255-acre thinning at the Catawba River WMA (Heritage Tract). Biologist Cockman met with SCFC Mike Shealy in preparation for timber thinning on the Heritage East tract of the Catawba River WMA. Technician Lowder and bat technician Miller conducted 2 mobile bat surveys in Kershaw County June 22-24 and a stationary bat survey June 28-July 2 at Liberty Hill WMA. Biologist Cockman conducted quail whistling count surveys in Lancaster County and at McBee and Liberty Hill WMAs June 18-30. A pre-bid meeting for the land clearing (brood fields) contract at McBee WMA was held on June 9. Contract bids were received on June 17 with Stihlwater Land Clearing submitting the winning bid of \$1950.00 per acre. Contract will be awarded next month.

Construction of the equipment storage building/shop at McBee WMA was completed on June 28.

The rock contract for Liberty Hill WMA was completed on June 25 with 932 tons tailgate spread and/or stockpiled on 4 miles of roads. Technician Lowder mowed 4 acres of grass at the parking area and compound, graded 1 mile of roads, fed 20 bushels of supplemental feed (June 10, 30), applied herbicide to 6 acres of Johnson grass, tree of heaven and the quail feed route, planted 1 acre of chufa and framed for office in the new shop at McBee WMA. Technician Lowder planted 2 acres of small game mix and 1.5 acres of chufa at Campbell's Crossroads WMA and 1 acre of small game mix at the Angelus WMA.

Technician McManus mowed 4 acres of grass at the parking area and shop, removed 3 trees from roads, graded 5 miles of roads, and disked and planted 2 acres of small game mix and 1.5 acres of summer food plot mix (peas, soybeans, sun hemp, buckwheat and sorghum) at Liberty Hill WMA.

Technicians Lowder and McManus built 5 dove traps and began prebaiting dove trap sites in Sumter and Kershaw Counties, respectively. Technician McManus received motor grader training from CAT representative at Liberty Hill WMA on June 9.

Wildlife Management Area Management Summary

Throughout Region 2, staff mowed 81 acres, scraped 19 miles of roads, disked 90 acres, applied ag. herbicide to 127 acres and treated 4 acres of woodlands, planted 65 acres of small grains, planted 11 acres of native grasses and pollinators, burned 4 acres of forest, hauled 17 loads of rock, graveled 1 mile of roads, daylighted 2 miles of road, applied fertilizer to 45 acres, conducted 2 quail surveys.

Property Management Activities

Marsh WMA: Hauled 6 loads of rock to repair roads. Cut 5 acres of grass at clubhouse and shooting range. Disked 14 acres. Planted 11 acres of native grasses and pollinators. Planted 3 acres of millet. Cultipacked 11 acres. Established 13 dove banding sites and pre-baited. Pre-baited 1 duck banding site. Conducted 1 quail survey.

Woodbury WMA: Daylighted 2 miles of roads. Hauled 11 loads of rock. Graveled 1 mile of road. Scraped 7 miles of roads. Conducted 1 quail survey.

Pee Dee Station WMA: Mowed 20 acres. Mowed .5 miles of roads. Sprayed herbicide on 2 acres around fence. Disked 5 acres.

Lake Wallace DF: Disked 13 acres. Planted 6 acres of millet. Spread 45 acres of fertilizer. Mowed 12 acres of wheat and 20 acres outside of the field.

McBee WMA: Completed shop construction. Framed for office. Disked and planted 1 acre of chufa. Mowed 4 acres of grass at shop and public parking area. Distributed 20 bushels of quail supplemental feed. Applied herbicide to 6 acres.

Liberty Hill WMA: Tailgate spread/stockpiled 932 tons of rock on 4 miles of roads. Mowed 4 acres of grass at shop and public parking area. Disked and planted 3.5 acres of openings. Graded 5 miles of roads. Removed trees from roads.

Angelus BDTR: Inspected herbicide spray contract. Planted 1 acre of small game mix.

Campbell's Crossroads: Planted 2 acres of small game mix and 1.5 acres of chufa.

Catawba River WMA: Cleaned culvert pipes at Heritage West tract. Began timber thinning operation at Heritage West tract.

Draper WMA: WMA Performed general depot, and equipment maintenance. Scraped 3 miles of road. Disked 20 acres of wildlife openings and dove field. Planted 16 acres of millet in dove field.

Planted 2 acres of small game mix in dove field. Burned 4 acres of forested area. Sprayed 22 acres of sunflowers and 4 acres of corn. Fertilized 29 acres of sunflowers and 4 acres of corn.

Worth Mtn. WMA: Disced 3 acres of open ground in dove fields. Planted 5 acres of millet in dove field. Applied deer deterrent to 8 acres of sunflowers. Scraped 3 miles of road. Herbicide application to 6 acres in dove field.

Broad River Waterfowl Management Area: Performed general equipment maintenance, and repair. Herbicide application to 30 acres of corn in impoundments. Applied deer deterrent to 30 acres of corn in impoundments. Disced 10 acres. Planted 8 acres of soybeans. Mowed 3 miles of dikes. Performed 14 days of water level management.

Worthy Bottoms PDF: Maintained deer exclusion fence. Planted 5 acres of millet in dove field. Sprayed 6 acres of sunflowers in dove field.

Landsford Canal FLA: FLA Planted 10 acres of millet and 2 acres of small game mix in dove fields. Herbicide application to 5 acres of corn and 11 acres of sunflowers in dove fields.

Heritage Preserve Management Activities

Heritage preserve (HP) management staff worked on endangered species and ecosystem monitoring, restoration and management; on longleaf and shortleaf pine, piedmont savanna and prescribed fire management, outreach, policy and education; on management plans; on conservation planning, and on maintaining and improving access and other preserve attributes. Staff worked to close out FY2021 matters. Staff developed requisition and position description for new technician position, which has been posted. Staff completed annual monitoring of nesting activity of populations of several clusters of federally-endangered red-cockaded woodpecker (RCW: *Picoides borealis*) on both Lee County HPs, and assisted with North American Bat Monitoring Program by conducting audio-survey. Staff applied herbicide to four highly-invasive exotic species. Staff fertilized federally-endangered Schweintz's sunflower (*Helianthus schweinitzii*) plot. Staff assisted the town of Lamar with wildlife damage management by identifying muskrat burrows threatening the dam on the town's wastewater pond and connecting the town with USDA-APHIS Wildlife Services, DHEC and SCDOT. Staff assessed firebreaks, soil and water-table conditions, and fuels; cleared around RCW cavity trees as well as snags, cat-faced trees, gates, signs, utility poles and other hazards or sensitive elements; and worked on equipment and gathered supplies in preparation for prescribed fire. Staff maintained preserves by assisting the SCDNR LED with enforcement, by monitoring for abuse, by removing trash, by managing vegetation and by maintaining gates, trails, parking areas and boundaries.

Property Management Activities

Forty Acre Rock HP/WMA: Staff maintained the preserve by assisting game wardens with surveillance (SCDNR LED had not reported any citations as of the time of this report), by monitoring for abuse, by removing trash and hazardous trees, by managing vegetation, and by maintaining gates, trails, parking areas and boundaries. Staff applied herbicide (via backpack application) to invasive exotic Japanese wisteria (*Wisteria floribunda*), spot-treating one acre.

Great Pee Dee HP/WMA: Staff removed trees from road and painted both main gates.

Longleaf Pine HP/WMA: Staff completed annual monitoring of nesting activity of all RCW clusters. Staff monitored soil, fuel and weather conditions and kept in touch with local farmers in preparation for prescribed burning. Two units on the preserve have not burned in three years, because of lack of opportunity in proper conditions (soils being too wet), and they are a high priority to burn. Staff cut and/or raked around snags near the firebreaks in these 2 units in preparation for burning. The firebreaks will soon be dry enough to clear unless we get significant rain. Staff applied herbicide (via hack-and-squirt application) to sweetgum and to invasive exotic Japanese climbing fern (*Lygodium japonicum*), spot treating one acre.

Little Pee Dee State Park HP: Staff checked roadside boundary and removed trash at boat landing and along entrance road.

Lynchburg Savanna HP/WMA: Staff completed annual monitoring of nesting activity of all RCW clusters. Staff monitored soil, fuel and weather conditions and kept in touch with local farmers in preparation for prescribed burning. One unit on the preserve has not burned in two years, because of lack of opportunity in proper conditions (soils being too wet) and is a high priority to burn. Staff cut and/or raked around snags near the firebreaks in this unit in preparation for burning. The firebreaks will soon be dry enough to clear unless we get significant rain. Staff found and applied herbicide to invasive exotic bicolor lespedeza (*Lepedeza bicolor*) and Japanese wisteria, spot treating one acre of each species. Staff applied herbicide (via hack-n-squirt application) to sweetgum, spot treating one acre. Staff cleared 4,200' of boundary, and regularly patrolled east boundary while neighbor was harvesting timber.

Rock Hill Blackjacks HP/WMA: Staff removed trash from parking area and notified York County Waste Collection of dumped material on Blackmon Road. The county will remove the material. Staff cut vegetation around parking area, kiosk, trail and picnic area. Staff mowed around one-acre fenced enclosure in Houk's Patch containing Schweinitz's sunflower, and applied herbicide to invasive exotic small carpetgrass/ hairy jointgrass (*Arthaxon hispidus*), spot treating one acre.

Woods Bay HP- Staff cleared and painted 1.3 miles boundary, posting 50 HP signs. Staff monitored soil, fuel and weather conditions and kept in touch with local farmers in preparation for prescribed burning. Ten units (nine are very small) on the preserve have not burned in three or more years, because of lack of opportunity in proper conditions (mainly, soils being too wet), and they are a high priority to burn. Staff cut and/or raked around snags near the firebreaks in these units in preparation for burning.

Segars-McKinnon: Staff re-flagged rotten sections of boardwalk and "closed trail" with flagging and signage, and checked all roadside boundaries. Staff met with SCDNR Engineer to discuss repairing/replacing the boardwalk.

Savage Bay HP: Staff checked roadside boundaries.

Wildlife Region 3

Summary

Biologist Young met with The Nature Conservancy and a potential Boy Scout about the possibility of remarking a new trail system at Peachtree Rock Heritage Preserve as an Eagle Scout project. South Carolina Department of Transportation started their Right of Way repair project adjacent to Shealy's Pond Heritage Preserve. They are removing a culvert pipe from under the roadway and replacing it with a new one. Botanist Bradley, Young, Janson, and Intern Drafts were able to relocate a rare plant species, Swamp bulrush, away from the work area for the duration of the project.

Regional Coordinator

Assisted regional staff with purchase requisitions, receiving and inspection reports, and personnel transactions forms. Submitted purchase card summaries by email for Region 3 Staff on June 11 and 14. Assisted with Region 3 Heritage Preserve and Wildlife Management Area Management plans. Issued 5 nuisance alligator permits for the region. Attended the Shealy's Pond Heritage Preserve Visit to discuss repairs to the road, controlling water flow off the preserve and needing to work on the preserve. Conducted a meeting to talk about the management, work schedule and hunts scheduled for Love Wildlife Management Area. Assisted with finding contact for neighboring homeowner's association adjacent to Savannah River Bluffs Heritage Preserve. Attended a meeting with the South Carolina Forestry Commission to discuss upcoming seasons and hunts on Manchester State Forest. Visited the following heritage preserves and wildlife management areas in Region 3; Belfast, Congaree Bluffs, Henderson, Hickory Top, Janet Harrison High Pond, Love Farm, Peachtree Rock, Shealy's Pond, Santee Cooper, Santee Dam and Wateree River.

Unit 3A

Reginal staff prepped trap sites to ensure they were kept clean and baited. Traps were inspected and prepared for the project. Bands were received along with record sheets and stored until trapping begins next month. The adult deer draw hunts were scheduled for the upcoming season at Belfast Wildlife Management Area and Wateree River Heritage Preserve Wildlife Management Area. Technicians Stephens and Technician Rex completed 6 quail surveys in Newberry County. Stephens completed a 4-hour Drivers Safety Class. The Belfast house hosted the Conservation Bank Board meeting. Clinton High and Greenwood High schools Junior Recruiting Officers Training Corps utilized the Belfast archery and pistol ranges for summer field exercises with 27 youth participating. Duck banding locations have been maintained and baited in surrounding counties. Biologist Bennett attended a regional biologist meeting at Eutaw Springs.

With high winds and storms staff continue to make needed repairs on hog panel surrounding waterfowl impoundments on Wateree River Heritage Preserve Wildlife Management Area. Waterfowl impoundments are being monitored for hog intrusion daily. Waterfowl impoundments are being monitored and sprayed for weeds. Staff installed a new culvert pipe and water control structure leading to the Cooks Mountain waterfowl impoundment. Technician Kiker and Technician Flemming spent several days moving material and working on road maintenance. Staff spent several days daylighting main roads. Wildlife openings have been prepared and ready for planting. The main gate has been programed and reprogram in attempt to get it working properly. Staff conducted a prescribed burn on 283 acres of mixed pine hardwoods.

The contractor is still in progress with the stumping/clearing of the dove field and shooting course at Love Wildlife Management Area. Technician Baldwin and other staff has continued clearing trees off impoundment dikes as well as starting to daylight some roads. Baldwin planted spring/summer food plots. A dove field was prepared and planted for a scheduled hunt hosted by Take One Make One early in the season. Trespassing issues from the highway was blocked off. Bennett, Baldwin, and Simmons met with the education division of the law enforcement section to discuss food plot objectives and upcoming hunting season calendar on Love Wildlife Management Area. High winds and summer storms resulted in several roads cleared of falling trees.

Staff spent a significant amount of time disking, planting, and fertilizing summer crops on dove fields at McCullough, Saluda and Belfast Wildlife Management Area. Electric fences on area dove fields were regularly checked sprayed or mowed to ensure effectiveness. The initial planting on Enoree Waterfowl Area was completed as well as dikes and ditches being sprayed to discourage undesirable hardwood growth and sprouting. With heavy rains this month, there was a need to monitor pipes on Enoree to ensure proper water drainage with no beaver blockage. Several equipment repairs were required due to normal usage. Region 3 summer interns cleaned and painted gates on Belfast Wildlife Management Area.

Unit 3B

Crackerneck Wildlife Management Area was closed to the public in June. Wildlife Technicians Chapman and Rinder fertilized, disced, and planted 40 acres with millet, sorghum, sunflowers, and benne at Crackerneck Dove Field. Technicians Chapman and Rinder and Biologist Forehand setup several feeders and hog traps, Technician Rinder trapped 17 feral hogs in June. Chapman and Rinder also planted and fertilized 9 acres of food plots, worked on equipment for 4 days, maintained the electric fence and plowed 3 miles of firebreaks. Chapman herbicided the dove field electric fence, herbicided and fertilized 20 acres of corn at Crackerneck dove field and completed several quail surveys. Biologist Forehand worked with Lisa Lord of the Longleaf Alliance and Tal Mimms of SRS-FS to secure funding for an herbicide treatment of understory vegetation, responded to several alligator calls, met with Aiken County Parks and Recreation to discuss alligators, and attended the Region 3 biologist meeting.

Unit 3C

Staff began trapping hogs at Santee Dam Wildlife Management Area. Technician Mackey and Biologist Shuler continued working on keeping the deer out of the Youth dove field on Santee Cooper Wildlife Management Area. Staff also planted millet on Oak Lea Wildlife Management Area, Santee Cooper Wildlife Management Area, and Santee Dam Wildlife Management Area. Disking and preparation continued for dove fields on Santee Dam Wildlife Management Area and Oak Lea Wildlife Management Area. Staff began planting plots for deer and fertilized the dove fields. Sunflowers look promising on all Unit 3C dove fields at this point. Water levels were monitored and adjusted as needed on Hickory Top Wildlife Management Area. Shuler closed out year-end purchase orders as needed. Shuler answered numerous alligator calls and issued tags. Staff mowed grass and cleaned buildings and grass as needed.

Heritage Preserves

Heritage Preserve Biologist Young, Technician Kiker, and Janson conducted multiple site visits to the Heritage Preserves and Wildlife Management Areas in Region 3. Janson has been painting the boundaries and putting up boundary signs at Henderson Heritage Preserve. Young met with The Nature Conservancy and a potential Boy Scout about the possibility of remarking a new trail system at Peachtree Rock Heritage Preserve as an Eagle Scout project. Young, assisted Unit 3A Biologist Bennett with an alligator call in Lexington County. Kiker has been plowing firebreaks at Aiken Gopher Tortoise Heritage Preserve. Kiker, Young, and Janson completed some trail work at Aiken Gopher Tortoise Heritage Preserve removing limbs and scraping firebreaks. Kiker mowed the grass at Congaree Bluffs Heritage Preserve. Janson has continued to assemble dove traps. Young took an interested student for a ride along around some of the heritage preserves as a request made by the student. Young, Kiker, and Janson replaced the kiosk roofs at Shealy's Pond and Peachtree Rock Heritage Preserves. Forester Burger had contracted out the spraying of Velpar on 29 acres of upland longleaf pine at Congaree Bluffs Heritage Preserve and 2 acres at Janet Harrison High Pond Heritage Preserve in the month of May. Young, Kiker, and Janson assisted on two prescribed burns at Wateree River Heritage Preserve. Young, Kiker, Janson, and Bennett conducted a prescribed burn of 28 acres at Congaree Bluffs Heritage Preserve. Young, Kiker, and Janson assisted in the tracking and monitoring of Red-cockaded woodpeckers at Aiken Gopher Tortoise Heritage Preserve and Aiken State Park. Young, Kiker, and Janson have continually been baiting trap sites for mourning doves and wood ducks around the region. South Carolina Department of Transportation has begun their Right of Way repair project adjacent to Shealy's Pond Heritage Preserve. They are removing a culvert pipe from under the roadway and replacing it with a

new one. Botanist Bradley, Young, Janson, and Intern Drafts were able to relocate a rare plant species, Swamp Bulrush, away from the work area for the duration of the project. Young has completed L180 fire training. Kiker is continually working on online fire training. Young, Kiker, and Janson have been cleaning the shop out for Region 3 Heritage Preserves at Styx. Kiker and Janson have picked up litter from Henderson Heritage Preserve, Shealy's Pond Heritage Preserve, and Peachtree Rock Heritage Preserve. Janson attended AAA driver training. Janson assisted Bat biologist Kindel on trapping bats one night at Wateree River Heritage Preserve. Young attended a Region 3 biologist meeting at Eutaw Springs. Kiker has begun to bushhog the underbrush in the uplands at Janet Harrison High Pond Heritage Preserve.

Wildlife Region 4

Highlights

Daily management of Public Dove Fields, waterfowl impoundments, and wildlife openings dominated staff activities in the month of June. Water levels and conditions were monitored and managed in all coastal waterfowl impoundments. Staff began preparing sites for trapping and banding of mourning doves, wood ducks, and mottled ducks. A Regional Biologist's workshop was conducted for one day at Donnelley WMA. A lunch was hosted at Bonneau Ferry WMA in honor of Natural Resource Technician Ryan Tyler receiving the 2021 Technician of the Year Award.

Regional Coordination

Time was spent on fiscal year close out, communicating with staff and vendors on the status of budgets, purchase orders, and delivery dates. A Region 4 Biologist's workshop was hosted at Donnelley Lodge where updates were given by Deputy Director Cope, Chief Dukes, and Assistant Chief Chappellear as well as presentations on several administrative processes and procedures. Several potential property acquisitions were toured and commented on. Exit interviews were conducted as needed. Personnel issues were attended to. A virtual meeting of the Migratory Game Bird Committee was attended. A virtual meeting for planning the upcoming Atlantic Flyway Council and Technical Committees meeting was attended. This virtual fall meeting will be hosted by South Carolina again before returning to in person. Comments were provided to OEP regarding the renewal of the Managed Tidal Impoundment General Permit. Construction projects were inspected across the Region. Dove fields were inspected across the Region. The WFF Advisory Board meeting was attended. County Game and Fish and Water Recreation Fund requests were submitted to HUB Chairman. DiSC training was attended.

Assistant Regional Coordination

Assistant Regional Coordinator Hook continued to monitor Public Dove Fields and waterfowl impoundments throughout Region 4. Significant time was spent consulting with staff and private landowners for herbicide and planting recommendations on dove fields and waterfowl impoundments. Multiple rounds of Technician interviews were conducted. Hook worked with OEP Director Riggins, Biologist Treptow, and SCDNR Engineering staff for upcoming projects at Santee Coastal Reserve WMA. A permit application for the replacement of a floating courtesy dock on Cedar Island was developed and submitted to OEP. Hook coordinated with coastal waterfowl staff to develop a tool for streamlined submission of Post Construction Forms to the USACE. Commentary on the Managed Tidal Impoundment RGP was provided to OEP. The monthly reporting spreadsheet was converted to OneDrive for easier submission and tracking of monthly activities. A tour of Tom Yawkey Wildlife Center was attended with SCDNR interns. The Region 4 Biologist Workshop was attended.

Unit 4A: Horry & Georgetown

Costal Bear: Activity remained steady through June. There were 21 sightings and 1 roadkill reported. The Charleston County (Awendaw) roadkill prompted several news outlets to reach out for an interview. Two HOAs were contacted in the Murrells Inlet and Pawleys Island area to assist with sending an email blast out to homeowners regarding recent bear sightings. One afternoon was spent sharing information and conducting a bear presentation with Unit 4A & Heritage Preserve summer interns.

Unit 4A Heritage Preserves: Heritage Preserves in Horry County were visited 20 times. Red-cockaded woodpecker monitoring wrapped up on Lewis Ocean Bay Heritage Preserve (LOBHP). The last sex ratio and fledgling checks were conducted in 9 RCW clusters. Staff participated in an onsite Blanchard Machinery Company/Power Systems Division Customer training on the new generator. Biologist Brantley participated with internal HP Tech II interviews. Brantley spent 2 days with Biologist Fowler preparing/documenting project

essentials. Staff held a backhoe training session with summer interns. Technician Matthews installed VHF radios for prescribed burns on the Polaris Ranger and new pumper truck. Additionally, Matthews transferred further electrical equipment from the old pumper truck into the new one. Intern Newman assisted with Venus Fly Trap counts (LOBHP), checking snake tins (LOBHP) and painting boundary (WRHP).

Samworth WMA Uplands: Samworth received much needed rainfall during June. Samworth dove field activities included: 21 acres of sunflowers replanted, herbicide and nitrogen applied at planting, 4 acres of millet planted, and field perimeters kept clean. Deterrents were added to help keep deer out of the sunflowers. Pig weed was pulled by hand in an .5-acre area. The electric fence around the Samworth dove field was continuously monitored and repaired when needed. Pre baiting began for dove banding. Biologist Brantley attended the Region 4 Biologist Meeting at Donnelley WMA. Technician Matthews attended the 4-hour driving class. Staff continued to maintain the Samworth grounds. Bearings on the field cultivator were replaced. Summer Interns Newman and Shankle performed maintenance on the nature trail. Additionally, Newman assisted the Upper Coastal Waterfowl crew one day in the wetlands. There she was instructed on how to operate the mash master, basic maintenance training and mowing. Newman also acquired basic boat training. Technician Matthews assisted the Upper Coastal Waterfowl crew with unloading a barge and installing cable in new mats.

Unit 4B: Berkeley & Charleston

June activities were dominated by agricultural work in waterfowl impoundments, dove fields, and wildlife openings. Hog control and fiscal year close-out also accounted for significant effort.

Bonneau Ferry WMA: 94 General visitors utilized Bonneau Ferry. Roads were graded. A congratulatory event was held for Technician of the Year, Ryan Tyler at Bonneau Ferry that was attended by Assistant Chief Sam Chappelle, Section Chief Billy Dukes, Deputy Director Emily Cope, and Unit 4B staff. Staff continued to train the new intern who learned tractor operation. The Pump Pond impoundments were planted. Fallen trees were removed from roads. Hogs were baited. Duck banding supplies were gathered and organized, and duck trapping sites were maintained. Childsbury Heritage Preserve was bush-hogged. Understory vegetation was controlled with herbicides in RCW clusters.

Canal WMA: Staff continue to work with COE personnel via weekly conference calls. Dove fields continue to be sprayed, fertilized, and cultivated as needed. Dove banding sites are ready for trapping in July.

Sandy Beach, Cross and North Dike WMA: Shed improvements were completed. Staff fertilized and sprayed crops and managed water levels. Santee Cooper continued bank erosion control measures. Hogs were scouted and 5 were dispatched by opportunistic shooting. Duck banding sites were prepared. Staff observed a black bear at Sandy Beach, a rare sighting for the property. Chufa was planted in wildlife openings in North Dike.

Francis Marion National Forest: Summer planting of wildlife openings continues. Staff baited for hogs. Staff maintained dove trapping sites. Staff helped coordinate completion of liming project in Waterhorn WMA and liming in Northampton WMA has started. Staff posted boundary and closed road signs. Routine mowing and equipment maintenance was completed.

Other Unit activities: Staff measured one set of deer antlers for SC records book. Staff completed quail call surveys. Staff assessed and edited equipment and building insurance policies. Interns attended driver safety class. Staff conducted exit interviews of Zac Powers prior to his last day of employment. Staff discussed the Integrated Natural Resource Management Plan for Joint Base Charleston with Anna Smith. Staff interviewed candidates for the wood duck box technician position. Staff attended the Region 4 Biologists workshop at Donnelley WMA. Staff followed up on several outstanding invoices and POs during the last days and weeks of the fiscal year.

Wildlife: A total of 544 wildlife calls were handled at the Charleston office (204 alligator, 2 bear, 338 other nuisance animals). There were 29 licensing/boat titling calls emailed to the licensing/permitting office. Hunting regulation and property calls were handled for 7 callers. 11 Property and 11 Individual Alligator Depredation Permits were mailed or picked up. 10 harvested Alligators have been reported through end of June. Alligator Signs were mailed 8 Property Managers for posting. Three of these properties also received signs in Spanish for posting.

Unit 4C: Colleton & Dorchester

Routine administrative and management duties were conducted for the month. Visits were made to WMAs within the unit to assess habitat conditions and other management items. Water levels in all impoundments on Donnelley and Bear Island were monitored and adjusted appropriately. All water control structures have been set to allow

ample water flow through impoundments and to slightly raise water levels to promote healthy SAV growth. Dove field management and maintenance continued to keep staff busy across the unit. Fences are checked daily, herbicide and fertilizer are applied, and replanting due to drought and deer damage has occurred. Pre-bait sites for dove and waterfowl banding were fed and monitored. A region 4 biologist meeting was attended. There was a minimum of 11,450 visitors for the month in Unit 4-C.

Bear Island WMA: Dike maintenance entailed continuing the topping around Minkey impoundment (2,360 linear feet). Miscellaneous eroded or worn spots on dikes are also being addressed by staff. Garlon 3A is being applied as needed anywhere that woody vegetation is emerging. Lastly, the never-ending bush hogging of dikes continue. Agriculturally, now that we have moisture in the ground, 25 acres of corn were planted and sprayed in impoundments. Ten acres of bird mix was also planted. The West cut impoundment has had a 20-acre area disced and rotovated to break up thick mats of proliferating spike rush and allow panic grass and red root to grow. Ground's maintenance included mowing common areas and around dwellings. Structures, trunks, gates, and signs have grass and weed control through an as needed application of herbicide. Our summer intern, Hannah Brown, continues doing a great job, she is keeping our duck/dove/pig trapping stations in check, has mastered tractor operation, continues to mow acres of grass, and attacks any task without complaint. Favorable burn conditions occurred for our White House woods block, and we burned the entire 320 acres. Miscellaneous jobs addressed during the month included, repaired broken cables on track hoe mats, repaired ATV drip torch, thoroughly cleaned Bear Island shop, and all staff that needed driver training renewed attended a virtual class. Construction/maintenance technician Joe Armstrong has just started a job to replace all doors and windows on a technician residence. Technician Armstrong is monitoring contractors to ensure work is completed correctly. He continuously orchestrates with contractors and paperwork for present and future projects.

Botany Bay Plantation WMA: Staff this month has been busy maintaining the dove field by checking fence daily and applying nitrogen to sunflowers. Several hundred doves are using winter wheat strips currently. Staff installed a culvert pipe in a ditch in the dove fields to allow for a more direct route of travel for equipment. Staff attempted to burn 150 acres, but the humidity did not cooperate and only 50 acres were burned. Staff moved the fuel tank under the corner of the new pole shed and took down the old fuel tank shed. Construction/maintenance technician Armstrong wrapped up the remaining plumbing at the Big house and finished a roof repair on staff housing. Volunteers started patching the mortar on both patios at the Big House which should be done soon. Overhanging limbs around the Big House have been cut so that a tractor can finally get under them safely. Duck box season has concluded that 87% of the boxes are positive for nesting and all boxes were utilized by nesting birds at some point. Bess Kellett and Janet Thibault roped off the shorebird nesting site at Interlude Beach. Volunteers assisted youth and adult anglers at Jason's Lake and all 25 people were engaged by volunteers. There were 204 turtle nests as of June 26, 2021. Volunteer hours=308 total, 192 regular volunteer hours + 116 turtle volunteer hours. There were 11,450 visitors with 3,507 vehicles for the month of June. There were 8 horseback riding parties with 19 riders this month. There was 6.72" of rain in the month of June.

Donnelley WMA: Agriculturally, between the deer and dry weather, most of our sunflowers were disced in and replanted. Approximately 35 acres have been replanted, received a nitrogen application, and treated as needed with Des X to repel depredation. The 4-row planter was extensively cleaned and stored until next year. The electric fence continues to be sprayed and checked for proper operation. Twelve acres of proso millet was planted in the dove fields. The Maximilian (perennial) sunflowers we planted in February are coming along nicely and we are very eager to see the outcome of their usefulness as an alternative dove attractant that will come back year after year with minimal maintenance and deer depredation. Fifteen acres of small grain bird cover mix has been planted in wildlife openings across the property. Dike and impoundment maintenance included work from last fall when Mail route impoundment had canal edges and any other area grown up in trees cleared and piled. An effort to burn the debris piles has been successful but we have since stopped for this year to let the moist soil vegetation emerge for duck season. The Boynton Nature trail received new number signs to correspond with numbers on the trail guide. Donnelley acquired an additional 11 acres of land across Hwy 17. We have identified the property lines and cut the border with the Brown tree cutter. The interior open area has been bush-hogged so we can see what we must work with and create a plan. All main roads and secondary roads as needed were graded during June. Construction/maintenance technician Armstrong replaced and repaired missing shingles at the lodge and office and repaired some bad flooring in a technician residence. Miscellaneous jobs addressed during the month include,

maintaining dove/duck/pig bait station for July trapping, airboat has been readied for duck banding, several pieces of old equipment were auctioned off and picked up, and all staff that needed driver training renewed attended a virtual class.

Edisto River WMA: The kiosk supplies at Edisto River WMA were monitored. Staff re-evaluated damage to roads from heavy rains in February. A plan was developed to fix roads and reinstall pipes that were blown out now that our new motor grader finally arrived.

GIS/GPS/Miscellaneous: Met with the Region IV Heritage Trust Coordinator and the Assistant Chief to review/edit a map being generated. One 36"x48" map of Lewis Ocean Bay was generated, printed and laminated. Met with Charleston IT for assistance in setting up laptop and plotter. Mapping assistance of banding sites and harvest location data for the 2020-2021 waterfowl season began at the request of the State Waterfowl Biologist Kneece. Worked with upgrading firmware and troubleshooting issues with the UAV. Traveled to Botany Bay HP/WMA to deliver items for kiosk. Ordered three metal 'No Fishing' signs (18"x24") through Columbia for posting at Donnelley WMA. Assistance was provided with kiosk map and handout monitoring at Donnelley WMA.

Unit 4D: Beaufort, Hampton, & Jasper

Webb Wildlife Center WMA, Palachucola WMA, Hamilton Ridge WMA:

Staff spent significant time preparing for and hosting the Wild @ Webb Range Day and on grounds maintenance around the Webb complex. Staff spent time cultivating and fertilizing dove fields and preparing, planting and fertilizing summer plots. Staff began preparations and baiting for upcoming wood duck and mourning dove banding. Staff also spent time monitoring red-cockaded woodpecker nest activity. 145 non-hunting users signed in to the 3 WMAs during the month with activities including: scouting for hunting, birding, wildlife viewing, archery range, fishing, paddling, and photography. Routine administrative and management duties were conducted within the unit. Biologist Atkinson made visits to all properties within the unit to assess habitat conditions and other management activities. Atkinson continued working on updating Webb WMA wildlife management plan and worked with admin Ginn on end of year fiscal obligations. Atkinson and Biologist Moss attended the Region 4 Biologist Meeting. Atkinson and Bland attended multiple committee meetings (zoom) to coordinate efforts for camp. Webb staff & facilities hosted 1 event: Wild @ Webb Camp Range Day (1 day, 25 participants) Lower Coastal Alligator activity for the month: issued 8 commercial permits with 26 tags, issued 6 individual permits with 9 tags, distributed 8 alligator signs and received 57 nuisance calls.

Monthly Totals: 34 hunters, 145 Non-Consumptive WMA users, 303 range users, 25 other users (meetings/trainings/organized groups and events). Grand total: 507

Habitat management: Staff continued with dove field management. Staff spent time maintaining fences around dove fields. Staff cultivated and fertilized 44 acres of dove fields. Staff planted 12 acres of food plots. Efforts began on invasive plant control: sprayed ~36 acres of escaped bicolor and mechanically controlled Chinese privet. Staff RCW nest monitoring continued with 3 nests monitored and 2 chicks making it to fledging age. Staff conducted prescribed burns on 103 acres.

Facilities & Infrastructure: Significant staff time was spent landscaping and cleaning the Palachucola Shooting Range. Approximately 2 miles of firebreaks plowed. 10 loads of rock were hauled for road repair. Significant time was spent mowing roads and trails on property totaling 155 miles. Staff used the side-arm mower on approximately 6 miles of roads. Staff spent time mowing all dikes around ponds. Staff spent significant time doing grounds maintenance which included mowing grass, blowing off all structures.

Equipment maintenance: Staff spent significant time rebuilding John Deere bush hog and time was spent repairing the sidearm mower. General equipment maintenance & repairs were conducted during the month.

Wildlife Management Area Hunts: Hog Hunt- 3 days, 34 hunter days of effort, 6 hogs harvested.

Upper Coastal Waterfowl Project

Santee Coastal Reserve WMA

Heavy equipment operator Matthew Fowler and Natural Resource Technician Alex Marshall joined the Upper Coastal Waterfowl team. Staff members Tanner Adair and Gunnar Kloth passed their Captain's license exams.

Upland: The construction of a new rice trunk was completed. The grounds were repeatedly mowed. The Big Well impoundments were mowed. The main avenue was smoothed out with a homemade drag to decrease the corrugation of the road. Dove trapping sites were baited. Most upland trails were mowed.

The Cape: All the dikes were repeatedly mowed. Water levels were monitored, and adjustments were made, as necessary. Salinities and water temperatures of each impoundment were measured and documented. Phragmites in Vaughan stand was sprayed by airboat.

Murphy Island: Water levels were monitored, and adjustments were made, as necessary. Salinities and water temperatures were measured and documented. The locations for a setback dike and the upcoming trunk were marked.

Cedar Island: The amphibious excavator had to be barged to the mainland for repair on the tracks. The machine was fully serviced while on the mainland and barged back. Re-topping of the newly constructed setback dike in the Peter Pond impoundment began. The long reach excavator, a rice trunk, lumber, hardware, and tools were barged to Cedar Island's Ford Creek impoundment in preparation for the setting of a new trunk. A tractor was barged to Cedar Island and half of the island dikes were mowed. Water levels were monitored, and adjustments were made, as necessary. Salinities and water temperatures were measured and documented.

Repairs: The airboat was repaired and serviced. A new pumper truck unit was delivered and installed. The air conditioning system of the mini excavator was repaired. The long reach excavator was serviced and line bored. The cylinder on the long reach excavator was re-installed. A new phragmites sprayer unit was set up on the Kubota.

Other Activities: New trackhoe buckets were picked up from the welder. The shop was cleaned up and broken tools were replaced. Phragmites chemicals were ordered, delivered, and put into storage. Biologist Treptow met with DU representative Malcolm Baldwin to talk about Delta East and West plans. Staff met neighboring wetland manager Bill Maze for a field trip of Annandale Plantation. The Bachman sparrow research student's truck was pulled out after it got stuck in a puddle. One quail route was surveyed.

Santee Delta WMA

Heavy equipment access is temporarily limited due to bridge painting activities and restricted lanes. Dikes and water control structures were monitored by boat, truck, and ATV.

Samworth WMA

This month we completed construction of an observation bridge and two foot bridges to improve public access to Rabbit Island. Internal canals and a portion of the perimeter canal (5.5 ac) were sprayed on Rabbit Island to control regrowth of aquatic vegetation. Field bed mowing (38 ac) was conducted in Mill Pond, Rabbit Island, and Big Carr. Mowing was conducted in strips in Mill Pond and Rabbit Island to control growth and reduce the density of sesbania. Complete field bed mowing is being conducted in Big Carr for upcoming white marsh control efforts. Internal dikes were mowed on numerous impoundments and perimeter dikes were mowed on Mill Pond, Rabbit Island, and Backfield. A rental excavator was barged to Backfield. Re-topping was conducted on Rabbit Island and adjacent to the river on Mr. Sam's Pond. Floating mats of aquatic vegetation were also removed from Mr. Sam's Pond. Two dead trees were removed adjacent to the shop following Tropical Storm Danny. Maintenance was conducted on the amphibious excavator tracks, a hitch replaced on the Marsh Runner, auxiliary hydraulic lines on the rental excavator, and seven mats were cabled for use with the rental excavator. A large chemical order was inventoried and stored. One wood duck bait site was set up on private property.

Heritage Preserves

Staff was busy this month with field work including mobile bat routes, Venus flytrap monitoring and seed collections, RCW checks, and boundary. Roads were maintained and mowing begin for the season. New project pumper unit was outfitted and readied for fire suppression.

Cartwheel Bay HP: One enclosure was installed around the 16 Venus flytraps (VFT) on the preserve proper and the vicinity was hand cleared of encroaching vegetation with hand tools. A total of six plants were observed to be flowering and successfully setting seed. The enclosure will ensure the plants will reproduce successfully and not be browsed by herbivores. Adjacent private lands VFT colonies were also monitored, and staff documented an additional 5 colonies not in the database. Staff has permission to collect VFT seed here as soon as plants are ready.

Dungannon HP: Technician Bell mobilized 2955 tractor from shop in Charleston to preserve. Roads were bushhogged (in part at least until tractor died again) and 2 new boards replaced 2 old in water control structures. Parking area was cleaned of litter and weed whacker was used to trim vegetation.

Lewis Ocean Bay HP: Staff conducted monitoring of Venus flytrap colonies at five study stations on 5 occasions. Intern Shankle received seat time on dump truck, backhoe, tractor with bushhog and exposure to hand tools such as

chainsaw/weed eater. Intern checked snake tins on preserve 3 times and assisted with RCW peeping for age/sex. The concrete monuments at encroachment site on the preserve's northern boundary line were inspected by staff and project was deemed complete. Staff coordinated with upper-level staff after determining Dominion Energy was surveying on the preserve without proper prerequisites and notification to SCDNR. Staff met with USFWS private lands biologist Beasley and USDA biologist Thomas to review and observe VFT habitats on preserve given their recent discovery of the plants on private land in Horry County. Biologist Fowler continued to work through management concerns with upper-level staff regarding rezoning of lands adjacent to preserve for a hospital. Staff received CAT generator and attended training for proper operation for the unit. Technician Bell picked up and mobilized new pumper truck from Styx to LOBHP. With the assistance of Unit 4A technician, old slip-on pump was mounted, including other miscellaneous outfitting, on new pumper truck. Project skid steer was outfitted with a winch and bracket at local welding shop. Technicians met with CAT and electrician to configure new generator power supply to shop. Roads were graded and mowed throughout preserve.

Tillman Sand Ridge HP: Staff traveled south to meet with RCW biologist to sex/age fledgling detected on preserve following last fall's translocation efforts. Three new RCW cluster sites on preserve were selected and spaced appropriately around existing cluster for upcoming fall translocations. Technician Kalinowsky performed routine property checks and litter patrol.

Victoria Bluff HP: A total of 8 acres and 15,111 linear feet were mulched by contractor to set back succession in the wildland urban interface given fire can no longer be applied to preserve. Technician Kalinowsky helped check on this job as well as overhanging tree limb issues off Sawmill Creek Road. A contractor is set to remove limbs on July 7th.

Waccamaw River HP: While inspecting a newly found tree house on the Ellis tract; staff in turn was able to document a new location for Plymouth gentian (*Sabatia Kennedyana*) a G3/S2 ranked species with a high priority on the SWAP. Staff made recommendations for GSWS to close out sewer outfall project including graveling a secondary road and removal of silt fencing. Interns reposted boundary sections of both Loris Hunt Club and Bridges tracts.

Miscellaneous: All preserves were assessed for storm damage after tropical storm moved through area. Two mobile bat routes were carried out for sixth year in a row and equipment was returned to Clemson student from Horry County grid surveys. Staff traveled to Aynor licensing office for staff directory pictures. Internal applicants for the vacant Natural Resource Technician II position were interviewed, position has been posted externally, and staff plan to conduct those interviews in the coming weeks. Biologist Fowler handled on call bear duties this month and made several HOA contacts given activity in the Litchfield/Pawleys/Murrells Inlet areas. Biologist Fowler attended region IV bio meeting at Donnelly WMA. Road tractor truck was cleaned out and mobilized to Chevrolet dealer in Conway for repairs. Interns assisted Unit 4A with clearing and maintaining nature trail at Samworth WMA. Intern Shankle attended safe driver course in Columbia and Technician Bell attended course in Charleston. Technician Ward remained on sick leave this month given some recent health complications. Staff collectively made 40 site visits to 6 preserves this month including Tillman Sand Ridge, Dungannon, Lewis Ocean Bay, Waccamaw River, Cartwheel Bay and Victoria Bluff HPs.

Tom Yawkey Wildlife Center

Habitat Management: Staff conducted and assisted with numerous research and survey projects during the month. Water quality and levels were monitored for waterfowl food production. Work continued on the Lower Reserve managed wetland project where 250 feet on dike were repaired. A spillway was constructed and installed in the Lower Reserve cross dike. Five miles of roads were graded and shaped, 1.5 miles of dikes were side-cut, and 15 miles of dike were mowed. One mile of trees were removed from the Main Dike on South Island to facilitate future road relocation due to continued flooding issues. Staff attended various training and virtual meetings during the month. Pre-baiting was conducted at several locations to facilitate capture and banding of waterfowl.

Education & Outreach: Staff hosted a visit from the staff and Trustees of the Yawkey Foundation. This is the first in person visit since 2019 due to Covid 19 travel issues. Staff participated in a panel interview and field tour with Dr. Jim Anderson from the University of West Virginia who is being considered for the next Chair of the Clemson University Kennedy Waterfowl and Wetlands Conservation Program in Georgetown. SCDNR Biologists Spencer Weitzel and Christy Hand spent several days working on the black rail project on Cat and South Islands. Remote

cameras were placed at key locations and a solar powered water pump was installed to investigate the potential for creating new rail habitat. Staff assisted with two black rail survey transects. The education program conducted 10 socially distanced field programs for 96 participants. Three interns from Horry-Georgetown Technical College completed 365 hours of work this month. Region 4 interns attended a field tour of Tom Yawkey Wildlife Center. *Research & Survey:* Clemson University graduate student Mikayla Thistle continued investigating Bachman's sparrow nesting ecology and habitat usage in the longleaf pine stands. Staff assisted University of Georgia graduate student Samantha Bock with two mark-recapture sessions of hatchling alligators on Cat Island. These animals are part of a long-term survival study and were marked out of the nest last fall. The monthly waterfowl and wading bird surveys counted 276 waterfowl and 315 wading birds. The quail call survey route detected 13 individual calling males for an estimated one calling male per 296 acres. This is slightly higher than average for this survey. Loggerhead sea turtles laid 238 nests on YWC beaches. DNR staff located 138 nests on South Island and 15 on Sand Island. Eleven nests were relocated. Volunteers located 85 nests on North Island. All nests were screened to help deter predation. Two helicopter surveys located 49 alligator nests on Cat and South Islands. Twenty-six of the nests were active when visited on the ground. Eggs were collected from six nests for ongoing research at the Savannah River Ecology Laboratory. YWC research was featured in three peer reviewed scientific publications and two popular forums. The publication entitled "Evidence of Determinate Growth in an American Alligator Based on Long-Term Recapture and Osteohistological Confirmation" was published in the journal *The Anatomical Record*. Two fisheries related publications entitled "Investigation into The Occurrence of Juvenile Snook in Managed Wetlands Beyond Their Established Range and Summer Ichthyoplankton Assemblage Diversity Within a Southeastern Estuary" were published in the journal *Estuaries and Coasts*. In addition, two popular articles were "Lowcountry Tarpon: Can juvenile tarpon survive in South Carolina?" in *Bonefish and Tarpon Magazine* and "Climate change could make alligator sex ratios go askew" in *GIZMODA* magazine.

Statewide Forester

Continued working with the three local Longleaf Implementation Teams (LIT's) in SC, the State Longleaf Coordination Team, and the South Carolina Prescribed Fire Council (SCPFC). Continued various duties as SEAFWA representative to the regional Longleaf Partnership Council (LPC). Continued collaboration with Forest Stewards Guild, USFWS, and Clemson University (Dr. Stephen Peairs) on hardwood management demonstration/outreach area grants, including timber harvest planning at Hamilton Ridge WMA. Continued collaboration with USFS on Good Neighbor Authority project on the Enoree RD of the Sumter NF. Timber sale preparation complete, advertised for sale (579 acres of loblolly pine thinnings) with bid due date of July 13, 2021. Visited Stevens Creek HP with Biologist Attaway to assess timber harvest plans. Visited Aiken and Barnwell State Parks with SCPRT, LLA, and SCFC staff to review habitat restoration plans. Visited Bannister Tract with Environmental Consultants to review mitigation work progress and monitoring. Attended camp Wildwood and taught Forestry Class. Forestry mulching on Mason WMA, Webb WC, and Hamilton Ridge WMA scheduled to commence soon. Land clearing at Love Farms for dove field and shooting complex continued throughout the month and made substantial progress. Finalized bid specs and packages for wetland restoration work on Webb WC and posted for bids. Held pre-bid meeting for brood field clearing project at McBee WMA and accepted bids (early FY22 start). Continued working with Milliken Forestry and DNR staff re: ongoing GIS timber stand database additions. Monitored and administered ongoing timber harvesting operations. Assisted Chief Dukes and Asst. Chiefs with timber budgets.

Harvesting operations remain suspended at Hamilton Ridge WMA (618 acres of plantation loblolly second thinning and 77 acres of clearcut), Woodbury WMA (792 acres of plantation loblolly first thinning and 28 acres of second thinning) but are very close to completion. Harvesting completed at Edisto River WMA (bird dog training area, 73 acres of planted loblolly second thins), close-out in progress. Harvesting operations on Bonneau Ferry WMA (784 acres of natural loblolly first thinning, 160 acres of planted loblolly and longleaf first and second thinning, and 80 acres of natural loblolly clearcut) are schedule to resume soon. Harvesting operations on two timber sales at Hamilton Ridge WMA (521 and 504 acres of plantation loblolly first thinning) are also scheduled to resume soon. Harvesting operations at McBee WMA (426 acres planted loblolly marked thinnings, 221 acres of operator-select planted loblolly, and 75 acres of clearcut for longleaf restoration) completed, close-out in progress. Harvesting operations at Palachucola WMA (270 acres planted loblolly and slash marked thinnings and 138 acres

clearcut for longleaf restoration) remain temporarily suspended. Harvesting operations at the Thurmond Tract WMA (116 acres of planted loblolly first thinning) were completed, close-out in progress. Harvesting operations on awarded timber sale at Jocassee Gorges (40 acres of white pine removal) have yet to begin. Harvesting operations remain suspended at James L. Mason WMA (408 acres natural loblolly marked thinnings). Harvesting operations at the South Heritage Tract (276 acres planted loblolly second thins) commenced briefly before being suspended temporarily. Harvesting operations at Draper WMA (60 acres of oak woodland thinning, 57 acres of planted loblolly first thins) have yet to commence. Recently awarded timber sale at Belfast WMA (591 acres planted loblolly second/third thins) has yet to begin. Recently awarded timber sale at Love Farms (64.5 acres planted loblolly pine for dove field expansion and shooting complex, 7.6 acres of thinning) has been completed, except for a few acres. Recently awarded timber sale at Santee Coastal Reserve timber sale (338 acres of marked natural mixed pine thinning, 81 acres of natural mixed pine clearcut) has yet to commence. Recently awarded timber sale at Woodbury WMA (1,132 acres planted longleaf and loblolly) has yet to commence. Continued working with staff on planning/preparation of numerous upcoming sales.

WILDLIFE AND FRESHWATER FISHERIES

ASSISTANT DEPUTY DIRECTOR'S OFFICE

Completed administrative and budgetary tasks. Prepared special use permit for DNR property in Georgetown County. Reviewed and commented on DNR Policy Directive 400.01. Investigated access road issue on DNR land in Oconee County. Investigated request for access easement on DNR land in Berkeley County. Contacted surveyor regarding boundary line discrepancy on DNR property in Aiken County. Reviewed closing documents for South Hutchinson Island property purchase in Colleton County. Transaction was completed. Review closing documents for Sisters of Charity property purchase in Charleston County. Transaction was completed. Prepared summaries on two real estate matters for consideration by the Heritage Trust Advisory Board. Prepared and submitted documentation to State Department of Administration (DOA) for preliminary approval of a property donation in Lancaster County. Prepared and submitted documentation to DOA for final approval of property purchase in Horry County. Prepared letters of intent for one property purchase in Georgetown County and another in Jasper County. Prepared contract for property purchase in Greenville County. Examined three properties for sale in Horry County. Continued work on 10 other real estate projects. Engaged in conversations with Naturaland Trust, The Conservation Fund, Open Space Institute, Ducks Unlimited, and The Nature Conservancy about potential/ongoing property acquisitions. Consulted with WFF staff on matters concerning Forest Legacy and State Wildlife Grants. Meetings and events attended: DNR Habitat Protection Committee meeting, Greenville County legislative delegation meeting, meeting with DNR IT staff on creation of data layers for land management and acquisition, DNR public meeting on Sunday hunting and conference call on property donation in Georgetown County.

SWG/FOREST LEGACY COORDINATOR

State Wildlife Action Plan (SWAP) Implementation & State Wildlife Grants (SWG) Coordination [Anna Smith]

Smith read and edited the OSI press release on the Tillman HP additions. A Grissom Parkway Mitigation Fund grant proposal was completed for the Willow Bend acquisition. In addition, three SCCB grants were completed: two for SCDNR which were match for the Slater Tract (FLP grant) and Santee Island (NCWC grant) and one for Pheasants Forever Inc./Quail Forever for Bobwhite Hills. Letters of support for partners' grants were drafted and submitted. A NAWCA grant was co-authored with Emily Purcell from DU for the Cowpens Tract (a.k.a. Carter Stilley Phase II). The remaining new SWG grant packages were completed and uploaded into Grant Solutions. Subsequent award letters were sent to PIs and Grants Dept. Interim reports were read, edited as needed, and uploaded to Grant Solutions. Grant extensions or modifications were prepared and submitted as well. A preliminary evaluation form was completed for the Gilmore Tract in Horry County prior to the 7/30/21 site visit. The CBD's petition to list the Bog Turtle was reviewed. The MAJIC Sentinel Landscape preproposal was read and edited by Smith for Bryan Hall with the SC Military Dept. Smith assisted Alicia Ferrell with a DU grant for transmitters. "WNS Research for Conservation Grants" was investigated as a potential funding source for Kindel. Smith and colleagues in TN and NC presented on "Uses of States' SWAPs" to the Climate Change into SWAPs Work Group facilitated by UTK. An ESRI blog article on the SC Natural Heritage Program was read and edited. Grant tracking spreadsheets were updated. Site visits completed this month included those to Willow Bend for a boundary check, River Oaks to check on the progress of clean-up before acquisition from DU, and the Gilmore Tract as a possible acquisition. The latter will not be considered due to poor habitat conditions.

Forest Legacy Program (FLP) Coordination [Anna Smith]

The new FY23 Forest Legacy guidelines package was read. SCDNR's QAI response letter was revised and resubmitted. The Mead Easement was reviewed with SCDNR legal staff. Updates to this project in FLIS are ongoing. A talking points report was created for Director Boyles for use with SC's Congressional Delegation. Smith participated in a conference call with Congressman Clyburn's office in regards to Slater funding needs. A no-cost, one-year extension was filed for the FY19 FLP Admin grant. Smith had conversations with staff from OSI and Naturaland Trust about potential FLP projects for future grant cycles.

Other Activities / USFWS Liaison [Anna Smith]

Took “Public Survey on Sunday Hunting on WMAs”. SEAFWA’s C-SWG Hellbender grant final reports were gathered. A reporting extension was granted to give more time to compile into one final report which Smith will submit on behalf of the SEAFWA-WDC. Smith and Dillman reviewed the Wildlife Viewing Survey State Based Modifications questions as they pertain to SCDNR for the upcoming survey being sent out by VTECH.

Summary of meetings attended / conference calls / webinars watched / continuing ed programs or workshops:

- Recorded TWS Talks watched this month: “Can we estimate the abundance of small mammals with camera traps?”; “Standardized Protocol for Reporting Methods When using Drones for Wildlife Research”; “Starving for Darkness—How Light Pollution Impacts Wildlife”; Climate Variability Influences Aspects of Fecundity but Not Survival in a Long-lived Species, the Gopher Tortoise”
- Watched recorded webinar: NCTC Forest Ecology and Management Webinar Series: Forests for the Birds – Webinar #3: “Climate Change, Adaptation, and Impacts of Forest Bird Recovery”
- South Atlantic Salt Marsh Initiative Steering Committee Kick-Off (2 hours on 7/12/21)
- SEAFWA-WDC Monthly Call (7/15/21)
- KnowBe4 refresher: Security Awareness Course (7/22/21)
- Habitat Protection Committee Meeting (7/27/21)

Natural Heritage Database Program / GIS Manager [Joe Lemeris]

Meetings:

- 7/7 – Lemeris met with Gary Burger to set his computers up with ArcGIS Pro and walk through several exercises to acclimate him to the new software, access forest stand data, etc.
- 7/7 – Lemeris attended monthly NatureServe US Section Council meeting, where topics discussed included updates on RAWA related to NatureServe, strategic planning, Explorer Pro application, network program action planning, etc.
- 7/8 – Lemeris met with SCPRT resource management staff to provide an overview to ArcGIS Pro/ArcGIS Online integrations, use cases for sharing/collecting/managing data, and potential next steps for their organization’s GIS data management.
- 7/9 – Lemeris, Arrington and Thachik met with Esri Advantage Program staff to discuss project updates, new technologies, upcoming conferences/training, and plan for the annual planning meeting.
- 7/16 – Lemeris, Arrington, Thachik, and Misura met to formulate a plan of approach for creating a workflow to track potential properties for acquisition. Lemeris agreed to assist in developing a survey workflow to identify new tracts for review by the Habitat Protection Committee.
- 7/20 – Lemeris, and Arrington met with Raleigh West (SC Conservation Bank) for introductions and discussion about the hiring process for a new GIS Analyst position between SCDNR and SCCB. The position was formally posted on 7/21 and runs through 8/3.
- 7/21 – Lemeris, Arrington, Johnson met with Esri Advantage Program staff to discuss next steps for installing an image server for hosting image services. Johnson will be reconfiguring the server license and standing up a new machine for this purpose in the coming weeks.
- 7/23 – Lemeris, Arrington, Thachik, and Misura attended the Coastal GIS User Group Meeting at MRD to discuss recent and ongoing projects related to GIS.
- 7/27 - Lemeris, Arrington and Thachik met with Esri Advantage Program staff to discuss project updates, new technologies, conference recaps/training, and plan for the annual planning meeting.
- 7/29 – Lemeris met with Utah Natural Heritage to provide an overview of our reviewer tools to their coordinators/GIS staff, who are considering creating something similar.

Training:

- 7/12 – 7/15: Lemeris attended the Esri User Conference (virtual) which offered a number of prerecorded and live sessions on new/upcoming technology, case studies/research presentations, and special interest group meetings. SCDNR was recognized at this conference as a recipient of the Special Achievement in GIS Award (SAG Award), specifically in the state/local environment and natural resources agencies category, for the work done over the past few years to upgrade the Natural Heritage database/online presence.

Project Progress Updates:

- Esri Enterprise Advantage Program Update:
 - Arrington and team are continuing to compile GIS data from across WFF to incorporate into a managed lands database and are close to standing up the data in a new Enterprise geodatabase for production use.
 - Fishing/Boat Access data have been pulled into a web format, and applications have been created for review by SCDNR staff.
 - Distribution Modeling Workflows: Modeling workflows have reached a stop/pause point at the moment, until the image server can be configured. In the meantime, Lemeris is researching additional statistical validation metrics to incorporate into model output.
- SCDNR/SCCB Joint position update:
 - The SCDNR/SCCB GIS Analyst position has been posted! The posting closes August 3rd and Lemeris, Arrington, and Smith will begin reviewing applicants/scheduling interviews in the coming month.
- **The Natural Heritage Hub Site has been viewed 490 times in July (12,720 all time since April 2020), and 9 new users (total of 310 since April 2020)** from state/federal/local agencies, land trusts, and private environmental consultants have requested/gained access to review species data and generate reports.
- **109 of 473** Users accessed the Heritage Trust GIS Portal in July, compared with 130 in June.
- **Over 280** new records were added to the database in July, comprised of a mix of herps, bats, plants, and several bird species.
 - July/August marks annual data exchanges between SC and NatureServe's central database. The taxonomy update/exchange was completed on 7/16, and the spatial data exchange was completed on 7/30 (barring any QAQC errors which need to be addressed in August.)
- **102 species reviews were completed automatically** using the new species reviewer tool for environmental professionals in July, compared with 113 in June.
- Lemeris created a new version of the observation survey form which will interact more directly with our Heritage database, including syncing photos back to occurrence records. This should be rolled out in August.
- Lemeris assisted various staff in the development of maps for projects, informational documentation, advisory board materials, etc.
- Turner (hourly intern) has been assisting work with creating a bat identification key on Survey123 and pulling historic museum records for invertebrate species (G1 through G3) we currently have no/minimal records for.

FRESHWATER FISHERIES

Highlights

Staff continued work on the new Hartwell Fish Habitat Project permit. Staff prepared staging area, marked trees to be cut and cabled along the shoreline, and hauled materials to storage area.

Staff expended 5 days of electrofishing effort on the Waccamaw River cataloguing the fish population's recovery from a devastating fish kill following Hurricane Florence in 2018. This is the third & final year of that post hurricane study.

To estimate pelagic forage abundance in Lake Murray hydroacoustic surveys were conducted overnight on July 13th and 14th. During those surveys data was collected from roughly 60 km of transects in the lower and mid lake areas. Vertical gill nets were fished both nights to evaluate forage species distribution and size ranges.

Staff attended the 2021 iCast event in Orlando, FL. Agency personnel met with industry partners throughout the week, including three of the four largest contributors to the excise tax which funds the Sportfish Restoration Act, who are based in South Carolina. In addition to meeting with SC based industry partners, time was spent with representatives from B.A.S.S. and MLF to discuss upcoming and future events in SC.

Staff continued data collection for the development of a Stream Quantification Tool (SQT) for South Carolina. Fish sampling was completed at 4 sites in July 2021, bringing the study total to 72 sites completed (study total target of 100). This study will provide the data for development of biological indicators to evaluate the effectiveness of stream restoration and mitigation activities in South Carolina.

A total of 19,244 trout were stocked during the month of July.

Redear Sunfish were trained on commercial feed and restocked into rearing ponds for Phase II production. Fingerling Redear were harvested and redistributed into rearing ponds at predetermined densities to produce advanced fingerlings (3"-4").

Performed fishing pier inspection on all existing piers and compiled a report on condition of each pier to determine a time frame for replacing with aluminum piers. Made repairs to fishing piers at Lake Wallace, Long, Jonesville Reservoir, and Oliphant walkway over the emergency spillway.

Diadromous Fisheries Project efforts this month included: downloading acoustic receivers and manual tracking in Charleston Harbor, Lake Marion, the Rediversion and Diversion Canals, and the Congaree, Wateree, Cooper, Santee, Edisto, Waccamaw, Great Pee Dee, and Savannah Rivers; gillnetting for Atlantic and shortnose sturgeon in the Great Pee Dee, Waccamaw, Edisto, and Savannah Rivers; monitoring elver ingress at Goose Creek Reservoir and St. Stephen Dam

Staff met with SCDOT on culvert survey aimed at targeting culverts to replace that would benefit the Carolina Heelsplitter

Provided new fishing tackle loaner equipment to: Dreher Island State Park, Aiken State Park, Lake Hartwell State Park, Paris Mountain State Park, and Sadler's Creek State Park

Coordination (Chief's Office)

Staff meet with Outreach staff from BASS to discuss potential activities and partnership opportunities associated with the Bassmaster Classic Expo scheduled for Greenville during March 2022

Staff attended ICAST 2021 in Orlando to meet with South Carolina companies that produce products supporting recreation fishing in South Carolina and/or contribute to Sport Fish Restoration Funds through excise taxes paid on the products they produce.

Staff conducted an orientation meeting with the Sections Summer Interns to overview the Sections suite of activities and responsibilities, of funds from the Sport Fish Restoration program are derived apportioned and utilized and review the South Carolina legislative process.

Staff participated in AFWA's monthly fish chief conference call

Met with freshwater mussel staff and the legal office to discuss a potential operational model for a safe harbor programs for endangered mussels.

Staff participated in a SARP Steering Committee conference call.

Staff met with the Director of the Chester County Airport to review Lake Oliphant property lease boundaries.

Staff participated in the July meeting of the Habitat Protection Committee

Staff conducted the monthly meeting of Section Coordinators (in-person) to review FY22 project budgets, discuss administrative issues and discuss processes for developing future Section focus areas and program priorities.

Staff participated on an interview panel to find a qualified candidate for the Hatchery Manager position at Spring Stevens Hatchery in Lancaster County.

Region 1

Staff continued work on the new Hartwell Fish Habitat Project permit. Staff prepared staging area, marked trees to be cut and cabled along the shoreline, and hauled materials to storage area.

Hired FTE Technician III for the Hartwell Habitat Project (Twelve Mile Creek Mitigation). Submitted paperwork to post vacant technician position on the Habitat Project.

Staff participated in the Tugaloo Modernization Project meeting with Southern Company (GA Power).

Staff began creel survey on Lake Greenwood.

Staff participated in Chattooga River electrofishing event with USFS, GADNR, and Trout Unlimited volunteers from South Carolina and Georgia.

Staff finished reading otoliths, entered and analyzed data, and prepared sections for the Federal Aid report.
Staff assisted USACE, USFS, and GADNR plant water willow on Lake Thurmond.
Staff assisted USACE and GADNR plant water willow on Lake Russell.
Staff monitored fish health at the Major League Fishing High School Tournament on Lake Hartwell (June 30 – July 3).
Staff attended intern meeting in Columbia.
Staff assisted Region 2 staff with state lakes sampling.
Staff picked up pole saw from shop and old electrofishing boat from shop after generator repairs. Staff had jet outboard serviced on electrofishing boat. Staff delivered a UTV to local shop for annual maintenance and to have several recalls fixed. Staff had oil changes and brake replacements done on vehicles, as necessary.
Staff replaced flooring on UTV trailer.
Staff responded to a fish kill in Craven Creek (Greenville County).
Staff collaborated with Friends of Lake Keowee Society (FOLKS) on a FOLKS grant application for a Duke Energy Habitat Enhancement Project (HEP) grant.
Staff drained a pond and removed fish in preparation for a stream restoration project.
Staff assembled fish feeders in preparation for beginning a supplemental trout feeding project on the Middle Saluda River.
Trout stocking was conducted on schedule. Staff stocked 19,000 fish in 15 trips.
Staff assisted the public with pond management questions.

Region 2

Staff prepared and submitted the June 2021 activity report, daily work reports, mileage & purchasing card logs to HQ as required.
Region 2 Summer Interns Dean Wrobel, Aiden Maddux, & Harper Jackson attended a meeting hosted by the Chief & Assistant Chief.
Staff sampled 1 day for LMB on Jonesville Reservoir.
Staff assisted the Small Rivers/Stream Team with sampling Kings Creek, Big Allison Creek, Flat Rock Creek, Hanging Rock Creek & the Chattooga River during the month.
Fish attractor buoy checks on Fishing Creek Reservoir & Lake Wateree revealed 1 buoy missing on each lake.
Staff expended 2 days electrofishing on the Little Pee Dee River for flathead catfish (FCF) over 750 mm to augment an historical dataset.
Staff expended 5 days of electrofishing effort on the Waccamaw River cataloguing the fish population's recovery from a devastating fish kill following Hurricane Florence in 2018. This is the third & final year of that post hurricane study.
Staff expended 6 day's effort sampling six oxbow lakes on the Waccamaw River for a special project by Florence Summer Intern Dean Wrobel of Coastal Carolina University. The special project is a comparison of main stem river fish assemblages to oxbow lake fish species assemblages.
Staff completed catfish otolith preparation for age/growth studies and computerization of that data. Ages to be determined in the near future.
Staff reviewed one Scientific Collection Permit Application.
Staff conducted 4.35 miles of trail maintenance at Mountain Lakes 1 & 2, Lake Oliphant, & at 3 Worth Mountain WMA ponds.
Staff created 2 new fish attractor sites at Lake Paul Wallace.
Staff participated in an in-person coordinator meeting.
Staff participated in the world ICAST fishing industry event in Orlando, Florida.
Staff re-initiated work on the 2020 Lynches River fish kill report.
Staff participated in a SDAFS Poster Committee Teams Meeting, agreeing to be chairman of the poster committee.
Staff investigated a fish kill occurring in the tailrace of the Canal Headworks Short Bypassed Reach, Catawba River, resulting from dewatering of the Great Falls Reservoir for recreational boating improvements. Approximately 500+ blue, channel, & flathead catfish stranded in pools and died.
There were no weed identifications nor water quality tests performed in Rock Hill during the month. In Florence, 2 weed identifications and 1 water quality test was performed for pond owners.
Two telephone pond consults were conducted at the Rock Hill Office (1 fish kill in a private pond & 1 weed herbicide control recommendation) and 2 fisheries information requests were received from the public. 22 calls regarding fisheries information were received at the Florence Office with 11 of those calls being pond related.

Constituents seeking fisheries information were served by Ginger Ridgill, Jason Marsik, or Gatlin Edge in Florence and by Robert Stroud, Preston Chrisman, or Alex Michaeli at the Rock Hill Workstation. Recommendations and pertinent pond management literature was disseminated as necessary via telephone, in-person, through the US Postal Service, or by email to pond owners.

Contact with NGOs: Four.

Region 3

To estimate pelagic forage abundance in Lake Murray hydroacoustic surveys were conducted overnight on July 13th and 14th. During those surveys data was collected from roughly 60 km of transects in the lower and mid lake areas. Vertical gill nets were fished both nights to evaluate forage species distribution and size ranges.

Summer-time Striped Bass habitat monitoring in Lake Murray was continued by collecting temperature and dissolved oxygen profiles at five sites on two July dates. Dissolved oxygen below the thermocline, where temperatures are optimal for striped bass, were ≤ 3.2 mg/l. Striped bass habitat in Lake Murray is currently suboptimal.

A study monitoring the seasonal distribution and summer habitat use of adult Striped Bass in the Edisto River continued. Acoustic receivers in the North and South Forks of the Edisto River were downloaded. To identify discrete locations and habitats 60 Km of the South fork were floated over three July days to manually locate Striped Bass.

Water quality monitoring in Lake Brown was continued to assess the presence and likely-hood of a summer-time blue green algae (cyanobacteria) bloom. Surface water temperatures in Lake Brown have reached 32.3 °C; however, a blue-green algae bloom has not been detected.

As part of a multi-year study to evaluate the influence of the invasive flathead catfish on native catfishes in the lower Savannah River one of five sample segments was sampled with boat electrofishing during July.

A second read of 260 otoliths was completed to estimate fish ages. The Largemouth Bass and Black Crappie otoliths were collected as part of routine sampling in Lake Murray and Parr Shoals Reservoir.

Staff provided pond management assistance to 7 pond owners involving queries on vegetation control. Staff responded to 21 calls or emails seeking information on boat titling, regulations, fishing licenses, fish parasites, and potential fish kills among other things.

Staff worked with OEP to develop management goals for Dominion's Saluda Hyrdoelectric Project. The management goals are intended to minimize late summer dissolved oxygen excursions and high flows in the lower Saluda River associated with tropical weather systems.

Staff worked toward completing federal aid reports for the sportfish restoration grant.

Staff reviewed and edited DNR's online fishing access geographic database for fishing access areas within the boundaries of Region 3.

Four Region three staff member attended driver's training and one member attended the ICAST conference/trade show in Orlando, Florida.

Region 4

Technical/Meetings

Federal Aid report

Staff continued analysis and write up for the FY21 Federal Aid in Sportfish Restoration report. Content will include all sport fish related program activities completed during the fiscal year and will be submitted to the division's executive office in August.

Santee Cooper FERC meetings

Staff participated in two meetings, one internal with division personnel and one with representatives from agencies involved in Santee Cooper's FERC relicensing process, to discuss potential projects eligible for undertaking utilizing fisheries enhancement fund monies that is part of the Santee Cooper FERC license issuance. Potential projects suggested that are outside of new or ongoing diadromous fishes work included a more robust study on the Santee Cooper Grass Carp population, and mussel and crayfish surveys within the Santee River Basin.

iCast

Staff attended the 2021 iCast event in Orlando, FL. Agency personnel met with industry partners throughout the week, including three of the four largest contributors to the excise tax which funds the Sportfish Restoration Act, who are based in South Carolina. In addition to meeting with SC based industry partners, time was spent with representatives from B.A.S.S. and MLF to discuss upcoming and future events in SC.

Field Work

Santee River Survey

As part of the ongoing coastal rivers assessment, regional staff initiated the 2021 survey on Santee River. The coastal rivers assessment is a community-wide survey with an emphasis on sport fish species. To date, 13 of 16 low frequency sites and 12 of 16 high frequency sites have been completed with the remainder to be completed in early August. Subsamples of Largemouth Bass, Redbreast Sunfish, Bluegill, Blue Catfish, and Flathead Catfish were sacrificed for otolith extraction and ageing. Results of this survey will be reported in the FY22 annual report and federal aid report.

Lab Work

Otolith Sectioning

Staff have begun mounting, sectioning, and ageing otoliths collected from the Santee River survey. Data will be analyzed and results will be provided in the FY22 annual report and federal aid report.

Statewide Research

We continued data collection for the development of a Stream Quantification Tool (SQT) for South Carolina. Fish sampling was completed at 4 sites in July 2021, bringing the study total to 72 sites completed (study total target of 100). This study will provide the data for development of biological indicators to evaluate the effectiveness of stream restoration and mitigation activities in South Carolina.

Staff provided input to the Heritage Trust Program on fish species distributions and conservation scenarios to assist in prioritization of multiple tracts proposed for protection in Oconee and Greenville Counties. Tracts were evaluated on their potential to provide cumulative benefit to the overall watershed in maintaining or increasing undeveloped (forested) land cover above critical levels at which aquatic resource integrity is protected (e.g. levels at which SWAP Priority species are maintained). These critical thresholds in land cover and watershed integrity have been derived from the results of statewide stream and river assessment studies conducted by the Freshwater Fisheries Research program over the past 15 years, which form a framework for statewide aquatic resource conservation decision-making.

Staff provided input to the Office of Environmental Programs on fish species distributions and expected biological responses associated with proposed restoration activities on a stream in the upper Broad River basin.

We met with collaborators at Clemson University to discuss analysis of stream data for evaluation of potential index of biotic integrity criteria for South Carolina streams.

Staff assisted Region 1 with the annual sample of the Chattooga River in collaboration with the U.S. Forest Service and Georgia DNR.

We continued site selection for the C-SWG Bartram's Redeye Bass conservation study, focusing on distribution and occupancy modeling for this species.

Staff submitted FY22 budgets for current projects to Grants Administration.

We circulated internally in WFF and had the legal office review a draft lease agreement for our use of facilities at the Clemson University Aquatic Research Laboratory; the reviewed draft document was returned to CU for final review and execution.

Our coauthored article "Modeling Distribution of Endemic Bartram's Bass *Micropterus* sp. cf. *coosae*: Disturbance and Proximity to Invasion Source Increase Hybridization with Invasive Alabama Bass" published in the *North American Journal of Fisheries Management* became available online <https://doi.org/10.1002/nafm.10637>.

Staff worked to revise draft sections on the Santee and Edisto Rivers for the 'Atlantic Rivers of the Southeastern US' chapter to be published in the second volume of the book *Rivers of North America*.

Hatcheries and State Lakes Activities

Coordination

This month 5,700 grass carp were processed for sterility testing at Cohen Campbell Fisheries Center.

Two (2) vendor permits were issued for grass carp distribution statewide.

Dennis Wildlife Center (DWC) and Bayless Hatchery

Staff completed the FY2021 Federal Aid Annual Report.

A broken gate valve was replaced on Pond #36 at DWC.

Staff completed the SCDNR Boater Education Program.

Hatchery staff, seasonal employees and our intern attended an 'End of the Hatchery Season' luncheon in appreciation of all the hard work this past striped bass season.

Our robust redhorse pond was sampled to verify the presence and size of the fish.

Our hatchery intern completed the SCDNR Boater Education Program, toured MRD, attended an annual intern meeting in Columbia, assisted the Diadromous Program with sturgeon gillnetting on the Santee and Savannah Rivers, assisted Region 4 with catfish electrofishing on the Santee River, assisted Region 1 with stream sampling and assisted the Alligator Program with eyeshine surveys on Lake Moultrie.

Purchase requisitions were submitted for HVAC, Plumbing, Electrical, Trash pick-up, Diesel, Internet at DWC and a new 4-wheeler. Diesel fuel was ordered, and oxygen bottles were refilled at Dennis Wildlife Center.

Staff assisted Region 4 with catfish electrofishing on the Santee River.

Staff traveled to Donnelly WMA to teach fisheries classes for year-3 Camp Wildwood students.

Fish food was ordered to feed the Striped Bass, Bluegill, Channel Catfish, and Robust Redhorse on site.

Staff met with Santee Cooper Environmental Specialists to discuss aquatic vegetation issues at DWC. Several ponds were treated with herbicide to control aquatic vegetation.

Staff completed and submitted daily staff reporting logs, monthly reports, mileage sheets, fuel logs, procurement statements, and purchase requisitions.

Staff performed routine water quality monitoring, fish feeding, as well as maintenance of grounds, buildings, and equipment.

Walhalla State Fish Hatchery

A total of 19,244 trout were stocked during the month of July.

Staff continued to rear fingerlings and began moving fish into outside raceways.

As both air and water temperatures have continued to rise and cause concern for fish health, staff have worked to mitigate stressors (where feasible) in attempt to reduce high mortalities.

Staff moved the final tanks of fingerlings to the outside raceways.

Visitation was high throughout the reporting period.

Cohen Campbell Fisheries Center/Barnwell Substation

Performed general maintenance and upkeep at both Cohen Campbell and Barnwell substation.

Began testing of in-pond raceway systems.

Assisted Hatchery Coordination with continuing efforts at Spring Stevens Fish Hatchery, including interviews for Spring Stevens Hatchery Manager.

Facilitated intern, hatchery manager, and coordination level meetings.

Facilitated five (5) fishing clinics for the outreach section.

Tested 2 shipments of Grass Carp.

Cheraw State Fish Hatchery

Phase II Redear sunfish were harvested and stocked into Sergeant Jasper County Park.

The AADAP was attended (virtually) concerning new and updated federal regulation on available chemicals for use in fish production.

New Fiber-optic internet system was installed in Cheraw office.

May production included Smallmouth, Largemouth, and Striped Bass. The Smallmouth Bass were trained to accept commercial feed and restock into rearing ponds for Phase II or were stocked as fingerlings in the Broad River System. The Largemouth Bass were harvested and stocked in public waters (i.e., the Waccamaw River system).

Redear Sunfish were trained on commercial feed and restocked into rearing ponds for Phase II production. Fingerling Redear were harvested and redistributed into rearing ponds at predetermined densities to produce advanced fingerlings (3"-4").

Interviews for Assistant Hatchery Manager were conducted, and a candidate was selected. We are also currently in the process of hiring another replacement for an open Tech III position, as the last one has retired.

Staff continued to perform routine maintenance services for water quality, feeding, and disease control.

Spring Stevens State Fish Hatchery

Summer grow-out of brim species continued.

Ponds were sprayed with herbicide to treat filamentous algae.

Routine care and maintenance of the facility was conducted by the Fresh Eyes Coordinator and the State Lakes Crew, along with assistance from other hatcheries.

Hatchery Residence was cleaned for July 30th Hatchery Manager interviews by Fresh Eyes Coordinator and State Lakes Crew.

Interviews for a new Hatchery Manager were conducted at the Spring Stevens Hatchery Residence on July 30th.

State Lakes

Performed fishing pier inspection on all existing piers and compiled a report on condition of each pier to determine a time frame for replacing with aluminum piers. Made repairs to fishing piers at Lake Wallace, Long, Jonesville Reservoir, and Oliphant walkway over emergency run around.

Spoke to adjacent property owner about the possibility of removing the picnic shelter that sits on their property at Jonesville Reservoir. Still need to speak with the city of Jonesville about this situation.

Contacted the contractor that installed the Lake Ashwood boat landing about the bumper at the end of the ramp, as it stops anyone from being able to launch their boat. He will be in touch with the Lee County School Board to determine if they have funds available to correct this issue.

Continue to monitor water level leak on back of dam at Sunrise Lake. Our engineers are assisting with coming up with a plan on how to fix this situation.

Fertilized Lakes Starfort, Johnson, Jonesville Reservoir, Cherokee, Long, Oliphant, Sunrise, and Mountain Lakes 1&2.

Removed old picnic tables from Lake Cherokee and Sunrise Lake and removed benches around inside of picnic shelters at Mtn. Lakes 1 and Lake Long.

Removed tent site where it appears to have been some illegal activity going on at Lake Cherokee.

Mowed the Springs Stevens facilities and cleaned the inside of the hatchery residence for Hatchery Manager interviews.

Performed routine maintenance (i.e., grass cutting, litter control, sign removal, and terrestrial weed spraying).

“Fresh Eyes” Program

Fresh Eyes Coordinator was assigned as interim point of contact for Spring Stevens to bring the hatchery back up to expectations until a new Hatchery Manager is hired.

Conducted routine care and additional maintenance at Spring Stevens facility.

Continued to spray ponds with herbicide to get filamentous algae under control at Spring Stevens Hatchery.

Repaired equipment for two (2) tractors and a mower were conducted and restored to working condition.

Outreach and Training

Annual intern meeting was held at the Styx Area 51 receiving complex.

Staff attended the July 28th Coordinator meeting at the Styx Area 51 receiving complex.

Administration

Hatchery Managers’ meeting was held at Cohen Campbell to discuss budgets, staff changes, and summer fish production.

Insurance updates on equipment and buildings were submitted.

Cohen Campbell Hatchery, Dennis Wildlife Center, Cheraw Hatchery, Walhalla, and Spring Stephens Hatchery executed all COVID-19 safety protocols.

Weekly trout stocking reports continue to be updated on the SCDNR website.

Diadromous

Activities—Summary

Efforts this month included: downloading acoustic receivers and manual tracking in Charleston Harbor, Lake Marion, the Rediversion and Diversion Canals, and the Congaree, Wateree, Cooper, Santee, Edisto, Waccamaw, Great Pee Dee, and Savannah Rivers; gillnetting for Atlantic and shortnose sturgeon in the Great Pee Dee, Waccamaw, Edisto, and Savannah Rivers; monitoring elver ingress at Goose Creek Reservoir and St. Stephen Dam; fulfilling telemetry data requests; maintaining the comprehensive telemetry database and cleaning up false detections and duplicate station names; submitting telemetry data to the FACT network; submitting monthly, quarterly, and annual reports to fulfill obligations such as the third quarter SHEP report to USACE and two NMFS Section 6 progress reports.

Breakdown of Project Activities

Great Pee River Sturgeon Project

This month’s efforts were concentrated on maintaining the Winyah Bay System receiver array. Seven trips were made to download receivers including one trip to North Carolina to download the ten receivers immediately below Blewett Falls Dam. Water temperatures exceeded 28C, which restricts sturgeon netting activities.

Winyah Bay Juvenile Sturgeon Project

Six sampling trips were conducted in the Winyah Bay System this month for a total of 13.18 100-yard net hours. Forty-two total sturgeon were captured: six recaptures and 36 virgin captures. All first capture fish received a PIT tag and the standard work up. Fin rays were subsampled from sturgeon < 700 mm fork length. Sampling nets were patched and maintained, and new webbing was ordered to build next season’s nets. The NOAA Progress Report draft for January through June was written and submitted.

Savannah River Sturgeon Egg Project

The Savannah Egg project downloaded and serviced receivers in the Cooper River and lower Santee River systems. Three download trips were made to the Savannah River (rkm 168) to monitor potential spawning

movements of Atlantic sturgeon (ATS). One ATS was identified. One manual tracking trip resulted in detecting three transmitted animals, two were confirmed ATS, the other unknown. Personnel have also assisted with the SHEP and Great Pee Dee sturgeon projects.

Savannah Harbor Expansion Project (SHEP)

Savannah Harbor Expansion Project staff fished a 14-inch stretch mesh net targeting adult Atlantic sturgeon for 9 days (net hours = 29.42) at river kilometer 32 through 45, however no sturgeon were captured. The third quarterly report was submitted to USACE. Staff compiled all sturgeon genetic vials for in house sub-sampling before they are sent to the USGS genetic repository.

Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA)

This month, project ACFCMA completed seven trips to the Edisto River for sturgeon sampling. Fish were PIT tagged, measured, and genetic fin clip samples were collected. The project sampling boat was serviced at 200 hours and the weight measuring scale was taken to Sisson for repairs. Additionally, regular boat trailer and field equipment maintenance was conducted. The eel ramp at Goose Creek Reservoir was monitored twice a week, every week this month.

Santee Accord Juvenile American Shad Study

Electrofishing surveys targeting juvenile American shad (AMS) continued in July. A total of 392 AMS were collected. Two trips to the Diversion Canal were made and one AMS was caught. Two trips were made to the Congaree River and Santee River with 144 AMS and 192 AMS respectively. Two trips were made to the Wateree River and 55 AMS were caught. All juvenile AMS were collected from sampling and fin clips were taken for genetic analysis. Mechanical issues with the project boat's trim and tilt motor were resolved.

Rediversion Project

American eel passage at the St. Stephen dam continued without pause this month, totaling 97 eels measured and passed upstream. Eels were stocked directly into Lake Moultrie (n = 39), aside from 58 eels, which were transported to the Wateree River, and stocked by Duke Energy staff in the tailrace below the spillway. To date, 161 eels have been stocked into the Wateree System, and 267 eels have been stocked into Lake Moultrie (n = 428). St. Stephen Dam discharge appeared minimal, aside from short intervals (0.25-3hr) of power generation which occurred sporadically throughout the month. Downstream water levels have dropped to normal summer conditions, and mean dissolved oxygen concentrations have lowered, but remained above 4 mg/L in all but short periods. Project staff continued to aid other Diadromous field work throughout the month and the interns participated in a depletion study (backpack electrofishing) with Clemson office personnel. Staff discussed the ongoing development of various project databases (electrofishing, gill netting, etc.) along with different approaches to data storage, improved graphics rendering in R, and ideas for new database development with Rediversion Project data. Project focus remains driven towards communications with Duke Energy, compiling presentation data for the August meeting with USACE leadership, and analysis/management of 2021 season data.

Meetings and Outreach

Staff participated multiple meetings and conference calls regarding:

- ASMFC shad and river herring mixed stock analyses,
- A project update with partners from Clemson University,
- Annual WFF intern meeting,
- Boater safety training,
- Internal discussion regarding Santee-Cooper plans,
- Meeting with FWS and Santee-Cooper,
- DISTEM webinar.

Mussels

General

Staff met with SCDOT on culvert survey aimed at targeting culverts to replace that would benefit the Carolina Heelsplitter.

Staff continued work on potential safe harbor agreement.

Staff began drafting Best Management Practices for Freshwater mussels.

Staff continued construction of mussel silos for use in Carolina Heelsplitter stocking study.

Staff continued work on landowner contact database.

Staff investigated mussel relocation work on Savannah River.

Staff communicated with USFWS regarding TSS violations in Critical Habitat for Carolina Heelsplitter on the Lynches River.

Outreach

Staff participated in filming mussels in the classroom video with office of media and environmental education staff.

Staff continued maintenance of mussels in the classroom program example tanks.

Mussel Culture

Staff began stage 2 culture of the largest of *Alasmidonta varicosa* cohort 2103AvA-O.

Staff continued stage 1 culture of *Alasmidonta varicosa* cohort 2103AvA-O and *Villosa delumbis* cohort 2106VdA and *Utterbackia imbecillis* cohort 2106UiA.

Staff continued pond culture of *V. delumbis* and *U. imbecillis* cohort 2019VdA and 2019UiA.

Staff moved long-term residents of mussel rack into pond culture due to high mortality.

Field

Staff sent 12 landowner contact letters and fielded 3 landowner responses.

Staff completed 4 CPUE surveys: SAL003- Little Saluda Creek (Saluda County), SAL014- Beaverdam Creek (Newberry County), PEE037- Lynches River (Lancaster/ Chester), PEE040. - Lynches River (Lancaster/ Chester).

Aquatic Education

Family Fishing Clinics & Certified DNR Fishing Instructors

Continued communicating schedule changes to volunteers and the public

Held 2 clinics open to the public: High Falls County Park and Table Rock State Park

Held 1 clinic for closed group: Lake Conestee Nature Explorer summer camp

Fishing Rodeos

On-going participant survey data collection

Responding to inquiries about schedule

Fishing Tackle Loaner Program

Site user logs collected for data collected for input

Collecting follow up surveys from participants

Provided new equipment to: Dreher Island State Park, Aiken State Park, Lake Hartwell State Park, Paris Mountain State Park, and Sadler's Creek State Park

Boy Scout group returned fly fishing materials

Loaned gear to South Carolina Wildlife Federation for programming with Irmo Middle School

Trout in the Classroom (TIC)

Receiving inquiries and applications for upcoming school year

Updating program materials to reflect new protocols

Youth Bass Fishing Club

Continued to field questions and provide assistance to schools creating clubs for the first time

Beginning to plan for 2022 by discussing with relevant counties and tourism council

Black Bass Slam

Received 2 partial entries

Received 2 slam completions

Began developing outreach flyer materials

Other

Summer intern, Hayden Bennett, attended fisheries intern orientation

Assisted 4 boy scout groups in receiving fly fishing merit badge at Cohen Campbell

Hosted instructional webinar for staff on guidance for reviewing the public fishing application development

Attended York County Veterans Fishing Day with an outreach booth, tackle loaner materials, and raffle prizes for participants

Hayden Bennett attended Chattooga Depletion study

Will Mundhenke attended ICAST as media coverage by posting an album to social media highlighting sportfish related companies in attendance

Delivered publications to Florence office

Hayden Bennett filmed an introductory video for the curriculum development of Mussels in the Classroom project in addition to finalizing PowerPoints and lesson plans

Outreach materials provided to: 8 members of the public and 9 phone interactions.

WILDLIFE SECTION STATEWIDE PROGRAMS

Coordination and Administration

Participated in numerous meetings with Deputy Director Cope, Chief Dukes and Assistant Chiefs Swaynham and Chappellear on various topics including, coordinating staff work schedules, activities, field operations, implementation of regulations, and budgets. Participated in interviews for a Region 4 Heritage Preserve Biologist. Attended meeting of WFF senior staff and meeting with Clemson to discuss office space and new contract. Worked with Wildlife staff to facilitate public meetings on Sunday hunting and attended meetings in Florence, Clinton, Monks Corner, and Columbia. Met with Law Enforcement and Herpetology staff to discuss increased outreach and education on recent changes to statute and regulation for reptiles and amphibians and began planning outreach events. Provided assistance to Law Enforcement with the release of more than 60 squirrels surrendered as part of a wildlife investigation.

Big Game Program

General Activities

Responded to 51 phone calls and 61 emails from the public related to new or proposed hunting regulations, deer/turkey tagging, sick or nuisance animals, urban deer, and other general deer, turkey, and black bear related topics.

Law Enforcement related activities involved answering questions from the public concerning legal issues related to deer, turkey, bears, hogs, weapons, and hunting (9 calls and 10 e-mails approximately 1.6 hours). Consulted directly with field officers (4) related to youth deer hunting day, deer depredation, and nuisance wildlife contractors. Underwent training related to the Open Carry with Training Act.

Participated in a Foreign Animal Disease (FAD) Exercise conducted by Clemson Livestock and Poultry Health (state veterinarian's office) related to actions by state agencies in the event of a FAD in South Carolina.

Participated (virtually) in a meeting hosted by Clemson Livestock and Poultry Health (state veterinarian's office) related to the diagnosis of African Swine Fever (ASF) in the Dominican Republic on July 28. This is the first occurrence of ASF in the western hemisphere. ASF could have devastating effects on the pork industry in the United States including stoppage of international trade etc.

Attended the meeting held in Clinton related to the Sunday hunting on WMA's issue.

Attended an in-person meeting with Brandt who is the new customer service enterprise portal provider for the agency. This meeting was for information sharing related to various systems that they provide.

Coordinated with OMO on news releases, social media posts, etc. related to deer tags being mailed and youth deer hunting days.

Mileage logs/receipts were scanned and forwarded to appropriate staff. PCard statements/receipts were scanned and forwarded to the PCard email address.

Provided one public speaking engagement with 35 in attendance.

Participated in 3 interviews with the media.

Completed 1 survey from other agencies/entities.

Deer Research and Management Project

The Deer Quota Program (DQP) required effort related to ongoing data entry and update from the application/renewal process that began in May. Approximately 250 applications were entered during the month bringing the total to 1,259 entered to date. Applications were forwarded to DQP biologists for their action in setting quotas. The initial fulfillment of printing and mailing permits and tags took place the last week in the month.

The initial fulfillment of individual license-based tags took place during the month requiring coordination with The Sourcing Group and IT. Approximately 197,987 sets of tags were printed and mailed as part of this process. Daily fulfillment began on July 29 and will continue throughout the upcoming deer season.

Attended (virtually) the SEAFWA Cervid Working Group Meeting and provided an update on deer related issues in South Carolina.

Participated in a Zoom call with SCWDS, SE CWG, SEWHTG reps to discuss recent news and findings of White-tailed deer and Covid 19 antibodies.

The 2020-2021 edition of South Carolina Deer Antler Records was produced and printed. Steps were taken to mail a copy to the 222 individuals who successfully entered a set of antlers during the last two years. The updated edition of the book was posted on the agency website.

Work on the cooperative deer and coyote study with Clemson University Department of Forestry and Environmental Conservation was ongoing during the month. Field work on this 3-year project is nearing completion. Overall, 83 does were captured during the study leading to the capture of 94 fawns. Overall fawn survival during the study has been approximately 30 percent. Additional details of this study will be forthcoming as data analysis is ongoing.

Continued coordination and communication with the PhD student from University of Georgia on the cooperative research project entitled "Use of fecal genotyping and spatial capture-recapture modeling to investigate coyote abundance in South Carolina. Field work on this 3-year study recently concluded. DNA extractions for species identification is ongoing.

Deer Depredation Permits were entered as they were received. To date 449 permits have been recorded.

Measured 2 sets of antlers in the office by appointment.

Wild Turkey Research and Management Project

The 2021 Turkey Hunter Survey required ongoing effort. Surveys were shipped to Data Dash in Missouri and data entry was completed. Steps were taken to develop the nonresponse database and provided to Southwick Associates which will conduct a phone survey nonresponse bias test in August the results of which will be incorporated into the overall analysis.

Attended (virtually) the SEAFWA Wild Turkey Working Group Meeting and provided a report on turkey related issues in South Carolina.

Attended (virtually) the NWTFC Technical Committee meeting.

Continued work on the new South Carolina Wild Turkey Public Lands Habitat Enhancement Program which was rolled out in June. This included finalizing the score sheet which will be used to rank applications and answering questions from prospective applicants. This cooperative program will combine funds from NWTFC and

a portion of turkey tag revenue to help fund habitat management projects on public lands open to hunting in the state.

Met on-site with Unit Biologist to look at 2 WMAs for potential Wild Turkey HEP projects.

The wild turkey gobbling chronology study with Clemson University Department of Forestry and Environmental Conservation continued during the month. Field work on this 3-year study ended during the month with all Autonomous Recording Units (ARUs) that were deployed in March being retrieved. Data analysis from the 2019-2021 field seasons is ongoing.

Continued coordination and communication related to the study entitled “Reproductive Ecology of Wild Turkeys in an Unhunted Population.” This is a cooperative study between SCDNR, USDA Forest Service-Southern Research Station, University of Georgia, Louisiana State University, and University of Missouri. The objectives focus on determining reproductive parameters in turkeys that are not hunted. To date, 116 birds (62 females, 54 males) have been captured and banded. 80 of these birds were marked with GPS transmitters. This project will continue until 2024 and findings will be provided as they become available.

Black Bear Research and Management Project

Upstate - Staff handled 27 bear complaint calls/sightings. Bears are very active right now and regularly getting into bird feeders and trash or outdoor food sources. There were 3 road kills this month. 10 bait survey lines were set and checked in the mountains. Three more survey lines will be run in August and data will be compiled for an index number. Staff attended the Large Carnivore Workgroup virtual meeting this month to discuss Bearwise webpage, AFWA, Eastern Black Bear Workshop, and cougar updates. Mast surveys will be run in August to determine a mast production index for the mountain hunt unit.

Furbearer and Alligator Program

Furbearer Project

Responded to thirty-one nuisance wildlife complaints. Ninety-two other technical assistance contacts were also made during this time via phone and email.

Draft wildlife possession and wildlife rehabilitators legislation was revisited, and a new more streamlined version was created to simplify the statute side of the proposed legislation. In addition, a version containing wildlife control operators was also created.

Discussed fox and coyote permitting and other legal issues with Melissa Collins of the Louisiana Department of Wildlife and Fisheries.

The protocol for mange sample from SCWDS was sent to an upstate rehabber that is attempting to capture a mangy fox in an effort to obtain mange samples at the request of SCWDS.

Responded to a request for any permitting information related to an animal bite at an exotic animal facility in Charleston. There was no permit due to the species being out of our purview.

Assisted with additional support and for the movement of more of the seized wildlife related to the wildlife hoarding case in Lee County from late June.

Alligator Project

Alligator surveys continued this month with ten additional routes run. To date, fifteen survey routes have been completed.

An on-camera interview about the possibility of there being alligators in Lake Murray was given to WLTX this month.

Biologist Hart Activity

General Activities and Accomplishments

- Monitored movement of GPS tagged alligators.
- Visited three captive alligator permit holders up for renewal
- Issued three transport permits
- Building and troubleshooting Access database for all non-public hunt alligator permits
- Debugging final Access database for Captive alligator permits
- Coordinating regularly with Clemson researchers regarding alligator movements
- Ongoing permitting website and data management improvements
- Conducted nine overnight Alligator eyeshine surveys in fourteen waterways
- Tested and improved Survey 123 electronic data collection platform for eyeshine surveys
- Managing Alligator program intern
- Working on harvest summaries and reports for all types of harvest.
- Organizing and entering private lands harvest data
- Issuing invoices and processing applications for Private Lands alligator hunting

Alligator Program Biologist Accomplishments

- Display/Transport Permits - 5
- Private Lands Permit Packages approved - 0
- Nuisance Calls - 87
- Nuisance Permits- 30
- Media Inquiries- 0
- Presentations- 1

Other

Continued to meet with the new licensing vendor on multiple occasions to discuss lottery hunts, tag issuance, and wildlife permitting.

Assisted with the roundtable discussion about current job duties and career paths with the winning state Envirothon team.

Attended two of the Sunday hunting public meetings.

Permitting and Lottery Hunt Program

During the month of July, Biologist Kearse had a bouncing baby girl. In her place, administrative specialist Trista Bishop continued to review and process permits. These permits consisted of 11 field trial permits, 3 falconry permits, 1 migratory bird permit, 5 scientific collection permits, 23 Canada goose depredation permits, 3 predator management permits, 5 furbearer depredation permits, 2 Tegú possession permits, 2 alligator possession permits, and any fox/coyote enclosure permits that arrived.

The alligator lottery was completed, and notifications sent out to all 8,380 applicants to check their status in the licensing portal. Tag sales will begin on August 1.

The Multi-site and Webb Deer Lottery Hunts opened on July 1, with a mass email announcing the opening. The deer lotteries will remain open until August 15th.

Assistance was provided by email or phone concerning lottery hunts, permits, and other general wildlife questions.

Herpetology Conservation Program

Biologist Gross Activity

General Activities and Accomplishments

- Reviewer of USFWS Florida Pine Snake Species Status Assessment
- Reviewer of USFWS Gopher Tortoise Species Status Assessment
- Participated in USFWS/Natureserve Reptile Specialist Webinar
- Participated in Alligator Eyeshine Surveys – Lake Marion
- Participated in National Horizon Scan Exotic/Invasive Species Monthly Meeting
- Rapid Assessment for 20 non-native species with invasive potential
- Presented “Turtles of South Carolina” to Palmetto Bluff Conservancy
- Site Visit to Joint Base Charleston with Natural Resources Biologist and Forester
- Santee Coastal Reserve Reptile/Amphibian job shadow for a day

McCrary Herpetological Surveys - McCrary surveys are underway

Catawba-Wateree Herp Surveys - Surveys underway at Liberty Hill, Wateree, and Carolina Sandhills NWR

River Frog Survey and Genetics - Processed Froglogger data from Santee Coastal Reserve, Webb Center

Multi-State Sandhills Restoration Project – Tillman – No activity during the month

Multi-State Wetland Restoration Project – Webb - Pre-treatment vegetation surveys underway

-Three wetland perimeters flagged for restoration work

-Contract awarded for restoration of Mike’s gopher Pond

Gopher Frog Population Augmentation and Headstarting - 52 metamorphs reared at Riverbanks Zoo released at the Webb Center – 7/21/2021

Camera Fence Surveys – No activity during the month

Gopher Tortoise Population Augmentation with Waifs – Aiken Gopher Tortoise HP - 21 headstarted tortoises released into pen 15 – 18 July 2021

-Nest searching – 5 nests found, 30 eggs total – 22 July 2021

State Wildlife Grant – Conservation of Coastal Reptiles and Amphibians - Processed Froglogger data from Groton Plantation

Green Salamander Population Assessment across Forest Disturbance Gradient (Clemson) - Genetics samples being processed and analyzed

Patchnose Salamander Environmental DNA (Clemson) - Field surveys being conducted by Clemson

Pine Snake Movements Lewis Ocean Bay (Coastal Carolina) - Currently tracking 5 adult snakes – 2 females/3 males

-Site visit with Santee Cooper to discuss the timing of mulching, mowing and herbicide treatments in ROWs on Lewis Ocean Bay as it pertains to pine snake habitat use, mating and nesting

Box Turtle Movements (Savannah River Ecology Lab, University of Georgia) -Currently tracking 24 of the 2019 Chester Co Seized turtles, 10 wild turtles from the area and an additional 24 long term captives to compare habitat use, movements, and effects of hard vs. soft release

Statewide Bat Program

Summer bat netting project finished up at McCrary Training Center, began netting at Lake Wateree SP - radio-tagged 1 tri-colored bat there and radio tracked to 2 roost trees. Last of the nine weeks of statewide NABat surveys completed, wrapped up field work and returned equipment; Ky currently working on data entry. Completed and submitted SC Bat Watch! talk for virtual Ecological Society of America meeting Aug 2- 6. Checked Hamilton Ridge WMA and Silver Bluff Audubon Sanctuary Rafinesque’s big-eared bat towers, which now have temp and humidity sensors in them: each had 20 including pups for a total of 40.

Statewide Bat Monitoring (Bat Biologist, Jennifer Kindel, WNS and SWG grants)

- July 2: Annual leave
- July 6 – 8: Bat netting at McCrady Training Center
- July 12: Hampton Historic Site Bat Project Meeting. Site visit to Hamilton Ridge WMA and Silver Bluff Audubon Sanctuary to count bats in towers and download temp and humidity data; brought back broken Hobo sensor. Both Hamilton Ridge and Silver Bluff Audubon Sanctuary had 20 CORA each.
- July 15: WNS meeting. Took working Hobo sensor back out to Silver Bluff bat tower.
- July 19: Met with partners to exchange NABat equipment, set out NABat equipment.
- July 23: Shuttled Ky's vehicle to Styx and back to the Upstate.
- July 26: Teams meeting with Susan Loeb and Ky Miller for SC NABat data entry plan.
- July 27: Picked up NABat equipment from partners, downloaded data, reorganized and cleaned up equipment.
- Managed McCrady DBIDs, R&I's, additional housing request.
- Managed NABat project. Set out 4 acoustic devices and passed off equipment w/Ky gone for funeral. Wrapped up field work and returned equipment. Gave Ky excel spreadsheets to enter paper metadata, prepping instruction for using Kpro and submitting metadata to NABat online.
- Requested and obtained update to current WNS grant to allow additional tech time to set out detectors looking for MYSE in more unknown coastal and piedmont counties.
- Responded to reference requests, bat talk (Lake Conestee Nature Preserve in Oct) request; responded to Post and Courier re: bats in houses article.
- Responded to Taxa Team expert requests: Oconee/Greenville Co tracts and Quail Forever tract.
- Completed and submitted SC Bat Watch! talk for virtual Ecological Society of America meeting Aug 2- 6.
- Communicated with Susan and David about final SWG NABat project plans.
- Updated multiple PTRs. Managed borrowed vehicle gas card accounts.
- Communicated with Michael Small about schedule for intern Cooper Butfiloski.
- Not able to make WNS research grant for coastal NLEB MS with Cara Rogers happen; ultimately, EMU couldn't provide enough match. Francis Marion NF interested in future attempts to survey MYSE on their property as part of project, could provide housing. Bonneau Ferry housing also an option.
- Managed account charges on and between all projects.
- Responded to bat nuisance and information calls when able.

Hourly technician, Maria Monarchino

- Conducted 7 mist-net surveys at McCrady Training Center, each lasting 5 hours per survey.
- Captured 35 big brown bats, 24 eastern red bats, 34 evening bats, 7 Seminole bats, and 1 tricolored bat at McCrady Training Center.
- Conducted 5 mist-net surveys at Wateree State Park, each lasting 5 hours per survey.
- Captured 14 big brown bats, 19 eastern red bats, 5 evening bats, 1 Seminole bat, and 1 tricolored bat at Wateree State Park.
- Deployed 8 acoustic detectors at Wateree State Park for a duration of 4 nights to determine optimal netting locations
- Radio-tagged 1 tricolored bat and radio tracked it to 2 roost trees at Wateree State Park

Temp hourly technician, Cara Rogers

- Conducted netting surveys for bats at both McCrady Training Center and Wateree State Park
- Read through recently released research on successful netting / maternity areas for our target species
- Caught a Tricolored bat- a bat facing declines in population
- Tricolored bat was transmittered and tracked
- Replenished cleaning supplies in daily cleaning kit
- Sanitized all used nets and equipment
- Set up and took down acoustics to analyze most effective netting sites

Temp hourly technician, Ky Miller

- Maintained and managed NABat gear

- Collected and managed weekly NABat data
- Contacted partners for surveys and managing logistics
- Ran weeks 7-9 surveys for survey GRTS cells in the upper coastal and sandhills ecoregions.
- Shuttled vehicle back to Styx.
- Currently working on data entry.

SWG: NABat Project (Clemson MS student/Dr. Susan Loeb)

- Anna Siegfried and Dr. Susan Loeb continue to manually vet bat calls and submit data to NABat online.

Small Game Program

General Small Game Program Activities and Accomplishments

Responded to a minimum of 16 phone calls and numerous emails requesting technical assistance.

Program Leader Hook and Assistant Program Leader Small met virtually with Ruffed Grouse Society Southern Appalachian Forest Conservation Director Nick Biemiller to further discuss forest operations in the upstate of SC.

Program Leader Hook participated in the monthly GIS webinar.

Program Leader Hook participated in a job shadow program that included a visit to the Clemson veterinarian.

Assistant Program Leader Small completed a 4-hour Driver Improvement Training class conducted virtually by SC State Fleet Management.

Assistant Leader Small continued to supervise the program's summer intern.

Quail survey participant t-shirts were sent to cooperators.

Quail hunter report was made available to constituents via posting on the DNR website.

Mileage logs/receipts were scanned and forwarded to Lindsay Wood. PCard Statements were scanned and forwarded to the PCard email address.

Issued 3 new bird dog training area licenses and 15 shooting preserve licenses. Deposits associated with shooting preserve renewals were delivered to Accounting and all preserve harvest data entered into the database.

Posted 1 social media post on SCDNR Facebook page: Bobwhite Quail/Ruffed Grouse Public Survey Request.

Posted 1 social media post on SCDNR Facebook page: for Bobwhite Quail hunter survey participants.

Mourning Dove Project

Assistant Leader Small updated mourning dove band recovery information from bi-weekly reports.

Assistant Leader Small continued to coordinate state-wide initiation of Mourning Dove banding program including receiving and entering data from mid-banding reports with associated quality control.

Assistant Leader Small continued to assist SCDNR in designating an S-rank for the Common Ground Dove for SC's State Wildlife Action Plan including potential data analysis methodologies.

Assistant Leader Small worked on developing quality analysis models for analyzing annual state-wide Mourning Dove survey data.

Assistant Leader Small submitted the 2021 annual state-wide Mourning Dove survey report.

Bobwhite Quail Project

Program Leader Hook, Assistant Leader Small, and SCBI biologist Carmichael participated the monthly Indian Creek Technical Committee meeting.

Program Leader Hook participated in a virtual meeting regarding the upcoming NBTC meeting agenda.

Assistant Program Leader Small worked on developing occupancy models for bobwhite quail survey analyses.

Assistant Program Leader Small met with SCDNR staff to ground-truth future bobwhite quail survey points in McCormick County.

Assistant Program Leader Small reviewed preliminary Automated Recording Unit study report.

Assistant Leader Small continued to supervise hourly employee working on quail data/habitat analysis including acquiring and providing additional data.

All quail call count survey data received to date was entered into the database and all quail call count survey maps were scanned to the file.

Program Leader Hook and SCBI Biologist Carmichael conducted a SCBFP site visit to McBee WMA.

Program Leader Hook and SCBI Biologist Carmichael attended a SC Bobwhite Funding Partnership Event Planning Committee meeting.

Program Leader Hook and SCBI Biologist Carmichael visited McBee WMA as part of the SC Bobwhite Funding Partnership program.

Assistant Leader Small completed the annual quail brood survey report.

Program Leader Hook and SCBI Biologist Carmichael visited Carolina Sandhills NWR to meet with the property forester regarding forest management on the property.

SCBI Biologist Carmichael conducted two technical assistance site visits in Abbeville and Fairfield Counties and wrote management plans for both properties (386 total acres).

SCBI Biologist Carmichael participated in several meetings at the Enoree Ranger District to oversee Good Neighbor Authority work.

SCBI Biologist Carmichael completed a Working Lands for Wildlife for Bobwhite Quail needs assessment survey and submitted it to the Natural Resources Conservation Service national office.

SCBI Biologist Carmichael conducted two site visits to SCDOT land tract (Hunting Creek Mitigation Bank) adjacent to Indian Creek Focal Area for potential habitat restoration (activities included conversations with SCDNR forester and legal counsel).

Program Leader Hook participated in a virtual meeting with the NBTC Forestry Subcommittee.

Assistant Leader Small met with SCDNR Region IV staff and toured Botany Bay WMA and Edisto River WMA Dog Training Area.

Assistant Leader Small investigated using Program R Distance package and its use to analyze annual state-wide Mourning Dove survey data.

Assistant Leader Small initiated annual mourning dove banding survey by providing dove bands and associated paperwork to banding cooperators.

Assistant Leader small reviewed the interim report regarding ARU data submitted by Small Game Program hourly employee Emma DeLeon.

Farm Bill/Ag Liaison Activities

Farm Bill Biologist Dan Peeples assisted Calhoun, Clarendon, Richland and Orangeburg County Natural Resources Conservation Service offices with program applications and planning, and certification, modification, and cancelation of contracts.

Biologist Peeples has been preparing for the expansion of the Quail Initiative Funding to 30 new counties.

Biologist Peeples attended a virtual Prescribed Fire training to meet certification requirements set by the Natural Resources Conservation Service to perform duties such as planning and certification for private landowners enrolled in their programs.

Biologist Peeples also completed the virtual Safe Driver Training class. He also attended the National Bobwhite Conservation Initiative – Technical Committee, Forestry Subcommittee virtual meeting.

Biologist Peoples received a phone call about an injured fawn on the evening of July 20, 2021 from an Orangeburg County resident. The fawn was located on Rainey Lane, Orangeburg, SC. Multiple attempts were made to contact local rehabilitators. None answered or returned my call even over the next several days. Prior to the call the fawn was reported to have been stuck under a fence for 2 or 3 days by the landowner. The fawn was euthanized since there was no rehabilitator available and it was determined to be too weak and injured to survive.

Farm Bill Biologist Krieg completed 1 site visit in Lee County and wrote a management plan for potential EQIP and CSP applicants.

Farm Bill Biologist Krieg met with farm bill participants in Lee County to discuss future CSP and EQIP possibilities.

Farm Bill Biologist Krieg visited and made recommendations for the beneficial insect/pollinator habitat on Samworth and Santee Coastal WMA's in Charleston and Georgetown Counties.

Farm Bill Biologist Krieg completed 1 EQIP certification in Lee County.

Farm Bill Biologist Krieg completed 2 Annual Whistling Cock Surveys in Williamsburg County.

Farm Bill Biologist Krieg met with members of the South Carolina Bobwhite Funding Partnership in Chesterfield County to discuss current and future management objectives of Mcbee WMA.

Farm Bill Biologist Krieg met with CSNWR staff and interns in Chesterfield County to discuss current and future management objectives of the CSNWR quail focal area.

Nongame Bird Conservation Program

Migratory Landbird Project

Collaborated with Coastal Carolina University on project researching reproductive success and survivorship of loggerhead shrike in coastal SC as part of an international work group efforts to conserve the species.

Collaborated with Clemson University project researching high elevation early successional bird communities.

Organized and hosted virtual meetings to help determine Atlantic Flyway landbird priorities and compiled solar resources from Atlantic Flyway states as chair of the Landbird Committee.

Worked with heritage database staff to update the bald eagle nest reporting form and develop a loggerhead shrike survey¹²³ monitoring form.

Assisted the National Partners in Flight coordinator with developing work priorities for his seasonal staff.

Attended virtual meetings to develop a logistical plan to host the next Atlantic Flyway Meeting.

Worked with furniture stores to purchase furniture for new offices.

Reviewed and provided comments on recommendation to support an Eastern Partners in Flight Conservation Delivery Specialist position.

Approved 1 permits to further bird research in South Carolina.

Provided technical assistance on 6 bald eagle nests.

Assisted LE on 1 potential bald eagle violation.

Attended SEAFWA Wildlife Diversity monthly meeting to discuss the development of a Bird Conservation Delivery Specialist position for the Eastern US.

Developed messaging for SCDNR staff if they are contacted about the unknown pathogen killing birds.

Provided information to SCDNR media staff regarding lead and bald eagles.

Attended virtual Forest for the Birds webinar.

Provided guidance to an agency considering putting up an eagle nest camera.

Visited Marsh Island with SCDNR and other agencies.

Completed 1 Breeding Bird Survey route.

Updated the SCDNR Guidelines on How to Clean Birdfeeders webpage.

Reviewed tracts of land in Oconee County and provided information on potential bird species that could use those properties.

Conducted 1 falconry facilities inspection.

Monitored loggerhead shrike on 20 days to contribute to a full annual cycle model to help determine conservation priorities for the species.

Participated in International Loggerhead Shrike Working Group calls.

Continued MAPS banding project at SC Army National Guard McCrady Training Center. Conducted 3 bandings sessions and netted 24 species & 88 birds. Highlight included banding the first ever Brown-headed Cowbird at the site. Also, tallied 39 species on site this month.

Conducted a summer season raptor survey & a nocturnal raptor survey for SC Army National Guard McCrady Training Center.

Conducted point counts for SC Army National Guard McCrady Training Center, at the Clarks Hill site.

Continued developing a more efficient way to organize and maintain past and future landbird data sets. Made changes to the relational database, began creating a spreadsheet to more easily import data from different databases, and submitted banding data to the Bird USGS Bird Banding Lab.

Conducted routine activities for the Atlantic Coast Joint Venture, Partners in Flight, Atlantic Flyway, and other committees.

Directed activities of landbird, wading bird, marshbird, shorebird, and seabird SCDNR staff by providing guidance on projects, developing grant proposals, and managing budgets.

Answered over 200 calls and emails related to technical assistance and other bird conservation efforts.

Red-cockaded Woodpecker Project

Completed nest monitoring of 54 RCW clusters on 6 DNR properties – 93 total fledglings confirmed for the 2021 nesting season.

Entered all nesting season data.

Completed nest monitoring of 4 RCW clusters on 2 SC State Park properties in Aiken and Georgetown Counties.

Participated in site visit to Joint Base Charleston in coordination with DNR/DOD biologists to inform land management and survey protocols outlined in INRMP.

Conducted annual site visits to three properties enrolled in the Safe Harbor Program: 2 in Jasper County, 1 in Beaufort County.

Conducted site visit to one property in Allendale County that is currently in the process of enrolling in the Safe Harbor Program. Established number of baseline clusters.

Revised and finalized 1 draft Safe Harbor Agreement.

35 phone calls and 75 emails were received and responded to regarding Safe Harbor and wildlife assistance and information.

Waterbird Project

Analyzed aerial photographs of wading bird colonies. Counted 3,493 wood stork nests from 26 colonies, setting a new record high count of stork nests in South Carolina. The prior record of 3,075 nests was set during 2019.

Monitored Wood Stork nesting at five index colonies. DNR staff monitored 4 colonies and volunteers monitored 1 colony.

Conducted call-playback surveys for Black Rails at two SCDNR properties.

Installed and maintained experimental solar-powered irrigation system in potential Black Rail habitat with the goal of determining if this approach could be used to increase Black Rail breeding success during dry conditions. If grant proposal is funded, SCDNR will test the feasibility and effectiveness of using irrigation to enhance habitat quality at the Tom Yawkey Wildlife Center during 2022.

Designed mounting wells and installed iButtons to collect soil saturation information in experimental irrigation plot.

Maintained ARU (autonomous recording unit). SCDNR's extensive ARU dataset from wetlands occupied by Black Rails is being used for testing the capabilities of two types of automated call recognizers (BirdNET/Cornell and MATLAB/Adam Smith, USFWS I&M). Manual validation of recognizers by SCDNR is underway. If the recognizers produce accurate results, they may be used to analyze past and future recordings to determine site occupancy and improve the accuracy and efficiency of Black Rail monitoring.

Deployed water level loggers, ARUs, and cameras to collect pre-treatment data at the ACE Basin NWR. If grant proposal is funded, SCDNR will study and assist with fine-scale management for Black Rails on the refuge during 2022.

Assisted colleagues in other states who have initiated or are planning projects to monitor Black Rails. Advised colleagues about equipment SCDNR uses to study and monitor Black Rails – automated playback unit design, autonomous recording unit models and scheduling, and camera models and techniques.

Participated in monthly virtual meeting for the Firebird Project (Gulf Coast rails), which included the discussion of survey protocols and acoustic sampling. Shared protocols used by SCDNR's Black Rail Project.

Installed and maintained arrays of research equipment for Black Rail monitoring. Reviewed and updated IDs for camera trap photos. These data will be used to compare detection methods and ensure future Black Rail monitoring is as efficient and effective as possible.

Deployed/maintained water level loggers at field sites to learn about fine-scale habitat conditions in wetlands occupied by Black Rails. Collected water level and rainfall data in wetlands where Black Rails have been consistently detected during recent surveys.

Responded to data requests. Provided rookery and stork banding data to other natural resource professionals.

Worked with DNR Law Enforcement on the July 4th holiday weekend to protect nesting areas at Deveaux Bank Seabird Sanctuary. Additionally, staff patrolled Deveaux Bank on weekends to ensure visitors to the island know the rules and educated the public about the seabirds and shorebirds that utilize the island. Prevented boat landing in closed areas and presence of dogs on Deveaux and the sandbar. Large nesting colonies of Brown Pelicans, Black Skimmers, and terns are present, and stewarding minimizes disturbance. Collected information regarding numbers of dogs, visitors, boats, and activities at these sites to inform future management for seabirds and shorebirds.

Led education about and protection of shorebirds during 4th of July holiday weekend in Cape Romain NWR; recruited and coordinated transportation for 5 volunteer stewards who logged 108 hours stewarding within the Refuge.

Patrolled Price's Inlet area to prevent public and dog incursion into the closed areas on Capers Bar. Collected information regarding numbers of dogs, visitors, boats, and activities at these sites to inform future management for seabirds and shorebirds.

Staff attended a virtual 4-hour Drivers Training recertification for State Employees.

Continued working with DNR media outreach about the successful Black Skimmer colony on Deveaux Bank. The colony withstood Tropical Storm Elsa that made landfall over Edisto and Seabrook islands during the night of July 7th.

Transported seasonal Sea Turtle Technician from Botany Bay WMA to Deveaux Bank to look for sea turtle nests and obtain genetic samples. Only the open area of the island was searched for nesting activity. Seven nests were found this month.

Provided technical assistance to Hunting Island State Park staff and USFWS about intertidal buoys, equipment, and attachment options. A portion of the park's beach is critical shorebird habitat and is closed to dogs and marked off by buoys in the intertidal zone.

Continued monitoring nesting success at 9 alternative nesting sites (primarily pebbled roofs) of Least Terns in Charleston, Berkeley, Georgetown, and Horry Counties. Management of Least Terns nest sites increases nest success of this state threatened seabird.

Checked seabird and shorebird nesting at Isle of Palms, Cape Island, Lighthouse Island, White Banks, Marsh Island, and Capers Island. Removed posts/stringing/signs to allow public access at sites where nesting is complete at these sites: Isle of Palms, Cape Island, and Capers Bar.

Monitored roof nesting American Oystercatchers in downtown Charleston. Able to deter nesting from this site using string and flagging on the roof. Oystercatcher chicks perished the last 3 years in this urban environment. All materials removed at end of month.

Met with Coastal Bird Project team to discuss and make plans for early fall.

Participated in interviews for a Manomet shorebird steward technician position focused on the southern coast of South Carolina and northern coast of Georgia.

Assisted with USC research project on movement patterns of Whimbrel stopping over on Deveaux Bank. Monitored Whimbrel roosting at Deveaux with pinpoint GPS tracking tags and receiving towers located on Deveaux.

Maintained live streaming video camera (in collaboration with Mt Pleasant radio and Coastal Conservation League) that is placed near nesting birds on Shutes Folly in Charleston Harbor. Checked seabirds nesting on Castle Pinckney.

Site visit to Marsh Island in Cape Romain NWR with partners to discuss strategies to protect nesting seabirds and migratory shorebirds at this site.

WILDLIFE SECTION

Regional Operations Activity Summary

Wildlife technical guidance was provided to 309 contacts along with 35 technical guidance site visits. Ten (10) management plans were written. Other agencies were assisted on 47 occasions requiring 37.5 person-days. Six hundred fifty-one (651) nuisance wildlife complaints (including 61 bear and 244 alligator calls) were handled. Twenty-five (25) nuisance site visits were made and 6 alligator site visits were conducted. Field studies required 132 person-days and data analysis required 55 person-days. Sixty-two (62) quail surveys, 72 bat surveys, 9 black bear surveys, 1 shorebird/seabird survey and 15 other surveys were conducted. RCW nest surveys were conducted and 5 clusters were checked. Twenty-four (24) neotropical bird counts were conducted. Thirteen (13) antlers were scored. Twenty-six (26) woodduck boxes were checked. Two hundred five (205) woodducks, 24 mottled ducks, 15 other ducks, 93 other birds, 1 bat and 934 doves were banded. Four (4) programs/presentations were given with 54 people in attendance. One (1) news release was submitted. There were a total of 88 water level management days.

Heritage Preserve (HP) Habitat Management Summary

Heritage Preserve staff conducted 338 site visits. Exotic control occurred on three (3) heritage preserves. Fifty-eight (58) miles of trails were maintained, 5 miles of firelanes were disced, 17 miles of roads were mowed, and 11 miles of roads were scraped. Twenty (20) acres were mowed/bushhogged. Ten (10) miles of boundaries were cleared/painted and 6 acres of annuals were planted.

Wildlife Management Area Habitat Management Summary

Field agricultural activities on WMAs included 227 acres mowed/bushhogged, and 423 field/agriculture acres were disced. One hundred sixteen (116) miles of roads were mowed, 44 miles of roads were scraped, and 1 mile of road was graveled. Prescribed burning occurred on 121 forest acres. Agricultural herbicide occurred on 587 acres and forest herbicide occurred on 67.5 acres. Five (5) miles of trails were mowed, 51 miles of dikes were mowed, 3 miles of dikes were retopped, and 7 miles of firelanes were disced. One hundred nineteen (119) acres of annuals were planted. Two (2) water control structures were installed. Four (4) WMA signs, 1 WMA boundary sign, 340 HP boundary signs and 8 other signs were posted. Eight (8) gates were refurbished or installed. Two hundred eighty-seven (287) WMA phone calls were answered.

WMA Hunts and Visitation

- Marsh WMA – 8 visitors, of which 4 were scouting and 4 were fishing.
 - Woodbury WMA – 42 visitors, of which 8 were scouting and 36 were fishing.
 - McBee WMA - 9 visitors, including 6 hiking, 2 birding and 1 fishing.
 - Liberty Hill WMA - 38 visitors, including 10 hiking, 5 sightseeing, 16 fishing, 2 swimming, 2 scouting, 1 horseback riding, 1 photographing and 1 illegal hunting.
- Hamilton Ridge/Palachucola/Webb Center - Hog Hunt- 3 days, 13 hunter days of effort, 9 hogs were harvested.

Wildlife Regional Operations – Chief

Meetings attended during the month included a DNR Habitat Protection Committee meeting, meeting of the AFWA Duck Stamp Modernization Task Force, an AFWA Wildlife Chiefs virtual meeting, four public meetings regarding potential Sunday hunting on WMAs, a partner meeting with interested parties to discuss spraying of invasive exotic plant species on Lake Marion, and various meetings with Deputy Director, Assistant Chiefs, and staff to discuss administrative, budget and personnel issues.

Recorded one radio interview on the topic of potential Sunday hunting on WMA lands.

Participated in a Congressional Sportsmen's Foundation webinar on developing alternative funding sources for state wildlife agencies.

Completed on EPMS Evaluation Stage and reviewed on EPMS Evaluation Stage.

Responded to a minimum of 11 miscellaneous technical guidance calls during the month.

Administrative duties related to the migratory bird program and maintaining agency bird banding permit included: Distribution of band recovery records to appropriate banding personnel and assisting the Bird Banding Lab with data requests.

Regions 1 & 3 Assistant Chief Activities

Completed administrative activities including budgeting, purchasing, personnel and correspondence. Covid-19 related activities continued including coordinating with staff on work schedules and questions. Made a trip to Columbia to meet with senior staff and perform administrative duties. Helped conduct interviews for two candidates for the JG hourly tech position. Helped conduct interviews for two candidates for the Sassafras hourly tech position. Took Clemson Administrative Assistant Egan to a luncheon upon her promotion. Attended a conference call on Ruffed Grouse with RGS and small game staff. Met with Jocassee Gorges staff regularly on management issues. Met with Chief Dukes and Denise Froehle on budget document needs in Columbia. Met with Pat Cloninger and Austen Attaway to do EPMS evaluations. Met with JG staff and Gary Burger on forest management on JG.

Checked JG from lake and inspected signage. Checked management needs on Sassafras. Completed substantial budget work for FY22 and FY23. Completed budget summary documents for all wildlife projects for FY22 and FY23 and forwarded to Sam Chappellear, Will Dillman and Chief Dukes. Edited building and equipment insurance list and submitted to Columbia. Reviewed DLEO requirements and authority, budget balances, personnel actions, purchasing requisitions, purchasing card submissions, media releases, travel requests, WMA map revisions, facility and equipment insurance coverage, telephone account numbers, and proposed acquisitions. Checked WMAs including Nine Times, Fant's Grove, Keowee, and Jocassee. Checked HPs including Laurel Fork, Eastatoee Creek and Wadakoe Mountain.

Regions 2 & 4 Assistant Chief Activities

Met with and/or conducted multiple conference calls with Chief Dukes, Deputy Director Cope and assistant Chiefs Swaynham and Dillman on various topics. Attended WFF senior staff meeting in Columbia. Met with Scott Speares on various topics. Attended Sunday hunting public meetings in Florence and Moncks Corner. Met with Biologist Fowler concerning ongoing issues and topics before he left the Agency. Met with Regional Coordinator Farrell, Biologists Dozier and Woods concerning various Yawkey topics.

Continued baiting and trapping fox squirrels for relocation. Assisted with banding of wood ducks via airboat. Worked to set up various training classes for staff to participate in. Proofed insurance policy and submitted corrections for the Wildlife Section. Proofed staff fuel card, credit card and other Wildlife Section charges for correctness. Participated in interviews for the Region 4 Heritage Preserve Coordinators position. Inspected Pee Dee Station and Lake Wallace dove fields in Region 2. Commented on multiple DNR property management plans. Submitted paperwork for hiring on various vacant positions. Viewed DLEO in-service video. Assisted as a DLEO on Lake Moultrie during the July 4th holiday. Provided input on various budget planning meetings.

Wildlife Region 1

Summary

Staff handled 46 nuisance wildlife investigations, made 14 site visits, and issued two depredation permits. Received 58 bear calls, three road kills, and made six bear site visits. Assisted Ken Prosser on a site visit to the Pacolet-Milliken tract in Greenville County. Submitted two proposed projects and applications to the NWTF Habitat Enhancement Program for consideration. Met with a volunteer on site at Bald Rock HP to initiate a "Friends" group that will assist in litter control and public outreach. Conducted bear scent line surveys in Game Zone 1. Region staff spent considerable time trapping and banding mourning doves and wood ducks. DLEOs completed legal updates through the SCCJA.

Region 1 Coordinator

Completed administrative activities including budgeting, purchasing, personnel actions, correspondence, special use permits, and staff status reports. Filled the vacant Jocassee Gorges biologist position. Reviewed and submitted revisions for generic property use regulations. Met with Ken Prosser and environmental consultants to view the Pacolet-Milliken site in Greenville County. Attended a coordinators meeting at Wateree Range, a conference call with the RGS, and a GIS webinar through DNR. Completed 3 legal updates through the SCCJA. Continued to work with Unit 1A to improve and repair both Clemson and Beaverdam waterfowl areas. Met with Gary Burger and Jocassee staff onsite to discuss future timber management. Participated in the Clemson University Animal Care and Use Committee meeting and reviewed 2 research protocols. Checked WMAs including Beaverdam, Fant's Grove, Jocassee Gorges, and Sumter National Forest. Checked Laurel Fork HP.

Nuisance Wildlife Activities

Conducted 47 nuisance wildlife investigations, made eight site visits, and issued five depredation permits. Checked and maintained hog trapping sites on WMA and assisted regional techs. Responded to four nuisance alligator calls and made one site visit.

Upstate Bear Report

Responded to 27 bear complaint calls/sightings, two road kills, and made several site visits pertaining to bears. 10 bait survey lines were set and monitored in Game Zone 1. Biologist Waldrop attended the Large Carnivore Workgroup virtual meeting.

Unit 1A (Anderson, Greenville, Oconee & Pickens)

Checked boundary marking on WMAs and reposted as needed. Surplus equipment was sold at Ravenel Work Center. Trapped and banded 75 doves. Attended a planning meeting for National Hunting and Fishing Day.

Property Management Activities:

Beaverdam Waterfowl Area – Maintained water levels and stabilized dikes. Repaired main water pump. Dike was overtopped during two storm events this month. Met with contractors to quote sediment removal and dike repairs. Trapped and banded wood ducks.

Clemson Waterfowl Area – Monitored water levels and removed beaver dams. Pipe and spillway repair was completed.

Fant's Grove WMA – Two hog trap sites were monitored on Fant's Grove. Maintained electric fencing around dove fields. Electric fencing was maintained on several of the fields to keep deer and hogs out. Trapped and banded wood ducks.

Gravelly WMA – Met with SCFC to discuss project to improve turkey habitat on Poe Creek WMA.

Long Creek Tracts WMA – Monitored field conditions. Trapped and banded doves.

Pickens Rifle Range Dove Field – Monitored field conditions. Trapped and banded doves.

Ross Mountain Dove Field – Monitored field conditions. Three hogs trapped and removed. Trapped and banded doves

Sumter NF - Andrew Pickens WMA – Worked with USFS staff on wildlife openings as needed. Conducted 4 bear bait station surveys.

Tall Pines WMA – Removed trees and applied herbicide on Tall Pines Lake dam. Mowed roads and parking area. Conducted bear bait station survey.

Unit 1B (Abbeville, Edgefield, Greenwood & McCormick)

Considerable time was spent banding mourning doves and wood ducks. Conducted bobwhite quail whistling call count census and mobile acoustic bat survey. Met with assistant small game program leader to establish northern bobwhite monitoring points. Prepared and submitted NWTF Habitat Enhancement Program application. Completed Criminal Justice Academy online training assignment and Longleaf Alliance Virtual Longleaf Academy. Began working on James L. Mason Tract WMA Management Plan update.

Property Management Activities:

Bordeaux Dove Field – Planted millet and buckwheat. Applied herbicide, mowed, maintained electric fences, and spread milorganite. Removed 1 pig. Banded 13 doves and 15 ducks.

Plum Branch Dove Field – Applied herbicide, maintained electric fences, and monitored hog trap.

Parksville Dove Field – Applied herbicide and maintained electric fences. Banded doves and 16 ducks.

Russell Creek Waterfowl Area – Monitored wood duck banding sites.

USACE-owned “unnamed” WMA – Applied understory herbicide.

Unit 1C (Cherokee, Laurens, Spartanburg, Union)

Attended Clinton public meeting regarding Sunday hunting on WMA lands, Indian Creek meeting at Newberry SCFC office and a Quail Forever meeting to plan Indian Creek field day in October. Completed two summer quail surveys. Began banding activities for both doves and wood ducks at multiple locations. Mailed out letters to all Upstate Mobility Impaired Deer Hunt hosts, sponsors, and hunters with information regarding the hunts planned for this fall. Picked up an injured red-shouldered hawk in Spartanburg Co. and delivered to veterinarian clinic in cooperation with wildlife rehab facility. Painted shop at the Union office.

Property Management Activities:

Cliff Pitts Bird Dog Training Area – Began mulching edges of training area.

Cliff Pitts WMA – Continued work on terraces in dove field to manage runoff.

Gaffney Dove Field – Applied herbicide to browntop for control of broadleaf competition and to wheat for final burn down.

Gray Court Dove Field - Applied herbicide to browntop for control of broadleaf competition and to wheat for final burn down.

Herbert Dove Field – Applied herbicide to browntop to control broadleaf competition and wheat for final burn down.

Santee Cooper Dove Field – Applied herbicide to browntop for control of broadleaf competition and to wheat for final burn down. Repaired electric fence charger box.

Sedalia Dove Field – Applied herbicide to browntop for control of broadleaf competition and to wheat for final burn down.

Sumter NF – Dunaway WMA – Disked field to prepare for golden millet and chiwapa millet.

Sumter NF - Tyger WMA – Planted and fertilized golden millet and chiwapa millet. Applied herbicide prior to planting.

Thurmond Tract Dove Field – Applied herbicide to browntop for control of broadleaf competition and to wheat for final burn down.

Thurmond Tract WMA – Began stumping edges of fields and daylighted roads from logging operations.

Turkey Demonstration Area – Coordinated with Hancock Timber to update management strategy in coordination with timber harvest schedule.

Jocassee Gorges

Completed administrative activities including personnel, correspondence and purchasing. Corresponded with the Prescribed Fire Training Exchange (TRES) concerning controlled burns to be conducted on the property in the late fall for training purposes. Set up a meeting with a gravel contractor on a potential bid. Contacted paving contractors on Sassafras paving job. Toured the property with Gary Burger, RC Cloninger and JG staff to assess forestry needs. Conducted interviews and submitted a hiring packet for the Sassafras Tower part-time position. Conducted two interviews for the Temporary Technician vacancy. Completed a bear scent line survey. Conducted maintenance on vehicles and equipment.

Property Management Activities:

Jocassee Gorges WMA - Replanted dove field in millet after hog damage. Conducted feral hog trapping. None captured. Applied herbicide around gates on the property. 10 miles of roads have been scraped and regraded. Approximately one mile of roadsides were mowed. Installed a large culvert on Dawkins Flat Road. Removed several fallen trees from the roads on the property.

Sassafras Tower Site - Repaired bathrooms and applied herbicide to control weeds. Inspected the site for future needs.

Heritage Preserve Activities

Completed administrative tasks including review of the new fiscal year budget and the annual EPMS for HP staff. Continued working on the Brasstown HP management plan update. Met with Greg Lucas and volunteers at Bald Rock HP to discuss the formation of a "Friends of Bald Rock" organization. Submitted a property interest form to HPC to consider a tract for purchase near Chestnut Ridge HP. Completed three assigned SCJA trainings to maintain DLEO commission. Found three significant clumps of Mountain Sweet Pitcher Plant had regrown at the upper Ashmore HP bog. Completed a virtual driver's training course. Assisted the Region 1A unit biologist with a bear scent line survey at Ashmore HP and the state bat biologist with two acoustic survey routes and one stationary monitoring site.

Property Management Activities:

Ashmore HP – Conducted bear scent survey. Cleared roads and trails. Brush cut dam at pond.

Bald Rock HP – Removed trash and litter. Repainted trash bin. Met with volunteer group.

Belvue Springs HP – Property check.

Blackwell HP – Property check.

Brasstown Creek HP – Ordered rock for road repairs. Assessed pine stands for potential timber harvest.

Buzzard Roost HP – Inspected trail.

Bunched Arrowhead HP – Mowed trail and parking area. Removed trash.

Chandler HP – Trail inspection.

Chestnut Ridge HP – Checked gate and inspected roads/trail.

Eastatoe Creek HP – Inspected trail.

Glassy Mountain HP – Cleared trees from trail.

Laurel Fork HP – Property inspection. Cleared trees from trail.

Peters Creek HP – Trail Inspection.

Stevens Creek HP – Trail inspection. Exotic control.

Stumphouse HP – Cleared multiple trees. Trail inspection.

Wildlife Region 2

Summary

Staff spent considerable time preparing and baiting dove and duck banding sites. Region 2 staff banded 160 mourning doves. Staff continued work on dove fields throughout the region. Region 2C staff, Regional Coordinator

and biologists from the small game section conducted a field tour, highlighting recent habitat work, at McBee WMA for the SC Bobwhite Funding Partnership committee on July 28. Region 2 biologist processed DQP applications. Heritage preserve management staff worked on endangered species and ecosystem monitoring, restoration and management; on longleaf and shortleaf pine, piedmont savanna and prescribed fire management, outreach, policy and education; on management plans; on conservation planning, and on maintaining and improving access and other preserve attributes. Staff worked to close out FY2021 business and administrative matters. Staff completed interview and other processes for new technician position, and current hourly Savannah Hebler has been offered and has accepted the job, to begin 17 August. Staff adhered to SCDNR C-19 emergency protocols in field work and office work, following social distancing and sanitation measures. The department has continued to provide personal protective equipment and sanitation supplies to staff to help us work safely and productively.

Regional Operations Activities

Unit 2A

Unit 2A staff worked extensively on maintaining dove banding sites. Staff banded 61 total doves between the Marion and Darlington County sites. Biologist Oates continued to monitor and bait two duck banding sites in Marion County and one site in Florence County. Biologist Oates worked on an updated management plan for Woodbury WMA and submitted a first draft. Biologist Oates assisted Unit 2C with additional work on the McBee office construction. Biologist Oates assisted two farmers (Florence and Dillon Counties) with obtaining a goose depredation permit for their crop fields. Biologist Oates and technicians Parsons and Parsons installed 8900 feet of additional high tinsel wire at Lake Wallace to prevent deer from entering the dove field. Technician Parsons sprayed herbicide on 14522 feet of fence at Pee Dee Station and Lake Wallace dove fields. Technician Parsons mowed 20 acres at Lake Wallace dove field. Technician Parsons mowed 42 acres in the dove field, winter wheat, and lock-in at Pee Dee Station and 20 acres at Lake Wallace dove field. Technician Parsons and Fitts sprayed 100 acres of herbicide at Pee Dee Station and Lake Wallace dove fields. Technicians Parsons and Parsons mowed parking areas, boat landings and around kiosk and sign-in box at Woodbury WMA. Technician Alston and Parsons scraped 10 miles of roads at Marsh WMA. Technician Parsons scraped 3 miles of roads at Woodbury WMA. Technician Alston hauled 16 loads of rock in Woodbury and to Marsh WMA. Technicians Alston and Parsons disked 14 acres of food plots and planted 6 acres of browntop and Japanese millet at Marsh WMA. Region staff had 84 technical assistance contacts (mostly phone calls) pertaining to wildlife, regulations, and WMA lands and 14 nuisance calls.

Unit 2B

Unit 2B staff continued preparations of WMA public dove fields in York, and Chester County for planting. Unit 2B staff maintained agricultural equipment for planting, and field maintenance. Unit 2B staff sprayed herbicide on wheat and soybeans across all properties. Technician Smith, Technician Scales, and Biologist Kesler monitored water levels, and beaver activity in ditches and water control structures at BRWMA. 8 days were spent pumping to drain ditches. Unit 2B staff performed road maintenance and improvements at Broad River WMA, Draper WMA, and Worth Mountain WMA.

Unit 2 B staff worked to find and establish wood duck banding sites in multiple areas across the unit. Technicians Scales and Wyatt trapped and banded doves at established sites.

Unit 2C

Biologist Cockman processed a second batch of Deer Quota Permits during the month.

Biologist Cockman scored one deer head at the Camden office. Biologist Cockman issued one mobility impaired vehicle permit (MIVP) for the Heritage Tract on Catawba River WMA and two MIVPs for Liberty Hill WMA. Biologist Cockman attended the public meeting in Florence concerning Sunday hunting on WMAs. DLEO Cockman completed on-line legal update training during the month.

Staff collected turkey and quail recruitment survey data during the month. Technician McManus banded 14 doves during the month in Kershaw County. Technician Lowder banded 22 doves during the month in Sumter County. Loggers continued timber thinning at the Heritage Tract (west) on Catawba River WMA.

A contract was awarded for the land clearing contract at McBee WMA on July 23. Work will commence on August 2. Staff, with assistance from Unit A staff, continued construction on the office portion of the new shop at McBee WMA.

Wildlife Management Area Management Summary

Throughout Region 2, staff mowed 71 acres, scraped 20 miles of roads, disked 19 acres, applied ag. herbicide to 140 acres, planted 6 acres of small grains, hauled 16 loads of rock, graveled 1 mile of roads, mowed 3 miles of dike, banded 160 doves.

Property Management Activities

Marsh WMA: Hauled 6 loads of rock to repair roads. Cut 5 acres of grass at clubhouse and shooting range. Discd 14 acres. Planted 6 acres of millet. Established 13 dove banding sites and banded 25 doves. Baited 1 duck banding site. Scraped 10 miles of roads.

Woodbury WMA: Daylighted 1 mile of roads. Hauled 10 loads of rock. Graveled .75 miles of road. Scraped 3 miles of roads. Mowed parking areas, kiosk, boat landings, and equipment compound (6 acres).

Pee Dee Station WMA: Mowed 20 acres of food plots. Mowed 4 acres of winter wheat and 8 acres of corn and sunflowers. Mowed 10 acres within the equipment compound. Sprayed herbicide on 2 acres around fence. Sprayed 60 acres of herbicide on dove field and winter wheat/browntop.

Lake Wallace DF: Sprayed 4 acres around fence. Sprayed herbicide on 50 acres of dove field. Installed 8900 feet of high tinsel wire.

McBee WMA: Mowed 2 acres of grass at shop and public parking area. Distributed 20 bushels of quail supplemental feed. Worked on office in new shop.

Liberty Hill WMA: Technician McManus mowed 4 acres of grass at the kiosk and shop area, graded the parking lot at the south kiosk, repaired the water cradle, graded 4 miles of roads, and removed 6 trees from roadways at

Angelus BDTR: Inspected herbicide spray contract.

Campbell's Crossroads: WMA: Inspected chufa and small game mix plantings.

Catawba River WMA Cleaned culvert pipes at Heritage West tract. Continued timber thinning operation at Heritage West tract.

Draper WMA: Performed general depot and equipment maintenance. Graded 2 miles of road.

Discd 3 acres of wildlife openings and dove field. Sprayed 5 acres of soybeans. Mowed 5 acres of dove field and wildlife openings.

Worth Mtn. WMA: Discd 2 acres of open ground in dove fields. Scraped 1 mile of road. Mowed 7 acres in dove field and wildlife openings. Performed general depot, and equipment maintenance

Broad River Waterfowl Management Area: Performed general equipment maintenance, and repair. Herbicide application to 6 acres of soybeans. Mowed 3 miles of dikes. Performed 20 days of water level management

Worthy Bottoms PDF: Fence maintenance at Worthy Bottoms Dove Field. Sprayed 10 acres of wheat in dove field.

Heritage Preserve Management Activities

Heritage preserve (HP) management staff worked on endangered species and ecosystem monitoring, restoration and management; on longleaf and shortleaf pine, piedmont savanna and prescribed fire management, outreach, policy and education; on management plans; on conservation planning, and on maintaining and improving access and other preserve attributes. Staff worked to close out FY2021 and administrative matters. Staff attended the celebration of the life of Dr. Valerius Geist, who has played a pivotal role in how heritage preserves have been managed the last quarter century, as well as in the restoration of the heritage of woods-burning in SC, Southeastern North America, the NA continent and the world, by inspiring, informing and advising Johnny Stowe. Dr. Geist has been one of the major leaders in wildlife management over the last 50+ years. Professor Geist has also advised the SCDNR on game farming and commercialization of wildlife matters for decades, and was the first proponent of the North American Model of Wildlife Management (NAMWM), the most successful paradigm around the globe, one which SCDNR has followed since the department's advent. Dr. Geist first formalized the NAMWL in writing, doing so for the Canadian federal government. Staff completed interview and other processes for new technician position, and current hourly Savannah Hebler has been offered and has accepted the job, to begin 17 August. Savannah began working in HP management as a volunteer during her spring break, then was allowed to work as a summer intern during the initial Covid-19 shutdown, and because of her high performance was kept on as part-time hourly in the fall while she completed her university degree and then as full time hourly since graduation. She has great potential as a career-long land manager. Her goal is to develop experience, knowledge, skills and abilities to become an SCDNR biologist. Staff completed a draft revision of the Segars-McKinnon HP Management Plan Update. Staff applied herbicide to four invasive exotic species on 2 HPs. Staff cut vegetation around federally-endangered Schweintz's sunflower (*Helianthus schweinitzii*) exclosure protecting federally-endangered Schweintz's sunflowers in "Houk's Patch" restoration area at Rock Hill Blackjacks HP/WMA. Also on this HP/WMA, where dumping along Blackmon Road has remained severe, we have kept York County Waste Collection notified of

conditions and they continue to remove the materials, with the latest removal leaving the roadside especially clean. Staff assessed firebreaks, soil and water-table conditions, and fuels; cleared around RCW cavity trees as well as snags, cat-faced trees, gates, signs, utility poles and other hazards or sensitive elements; and worked on equipment and gathered supplies in preparation for prescribed fire. Staff maintained preserves by assisting the SCDNR LED with enforcement, by monitoring for abuse, by removing trash, by managing vegetation and by maintaining gates, trails, parking areas and boundaries.

Property Management Activities

Forty Acre Rock HP/WMA: Staff maintained the preserve by assisting game wardens with surveillance (SCDNR LED had not reported any citations as of the time of this report), by monitoring for abuse, by removing trash and hazardous trees, by managing vegetation, and by maintaining gates, trails, parking areas and boundaries. Staff applied herbicide (via backpack application) to invasive exotics Japanese wisteria (spot-treating one acre); and mimosa (spot-treating one acre) and sweetgum (spot-treating one acre).

Great Pee Dee HP/WMA: Staff removed downed tree and encroaching vegetation from preserve road; and applied herbicide (via backpack application) to vegetation along 1,700' of preserve easement road.

Longleaf Pine HP/WMA: Staff applied herbicide (via hack-n-squirt and backpack applications) to woody vegetation in Santee Cooper ROW (spot-treating 6 acres). Staff applied herbicide to invasive exotic Japanese climbing fern (spot-treating 3 acres) .and Chinese privet (spot-treating < 1 acre); and sweetgum scattered along firebreaks (via hack-n-squirt application).

Little Pee Dee State Park HP: Staff checked roadside boundary and picked up trash along preserve road and at boat landing.

Lynchburg Savanna HP/WMA: Staff applied herbicide (via backpack and hack-n-squirt application) to sweetgum scattered along firebreaks (spot-treating 12 acres in sensitive wetland stringer), monitored for invasive exotic bicolor lespedeza (*Lespedeza bicolor*), and monitored 600' of boundary along neighbor's ongoing timber harvest and removed debris left behind in firebreak.

Rock Hill Blackjacks HP/WMA: Staff removed trash from parking area. Dumping along Blackmon Road has remained severe, but we keep York County Waste Collection notified of conditions and they remove the materials, with the latest removal leaving the roadside especially clean. Staff cut grass around parking area, kiosk, picnic area and enclosure protecting federally-endangered Schweinitz's sunflowers in "Houk's Patch" restoration area.

Woods Bay HP- Staff applied herbicide to sweetgum (via backpack application) along 3,700 feet of firebreak, and patrolled boundary.

Segars-McKinnon: Staff worked with Coker University's Kalmia Gardens and SCDNR Engineers on planning to repair or replace boardwalk. We are monitoring Black Creek, waiting for water levels to rise enough that we can float creek. Staff applied herbicide to pocosin vegetation (via backpack application) in "Firewise" fuel break around Hunter's Pointe neighborhood and trimmed 1 mile of trail and re-tied Danger flagging across closed boardwalk section of trail.

Wildlife Region 3

Summary

South Carolina Department of Transportation continues to work at Shealy's Pond Heritage Preserve on replacing the culvert under Boiling Springs Road. They have the new culvert in place and starting to clean up the site and build in the retention walls that will lie in the right of way at Shealy's Pond. The contractors for this project are expected to be done within the next 2 weeks. Young has requested a walkthrough with South Carolina

Department of Transportation at the finish of the culvert replacing process to check for proper depth placing of the pipe and that guidelines were followed per the license agreement.

Regional Coordinator

Assisted regional staff with purchase requisitions, receiving and inspection reports, and personnel transactions forms. Submitted purchase card summaries by email for Region 3 Staff on July 12 and 14. Assisted with Region 3 Heritage Preserve and Wildlife Management Area Management plans. Issued 7 nuisance alligator permits with the region. Attended the public meeting about Sunday Hunting in Clinton and Columbia, South Carolina. Attended the Regional Coordinators Meeting at Wateree Rifle Range on July 27. Attended the Cowasee Basin Task Force Meeting in Saint Matthews, South Carolina on July 28. Assisted with the 2021 Deer Quota Applications for Region 3C. Visited the following heritage preserves and wildlife management areas in Region 3; Belfast, Congaree Bluffs, Henderson, Hickory Top, Love Farm, Peachtree Rock, Shealy's Pond, Santee Cooper, Santee Dam and Wateree River.

Unit 3A

Regional staff spent a significant amount of their time trapping doves and collecting data. Duck banding locations are still being monitored and baited as needed. Biologist Bennett and Technician Stephens completed the required video training by the South Carolina Criminal Justice Academy.

Waterfowl impoundments are being monitored for hog intrusion daily at Wateree River Heritage Preserve Wildlife Management Area. Waterfowl impoundment openings have been top sowed with millets. Buffers are being mapped and posted around waterfowl impoundments with the intention to limit public access during critical migration period. Technician Kiker and Technician Flemming continued moving material and working on road maintenance in the river swamp. Staff spent several days daylighting roads in the river swamp as well as mulching several of the mitigation areas to be converted to hardwoods. The green tree reservoir restoration area is still underway as staff is attempting to regain control of structures and dikes. Summer food plots have been planted. Hog trapping is a continuous battle, however staff trapped 27 hogs this month. The overflow structure at the fishpond was modified to minimize stoppages and backups due to vegetation die off. Goodwill Road was motor graded, and potholes were filled where needed. The contractor is still in progress with the stumping/clearing of the dove field and shooting course at Love Wildlife Management Area. Technician Baldwin and other staff has continued clearing trees off impoundment dikes as well as starting to daylight some roads in the river swamp. Baldwin replanted a few summer food plots due to some crop failure. The hardwood restoration mitigation area was mowed. Water control structures were monitored during high rainfall periods.

Dove field fences were sprayed for the last time and wheat was sprayed for the upcoming season as Belfast Wildlife Management Area, McCullough, and Saluda dove fields. Water flow was monitored because of local heavy rainfall at Enoree Waterfowl Area. Various pieces of equipment were maintained and repaired. Stephens completed and submitted Employee Performance Management System for Technician Rex. Several roads were limbed and daylighted at Belfast Wildlife Management Area. Summer interns completed the painting and refurbishing of gates. Fireline marking and widening has started again off the Silver Gate Road. The late summer growing season 5-acre burn was completed on the research block in cooperation with the University of Tennessee.

Unit 3B

Crackerneck Wildlife Management Area was closed to the public in July. Biologist Forehand and Technicians Chapman and Rinder focused on trapping doves and feral hog control at Crackerneck Wildlife Management Area. Technicians Chapman and Rinder worked on equipment for 6 days, maintained and repaired the electric fence and plowed 5 miles of firebreaks, scraped, and repaired roads, and started replacing wood duck boxes. Biologist Forehand met with US Forest Service-Savannah River several times to discuss logging the new dove field and planning routes that the log trucks can utilize to minimize disruption to the upcoming hunting season. Forehand also made several visits for nuisance alligators across Region 3B.

Unit 3C

Technicians Clyde Smith and Jonathan Mackay continued working on keeping the deer out of the Youth dove field on Santee Cooper Wildlife Management Area. Staff continued to successfully trap hogs on Santee Dam Wildlife Management Area. Staff continued preparing plots for summer planting. Preparation for the upcoming dove season began as staff began mowing and spraying in the unit dove fields. Equipment maintenance and repair took significant time throughout the month. Biologist Shuler answered numerous alligator calls and issued tags as needed.

Heritage Preserves

Heritage Preserve Biologist Young, Technician Kiker, and Summer Intern Janson conducted multiple site visits to the Heritage Preserves and Wildlife Management Areas in Region 3. Janson and Summer Intern Drafts have finished painting boundaries and replacing boundary signs at Henderson Heritage Preserve and Bennett's Bay Heritage Preserve. Young mulched an area of overgrowth at Congaree Bluffs Heritage Preserve. This area will be maintained with winter discing and prescribed fire in the future and will provide a wildlife opening for the annual youth deer hunts on the preserve. Kiker has bushhogged the uplands at Janet Harrison High Pond Heritage Preserve. Staff still must mulch some areas to open up overgrown thickets of Sweetgum and reopen the firebreak between the preserve and private property once the ground begins to dry out. Red-cockaded woodpecker Biologist Lerow has completed the nest checks on the three active clusters at Aiken Gopher Tortoise Heritage Preserve. Cluster 1 had 1 nestling, Cluster 2 had 3 nestlings, and Cluster 3 had no nestlings this year. At Cluster 3, Lerow found two unmarked naturally excavated cavities near this cluster. They have been flagged and awaiting to be banded with spray paint. Young and Kiker attended chainsaw safety training at Wateree River Gun Range. Young attended a walkthrough on a potential property acquisition with Botanist Bradley and Archaeologist Taylor in Red Bank, South Carolina. Young attended a walkthrough at Peachtree Rock Heritage Preserve with The Nature Conservancy to discuss final plans for an Eagle Scout to remark the entire hiking trail system as his project. South Carolina Department of Transportation continues to work at Shealy's Pond Heritage Preserve on replacing the culvert under Boiling Springs Road. They have the new culvert in place and starting to clean up the site and build in the retention walls that will lie in the right of way at Shealy's Pond. The contractors for this project are expected to be done within the next 2 weeks. Young has requested a walkthrough with South Carolina Department of Transportation at the finish of the culvert replacing process to check for proper depth placing of the pipe and that guidelines were followed per the license agreement. Young, Kiker, Janson, Drafts, with assistance from other Region 3 staff have been baiting and trapping wood ducks around the state. We currently have 9 wood ducks banded. Young, Janson, Drafts, Summer Intern Butfiloski, and help from various volunteers have been trapping and banding doves at Styx and the Cohen Campbell Fish Hatchery. We have banded 96 mourning doves. Young finished Department Law Enforcement Officer online training.

Wildlife Region 4

Highlights

Daily management of Public Dove Fields, waterfowl impoundments, and wildlife openings dominated staff activities in the month of July. Activities to prepare Public Dove Fields and deer stands for upcoming public hunts commenced. Water levels and conditions were monitored and managed in all coastal waterfowl impoundments. Staff began trapping of wood ducks (124), mottled ducks (24), black-bellied whistling ducks (15), and mourning doves (351). Budgets were reviewed and distributed to all Unit Biologists and Project Leaders. Interviews were conducted for multiple Technician openings and the Heritage Preserve Biologist.

Regional Coordination

Most of the month was spent on administrative duties including distributing and reviewing FY22 budgets, personnel topics, and preparing for several meetings. Several visits were made to neighborhoods in Charleston to check on reports of nuisance alligators, injured Canada geese, and nuisance geese. One day was spent with the Region 4 interns at Webb WMA to discuss habitat management techniques. Duck banding sites were explored and inspected with the manager of Santee National Wildlife Refuge, and one night was spent banding wood ducks at Bushy Park Landing. A meeting of Regional Coordinators was attended at Wateree Shooting Range.

Assistant Regional Coordinator Hook met with SCDNR and Santee-Cooper staff at Lewis Ocean Bay HP to review right of way management activities. Hook assisted Unit Biologists with multiple rounds of interviews for Natural Resource Technicians. Budget review and general administrative duties were conducted. Dove fields and

waterfowl impoundments throughout Region 4 were monitored. Water levels and vegetation conditions at Dungannon HP rookery were monitored and one tree was cut and removed from the road. The ACE Basin Task Force and Regional Coordinators Meeting were attended. Hook visited the Love WMA with Regional Coordinator Simmons. Time was spent coordinating with UCWP and Unit 4D Biologists working on the development and submission of permitting documentation for work on coastal Waterfowl Management Areas. Plans were made for ongoing management of Region 4 HPs until the Biologist vacancy is filled. A day was spent with SCDNR staff and representatives from Ducks Unlimited visiting potential property acquisitions and reviewing a boundary encroachment issue in Horry County.

Unit 4A: Horry & Georgetown

Coastal Bear: Activity remained steady through July. There were 18 sightings, 1 unconfirmed sighting and 1 roadkill reported.

Unit 4A Heritage Preserves: Heritage Preserves in Horry County were visited 14 times. All red- cockaded woodpecker trees were scraped, repainted and GPS locations documented. Biologist Brantley assisted with marking monuments along two sections of the Lewis Ocean Bay Heritage Preserve (LOBHP) boundary and attempted to locate the boundary along a third section. Brantley also participated in the interview process for the HP Tech II and Region 4 HP Coordinator positions. Time was spent with Biologist Fowler prior to his departure from SCDNR reviewing files and preparing a workplan. Technician Matthews assisted with mowing roads at LOBHP and installed a winch on the skid steer. Summer Intern Newman assisted with monitoring Venus flytraps and painted gates at LOBHP. One quail call count survey was completed.

Samworth WMA Uplands: Wet ground conditions slowed the dove banding process but ramped up the grass cutting. Samworth dove field activities included: post emergent herbicide applied to 21 acres of sunflowers, field perimeters kept clean, fence lines sprayed, and the electric fence monitored daily and repaired when needed. Deer browsing was also monitored among the sunflowers. Sandspur and pigweed eradication continued. Staff spent 2.5 weeks banding doves with a total of 74 banded. The Samworth kiosk was pressure washed and cleaned of spider webs and dirt dauber nests. In addition, an updated nature trail map was posted on the kiosk. Two wildlife openings were disked, and a pump was repaired on an ATV sprayer. Technician Matthews fabricated a boomless sprayer on the Marsh Master for the Upper Coastal Waterfowl crew. Intern Newman completed necessary work on the nature trail and assisted the UCWP crew with mowing on the Mash Master. Newman also participated in the intern field trip to Webb and a nightlight alligator survey with Biologist Hart at Santee Coastal Reserve and Samworth WMAs. Biologist Brantley partook in the Long Leaf Alliance Academy when time allowed. Brantley also coordinated with Regional Coordinator Farrell on various items related to Unit 4A and Heritage Preserves.

Unit 4B: Berkeley & Charleston

July activities were dominated by duck and dove banding and depredation management in fields. Agricultural activities progressed where and when it was dry enough.

Bonneau Ferry WMA: 77 general visitors utilized Bonneau Ferry. Roads were graded and cleared of storm debris. Tractors and chain saws were cleaned and serviced. Staff baited, scouted, and banded wood ducks. Hogs were scouted and baited; none were removed. Some disking was accomplished in Quarterman's Reserve where dry conditions allowed.

Canal WMA: Staff continue to work with USACE personnel via weekly conference calls. Dove fields continue to be maintained. Proso millet was planted. Strips and alleys are being rotovated on a rotation. Doves were baited and banded.

Sandy Beach, Cross and North Dike: Shed improvements were completed. Staff fertilized and sprayed crops and managed water levels. Chufa was planted in impoundments. A tree was cleared from the road and all roads were mowed.

Francis Marion National Forest: Summer planting of wildlife openings continues. Staff baited for hogs. Staff banded doves. Staff helped coordinate progress of liming project; Waterhorn and Northampton have now been completed and lime has been delivered to Wambaw for spreading as soon as conditions are dry enough. Staff posted boundary and closed road signs. Routine mowing and equipment maintenance was completed. Duck boxes were checked in Wadboo section of Santee WMA.

Other Unit activities: Staff assisted with set-up ahead of a Sunday hunting public meeting. Staff attended a boater safety course. Staff traveled to Styx to pick up new truck. Interviews were conducted of internal candidates for Natural Resource Technician II vacancy. Wood duck box technician began work. Staff completed DQP edits for Charleston and Berkeley County properties.

Wildlife: A total of 320 wildlife calls were handled at the Charleston office (90 alligator, 2 bear, 228 other nuisance animals). There were 28 licensing/boat titling calls emailed to the licensing/permitting office. Hunting regulation and property calls were handled for 13 callers. Deer tag inquiries were answered for 10 callers. 6 Property and 7 Individual Alligator Depredation Permits were mailed or picked up. 11 harvested Alligators have been reported through end of June. Alligator Signs were mailed to 1 Property Manager for posting.

Unit 4C: Colleton & Dorchester

Routine administrative and management duties were conducted for the month. Visits were made to WMAs within the unit to assess habitat conditions and other management items. Water levels in all impoundments on Donnelley and Bear Island WMAs were monitored and adjusted appropriately. All water control structures have been set to allow ample water flow through impoundments and to slightly raise water levels to promote healthy SAV growth. Dove field management and maintenance continued to keep staff busy across the unit as fences are checked daily, herbicide and fertilizer are applied, and cultivating is done. Donnelley hosted Camp Wildwood. A tour of Bear Island and Donnelley was given to a graduate level class from Clemson University to demonstrate management techniques of upland and wetland habitats alike. All deer tag applications were reviewed and processed for Colleton and Dorchester counties. Quail routes were run within the unit. There was a minimum of 12,944 visitors for the month in Unit 4-C.

Bear Island WMA: Dike maintenance entailed continuing the topping around Minkey impoundment (1,740 linear feet). Miscellaneous eroded or worn spots on dikes are also being addressed by staff. Previously topped dikes that have dried were rotovated (3,300 linear feet) to improve travel by truck. Garlon 3A is being applied as needed anywhere that woody vegetation is emerging along dikes, roads and field edges. Approximately 26 miles of dikes were bush hogged. Agriculturally, nitrogen and herbicide were applied to corn. Rice was planted as an additional attractant for duck season. The clover and aeschynomene patches were high mowed as needed to control sesbania. Ground's maintenance included mowing common areas and around dwellings. Structures, trunks, gates, and signs have grass and weed control through an as needed application of herbicide. Our summer intern, Hannah Brown, took charge of dove banding this month and currently has banded 45 birds. Duck banding also began this month and between airboat and rocket net methods 24 Mottled ducks, 23 Wood ducks, and 10 Black bellies were banded. Miscellaneous jobs addressed during the month include, repaired broken cables on track hoe mats, repaired boomless sprayer hoses, airboat, and pickup oil changes. Two staff members attended Chainsaw safety class. Construction/maintenance technician Armstrong finished replacing doors and windows on a staff house. Wrote up scope of work paperwork for repairs to Donnelley managers house. Repairs and maintenance were done on his truck and traveling shop trailer. With a new budget out, paperwork for this year's projects is being worked on.

Technician Armstrong continuously orchestrates with contractors and completes paperwork for present and future projects.

Botany Bay Plantation WMA: Staff continued work in dove fields by spraying wheat strips, keeping up with electric fences and removing temporary electric fence. Staff mowed all roads. Staff graded the main road and tour route. Volunteer work included mowing the property as well as pulling up old shrubs around the Big House. Volunteers planted pollinator flowers around bird feeders. Volunteers also bush hogged roads and repaired dove field fences. July was filled with volunteer training, biodiscovery and we even have a volunteer appreciation boat ride. There are 339 turtle nests on Botany Bay as of July 29. Volunteer hours= 478 regular volunteer hours + 102 turtle hours for a total of 580 hours. There were 12,944 visitors with 3,747 vehicles. There were 6 horseback riding parties with 17 riders.

Donnelley WMA: Agriculturally, sunflower maintenance kept us busy. Applications of herbicide, nitrogen, and Des-x were conducted. Additionally, some areas were cultivated. The electric fence continues to be sprayed and checked for proper operation. In addition to keeping electric fence maintained to aid in depredation we successfully trapped 7 pigs. Dike and impoundment maintenance included applying Garlon 3A along the run around dike where previously we have removed overgrowth by mechanical means. A couple of violent thunderstorms caused us to need to clear some roads and gather up debris blown around the lodge yard. Ground's maintenance included mowing common areas and around dwellings. Structures, trunks, gates, and signs have grass and weed control through an as needed application of herbicide. In preparation for the upcoming deer season, we added a gate to the rice field end of Ball bank road. Intentions are to allow hunters better access in this area without excessive walking. Miscellaneous jobs addressed during the month include, serviced the John Deere gator and John Deere 5100, installed small fans on dozer to help with heat and bugs, replaced blades on 3210 bush hog, tire repair on bush hog, lawnmower, and backhoe, installed water filters on shop water pump and hauled a truck to STYX.

Edisto River WMA: Staff hauled the backhoe to ERWMA where the road and a pipe were blown out by flooding. The area was repaired and any other pipes around the property that needed cleaning out were addressed. We also drove the motor grader to ERWMA and graded all roads.

GIS/GPS/Miscellaneous: Assistance was provided with generating two map inserts for an updated management plan document for Crosby Oxypolis Heritage Preserve. Assistance was provided with mapping of reported banding and harvest locations of waterfowl from season 2020-2021. Worked with the UAV troubleshooting flight issues. The UAV was shipped out for servicing. Assistance was provided with water level monitoring at Dungannon HP/WMA ahead of a rain event and tropical storm Elsa. Miscellaneous supplies were ordered and picked up. The kiosk supplies at Edisto River WMA were monitored. Assisted with kiosk monitoring at Donnelley WMA. The Fleet Safety Driver Training 4-hour Certification class was attended.

Unit 4D: Beaufort, Hampton & Jasper

Significant time was spent doing grounds maintenance and mowing facilities around the Webb Center and working on road maintenance. Staff spent much of the month preparing and installing deer stands for the Webb draw hunts. Staff spent a substantial amount of time baiting and banding mourning doves, wood ducks, and black-bellied whistling ducks. Webb personnel participated in summer turkey and quail brood surveys. Webb staff and facilities hosted 3 meetings. 79 non-hunting users signed in to the 3 WMAs during the month with activities including: scouting for hunting, birding, wildlife viewing, archery range, fishing, paddling, and photography. Routine administrative and management duties were conducted within the unit. Biologist Atkinson made visits to all properties within the unit to assess habitat conditions and other management activities and worked on procuring bids and writing specifications for multiple projects for the unit. Completed first draft of the Webb WMA management plan, edited DQP applications and attended a conference call to discuss pollinator project. Atkinson and Biologist Moss attended the Public Meeting for Sunday Hunting on WMAs in Columbia. Moss attended the

July Lunch & Learn. Moss, Technicians Bland, Tant, Wargo, Klinedinst, Pollock, and Klecan attended 4-H Shotgun Instructor Training at the Wateree Shooting Range. Moss, Bland, and Tant attended Virtual Longleaf Academy: Herbicides & Longleaf. Staff trapped and successfully banded 10 wood ducks and 4 black-bellied whistling ducks. Wargo banded 47 doves. Webb staff & facilities hosted 3 meetings: DNR Intern Field Day (1 day, 8 attendees), Clemson Field Tour (1 days, 15 attendees), and Camp Wildwood III (3 days, 24 attendees). Lower Coastal Alligator activity for the month: issued 10 commercial permits with 62 tags, issued 4 individual permits with 5 tags, distributed 17 alligator signs, and received 23 nuisance calls. Monthly Totals: 79 Non-Consumptive WMA users, 279 range users, 47 other users (meetings/trainings/organized groups and events). Grand total: 405

Habitat management: Staff continued with dove field maintenance. Staff maintained 3 bait sites for feral hog trapping. Significant time was spent baiting, trapping, and banding mourning doves, and ducks. Staff spent time spraying bicolor patches around wildlife openings. Staff wrapped up RCW monitoring with 5 clusters monitored in July.

Facilities & Infrastructure Maintenance: Staff spent significant time preparing deer stands for upcoming draw deer hunts in the fall. Staff replaced 2 deer stands. 29 miles of roads were mowed and an additional 31 miles were opened with the sidearm mower. Staff spent time cleaning out and organizing sheds on property. Staff hauled 7 loads of gravel for road maintenance. Staff spent significant time doing grounds maintenance which included trimming trees, mowing grass, and blowing off all structures. Staff spent time checking the canoe trail. Staff conducted regular range maintenance at Palachuola WMA.

Equipment maintenance: Staff sent the Honda Pioneer off for repair. Staff spent time repairing the John Deere rotary mower. Staff spent time on general equipment maintenance & repairs.

Upper Coastal Waterfowl Project

Santee Coastal Reserve WMA

Upland: The Avenue was raked for pine straw and then graded. The Main office lawns and several roadsides were mowed. The shop yard was re-organized to ensure that most of the equipment is stored under a roof. Old tires were disposed of. The weather station was string trimmed. Doves banding sites were disced and repeatedly baited. So far, 25 doves have been banded. A new trunk for Murphy Island was built.

The Cape: All dikes were mowed. Water levels were monitored, and adjustments were made, as necessary. Salinities and water temperatures were measured and documented.

Murphy Island: The long reach excavator was barged to Murphy in preparation of setting a new trunk in the Thompson Creek impoundment. Materials were staged on the barge for new trunk installation. Water levels were monitored, and adjustments were made, as necessary. Salinities and water temperatures were measured and documented.

Cedar Island: A trunk, lumber and equipment was barged to Cedar. A trunk was installed on the South Santee River side of the Ford impoundment. The dike between the newly installed and decommissioned trunk was re-topped at a length of 0.5 miles. Canals were cleaned out and connected for better boat access and water flow. The amphibious long reach excavator was then moved to a new location on Cedar to repair a gangway to the floating dock. The gangway was severely damaged during tropical storm Elsa and had slipped off the floating dock. The gangway was taken off and barged back to the mainland where a welder repaired the damage. The amphibious excavator was refueled. A tractor was barged to Cedar and all dikes were mowed. Water levels were monitored, and adjustments were made, as necessary. Salinities and water temperatures were measured and documented.

Repairs: Two boat trailers were repaired. Two four wheelers were repaired. Two transfer tanks were repaired.

Other Activities: Quail survey routes were completed. Several technicians attended a chainsaw safety class.

Santee Delta WMA

A tractor and a batwing mower were taken to the Delta WMAs. Dikes were mowed on the East and West side. Water levels were checked and monitored. Delta West gate damage was assessed. Deltas were checked for storm damage.

Samworth WMA

This month considerable effort was focused on retopping with the amphibious excavator and a rental LR excavator. The amphibious excavator continues retopping on Rabbit Island (1,195 LF). The rental LR excavator has initiated phase two of a retopping project on Backfield (530 LF). It took considerable time to get the rental excavator to the area to begin retopping as the machine had to be matted approximately 0.6 mile to where the new retopping began. The Marsh Master mowed 14 acres of field bed this month in the Big Carr Impoundment and 4 miles of dikes were mowed on the Carr Complex. Approximately 12 acres of white marsh was sprayed on Big Carr as part of a large white marsh control effort under way in that impoundment. Numerous trips were made to refuel excavators and the Marsh Masters. Three wood duck and dove bait sites for banding were maintained throughout the month on Samworth WMA and private properties.

Repairs: A herbicide sprayer for the Marsh Runner was assembled and pressure issues were investigated. Herbicide rig was swapped between equipment and a boomless sprayer system was installed on a Marsh Master. A radiator line was replaced in the field on an overheated Marsh Master, however engine issues persisted, and the machine was towed from the field and barged back to the shop for further repairs. A boat was dropped off for repairs.

Other Activities: Two technicians received training on how to retop perimeter dikes with a long reach excavator. One new technician received training on how to operate and mow with the Marsh Master.

Habitat Report: Habitat conditions continue to look promising for the upcoming waterfowl season. Rabbit Island, Pullfare, Mill Pond, and Cane Patch impoundments show exceptional growth of sedges, grasses, and smartweeds. Select areas of Middle Carr and Little Carr also show abundant growth of beneficial grasses and smartweeds.

Heritage Preserves

The Heritage Preserve Biologist position became vacant as Biologist Fowler's last day with SCDNR was July 16th. Ample time was spent preparing and planning with upper management and upper-level staff.

Cartwheel Bay HP: The 16 Venus flytraps (VFT) were monitored. Biologist Fowler collected VFT seeds on the private parcel near Cartwheel Bay HP. Those seeds were delivered to UNC Chapel Hill to Dr. Randall for SCDNR/USDA. Property check was conducted, and litter was removed.

Crosby Oxypolis HP: Management plan was updated and submitted.

Dungannon HP: The 2955 tractor was mobilized back to the shop in Charleston after determining repairs were not completed. The parking area was cleaned of litter.

Lewis Ocean Bay HP: Staff met a Coastal Carolina grad student onsite and assisted with a onetime collection of VFT roots, per permit. Intern Shankle checked snake tins on preserve 3 times and assisted with repainting RCW

trees. Shankle also tracked radio transmitted pine snakes with another Coastal Carolina grad student for one day. Concrete monuments at encroachment site on the preserve's northern boundary line were marked with boundary paint. Staff attempted to continue identifying the boundary adjoining the adjacent proposed development site. A surveyor has been requested to assist in-house. Staff met with Santee Cooper representatives to discuss BMPs for rare plants and wildlife. Technician Bell mobilized the 5100M tractor to shop for repairs. Summer Interns sanded and painted 10 gates. Other repairs included PTO shaft on rear mount side mower and fuel filters changed on the 5525 JD tractor and new blades for side mower purchased. Roads were graded and mowed throughout preserve. Roads were also side mowed throughout preserve. Litter pickup was carried out.

Little Pee Dee: The northern end of the 917 tract was posted by river.

Tillman Sand Ridge: Technician Kalinowsky performed routine property checks and litter patrol.

Victoria Bluff: A contractor was called upon to remove a fallen tree in neighbor's yards due to Tropical Storm Elsa. Technician Kalinowsky performed routine property checks and litter patrol.

Waccamaw River: Biologist Brantley escorted General Counsel Whitehead and Assistant Regional Coordinator Hook on the Ellis Tract to research an ongoing boundary issue. In addition, a site visit was conducted to the Willow Bend (assess locations) and River Oaks property (structures and access). The adjoining Gilmore Property was also visited but determined DNR would pass on pursuing it as a possible acquisition. Biologist Fowler and Intern Shankle kayaked along the Waccamaw River trying to identify rare plants, but recent rainfall caused the water level to rise.

Miscellaneous: External applicants for the vacant Technician II position were interviewed and SCDNR Technician Ryan Tyler was chosen to fill the vacancy. Biologist Fowler met with upper-level staff and HP staff multiple occasions for planning ahead and close out procedures. Fowler attended the Upper Waccamaw Task Force Meeting. Fowler also cleaned and organized computer files and work truck prior to his departure. All computer files were backed up on an external hard drive. A large rock requisition was prepared and submitted. The FY'23 budget needs was submitted. Intern Shankle attended a field day at Webb WMA and assisted Unit 4A with dove banding. Technician Bell participated in the Long Leaf Alliance Academy. Gates that were fabricated were picked up. Biologist Brantley is assisting with covering day to day duties during HP Biologist vacancy. Staff collectively made 44 site visits to 6 preserves this month including Tillman Sand Ridge, Dungannon, Lewis Ocean Bay, Waccamaw River, Cartwheel Bay and Victoria Bluff HPs.

Tom Yawkey Wildlife Center

Habitat & Infrastructure Management: Water quality and levels were monitored for waterfowl food production. Pre-baiting was conducted at several locations to facilitate capture and banding of waterfowl. Work continued on the Lower Reserve managed wetland project where 60 feet of dike were repaired. Staff spent considerable time conducting routine maintenance on the 200-foot Miss Ellie swing bridge. The decks, sides and compartments were prepped and painted. Ramps and winch cables were inspected and serviced. Lights and other safety gear were inspected. Ten miles of roads were graded and shaped, 6 miles of dikes were side-cut, and 50 miles of dike and roads were mowed. Staff attended several training classes this month including CPR-First Aid certification, Boater Safety, Chainsaw Safety, and Defensive Driving. One staff member successfully completed the requirements to renew his US Coast Guard Captains License. Two staff members completed required DLEO training.

Education & Outreach: The education program conducted 9 socially distanced programs for 134 participants. Three interns from Horry-Georgetown Technical College completed 225 hours of work this month and volunteers logged 32 hours. One off-site presentation was conducted at Cypress Gardens for 40 attendees. Staff hosted documentary filmmaker Jon S. Goff and his production team with filming at several locations on the Tom Yawkey Wildlife Center. This project is funded by PBS and will document the difficulties of the traditional South Carolina

Gullah culture surviving in a changing world. Staff worked closely with SCDNR attorney Van Whitehead and the Yawkey Foundation to facilitate the final steps of the 256-acre Blackout tract donation on Cat Island. We also developed and implemented an agreement to facilitate the transfer of over 700 historic documents from the Yawkey Foundation archives to SCDNR. Project Leader Jamie Dozier conducted several meetings with Clemson University Forestry and Environmental Conservation Chair Dr. Todd Petty concerning a potential new internship program and the selection process for the new Director of the Baruch Institute of Coastal Ecology and Forestry Science in Georgetown.

Research and Survey: Staff conducted and assisted with numerous research and survey projects during the month. The monthly waterfowl and wading bird point counts detected 313 waterfowl and 218 wading birds. A route for the statewide bobwhite quail whistling call count census was conducted. The survey route on Cat Island detected 16 individual calling males calling 143 times. SCDNR Biologist Spencer Weitzel spent several days working on the black rail project on Cat and South Islands. Remote cameras were placed at key locations and a solar powered water pump was installed to investigate the potential for creating new rail habitat. Staff assisted with two black rail survey transects. Clemson University graduate student Mikayla Thistle continued investigating Bachman's sparrow nesting ecology and habitat usage in the longleaf pine stands. Staff assisted University of Georgia graduate student Samantha Bock with two mark-recapture sessions of hatchling alligators on Cat Island. These animals are part of a long-term survival study and were marked out of the nest last fall. Tom Yawkey Wildlife Center hosted visiting wildlife biologist and toxicologist, Dr. Scott McMurry (Department of Integrative Biology, Oklahoma State University) for a tour and discussion about the YWC/Clemson Baruch Institute of Coastal Ecology and Forest Science wildlife research program. Archaeologists and summer interns with SCDNR Heritage Trust Program continue to work on-site daily cataloguing the artifacts recovered from several research projects and the Hume site excavations. YWC research was featured in two peer reviewed scientific publications this month. The publications are entitled "*Intrinsic and extrinsic factors interact during development to influence telomere length in a long-lived reptile*" in the journal of Molecular Ecology, and "*Incubation temperature and maternal resource provisioning, but not contaminant exposure, shape hatchling phenotypes in a species with temperature dependent sex determination*" in the Biological Bulletin journal. DNR staff located 140 nests on South Island and 19 on Sand Island. Fourteen nests were relocated. Volunteers located 70 nests on North Island. All nests were screened to help deter predation. The total nests to date at YWC are 572. Hatching is beginning to occur from nests laid in May. Twelve nests hatched this month.

Statewide Forester

Continued working with the three local Longleaf Implementation Teams (LIT's) in SC, the State Longleaf Coordination Team, and the South Carolina Prescribed Fire Council (SCPFC). Continued various duties as SEAFWA representative to the regional Longleaf Partnership Council (LPC). Continued collaboration with Forest Stewards Guild, USFWS, and Clemson University (Dr. Stephen Peairs) on hardwood management demonstration/outreach area grants, including timber harvest planning at Hamilton Ridge WMA. Continued collaboration with USFS on Good Neighbor Authority project on the Enoree RD of the Sumter NF. Held timber bid opening (579 acres of loblolly pine thinnings), and awarded contract to Charles K. Doolittle, Inc. out of Newberry, SC. Bid out and contracted herbicide work for summer/fall season (site prep at McBee, release and wisteria at Belfast). Planning release work at Cliff Pitts. Forestry mulching on Mason WMA, Webb WC, and Hamilton Ridge WMA scheduled to commence soon. Land clearing at Love Farms for dove field and shooting complex continued throughout the month, and made substantial progress. Received bids and contracted wetland restoration work on Webb WC (hand and mechanical brush/tree removal). Finalized contracting for brood field clearing project at McBee WMA, (early August start). Visited Parker Annex with Coordinator Simmons to discuss Wateree WMA archaeology surveys and mitigation work with Archaeology staff. Visited Jocassee Gorges with Biologist Swaynham and other staff to assess timber management needs. Attended virtual AAA Driving Course. Continued

working with Milliken Forestry and DNR staff re: ongoing GIS timber stand database additions. Monitored and administered ongoing timber harvesting operations. Assisted Chief Dukes and Asst. Chiefs with timber budgets.

Harvesting operations remain suspended at Hamilton Ridge WMA (618 acres of plantation loblolly second thinning and 77 acres of clearcut), Woodbury WMA (792 acres of plantation loblolly first thinning and 28 acres of second thinning), but are very close to completion. Harvesting completed at Edisto River WMA (bird dog training area, 73 acres of planted loblolly second thins), close-out in progress. Harvesting operations on Bonneau Ferry WMA (784 acres of natural loblolly first thinning, 160 acres of planted loblolly and longleaf first and second thinning, and 80 acres of natural loblolly clearcut) are schedule to resume soon. Harvesting operations on two timber sales at Hamilton Ridge WMA (521 and 504 acres of plantation loblolly first thinning) are also scheduled to resume soon. Harvesting operations at McBee WMA (426 acres planted loblolly marked thinnings, 221 acres of operator-select planted loblolly, and 75 acres of clearcut for longleaf restoration) completed, close-out in progress. Harvesting operations at Palachucola WMA (270 acres planted loblolly and slash marked thinnings and 138 acres clearcut for longleaf restoration) remain temporarily suspended. Harvesting operations at the Thurmond Tract WMA (116 acres of planted loblolly first thinning) completed, close-out in progress. Contract expired and not renewed on timber sale at Jocassee Gorges (40 acres of white pine removal). Harvesting operations remain suspended at James L. Mason WMA (408 acres natural loblolly marked thinnings). Harvesting operations at the South Heritage Tract (276 acres planted loblolly second thins) resumed. Harvesting operations at Draper WMA (60 acres of oak woodland thinning, 57 acres of planted loblolly first thins) have yet to commence. Recently awarded timber sale at Belfast WMA (591 acres planted loblolly second/third thins) has yet to begin. Recently awarded timber sale at Love Farms (64.5 acres planted loblolly pine for dove field expansion and shooting complex, 7.6 acres of thinning) has been completed, except for a few acres. Recently awarded timber sale at Santee Coastal Reserve timber sale (338 acres of marked natural mixed pine thinning, 81 acres of natural mixed pine clearcut) has yet to commence. Recently awarded timber sale at Woodbury WMA (1,132 acres planted longleaf and loblolly) has yet to commence. Continued working with staff on planning/preparation of numerous upcoming sales.

Law Enforcement

DIVISION SUMMARY – COL CHISOLM FRAMPTON

Officers issued 637 summonses and 2479 warnings with 759 cases clearing court with fines totaling \$104,956.25 being assessed. A total of 4720 hours were spent on boating patrols resulting in 7092 boats being checked. Officers spent 371 hours on Homeland Security, 694 hours on litter patrols and a total of 234 hours were spent patrolling Heritage Trust Preserve properties. Officers also spent 1828 hours on night patrols. A total of 157 JEA hours were worked.

SEAHAWK – FSGT GREGG BROWN

- MASFO – Wando Terminal – June 16, 2021 – 0900-1300 – 12 agencies with 27 personnel were represented. 39 vehicles - were stopped, visually scanned and several physically searched. 46 people were run through the databases for warrants/DMV status. 1 subject came back with active warrants for PPP. Subject detained for PPP to receive/process. 2 Subjects had active warrants out of GA with no extradition. During the operation, the following occurred: 4 Warnings for equipment violations and no DL in possession. 1- Handgun was discovered determined not stolen. Subject cleared and handgun returned off port property with a warning by SC Port LE. USCG Prevention inspected 26 Containers and 0 were placed on hold. Federal Motor Carriers completed 2 Level 2 Hazmat inspections. 1 driver was issued a "14-hour rule violation" for being over hours. 40 TWIC cards were scanned through the mobile app and TSA databases. All came back clear. 39 trucks/cars were scanned with PRD's and radiation detection equipment with 0 alerts.
- Theft of a Dirt Bike – (Berkeley Co SO) – IOC analysts were sent a photo of a subject that had recently stolen a dirt bike. A false name and Facebook profile picture was provided. IOC analysts were able to take a Facebook photo and found a possible match. ID was confirmed by Berkeley County SO and charges were made.
- Homicide – (Florence County SO) – IOC analysts were sent photos of a possible vehicle involved in a homicide. IOC analysts were able to identify the make and model and create a possible suspect list. One vehicle was found to have the same stickers on the vehicle in question. Information was sent back to Florence County SO and charges are pending.

K9 TEAM – LTC JAMIE LANDRUM

K9 Team – LT Brady Branham

- K9 Teams have been very busy during the month of June assisting other agencies with calls ranging from tracking wanted suspects to article searches for evidence.
- The K9 Teams were called out 17 times during the month of June. K9's were deployed 15 times in the month. 3 were DNR related callouts resulting in 4 cases. 14 were other agency assists.
- K9 Lola located a handgun thrown from a vehicle that was used in an officer involved shooting in Marlboro County.
- Some K9 Teams have also assisted this month with Wildlife Basic helping the new officers understand the abilities and benefits of having and using the K9's.

Community Relations, Officer Wellness, & Diversity Recruitment – CPT Henry Stackhouse

- Weapons Training and Certifications with Region 4 Non-Dept. DLEO's at Twin Ponds Rifle Range.
- Attended Fusion Liaison training class with SLED at Charleston Police Dept.
- Attended SCLEAP meeting via Zoom and CJIS training at Ft Johnson, also went to the Region 4 regional meeting.

INVESTIGATIONS / REGION 4 – MAJ GARY SULLIVAN

Investigations – MAJ Sullivan/ LT Tony Spires

Thank you to everyone for their continued hard work!

Investigators issued 4 summons and 29 warnings, with 4 cases cleared. Investigators assisted with 15 cases, inspected 156 boats, 1 motor, and accrued 253 boating hours. Investigators conducted 52 night patrol hours, 31 search and rescue hours, and 144 boating accident investigations hours. Section Investigators attended or assisted with 3 hours of training this month.

Aids to Navigation/Dive Team

- Aids to Navigation received 30 maintenance requests from the Charleston Office.
- The investigations office received 8 zoning requests this month.

- There were 331 hours of Aids to Navigation work.
- There were 2 dive assignment this month.
- There were 57 Marine Event Permits approved and the year to date total is 393.

Investigations/Marine Theft

- The investigations office received and processed 42 boating accident reports bringing the year to date total to 80.
- We had 2 boating fatalities this month bringing us to 9 years to date.
- Investigators conducted 134 Marine Theft Investigations hours.

Region 4 – CPT Michael Paul Thomas

Officers issued 216 summonses and 819 warnings. 285 cases cleared court, with fines of \$39,060 being assessed. Officers checked 1 hunter and 3,563 fishermen, with a total of 1,487 hours spent on boating patrols resulting in 2,671 boats inspected. Officers spent 114 hours on Homeland Security, and 221 hours on litter patrols. A total of 142 hours were spent on patrol of the Heritage Trust Preserve properties. A total of 627 hours were spent on night patrols. Officers gave a total of 30 public presentations. Officers also spent 157 hours on JEA patrols. There were 107 boating accident investigation hours conducted. 10 BUI screenings were conducted, with 5 BUI cases written.

Captain's Spotlight

After a week-long investigation of tampering with commercial devices by PFC Wells, Unit 4H placed decoy crab pots and monitored them from covert positions. Officers Wells, DuPree, Moskos, and Moore watched the subjects remove the decoy pots, steal the crabs, and throw the pots in the marsh. The 2 subjects were charged with 4 counts of tampering with commercial devices and 3 counts of undersized flounder that they were in possession of at the time. Both subjects were arrested and booked at Beaufort County Detention Center.

Unit 4A (Horry) FSGT Kevin Pardue

- LCPL Burton and LCPL Hering made 3 BUI cases in the month of June.
- PFC Buckhannon and FSGT Pardue charged an individual harvesting shellfish in Cherry Grove in a closed area during closed season. Subject was in possession of 84 clams and one 8-inch flounder. The subject was issued multiple summons and several warnings.
- Unit Officers worked Conway Riverfest making 2 BUI cases as well as issuing numerous violations.

Unit 4B (Georgetown) FSGT Ryan Williams

- FSGT Williams, LCPL Graham, and PFC Dozier charged a subject with littering/ dumping at a construction site in a wooded area.
- CO Hamblen and FSGT Williams made a BUI case on the Waccamaw River as well as 7 Underage Possession of Beer charges in the same incident.
- CO Hamblen caught a subject taking saltwater gamefish illegally with a net.

Unit 4C (Charleston North) FSGT Huger McClellan

- LCPL Duncan and CO Cato caught a Commercial Snapper Grouper Vessel with 106 pounds of Red Snapper during closed season.
- LCPL Duncan caught 3 fishermen with 4 Red Snapper during closed season.
- CO Cato caught an individual with 2 undersized flounder while working flounder gigging.

Unit 4D (Berkeley) FSGT Brian Crawford

- PFC Angotti-Smith and FSGT Crawford wrote 2 cases for over the daily limit Black Tip Sharks with all three being undersized while patrolling the Cooper River near Bushy Park Boat Landing.
- PFC Angotti-Smith and FSGT Crawford investigated a call of a man shooting geese. It revealed that the subject did have a permit but was shooting the geese on someone else's property. The subject was issued one citation and numerous warnings and his permit revoked.
- PFC Angotti-Smith and PFC Bond worked crab pots in the upper Cooper River following numerous complaints. Several citations and warnings were issued for insufficient PFD's, failure to register a vessel, no commercial license, unattended gear, no commercial numbers on the vessel and undersized blue crabs.

Unit 4E (Charleston South) FSGT Greg Garner

- LCPL Ladue issued several more citations in reference to the ongoing derelict boat investigation, also clearing the way for two more vessels to be removed from the waterway.
- 4E officers worked new hire training in Clemson, CBC Governors Cup Bill fishing Tournament, late affidavit reports, JEA patrols, multiple boating accidents, dive training, illegal dump sites, and commercial crab pot tampering.

Unit 4F (Dorchester/ Colleton) FSGT JP Jones

- PFC Riley and SGT Gantt stopped a vessel in the Ashley River for plowing through a no wake zone. Upon investigation, the operator was charged with BUI by PFC Riley, as well as wake zone and registration violations.
- PFC Woodward assisted Jasper County units along with Captain Thomas locating a marijuana grow. The grow is currently under investigation.

- LCPL DeLoach and FSGT Jones investigated an overturned shrimp boat at Otter Island. The accident happened the previous day. There were two subjects on the vessel, and one subject was missing. LCPL DeLoach and FSGT Jones located the other subject on Otter Island.
- LCPL DeLoach made a case for prohibited sandbar sharks at Edisto Beach.

Unit 4G (Beaufort) FSGT Adam Henderson

- Tips received lead CO Cooler to place cameras on an illegal animal carcass dump site. Photos were used to identify a local nuisance wildlife control operator. He was charged for unlawful dumping.
- As part of an ongoing investigation CO Cooler observed food trucks advertising local flounder tacos. The owner was not able to provide bills of lading for the flounder he had purchased on at least 3 separate occasions from a local fisherman.

Unit 4H (Jasper/ Hampton) FSGT Earl Pope

- PFC Moskos apprehended 2 different boats setting limb lines during day light hours while on patrol in the Savannah River. Both boats had gamefish tackle on board, license violations, and numerous safety equipment violations.

FIELD OPERATIONS REGIONS 1-3 – MAJ Mike Isaacs

Region 1 – CPT DJ Riley

Officers issued 122 summons and 754 warnings with 193 cases clearing court with fines totaling \$29,762.00 being assessed. Officers checked 1640 fishermen and a total of 1086 hours were spent on boating patrols resulting in 1587 boaters checked. Officers gave a total of 13 public presentations. Officers spent 151 hours on Homeland Security, 290 hours on litter patrols. A total of 19 hours was spent patrolling Heritage Trust Preserve properties. A total of 58 hours was spent patrolling Jocassee Gorges 3 warnings being issued. Officers spent 406 hours on night patrols. There was 1 boating incident and 3 drownings.

Captain's Spotlight:

LCPL Garner, PFC's Lindsey and Turner responded to a boating accident on Lake Greenwood involving a Jon-boat being struck by another vessel. After impact, the driver was ejected, and the boat began to go in circles. Garner and Lindsey then pulled alongside the boat allowing Garner to jump in and gain control of the vessel. The ejected operator was ok and a BAR was completed.

Unit 1A (Oconee / Pickens) FSGT Ron Hedden

- All officers assisted in scenarios with Wildlife Basic Training this month for the new hires in the Fants Grove WMA.
- LCPL Brooking received a call through Pickens County dispatch of subjects entering Glassy Mtn. Heritage Preserve after hours. LCPL Brooking responded and located the subjects who had been spray painting areas inside the preserve and issued multiple summons.

Unit 1 B (Greenville / Spartanburg) FSGT Joe Cartee

- LCPL's Miller and Holliday spent 19 hours assisting the Spartanburg County Sheriff's office with 3 separate events. Two swimming fatalities and search of a murder weapon.
- LCPL Tatum cited one fisherman for over the limit trout on the Saluda River in Northern Greenville County

Unit 1C (Cherokee / Union) FSGT John McCraw

- Officer Gardner attended a 4 day less lethal ICP instructor course at the SCCJA, receiving certification as a Safariland Training Instructor.
- LCPL Woodlief assisted the Clemson Extension and Cherokee 4H Club with the events at London Creek WMA in Cherokee County.

Unit 1D (Greenwood / Laurens) FSGT Travis Dudley

- After conducting a stop on a subject operating a PWC on Lake Greenwood, a hit came back that the subject was a runaway juvenile from foster care. PFC's Turner and Lindsey, and LCPL Garner stood by for several hours until arrangements were made with DSS to have the subject picked up and safely returned.

Unit 1E (Abbeville / Anderson) FSGT Rhett Barwick

- Unit had 1 drowning, a subject fell off a dock at Portman Marina and drowned. Body was recovered in several hours.
- During training scenarios, with the new hire class, they came across several subjects who took off running in the woods. LCPL Moon and K9 Blade were able to locate the two suspects who ran from the scene. 4 Subjects were charged with catching Game Fish with a cast net as well as undersize Crappie in possession on Fants Grove WMA.

Unit 1F (Edgefield / McCormick) FSGT Michael Davis

- LCPL Harvey charged an individual in McCormick for unlawful possession of alligator parts. He contacted Aiken officers with info on the case which resulted in them making two more charges for alligator out of season and unlawful possession.
- PFC Jones charged two individuals for jugging after hours.

Region 2 – CPT Matt McCaskill

Officers issued 190 summons and 423 warnings with 152 cases clearing court with fines of \$21,731.75 being assessed. Officers checked 3 hunters and 1267 fishermen, and a total of 913 hours were spent on boating patrols resulting in 1179 boats inspected. Officers spent 47 hours on Homeland Security and 67 hours on litter patrols, and a total of 63 hours were spent patrolling Heritage Trust Preserve properties. Officers gave a total of 26 public presentations. Officers also spent 408 hours on night patrols. There was 1 boating accident, 1 drowning, 3 BUI screenings, and 2 BUI's.

Captain's Spotlight

On June 29th, Officers Norris, Gaskins and DNR Investigators served a search warrant on a residence in reference to the illegal possession of deer. Upon service of the warrant, officers found several hundred squirrels of different species that included nutria, opossums, armadillos, whitetail deer, and various domesticated animals. Most of the animals were living in inhumane conditions. Several other officers and biologist, along with Lee County Sheriff's Office and additional wildlife rehabilitators, were requested to assist in the assessment and relocations of all the animals. 14 DNR charges were issued, along with 2 counts of ill treatment of animals, 5 counts of possession of narcotics, and 2 zoning violations from county authorities.

Unit 2A (Chester, York) FSGT Jason Plemmons

- Officer Oliver obtained game camera pictures of a trespasser on a private hunt club in Chester County. He was then able to identify the subject in the picture. The same subject was caught 1 year earlier for trespass to fish on this same property. Officers Oliver and Ruff interviewed the subject and confronted him with the evidence. The subject confessed to trespassing to hunt and was arrested for trespassing to hunt, hunting without a license, possession of marijuana, and an arrest warrant was obtained for possession of methamphetamine.
- Officers Owen and Santangelo caught a subject on Lake Wylie using a cast net to catch game fish. The subject was charged for taking game fish with a non-game device.

Unit 2B (Fairfield, Lancaster) FSGT Will Coleman

- Officers Stewart and Kimbrell made 2 cases for fishing under suspension and 2 cases for possession of a license while suspended on Cedar Creek.
- Officers Stewart and Shannon each made a BUI case on Lake Wateree.

Unit 2C (Kershaw, Lee) FSGT JC Hough

- Officers Poeta, Bessinger, and FSGT Hough responded to a nest of juvenile hawks being shot. Upon arrival, they found a dead juvenile Cooper's hawk. One summons was issued.
- Officer Norris observed a vehicle shining in Lee County. After initiating a traffic stop, 3 loaded rifles and open containers were discovered. Two summonses were issued for night hunting.

Unit 2D (Marlboro, Chesterfield, Dillon) FSGT John Hillian

- Unit officers executed a search warrant on an animal rehabilitator in Chesterfield County. The search resulted in the removal of 38 animals. Officer Gallien wrote 10 cases for animal cruelty to raccoons.
- Officer Jacobs wrote 3 summonses and 17 warnings while working boating and fishing activity in Chesterfield Co.

Unit 2E (Florence, Darlington) FSGT John A Perry

- Officer Gaskins participated in a Clay Sporting Event, whereas he represented Region 2 Unit E, "winning" a fishing trip and a plaque. Money raised at the event went to the SCWLEOA.

Unit 2F (Williamsburg, Marion) FSGT William Huggins

- Officer David Tanner made 1 case for set hook violation.
- Officer Brant Elliott made 3 cases for set hook violations.

Region 3 – LT Brian Corbett/ LT John Bedingfield

Officers issued 103 summons and 441 warnings with 114 cases clearing court with fines of \$14,402.50 being assessed. A total of 915 hours were spent on boating patrols resulting in 1386 boaters checked. Officers spent 59 hours on Homeland Security, 116 hours on litter patrols and a total of 10 hours were spent patrolling Heritage Trust Preserve properties. Officers gave a total of 10 public presentations. Officers also spent 335 hours on night patrols. There were 6 hours spent on boating accident investigations and 7 BUI's.

Captain's Spotlight

While checking boat ramps in Barnwell, CO Pierson observed a pontoon barge anchored on a creek adjacent to Steel Creek boat ramp. It was determined that the barge belonged to a river logging group out of Dorchester County. A check with the State Underwater Archeologist revealed that the owner did not have any current permits to remove historical sinker logs from any state waters. LCPL McDaniel made contact with the subjects in Aiken County pulling logs in the Savannah River. He observed divers working with no diver down flags. The subjects were advised that they needed the state permits and must have diver down flags out when diving. PFC Fralick and C/O Pierson began working surveillance on the subjects and observed them continuing to pull logs from state waters on multiple occasions and operate without the diver flags. Multiple warrants were obtained and both subjects were arrested.

Training – LT Rusty Monnet, SSGT Jeremy Cooper, SSGT Erik Martin, SSGT Raquel Salter

- Conducted Non-Departmental pistol qualifications at SCCJA.
- Conducted Patrol Rifle training for New Hires at Clinton Range.
- Conducted Wildlife Basic for New Hires in Columbia and Clemson.
- Hosted Defense Technologies Less Than Lethal Instructor Course at SCCJA with Kevin Johnson, Ezra Arnold, Trey Baker, George Caddell, JP Cooler, David Gaskins, Tanner Riley, and Brandon Gardner.
- Completed projects open for year end at Styx Range.

Homeland Security/EMD – LT Charlotte McKee

- Full Scale DPS Hurricane Exercise.
- Graduated FBI MPR training.
- Warrant meeting.
- Meeting and planning with procurement team.
- Alastar IAP Hurricane planning.
- End of fiscal year PO close outs and roll overs.
- OMO social media interviews.
- Supply job posting.
- Radio Room interviews.

Aviation – Chief Pilot Owen Barker

- 18 sorties for 46.7 flight hours
- SCDNR Biology Flights – 8.5 flight hours
- SCDNR Law Enforcement Flight – 8.3 flight hours
- SCDNR Training Flights – 8.5 flight hours
- SCEMD/SCHP Hurricane Evacuation FTX Flights (2) – 7.3 flight hours
- SLED/Colleton County SD Surveillance Flight (2)- 4.4 flight hours

Receiving– Laken Riddle Williams

- Continued moving new vehicles to Holly Hill for radio and light outfit.
- Working with various marinas to install boat and motors for the LE division.
- Conducted inventory of all assets on Styx Compound.
- Preparing and issuing out various vehicles and equipment divisions within the state agency.
- Prepping vehicles for TID and new hire class.
- Closed out PO's for fiscal year.
- Completed annual audit with SCDNR's auditor
- Squared away items in supply before transitioning into new position as Supply Manager II.
- Interviewed for the new Supply Manager I position

Communications – Toby Freeman

- Continued working on encrypted radio programs.
- Working on tower research and contracts.
- Annual inventory.
- New fiscal year contracts.

Radio Communications Center – SSGT Jason Smith

- Congrats to Dylan Barfield on his promotion to third shift supervisor
- Held meeting with Region Warrant officers to discuss warrant protocols.
- Worked with Licensing to get their users NCIC certified.
- Interviewed for new dispatchers.
- Calls for Service: Alligator Call-195, General Info-160, Injured Animal-147, Deer Depredation Permit-103
- Warrants: Entered: 0 Arrest/ 2 Bench Cleared: 0 Arrest/ 5 Bench
- Transmissions: 29,888: 800: 17,859 Phones: 9993 and VHF: 2,390

Law Enforcement

DIVISION SUMMARY – COL CHISOLM FRAMPTON

Officers issued 1,107 summonses and 4,063 warnings with 870 cases clearing court with fines totaling \$141,031.50 being assessed. A total of 8,056 hours were spent on boating patrols resulting in 12,901 boats being checked. Officers spent 470 hours on Homeland Security, 844 hours on litter patrols and a total of 276 hours were spent patrolling Heritage Trust Preserve properties. Officers also spent 2602.5 hours on night patrols. A total of 312 JEA hours were worked.

SEAHAWK – FSGT Gregg Brown

SeaHawk IOC Analysts assisted with 173 requests from 26 different agencies during the month of July 2021.

FSGT G. Brown assisted Region 4 over the 4th of July weekend with continued violations on Deveaux Bank Bird Nesting Sanctuary, primarily Dogs disrupting nests in closed areas. 6- Summons and 13- Warnings were written.

Presentation given on SEAHAWK UPDATE to Region 2 at region meeting.

Partial Tag/ALPR Successes:

- **Hit and Run Involving Death – (NCPD)** –IOC analysts were able to locate a possible vehicle match and sent it to the investigators. NCPD was able to confirm that the vehicle sent to them was the vehicle involved in the Hit and Run. NCPD was able to obtain a full confession from the owner’s son. Charges of Hit and Run involving death, and DUS 1 were made.
- **Homicide – (NCPD)** – IOC analysts were contacted by North Charleston PD in reference a Homicide investigation. IOC analysts were able to take the supplied photo from NCPD, run it through facial recognition, and locate a possible match. Charges made.

K9 TEAM – LTC JAMIE LANDRUM

K9 Team – LT Brady Branham

- K9 Teams were called out 16 times assisting other agencies during the month of July and K9’s were deployed 11 times in the month.
- Handlers Welch, Urquhart, and Earhart spent the last two weeks of the month in Colleton County training two new handlers and K9’s for the Sheriff’s Department for their UTAH Post Instructor Certifications.

Community Relations, Officer Wellness, & Diversity Recruitment – CPT Henry Stackhouse

- Crisis Management Briefing with Simpsonville City Police (Part 1 and 2).
- Attended 3-day PCIS-45 with SCLEAP in Lexington.

INVESTIGATIONS / REGION 4 – MAJ GARY SULLIVAN

Investigations – MAJ Sullivan/ LT Tony Spires

Thank you for the hard work put in on the three fatalities we’ve had this month!

Investigators issued 2 summons and 39 warnings, with 5 cases cleared. Investigators assisted with 3 cases, inspected 217 boats, 3 motors, and accrued 212 boating hours. Investigators conducted 44 night patrol hours, 98 search and rescue hours, and 178 boating accident investigations hours. Section Investigators attended or assisted with 32 hours of training this month.

Aids to Navigation/Dive Team

- Aids to Navigation received 13 maintenance requests from the Charleston Office.
- The investigations office received 3 zoning requests this month.
- There were 366 hours of Aids to Navigation work.
- There were 6 dive assignment this month.
- There were 31 Marine Event Permits approved and the year to date total is 424.

Investigations/Marine Theft

- The investigations office received and processed 47 boating accident reports bringing the year to date total to 127.
- We had 3 boating fatalities this month bringing us to 12 years to date.
- Investigators conducted 108 Marine Theft Investigations hours.

Region 4 – CPT Michael Paul Thomas

Officers issued 457 summonses and 1,397 warnings with 349 cases clearing court and fines of \$52,675 being assessed. There were 6 hunters, 3,883 fishermen, and 2,992 hours spent on boating patrols resulting in 5,347 boats inspected. Officers spent 114 hours on Homeland Security, 177 hours on litter patrols, 137 hours on patrol of the Heritage Trust Preserve properties, and

784 hours were spent on night patrols. Officers gave a total of 74 public presentations. Officers also spent 312 hours on JEA patrols. During the month there were 7 hunting accident investigation hours and 155 boating accident investigation hours conducted. 35 BUI screenings were conducted, with 22 BUI cases written.

Captain's Spotlight

An investigation by Unit 4G and the Covert Team that lasted several months resulted in the arrest of 3 subjects and 76 charges being made. The subjects were unlawfully gigging over the limit and undersize Flounder as well as other fin fish. The investigation led to the seizure of 42 fish in one night; 33 of which were undersize and 22 over the limit. Hundreds of violations have been discovered including multiple restaurants that were facilitating the illegal sale of saltwater fishery products. The investigation is still ongoing which may result in additional charges.

Unit 4A (Horry) FSGT Kevin Pardue

- CO Hemingway assisted by LCPL Burton made a BUI in Little River.
- LCPL Burton assisted by LCPL Hering, and PFC Buckhannon caught a NC charter vessel fishing in SC waters without an SC Charter Permit. LCPL Burton had known this Captain to charter without a SC Charter Vessel permit in the past.
- LCPL Hering and PFC Buckhannon worked a night hunting complaint based on info LCPL Burton had received concerning a known night hunter trophy hunting for bucks in velvet. 2 cases were made by the officers as a result.

Unit 4B (Georgetown) FSGT Ryan Williams

- Unit B combined made 5 BUI cases.
- LCPL Capps and LCPL Kaminskas caught a vessel coming from offshore with fillets onboard, resulting in 2 cases.
- LCPL Capps and DLEO Ammons caught a vessel in Murrells Inlet with King Mackerel in fillet form.
- PFC Dozier continued to work abandoned vessels in Georgetown Harbor.

Unit 4C (Charleston North) FSGT Huger McClellan

- LCPL Duncan and CO Cato wrote 25 tickets for undersized, oversize and over the limit of saltwater gamefish.
- Unit 4C made 4 BUI cases -Beckett 1, Gray 1 and Cato 2.
- PFC Beckett attended FTO training.

Unit 4D (Berkeley) FSGT Brian Crawford

- PFC Courtney Angotti-Smith wrote 4 BUI cases.
- PFC Bond wrote 2 BUI cases.
- PFC Ellis, FSGT Crawford and PFC Angotti-Smith responded to a boat accident in The Diversion Canal. The subject was extremely combative and was subsequently charged by PFC Angotti-Smith for BUI.

Unit 4E (Charleston South) FSGT Greg Garner

- LCPL Ladue was able to have two more derelict boats removed from Charleston waterways.
- LCPL Whaley took Congresswoman Nancy Mace, Director Robert Boyles, and a Corps of Engineers Representative to Crab Bank to view the upcoming renourishment project.
- Officers worked plain-clothes patrols of charter vessel confrontations with a homeowner. The investigation is on-going.

Unit 4F (Dorchester/ Colleton) FSGT JP Jones

- BSGT Richardson along with FSGT Jones rescued numerous tubers on the Edisto River. One female was experiencing acute kidney failure. BSGT Richardson did an outstanding job operating his patrol vessel in dangerous waters to rescue these individuals. The female was transported to MUSC.
- LCPL DeLoach assisted Beaufort officers with a Flounder operation that lasted all night and most of the next day. The subjects were caught and booked into the Beaufort County Detention Center. A total of 76 cases were made for undersize, over the limit, and illegal sell.
- PFC Riley, BSGT Gantt, and FSGT Jones observed a dozen of recreational crab pots with several violations. Officers continued to watch the pots and observed the crabbers return. Subjects were issued summonses for excess number of crab pots and several warnings. PFC Riley, assisted by BSGT Gantt also arrested one subject for BUI.
- PFC Woodward assisted Jasper officers with a Marijuana grow. The subject was caught on-site and was charged for trafficking Marijuana. 68 plants were seized, 205 green buds, and 55 dried buds as well as dozens of other items.

Unit 4G (Beaufort) FSGT Adam Henderson

- After a lengthy investigation into complaints from commercial crabbers CO Willis was able to make an arrest and charge 3 individuals for unlawfully tampering with commercial crab traps. The subjects admitted to taking around 16 traps that were marked with another's crab pot number.

Unit 4H (Jasper/ Hampton) FSGT Earl Pope

- 4H officers participated in a litter pickup project collecting over 20 bags of trash weighing 300lbs from the Savannah River banks. This was the same location where a subject had been apprehended a week earlier by unit officers after discovering his marijuana grow site.

FIELD OPERATIONS REGIONS 1-3 – MAJ Mike Isaacs

Region 1 – CPT DJ Riley

Officers issued 239 summons and 1101 warnings with 186 cases clearing court and fines totaling \$22818.00 being assessed. There 1498 fishermen checked, 1747 hours were spent on boating patrols resulting in 2343 boaters checked. A total of 41 public

presentations by officers. Officers spent 202 hours on Homeland Security, 365 hours on litter patrols, and 3 hours were spent patrolling Heritage Trust Preserve properties. A total of 30 hours was spent patrolling Jocassee Gorges resulting in 1 warning being issued and 616 hours on night patrols. There were 2 boating incidents and 2 drownings.

Captain's Spotlight:

While patrolling the Saluda River on foot, in Whare Shoals, LCPL Ryan Abernathy heard two people in distress that were swimming. Abernathy and a citizen then quickly swam to the aid of a teenager and child got them safely back to shore.

Unit 1A (Oconee / Pickens) FSGT Ron Hedden

- SGT Busha received a tip of illegal night hunting for feral hogs in the Long Creek area of Oconee County. After several days of follow up on leads; he identified, located, and charged the subject for night hunting.
- LCPL Welch was on routine boating patrol on Lake Hartwell with DLEO Thorne. They noticed a boat tied up to the DNR dock at the departmental boat ramp. Upon further investigation they located a subject grilling undersized crappie he had caught in a boat with an expired registration and other safety violations.

Unit 1 B (Greenville / Spartanburg) FSGT Frank Jordan

- LCPL Tatum focused special attention to Heritage Trust properties. A total of 30 hours spent patrolling the specific areas resulted in 4 tickets for Heritage Trust violations.
- While checking fishermen on Lakes Blalock and Cooley PFC Sherbert wrote one subject for undersized bass.

Unit 1C (Cherokee / Union) FSGT John McCraw

- LCPL Burnett and CO Gardner assisted Union County Rescue Squad with locating an injured hiker on WMA property in Union County.
- Officers made 18 fishing without licenses cases and numerous other cases/warnings while patrolling state and forest service lakes in Cherokee and Union Counties

Unit 1D (Greenwood / Laurens) FSGT Travis Dudley

- While patrolling the Saluda River on foot, in Whare Shoals, LCPL Abernathy heard 2 swimmers in distress. LCPL Abernathy and a citizen then quickly swam to the aid of a teenager and child got them safely back to shore.
- Special thanks to LCPL's Garner, Abernathy, Stewart & Keller and PFC's Lindsey and Sprouse in the recovery of a drowning victim involving a boat on Lake Greenwood after a three-day search.

Unit 1E (Abbeville / Anderson) FSGT Rhett Barwick

- Unit had one Boat Incident for month involving a Jon Boat being swamped during a storm. No Injuries
- LCPL Hanna Made 2 BUI's on one evening on Lake Hartwell performing Boat Patrols.

Unit 1F (Edgefield / McCormick) FSGT Michael Davis

- LCPLs Harvey, Winn, Henry, and PFC Jones worked throughout the month and made 4 cases and 14 warnings for jugging violations. Officers found live bream as bait, after hours, unmarked jugs, and no jugging permits.
- PFC Rowland made 3 cases for trespass to fish in Edgefield.

Region 2 – CPT Matt McCaskill

Officers issued 237 summons and 720 warnings with 152 cases clearing court with fines of \$21,008.00 being assessed. Officers checked 6 hunters and 1751 fishermen, and a total of 1421 hours were spent on boating patrols resulting in 2354 boats inspected. Officers spent 93 hours on Homeland Security, 125 hours on litter patrols, and a total of 135 hours were spent patrolling Heritage Trust Preserve properties. Officers gave a total of 22 public presentations. Officers also spent 598.5 hours on night patrols. There were 10 boating accidents, 2 drownings, 9 BUI screenings, and 4 BUI's.

Captain's Spotlight

Units A and B officers, Captain McCaskill, LT McKee, and York Co. Sheriff's Office worked a special detail on Lake Wylie for the annual Tiki Party. SCDNR officers made 3 BUI's and issued 18 other summonses as well as 35 warnings.

Unit 2A (Chester, York) FSGT Jason Plemmons

- Officers worked a detail on the Catawba River by kayak. Officers issued 19 summonses, 4 of those for littering and 1 for no PFD. Officers also issued 7 warnings.

Unit 2B (Fairfield, Lancaster) FSGT Will Coleman

- Officer Stewart made 1 case for over the limit of striped bass on Lake Wateree.
- Unit officers continued to work fishing in the Sanctuary at Cedar Creek making a total of 46 cases.

Unit 2C (Kershaw, Lee) FSGT JC Hough

- Officer Poeta, with the assistance of Officer Norris, made 1 BUI case after the Tiki Party on Lake Wateree.
- Officer Poeta made 3 taking striper out of season.

Unit 2D (Marlboro, Chesterfield, Dillon) FSGT John Hillian

- Officer Charles Bowen made 2 cases for boater safety act and wrote 6 warnings while working patrols in Marlboro and Chesterfield County.
- Officer Gallien made 1 PFD case and wrote 10 warnings while working patrols in Chesterfield County.

Unit 2E (Florence, Darlington) FSGT John A Perry

- Officer Gaskins responded to Lake Robinson regarding a boater driving erratically. During his investigation, he learned an off-duty officer witnessed the incident and subsequently was able to charge the operator with reckless operation of a watercraft.

Unit 2F (Williamsburg, Marion) FSGT William Huggins

- Officers Dale Tanner, David Tanner, Cody Britt, and Ethan McGiboney worked a boating accident that injured 3 subjects.
- Officers Dale Tanner and David Tanner assisted Horry County units with the 4th of July holiday.

Region 3 – LT Brian Corbett/ LT John Bedingfield

Officers issued 128 summons and 806 warnings with 178 cases clearing court with fines of \$44,530.50 being assessed. A total of 1552 hours were spent on boating patrols resulting in 2446 boaters checked. Officers spent 61 hours on Homeland Security, 177 hours on litter patrols and a total of 1 hour were spent patrolling Heritage Trust Preserve properties. Officers gave a total of 12 public presentations. Officers spent 560 hours on night patrols. There were 39 hours spent on boating accident investigations. Region officers made 9 BUI cases.

Captain's Spotlight

Officers worked long hours patrolling the waterways to ensure boating safety for the general public. As a result of hard work and perseverance, 9 BUI charges were made throughout the month.

LCPL Johnson and PFC Egan caught 2 fishermen on Lake Murray at night with 34 Striper in possession. Fish were taken to get weighed for restitution and both fishermen were charged. LCPL Hoover and CO Thornton worked late nights in Richland County and made multiple cases for taking striper during the closed season along the Saluda River.

Unit 3A (Lexington) FSGT Hunter Robinson

- CO Barone and LCPL Johnson stopped a boat on Lake Murray operated by a man that LCPL Johnson recognized from a BUI several years ago. After checking, the driver was still under suspension and was charged for BUS and insufficient PFDs.
- LCPL Johnson found the body of a missing drowning victim on Lake Murray.

Unit 3B (Richland) FSGT Hogan Tyler

- Richland officers made a total of 4 BUIs this month on Lake Murray. LCPL Marion Baker made 2 BUIs, LCPL Hoover and LCPL Bryant each made one as well.
- Unit officers helped organize a litter pick up event called "Maintain the Terrain" with Sportsman's Warehouse. This litter clean up took place along the riverbanks in Richland County and resulted in 46 bags of trash being removed from along our waterways.

Unit 3C (Newberry/ Saluda) FSGT Marcus Smith

- PFC Scogin made a BUI during the holiday weekend on Lake Murray. He also attended FTO training class.
- Unit officer's and their families picked up 30 bags of trash throughout the month in their communities. In addition, 4 tires, a toilet, and a sink were removed.

Unit 3D (Aiken/ Barnwell) FSGT Steve Terry

- PFC Fralick and CO Pierson received a call about a possible stolen boat in Aiken County. Upon arriving on the property, they located the boat. Their investigation revealed that the boat had been stolen out of Georgia over a year ago. The boat was taken into their possession and the investigation is ongoing.
- LCPL McDaniel responded to a possible boating accident with a possible drowning on the Savannah River. It was discovered that the incident had occurred 12 hours earlier and the local responding agency had not notified the Department. McDaniel was able to locate all the subjects and witnesses and determine exactly what had occurred. He was able to provide Investigations with all the information needed to complete their investigation.

Unit 3E (Allendale/ Bamberg) LT Corbett

- PFC Gray and Officer C. Baker assisted on Lake Murray over the July 4th Holiday Weekend.
- LCPL Nettles assisted the Wildlife Basic Class in Clemson with hunting scenarios, and Officer C. Baker assisted Allendale County with a murder investigation.

Unit 3F (Calhoun/ Orangeburg) FSGT Eddie Lee

- PFC Thomas and CO Dantzler assisted the Orangeburg County Sheriff's office, SCHP, SLED, ATF with marijuana eradication, locating and destroying an illegal still. They also assisted them with working high crime areas in the eastern part of Orangeburg County.
- PFC. Thomas attended FTO training class, and LCPL Collins gave a presentation to 30 individuals about boating/hunting safety.

Unit 3G (Clarendon/ Sumter) FSGT Cary Robinson

- LCPL Baxley and PFC Price both made two BUI's a piece over the Fourth of July Weekend.
- FSGT Robinson, LCPL's Jervey and Baxley, and PFC Price worked a boating accident out of Goat Island where a pontoon and bass boat collided at high speeds. Two injuries were sustained. It is still under investigation.

STAFF OPERATIONS – MAJ BILLY DOWNER

Education – CPT Steve Simpson

Officers issued 44 warnings and a total of 68 presentations were given to the public. Officers assisted regions with 132 boating hours resulting in 194 boats being checked.

- 169 students certified in 15 Hunter Education classes; 302 students certified in Hunter Education Internet classes
- 106 students certified in 10 Boater Education classes; 503 students certified in Boater Education Internet classes.

Outreach Activity

- SCNASP: BAI Conference in Missouri
- BAI Class in Gray Court with 13 new instructors
- SCTS: 4H shotgun training 10 new students

Range Activity

- Pickens Range (Andy Emerson)----- 882 Shooters
- Spartanburg Range (Brian Bailey) ----- 764 Shooters
- Wateree Shotgun Range (Richie Boykin)----- 360 Shooters
- Wateree Rifle Range (Kyle Betterly)----- 349 Shooters
- Twin Ponds Range (Scott Hanson) ----- 961 Shooters
- Total for Manned Ranges ----- 3316 Shooters

Confiscations, Grants and Records & Technology – CPT Lee Ellis

- Successfully hosted International Wildlife Crimestoppers annual conference. This was a great success and could only be accomplished due to the hard work of 1st Sgt Sidney Rainwater and Pfc. Thomas Buckhannon. A huge thank you goes out to our Support Team which provided an outstanding meal for the attendees and guests. Many thanks to the Region 1, 4 and MTI staff that assisted with making sure everyone was taken care of and all guest needs were met.
- Summons entered – 916 Warnings entered – 3,525
- New Suspensions – 34 Suspensions closed – 14
- SCDNR Suspensions – 850 IWVC Current Suspensions – 56
- Pending Suspensions –90 IWVC Suspensions Reviewed – 0
- Issued 28 Points suspensions and 15 Statutory Suspensions

Training – LT Rusty Monnet, SSGT Jeremy Cooper, SSGT Erik Martin, SSGT Raquel Salter

- Completed Wildlife Basic and most of MLE:
 - Small game, big game, night hunting scenarios, MLE Basic, Air Team
 - FBI Task Force, Marlin Spike, Vessel Stops, BUI Transition
 - Marine Theft, Boat Registration, Trailering, Loading Unloading Boats
 - Boat boarding, Transfer and Arrest, Transport Procedures, BUI Legal
 - Saltwater Enforcement. Road Side Vendors, Chart Plotting
 - Freshwater Enforcement, Marine Force on Force, BUI Scenarios
 - Boat Accident Investigations, Shellfish Enforcement
- SSGT Cooper conducted quotes for ATV and 4X4 course for Styx Range.
- SSGT Salter completed enrollment to SCCJA for New Hire Class.
- LT Monnet conducted FTO training at Styx Classroom for 16 officers.

OGT/Property Watch/ Special Projects/DLEO Program – FSGT Sidney Rainwater

- Coordinated OGT Wall of Shame Trailer at 2 events.
- Property Watch: 9 new members adding 1,487 acres, collected \$294.00

Homeland Security/EMD – LT Charlotte McKee

- Warrant meeting.
- Finalized Alastar IAP for 2021 Hurricane season.
- State House Detail- flag raising event.
- Meeting with State Surplus.
- EMD Foreign Disease Animal Response seminar.
- Assisted with BUI case on Lake Wylie for Tiki Torch Boat Detail.
- Social Meeting postings for game warden job openings.

- Meeting with Boat fabricator.
- Meeting with Tricounty for blue light packages.

Aviation – Chief Pilot Owen Barker

- 14 sorties for 32.5 flight hours
- SCDNR Law Enforcement Flight – 11.4 flight hours
- SLED Marijuana Eradication Flight 10.9 hours
- SCDNR Training Flights – 4.6 flight hours
- SCDNR Biology Flights – 4.3 flight hours
- DEA Surveillance Flights – 1.3 flight hours

Equipment – Laken Riddle Williams

- Meeting with State Surplus
- Created TID lists for equipment/vehicles that need to go to state surplus.
- TID boats, motor, & trailer packages along with trucks.
- Continue to transport LE trucks to TriCounty for outfitting.
- Issued out vehicles and equipment to divisions.
- Created master list of vehicles at Styx.

Supply – Haley Mitchum

- We welcome Hayley Mitchum as the new Supply Manager over supply.
- Started getting summer order boxes ready for issue.
- Issued out uniform items through Citrix.
- Assisted Styx with running TID vehicles.

Communications – Toby Freeman

- Continued radio programing updates.
- Worked on the Santee Tower.
- Continued radio programing updates.
- FCC relicensing.
- Programed radios in new vehicles.
- Submitted open PO's and 800/Motorola system PO's.
- Continuing to work on maser inventory list.
- Worked on insurance listings.
- TID listing for old radios.

Radio Communications Center – SSGT Jason Smith

- Warrant meeting with the Shannon Bobertz.
- Created Nextest accounts for the entire L.E. Division.
- Completed direct billing for hurricane deployments.
- Worked with Licensing to set up NCIC access.
- Assisted Mary Lucas with hiring Compliance Analyst.
- Worked July 4 Weekend with Unit 3B.
- Submitted paperwork to hire additional dispatchers.
- Calls for Service: General Information (156), Injured Animal (122), Alligator Call (110)
- Warrants: Entered: 0 Arrest/ 0 Bench Cleared: 0 Arrest/ 0 Bench
- Transmissions: 800: 19,995 Phones: 9,812 VHF: 40

June 29, 2021

So far, the summer has been busy. Managing editor Cindy Thompson and I participated in an Environmental Educators conference (via a Zoom meeting) and the feedback was positive. The new July-August issue is available, and I have been hearing very positive review from readers, although a few prefer the old wall calendar to the new planner style. So, we plan to offer a wall calendar at a reasonable price.

Subscription sales are up for this time of year. That is a good sign as we soon will enter our best months (historically). We hope to see subscriber numbers continue to follow an upward trend.

We are already working hard on the next three issues and fine-tuning plans for the spring and summer 2022 issues.

I hope this finds you all safe and well.

Thanks,

Joey Frazier, editor

South Carolina Wildlife

July 20, 2021

July is about over, but the heat probably is not. I hope you all are safe and cool.

South Carolina Wildlife magazine continues on a good track. As I write this report, we are nearing our press deadline for the September-October issue. Also work on the next two issues is well underway.

Besides our normal schedule, we have worked this year to assist SCDNR LE with their officers' directory photographs and I recently led a photography workshop for Camp Wildwood campers at Donnelley WMA.

We also confirmed a plan for the S.C. State Library to digitize the entire set of SCW beginning with our first issue in 1954. This will be available to readers who want to look back at past issues. New issues will only go up after they are about 1 year old -that is only fair to paying subscribers.

Please don't hesitate to reach out to me or Cindy with any ideas/suggestions you may have.

Thanks,

Joey Frazier, editor

South Carolina Wildlife

LAND, WATER & CONSERVATION

STATE CLIMATE OFFICE

The SCO answered 20 data requests on various topics from the general public, engineering, and law firms as well as various state agencies. One request was certified and two media interviews provided.

Melissa is the primary point of contact for the State Climate Office service program answering 13 data requests. She drafted and posted four weekly weather summaries on the SC State Climate Office website. She worked with Elliot to coordinate drought impacts from across the state for the US Drought Monitor. She was asked to speak to members of the National Weather Service Western Region and Alaska about engagement, recruitment and retention of Community Collaborative Rain, Hail and Snow Network observers. She provided information on potential site locations to the Clemson Extension team, responsible for the deployment of new automated weather stations. She coordinated with Maria Cox Lamm and her contractors about potential rainfall forecasts with Tropical Storm Claudette (18) and Tropical Storm Danny (27). She continued to collaborate with the Carolina's Heat Health Coalition, now spearheaded by the Southeast Regional Climate Center. She posts 'On This Day' climate information for social media. She promoted SCEMD Hurricane Preparedness Week (May 31 – June 4) and participated in Lightning Awareness Week (June 20 – 26).

Elliot led the efforts of USDM input for SC for 5 weeks and wrote 5 drought narratives. He created 5 infographics to help explain and communicate weekly changes in USDM conditions that were released on social media and to the SCDNR Drought Listserv on GovDelivery. He participated in weekly NC Drought Management Advisory calls and communicated with partners in Georgia to discuss if any drought issues span across State lines. He created weekly maps of the Palmer Drought Severity Index and the Crop Moisture Index. He conducted calls with Dominion Energy, USDA, and NWS. He takes the lead on updating the SC Drought Program website as needed. He helped with collecting and analyzing the climate normals data for South Carolina; and started a GIS project for creating precipitation maps for specific Drought Management Areas.

Hope gave two presentations at the AASC 2021 Annual Meeting. One presentation focused on the Hydrometportal and the second highlighted office activities. Hope compiled information and conducted two media interviews (Post and Courier and WPDE TV). She provided a Hurricane Exercise Briefing for the South Carolina Department of Public Safety 2021 Hurricane Full Scale Exercise. Hope participated in two planning meetings with leadership from the American Association of State Climatologists. Hope had a call with retired Clemson Professor to discuss SC historical data. She conducted briefings for SCDNR Law Enforcement contacts, several SCDNR Deputy Directors and a Senator on Tropical Storm Claudette and Tropical Storm Danny. She also responded to several calls and emails from the public on the storms. She provided regular guidance for office interns and staff. She participated on a call with Maria and Senator Scott's office where Maria explained the NFIP and South Carolina (16).

Hope and Elliot conducted two SC Drought Response Committee Conference Calls (9 and 23). Following the calls Hope drafted press releases which were issued to the media and mailed to 483 water systems across the State.

Grayson is the new summer intern for the climatology office. Through the end of May and in June, she worked on the Yadkin-Pee Dee precipitation project. She created climate almanac infographics to be released on different holidays throughout the coming year and an informational video about the major hurricanes that have made landfall in South Carolina. She attended two DRC meetings and began plotting the 2021 hurricane season on a map outside the office. She has updated the hurricane executive summary, now complete with new graphs and information and the County Weather Atlas. She is now working to collect the new 1991-2020 climate normals for each station across the state.

Meetings/Workshops/Webinar/Etc.

- Staff participated in the SERCC Quarterly Call (2)
- Melissa and Elliot participated in the SCEMD River Forecasting and Flood Modeling Group Call (3)
- Melissa participated in the Collaborations across NOAA: An overview of the Weather Prediction Center and the National Water Center (3)
- Staff participated in the monthly CISA call (4)
- Staff participated in the AASC 2021 Virtual Annual Meeting (4, 11, 18, 25)
- Hope gave two presentations at the AASC Annual Meeting (4)
- Melissa attended the HURREVAC Training (7-10)
- Elliot participated in the Southeast Climate monthly Webinar (8)
- Elliot attended the Catawba-Wateree Drought Management Group Meeting (9)
- Hope gave a presentation to the SCDNR Board (17)

June 2021

Land, Water and Conservation Division

Page 1

- Melissa attended the NOAA/NWS Beach Hazards Webinar (21)
- Elliot attended the Edisto RBC meeting (23)
- Elliot participated in the NIDIS Southeast Flash drought Workshop Planning Group Call (23)

Additional Information on Staff Activities

- Melissa serves as a co-host with Valerie Shannon to help facilitate SCDNR and Harry Hampton virtual board meetings.
- Hope participated in the DISC Training for SCDNR Senior Staff (10)
- Hope attended a SCDNR LWC Budget Planning Meeting (29)
- Hope chaired the AASC Nominating Committee. She organized conference calls and discussed officer responsibilities with potential candidates

GEOGRAPHIC INFORMATION SYSTEMS

General

Work this month included the FEMA Flood Mitigation LiDAR Review, work with the Climatology Group and the Earth Science Program. One project was completed making a web application for the Governmental Affairs Liaison in the Executive Office. Several webinars were attended as well as a software demonstration.

At the request of the Governmental Affairs Liaison a map application was created to help visualize the effects of potential legislation of various Idle Speed shoreline-buffer distances on the Intracoastal Waterway in Horry County. The application showed how potential changes would affect areas along the ICW. This web application was published and is available for public use.

Numerous presentations were attended during the Digital Mapping Techniques 2021 conference including presentations from members of SCGS. One topic during the meeting was the nationwide conversion to USGS's GeMS database schema. Attended ESRI webinar that dealt with Spatial Analytics operations within the ArcGIS Pro platform. Attended a software demonstration by Schlumberger's Petrel group, which is used in the oil and gas and mining industries for visualization and quantification of subterranean environments in three-dimensional space. This demonstration was requested because of our interest in developing subsurface modelling capabilities.

Flood Mitigation Program

A majority of time was spent with the LiDAR review project in the Upstate. Chester County was reviewed, and edits sent off to ESP for correction. One issue to resolve was an abnormal flood event along Fishing Creek caused some river lines to be skewed higher than normal. Work began on Union County. After the last county is reviewed, Cherokee, all data can be mosaiced and sent to DNR for implementation.

State Climate Office

Work on the Statewide Drought Status Update continued. Scripts, workflows, and data were updated locally as well as on AGOL (ArcGIS Online). Exhibits were created by climatologists using the updated project files. Work also was done converting the older ArcMap version of this program to ArcGIS Pro. ArcGIS Pro was also added and updated to climatology computers.

The Climatology group created new exhibits by interpolating raster layers of precipitation across the state. Using weather station data at 3-month intervals, grids were created in ArcGIS Pro to visualize rainfall dispersion. The results were then analyzed for relationships between areas with elevated drought risk and existing Drought Management areas. Interesting correlations are present. But more work is needed to establish definitive relationships.

Earth Science Group (ESG)

Work continued in the development of Level 3 GeMS compliant databases addressing questions that arise and finding solutions as final implementation is approached. Several common issues deal with geologic nomenclature, database voids, and feature metadata. The goal is to collect, create, and distribute all geologic data in GeMS Level-3 compliance.

A new project started on a Geologic Well Database program. SCGS wants to create a comprehensive database that contains all bore holes drilled across the state. Currently, there are several databases containing different and overlapping drill holes. Many of the borings with drill logs connected to them were previously put into the Perceptive Content (Image Now) database. We extracted them and moved them into a GIS database, which is better suited for use by geologists. The next steps are to design a workflow to identify, validate, add new holes, and remove duplicates. Currently, there are ~7,000 wells. Work expected to continue indefinitely.

Hydrology

No work this month.

South Carolina Conservation Bank

No work this month.

Scenic Rivers

No work this month.

Archaeology

No work this month.

Cultural Heritage Preserves

No work this month.

RIVER CONSERVATION PROGRAM

River Conservation / Scenic Rivers:

- Black River: Staff researched litter-reduction programs for potential applications to Black River, meeting with Litter Commission staff, DNR-LE, and others. Continued distribution of the Black Scenic River Management Plan. Participated in June 17 meeting of the steering committee of the Black River state park and water trail project; also addressed related public questions and concerns submitted to DNR staff.
- Lynches River: Staff addressed citizen questions and concern regarding ongoing turbid conditions seen in the river in recent months and referred the questions to SCDHEC staff.
- Beach Sweep/River Sweep: Staff began communications with volunteers about the planned 2021 Sweep event. Staff updated the website and began developing new website capabilities for the registration of volunteers, map display of cleanup sites, and data input for trash collection results.

FERC Hydroelectric Projects:

- Neal Shoals Hydroelectric Project: Staff provided additional review and comments to address potential impacts of the Dominion Energy proposed summertime plans for project maintenance that will dewater the project reservoir and release sediment to the downstream river reach.

Heritage Trust: Staff prepared a draft agreement between SCDNR-Heritage Trust and Clemson University Herbarium for office space and botanical collaboration. Staff interviewed a potential part-time employee on June 22.

S.C. Environmental Awareness Award: Staff continued to lead and coordinate this year's award process; the month of June involved final preparations for and conducting the June 15 awards ceremony at the State House and a catered reception in the Hampton Building. Robert Boyles and Governor McMaster presided over the ceremony, which was attended by approximately 40 people.

BOTANY AND PLANT CONSERVATION PROGRAM

Tracked Plant List Revision:

Major efforts to revise the Track Species List have continued through June. The research conducted by the Assistant Botanist; Samantha Tessel has contributed to a more thorough understanding of the distributions of tracked species.

- Continued re-ranking of species already on tracked species list
- Worked with Joe Lemeris to update existing Element Occurrence records
- Samantha Tessel has focused on specimen evaluations in a North Carolina herbarium (NCU), virtual specimen evaluations in the Southeast Regional Network of Expertise and Collections (SERNEC) and using specimen data and the Heritage Trust database to calculate proposed ranks using NatureServe's Rank Calculator. These efforts have centered on tracked species but have also included species being evaluated for addition to the tracked species list. In the process, she has been resolving taxonomic problems that affect ranking of tracked species. and has been learning the Tracked Species list, NatureServe ranking criteria, and the Heritage Trust database.
- Technicians (Csilla Czako, Celeste Gross) have made great progress in georeferencing and digitizing herbarium specimens of tracked plant species, and species under evaluation for tracking, at the University of South Carolina. This effort is now leading to a major improvement in the DNR tracked species database as a result of DNR's long-term history of the development of the SERNEC herbarium portal. The team is now incorporating on a weekly basis EO records of newly tracked plant species to the Heritage Trust database

Field Surveys and Monitoring:

- Conducted surveys of rare plants, invasive plants, and assessed management needs at Bunched Arrowhead HP Core Tract, Blackwell HP, Cartwheel Bay HP, Cohen Campbell Fish Hatchery, Fort Moultrie National Historic Park, Greystone Preserve, Janet Harrison High Pond HP, Lewis Ocean Bay HP, McDowell Preserve, Poinsett Electronic Combat Range
- Documented new occurrences of Venus flytrap (*Dionaea muscipula*) adjacent to Cartwheel Bay HP
- Processed data from 2021 field surveys and entered rare plant data into Heritage Trust database.

Conservation Actions:

- Conducted field surveys with USFWS and NRCS staff to advise and strategize for Venus Flytrap conservation on private and public lands
- Conducted field survey with USFWS staff in Aiken County for Ocmulgee skullcap conservation, and coordinated FWS Partners Program funding for the Central Savannah River Land Trust for restoration
- Conducted rare plant rescue at Shealey's Pond HP associated with a culvert replacement

Habitat Protection Committee:

- Surveyed potential acquisition site, Spence Pond, in Greenville County
- Surveyed potential acquisition site, Carter Stilley Phase II, in Horry County

Other:

- Submitted grant proposal, and received approval, to USFWS to fund a botany technician for one year to update all botanical data for Federally listed species and Federal species of concern
- Submitted DNR response to USFWS delisting proposal of the Federally Threatened Dwarf-flowered heartleaf (*Hexastylis naniflora*)
- Surveyed Fort Moultrie National Historic Park and advised National Park Service on invasive species threats and coastal grassland restoration needs
- Spot checked contractor botanical survey of Grand Strand Water & Sewer project at Lewis Ocean Bay HP
- Reviewed FERC Terrestrial Invasive Plant Management Plan Compliance Report
- Participated in Piedmont Prairie Indicator meeting
- Participated in Relict trillium status meeting
- Participated in steering committee conference calls with University of South Carolina A.C. Moore Herbarium
- Advised on rare plant EOs for the Brasstown Creek HP management plan
- Peer reviewed paper for the botany journal *Castanea*
- Processed herbarium specimens collected in 2020/2021 for deposit at the University of South Carolina A.C. Moore Herbarium

CULTURAL PRESERVES PROGRAM

While working on some of the Heritage Preserves, Brian Long and his team have been incredibly busy work on various HP properties. This past month they have been working on the maintenance and upkeep of the preserves. There was a new roof put on the house at Horse Creek HP and have installed multiple gates on the property and on the dam of Mathis Pond was gyro tracked. They are continuing to work with the legal department of the easement violations at Palmetto Fort in Mt. Pleasant. The team is also working with engineering on the Poinsett Bridge Stabilizing project and have completed interviewing engineers for the project. They have also worked on and received staff level approval from the D.O.A. for the stabilization of Callahan Creek at Poinsett Bridge HP. Last month, they also received phase I approval from JBRC for the potential Horse Creek HP addition and are working on the requirements for this addition. And lastly, they are working on filling the Beaufort area technician position.

Last month the archaeology team completed their fifth field season at Pockoy on June 4th, this time they worked on the outer edge and outside of Ring 1. They opened 18 1m units and exposed several shell-filled pits. One of the pit dates to the Woodland Period (~1,500 years old). One pit, on the outer edge of Ring 1, they think is contemporary with the rings (~4,300 years old). The other features will need to be further explored in the fall to determine their age and function. They have surpassed 300K cataloged artifacts/ecofacts for the Pockoy project.

On June 14th Karen Smith and Meg Gaillard presented papers at Keeping History Above Water, an annual conference on community responses to climate challenges supported by the Newport Restoration Foundation. The paper was on the work to salvage data from Pockoy. There was also a continued archaeological survey at Wateree HP/WMA.

AQUATIC NUISANCE SPECIES PROGRAM

Technical

- Completed fiscal year cost share invoices and contractor payments along with invoices for cost share partners for repayment.
- 133 acres of invasive aquatic species were treated on the Goose Creek Reservoir (65 ac), Cooper River (46 ac), and several state park lakes (22 ac).
- Continuing surveys were conducted on, Back River Reservoir, Black River, Black Mingo, Cooper River, Ashepoo River, and Goose Creek, along with several others.

Outreach

- Staff is participating in the 2021-22 Rules and Regs.
- Fielded many calls and emails about invasive species from several homeowners to positively ID plant species and give guidance for treatment
- Staff met with SCPRT concerning continued help on aquatic problems at several state parks.
- ANS Staff continued meetings with SCDNR Wildlife Staff, Santee Cooper, SC Waterfowl Association and Ducks Unlimited about a cost share plan for increased habitat on the Santee Cooper lakes for hunting and fishing opportunities.

Other

- Continuing maintenance on all boats and vehicles was performed to keep them in readiness.

CONSERVATION DISTRICTS

Statewide Projects

Staff attended/participated in:

- SCDNR Lunch and Learn Sessions
- SC Association of Conservation Districts Board Meeting
- Environmental Education Association of SC Annual Conference
- Edisto-Savannah Conservation Districts Area Meeting
- State House/Governor McMaster & SCDNR Director Boyles' recognition ceremony honoring Jane Hiller of Sonoco Recycling as recipient of the 2020 SC Environmental Awareness Award

Staff also:

- Continues attending Conservation Districts' monthly board meetings throughout the State
- Virtual training sessions from *Amplos* (leadership training/coaching business in Greenville, SC) as part of PLEAF (Palmetto Leadership group)
- Hosted SC Envirothon Steering Committee meeting
- Planned for hosting SC Envirothon State Champions for Virtual NCF-Envirothon Competition
- Continued building SC Envirothon Training Trunks to be launched Fall 2021
- Worked on an informational outreach brochure about various state agency roles with water
- Assisted in planning the 2022 South Carolina Conservation Partnership Conference
- Submitted an article to SC Wildlife as part of Conservation Partnership Series
- Completed the AAA driver training course
- Processed 8 Soil and Water Conservation District Commissioner appointments through SCDNR Board for consideration/approval and 3 Commissioner Emeritus approvals

Technical

- Continued to visit sites and provide the NRCS with the proper documentation for easements on the 2021 easement monitoring list.
- On-site monitoring has been conducted in the Allendale, Hampton, Colleton, Fairfield, Marion, Georgetown, and Clarendon districts.
- Landowners have been contacted in other districts to setup future on-site visits.
- Staff has continued to train on Easement and CRP related programs.

Conservation Districts:

Aiken District – hosted a great Edisto/Savannah area meeting at the Aiken Visitors Train Depot. Five counties were represented, as well as SCACD President, Jeff Wilson, other SCACD members, and Tyler Brown and staff from DNR. After the meeting, some stayed for the Aiken Trolley Tour of our great little town and learned some interesting facts. It was wonderful to meet in person again.

Allendale District – Commissioner Diane O. Bosler was recently recognized for serving 25 years on the Allendale Board. She was presented a 25-year pin by Chairman John Rice.

Allendale SWCD currently has an agreement with USDA for Seasonal High Tunnel Implementation. This includes technical assistance/installation and covers all counties within South Carolina. If your district has producers that need installation, please contact Bob Connelly at the Allendale office: (803) 584-4233 Ext. 3 or bob.connely2@sc.nacdnet.net.

Anderson District – Our Seed Library is now closed due to restocking and will reopen August 1st with fall crops. Over 5,000 seed packets were checked out and over 450 zip codes were recorded. Our Education Coordinator helped one of our commissioners sample the 3&20 creek with Adopt-A-Stream. Our staff also attended the Environmental Educational Association of SC conference; Lake Hartwell Partners meeting; Highly Erodible Land Webinar; Water Resources meeting with the Chamber, the National Watershed Coalition meeting; and Be Septic Safe Webinar. The Anderson District has also been busy with EQIP obligations. We have assisted Anderson NRCS with 7 obligations and Oconee NRCS with 21 obligations.

Beaufort District - had its first in person board meeting. We were excited to meet our new District Conservationist, Kenyetta Render. We completed our updated Cypress Wetlands Activity Booklet and have printed several copies with funds from our RC & D Youth Grant. Commissioner Denise Parsick presented our 2020 Annual Report to the Beaufort County Council's Natural Resources Committee via Zoom. Our quarterly Together for Beaufort County Water Quality Coalition met via Zoom with the Lowcountry Stormwater Partners and discussed current issues & events. We helped judge stormwater coloring contest sheets. We sent out applications for our onsite Education programs in July to replace our annual Eco Camp, which had to be canceled. Staff attended the NACD Webinar on the Urban Agriculture Grant Program. Educators taught two SC Fur Bearer programs at a summer camp.

Berkeley District Commissioners and staff are working on a new platform called *Berkeley Outdoor Life*: www.BerkeleyOutdoorLife.com. After creating the Berkeley Blueways with its 25 kayaking trails, more than 235 miles of paddling, the District saw an opportunity to add the new programs of the Berkeley Walkways, Berkeley Bikeways and Berkeley Gameways. The Walkways will consist of 18-20 walking and hiking routes, the Bikeways will have 16 bicycling routes, and the Gameways will highlight the best places to fish, boat, camp, and hunt in Berkeley County. The new website features all the information for families to choose an exciting adventure. It includes original photography, all relevant trail information, downloadable guides for each activity and interactive maps. This project was launched in the 2nd quarter of 2021 and the development of the platform will extend into 2022. The *Berkeley Earth Team* continues with their goal of keeping Bushy Park Boat Landing and other areas free of litter and recyclable materials. This group consists of 15+ members who are dedicated to keeping Berkeley County beautiful. Associate Commissioner Roseann Bishop leads this group. Nick Yoder, Farm & Land Services, Berkeley County, has recently joined our staff and has been working on several projects involving dry hydrants and drainage ditches maintenance plan. The remediation to a section of the *Swamp Fox Passage of the Palmetto Trail* has made tremendous strides towards the finish line! This project, a partnership between Berkeley Soil and Water Conservation District, USFS, Palmetto Conservation Foundation and Berkeley County Government has been tracking for several years now. To date, many of the turnpikes and boardwalks have been completely restored, allowing safe and enjoyable access to this section of the Palmetto Trail. We have one more phase to complete the projects which will include several more identified sections as well as improvements to the trailheads and parking areas. We are very excited about the progress that has been made through the collaboration of our partnerships. Staff continues to send public service announcements promoting soil and water conservation to Home Telecom for broadcasting on television. Our monthly meetings are held regularly.

Charleston District – staff was busy this month with school poster-essay contest and awards. We had a good turn-out despite the Covid issues. We are also sponsoring 3 students who will participate in the Bee outreach program. We are preparing ahead for our Southeastern Wildlife Expo outreach and our annual partnership conference to be held in Charleston in February of 2022.

Cherokee District – Cherokee SWCD had a drive-thru/walk-up recognition for the annual contest winners this year. (Idea for this event/ credit goes to Matt Barrington, NRCS). Attendees enjoyed a hot dog supper that they could carry-out or eat picnic-style. SWCD commissioners were on hand to make presentations and speak with the winners. The board was able to have our first in-person meeting following the recognition. Karen Allen assisted with a 4-week Junior Naturalist Camp hosted by the local 4H agent. This was held each Friday and had 16-24 attendees. The kids enjoyed much needed outdoor time, listened to informative speakers, and participated in fun activities. Chairman Willie Sarratt insured that the district's community garden has been planted this year. This project is a tradition at the office and was greatly missed last year by folks in our neighbor offices. Thicketty Creek Watershed District has completed regular dam maintenance on the six dams in the district. The district also had our first in-person meeting since 2020. Chris Workman

(SCDNR) and Matt Barrington (NRCS) were instrumental in a successful agenda for the meeting. Cherokee SWCD is seeing an increase in their Affiliate Membership program. In addition to the state and county funds, our Soil and Water Conservation District has received \$5,350.00 from 57 contributors.

Chester District – staff sent press releases to local newspaper on essay, poster, and photography winners. Four watershed maintenance projects at three dams were finished. Chester SWCD Vice Chair Jeff Wilson received notification from SCDNR Director Robert Boyles that he was re-appointed for another 4-year term. The form was completed and mailed to have the district's state appropriations direct deposited. Our no-till seed drills were utilized on 17 acres Chester County acres.

Colleton District - Commissioners Rev. Mabry and Gary Herndon reported that our booth at the Colleton County Rice Festival was a success. A special *Thank You* goes to Berkeley SWCD for letting us borrow their Honeybee Posters and Honeybee Hive as our booth's main attraction. Children and adults were interested in learning more about the important role of honeybees and other pollinators. Commissioners Cleveland Hiott and Rev. Mabry attended the Edisto-Savannah Area Meeting in Aiken. We are currently printing the 2020-2021 Annual Report. The NACD Stewardship and Education Committee has announced the 2022 Stewardship Week theme: "Healthy Soils : Healthy Life".

Dillon District – Continues working with NRCS on the following: 19 EQIP Applications pre-approved; 18 obligated so far; over 15 EQIP practices certifications and payments; over 50 new EQIP 2022 Applications; 4 CSP Classic Applications (have been planned and ranked already). 2 CSP Renewals; and 1 WRE site visit.

Dorchester District held our annual board meeting on June 15th. The District's Affiliate Drive has ended with a total of 38 affiliate members. Commissioners and staff attended the 2021 Edisto-Savannah Area Meeting in Aiken this month. Tammi has been working on getting the annual report ready and hopes to have that available soon.

Fairfield District - The maintenance of the watershed dams has been completed. FSWCD Commissioners voted unanimously to re-appoint Charles H. Coleman, III to another four-year term. Staff has completed and mailed the Direct Deposit Form. Met with one of our watershed directors. The Grazing Land Study has been confirmed for the month of July. Our campers left for Camp WildWood, Sunday, June 20th and returned, Saturday, June 26th. One of our previous campers was a CIT this year. The Youth Commissioners are in the process of Adopting a Stream and Adopting a Highway. Sammy Soil Handbooks have been distributed. Site visits were made with NRCS personnel. The district's ongoing assistance re: The Farm Bill Program continues with NRCS. DNR's Tyler Brown and Deanne Myrick attended our board meeting. After reviewing and discussing the new Memorandum of Agreement (MOA) and the Unfunded Cooperative Agreement, the commissioners unanimously agreed to accept and sign the new MOA. Commissioner Kerry Matthews was sworn-in with the official Oath of Office at the meeting.

Greenville District – staff taught at several events in June: Greer Farmers Market Pop-up Seed Library (sunflower planting); Sustaining Way Fellows program (soil health); LEAD Academy with 4H (Entomology, hydration, and wildlife biology); Conestee Water Striders Camp (stormwater); and Roper Mountain Science Center Summer Adventures (stormwater). Our seed library was featured in a national webinar on "Food Access and Seed Libraries in Rural Public Libraries". The District also hosted the first of a series of soil health experiments with the Greenville Library called the Soil Your Undies challenge. District Manager Kirsten Robertson was featured this month in the National Association of Conservation Districts (NACD) News Briefs for her work on soil health issues. We designed riparian buffer signage for Greenville County Parks department, and we also distributed Poop Fairy signs to residents. We also continued giving technical advice on erosion and flooding to County residents.

Hampton District - staff presented a recycling program in conjunction with the Hampton County Library Summer Reading Program. Participants learned what items could be recycled in the county and several books were read about the importance of recycling. Assistance is provided by district staff to the hog trappers associated with the feral swine pilot program as required. Keep Hampton County Beautiful assisted in one litter pickup at the Combahee boat landing where burned debris was removed along with 30 pounds of litter. KHCB and County Codes Enforcement Officer have visited the 10 recycling centers and distributed 579 tarps to be used to cover loose or light weight items in a truck bed or utility trailer to keep items from blowing out and becoming litter on the roadside. KHCB concluded the "Clean Where You Live and Work" litter pickup campaign in conjunction with the Great American Cleanup. A total of 88 volunteers picked up 351 bags of litter around their neighborhood or where they work since mid-March.

Jasper District - participated in 4 Adopt- A- Highway litter drives, distributed cigarette butt bins to local businesses for our *BIZ FOR BUTTS* anti- litter campaign and completed our Keep Jasper County Beautiful brochure. We met with our

new NCRS District Conservationist, Kenyetta Render, and discussed FY21 EQUIP applications (2 apps that are obligated), Conservation Stewardship Program (1 app rollover), intern starting on 6.21.2021 for 8 weeks, and COVID-19 update that the office remains closed to customer visits, but contact will be through email and phone. We assisted the Jasper County Fire Department with the process of installing and certifying dry fire hydrants. We presented our budget request to Jasper County Council to get appropriation funding approved for the Blue Heron Nature Center and Keep Jasper County Beautiful for 2021-2022. SCDNR and Jasper Conservation District hosted a *FATHER'S FOR FISHING DAY* at the Blue Heron Nature Trail & Pond for 25 children and Dads, and four 12-year-olds (of Ridgeland Baptist Childcare Ministries). We fished with the assistance of DNR officers. Ridgeland Fire department gave a demonstration on their fire regulations and a tour of the fire truck. Lyn Boyles, JSWCD Director, gave a presentation on wildlife and tours of the Blue Heron Nature Center Museum. Lyn also made a presentation to Sun City North First Friday and explained the mission and operations of the Jasper Conservation District and Keep Jasper County Beautiful.

Kershaw District - Board began meeting in person since the pandemic, for the first time on June 8th. The District assisted SC DNR with a Hunter's Ed workshop on June 19th. We are working on the new fiscal year budget, and planning outreach for the start of the 2021- 2022 school year. Plans include a tour of the *Hardsrabmble* property (for our affiliates), and a potential fundraiser for the District. Commissioner Zechariah Willoughbuy will work with the District Coordinator to plan the events. Conservation District Certification Forms were completed and sent to SC DNR on behalf of Sarah Williams and Jeff Clark.

McCormick District - is now open to the public but continues to retain social distancing by handling all request via email, voice mail and/or by appointment. We held our monthly board meeting on June 16, 2021. NCRS partner Matt Brown updated the District on the progress of EQIP with a written report on the status of the EQIP contracts for our area. NCRS partner Brown informed the Board that 6980 feet of pipeline, 4318 square feet of heavy use area, 6 concrete water troughs and 9636 feet of electric fence installed. M. Brown informed the Board that the field office is now open to the public and if clients have had shots mask are not required. McCormick staff has completed the coordination with the Middle School for the essay contest on the Benefits of Control Burning. Essays will be submitted by October and awards will be given for 1st, 2nd, and 3rd place. The class that wins 1st place will receive an award for the purchase of materials for their classroom. McCormick has set up the committee with the Board and staff from John de la Howe school of Agriculture; the board has approved four scholarships which meet the criteria set by the committee. All Board members have received copies of the MOU provided by DNR for their review and comments. DNR representative Tyler Brown will be attending the August board meeting to explain and answer any questions the Board may have.

Oconee District – The Technical Assistance grant from NACD continues to support the outreach and sign-ups for the NCRS CSP program. The project will start to assess the local needs and write plans for the stewardship projects to be implemented. The current conservation easement being worked on is in its final stages of review by the NCRS national Team. Vegetation management has taken place on all 8 of our watershed structures. Easement inspections are being scheduled, contact with the property owners of easement property is also in place and interviews about easement responsibilities will go forward. OSWCD has held two water barrel workshops in June and has promoted conservation stewardship at three events this month.

Orangeburg District - held our monthly board meeting on Tuesday, June 22. Staff is continuing to assist NCRS as needed. We are also busy planning upcoming events such as the Rose Festival in September, the County Fair in October, as well as some summer programs for children. OCSWCD Chair John Cuttino, Sr. and Commissioners Jackie Fogle and Harold Donnelly attended the Edisto- Savannah Area Meeting on June 28 in Aiken at the Visitors Center and Train Museum. Employees Lisa Rigden and Diane Curlee also attended. Following the meeting, a guided tour on Aiken's Historic Trolley was enjoyed by all.

Richland District – our education programs were featured in the spring issue of *The Resource*, a publication of the National Association of Conservation Districts. The District sponsored and co-coordinated the Environmental Education Association of SC's virtual annual conference. Eighty-eight people registered for the event, which featured 24 concurrent sessions, 23 sponsors, three field trips, and a keynote address by Dr. David Shelley of Congaree National Park. The District also co-hosted the June Meetup for environmental educators; 21 people participated in the event. District staff led an upcycling activity in partnership with Keep the Midlands Beautiful and the Green Steps School program at the Columbia Homeschool Expo on June 26. The District nominated partner Jane Hiller of Sonoco Recycling for the 2020 SC Environmental Awareness Award and was pleased to celebrate the award with her in a ceremony featuring Governor Henry McMaster and SC DNR Director Robert Boyles at the SC State House. The District's monthly e-newsletter was distributed to >3,000 subscribers, and conservation-related social media posts reached >2,815 in the past 30 days through the District's accounts. District staff provided support for the SC Envirothon Steering Committee; Southeaster

Environmental Education Alliance Landscape Analysis and Leadership Team; Richland County Conservation Commission; SC Forage and Grazing Lands Coalition; Environmental Education Association of SC; and Palmetto Environmental Education Certification Advisory Committee.

Spartanburg District - This month we have received some poster contest submissions from area elementary schools, which are always fun to see. One of our commissioners participated in a Lake Sweep with SJWD Water District. Our garden has been fully planted and now needs weeding often. We already have pollinators visiting. Staff has started the Conservation Planner Level 1 course. A lot has been learned and it is interesting to see the methods behind the information in the 6-part folders.

Sumter District – purchased two “Pig Brig” feral hog traps and are renting them at no cost to producers, in exchange for the completion of a data report. Sumter SWCD has been networking with many agencies to get the word out on the feral hog issue in the county and is compiling data. A piece ran in the Sumter Item, and producers are beginning to call in and share their acreage/financial losses with the District. Sumter SWCD is working on creating a feral hog workshop to be held in October. All submissions are in for our Summer Camp sponsorship, and we will send students to the 4-H Club Camp Bob Cooper in Summerton this July. We continue to rent the no-till drill. Also continue to support NRCS with contracts.

York District – Chasity completed the 4 lesson garden series at a local elementary school. The last lesson included harvesting and eating what they had planted (lettuce, carrots, radish) in a salad at lunch. The carrots were the only vegetable that were not quite ready, but they were able to use some lettuce and radish from the garden! More than half of the children gave the salad a try and most really enjoyed it. Chasity and Beth (YSWCD Chair) did an interview with CN2 regarding the garden series and the impact it has on the local community. More work has been done in the last month to get the floating wetland completed at the Riverbend property. Chasity is also attending a local farm camp in June and doing an *EnviroScape* presentation every Wednesday.

EARTH SCIENCE GROUP

Earthquake Activity: 0 earthquakes.

Special Mentions: Mr. Kyle Gawinski’s service and contributions to the Geological Survey are acknowledged. He is an excellent field geologist, and his work on the Survey123 data collection application is a significant contribution to our mapping methodology. Mr. Gawinski is taking a position with Haile Gold Mine, and we wish his success in his new endeavors.

South Carolina Geological Survey Geological Information

STATEMAP: Andy Wykel and Kyle Gawinski began drafting the Centenary and Mullins maps (FY20). Robby Morrow completed four (4) traverses were in the southern half of Edgefield Quadrangle, Edgefield County; mapping focused on delineating the contact between a quartz diorite-tonalite intrusion and the surrounding Carolina terrane rock types; work continued drafting Geologic Map of southern half of Edgefield 7.5-Minute Quadrangle. Because of staffing issues at USGS and numerous requests from other states for FY20 No-Costs Extensions, we are still waiting for formal approval of our request. Revised paperwork for FY21 was submitted to USGS; FY21 start date was modified to September 1, 2021. Zach Zelaya continued training in logging drill cuttings. Katie Luciano and Will Doar identified three OSL labs that could bid on age-dating work, part of the FY21 project.

Other Mapping including Outsource Mapping: Blake Stubbins, Andy Wykel, and Will Doar observed a roto sonic drilling operation by F&ME Consultants west of Allendale. Dr. Doar also showed an exposure in the area that has Altamaha Formation overlying Tobacco Road Sand. Zach Zelaya continued work on a structure contour map of the base of the Quaternary in Horry, Georgetown, Marion, and Dillon Counties.

Earth Mapping Resources Initiative: Earth MRI field work and sample processing continued in Calhoun and Orangeburg Counties. Drilling for the month produced 5 holes for 336 ft; heat and difficult drilling conditions contributed to low output. Andy Wykel and Blake Stubbins located 10 new drill sites and survey several outcrops in Orangeburg and Calhoun Counties. Ralph Willoughby (SCGS, retired) spoke with Andy Wykel and Kyle Gawinski about the geology in the study area. Kyle Gawinski, Robby Morrow, and Zach Zelaya collected fourteen (14) additional samples for geochemical studies from Gilbert, St. Matthews, Staley Crossroads, and Fort Motte Quadrangles, Calhoun, Lexington, and Orangeburg Counties; 40 samples were processed and sent to USGS for analysis. To date, 75 samples have been collected from two sample areas; 60 samples have been sent to the USGS for analysis. FY21 proposal was submitted to USGS.

General: Dr. Will Doar attended the Central and Eastern USGS Quaternary Fault Workshop seismic hazard zone update web meeting.

Staffing

Brian Lockerbie and Jordan Suttles (USC geology graduates) were hired as temporary drilling assistants. Darby DeBruhl was hired as a geologist intern to work on database and web applications. Senior staff attended the 2021 Association of American State Geologists Annual Meeting; one session was a discussion on the USGS Critical Minerals program. Katie Luciano participated in NOAA-led ACE Basin NERR Review, which is done every ten years; she spoke about cooperative research projects focused on shoreline change at Pockoy Island, Botany Bay Plantation Wildlife Management Area. Scott Howard, Megan James, and Taylor Turbyfill gave a presentation to DNR Board on SCGS activities. Scott Howard attended DISC training sessions. Eli Covell resigned his Drilling Assistant position at the end of May, and Kyle Gawinski resigned his Geologist II position effective July 16. Both are moving on to better paying positions.

Drilling Services and Core Repository

Jacky Steen repaired the drive coupler from the CME drill rig. The Ford Escape was sent out for break work and other maintenance. A Suburban truck was retrieved from State Surplus formerly used by DHEC to deploy the geophysical logging tools DHEC donated to us; minor repairs will be needed, and final documentation is being processed. Jacky Steen replaced the lock on repo door, repaired 3.5 hp outboard motor, added additional air lines to repo, and met with CME rep Therrell Hanna to discuss ways to prevent equipment damage and possible solutions with new augers and techniques. After working on the sieve shaker, Andy Wykel and Blake Stubbins made repairs to sieve shaker. Andy Wykel researched and received quotes on multiple push probe drill rigs. Four orphaned red wing swallows (birds) were found that were blown out of a truck exhaust pipe. They were taken to Carolina Wildlife Rehabilitation Center. Consulting geologists from HDR donated core material from the Richtex Formation along the Broad River, northern Richland County. Cole Bates, Consulting Geologist, donated core material from Holly Hill, Orangeburg County. Gary Taylor reviewed files on core material tried to correlate with material on shelves.

Digital Products and the Digital Information Program (DIP).

STATEMAP: Taylor Turbyfill set up templates within ArcGIS for geologists to use when drafting their map products. Ms. Turbyfill finished a presentation showing the functionality of KML files using Google Map apps.

Other Mapping including Outsource Mapping: Taylor Turbyfill and Scott Howard made final edits to Middendorf quadrangle geologic map. Map author, Chris Swezey, USGS, will submit for final USGS approval, and the map can be released.

Data Preservation: Megan James updated legends for cross section illustrations. LWC GIS Manager finished the hydro-geo app, and once the Hydrology Section updates their webpage the Geological Survey can link to it from its website

Geologic Map Schema (GeMS): Megan James continued work on creating map symbols. Ms. James worked on the python script Quinn Nisbet created to download data from Survey 123. Kyle Gawinski fixed the Strater template used to make litho logs; Quinn Nisbet about fixed all problems with Survey123 script.

General: Staff attended annual Digital Mapping Techniques (DMT) workshop, 6/7-11. Kyle Gawinski, Megan James, and Robby Morrow gave a presentation on how SCGS is capturing data in the field using the Survey123 app; a script was written to export the data from 123 and save days of office time. Megan James presented at DMT on her work developing an HTML version of the GeMS document and the 2019 GeMS questionnaire. Ms. James also updated the hydrology and geology websites and created four (4) new web pages for the Geology website. Taylor Turbyfill attended an online Avenza MAPublisher training, which is a cartography software that pairs with Adobe Illustrator to produce spatially accurate map products. The 3-day training course provided information to improve and streamline the current cartography workflow.

Coastal Program (Ft. Johnson Satellite Office)

Coastal Vulnerability

Murrells Inlet to Capers Island Coastal Vulnerability Project: Katie Luciano compiled AMBUR analyses for recent shorelines digitized for Pockoy Island (2011 and 2015-2021); results are presented in a project report that was submitted to Scott Howard and Will Doar for review; continued digitizing 2020 shoreline for Yawkey Nature Center Property (Cat, South, and North Islands) in Georgetown County.

Surface Elevation Tables-SET

Katie Luciano and Dr. Will Doar measured SET stations (10 total) and took GPS measurements (31 measurements taken; 2 required on each station per protocol each time GPS data are collected on the full array). Repairs

to 4 Stations were made, typical damage from age of the stations, wood rot, and rust. Dr. Doar continued editing the SET manuscript to produce a few, smaller, and more focused manuscripts.

USACE-South Atlantic Coastal Study (SACS)

No new work this month.

Botany Bay and Pockoy Island Projects

Katie Luciano measured erosion transects at Pockoy Island. Working under a DNR contract, Scott Harris (CofC) and three undergraduate students finished surveying an area offshore of the northern part of Edisto Island for the Botany Bay Offshore Mapping Project. They collected bottom samples to verify sidescan sonar data and submitted a preliminary report.

BOEM

Katie Luciano made edits requested by BOEM to the Southeast Regional Cooperative Project Technical Report and South Carolina State Cooperative Project Technical Report throughout the month; met with Scott Howard to discuss edits and additions to the Regional Cooperative report, which will include updates on planned publications and several new figures; worked with Josh Long (USGS) to organize edits to the South Carolina State Cooperative Technical Report; final edits will be submitted to BOEM’s Marine Minerals Program by the end of July 2021. Katie Luciano met with Clark Alexander (University of Georgia-Skidaway Institute of Oceanography) and Ashley Long (BOEM) to discuss BOEM regional-scale work focused on southern SC and GA. Megan James created a GIS document to highlight onshore and offshore data for use in BOEM discussions.

General and Outreach

General: General information was provided to 16 customers; 4 meteorite ID; 1 gold RFI; 0 sinkhole inquiries; no requests for blue granite. Three (3) Rock and Mineral kits ordered, and Four (4) map and publication orders.

Bruce Crawford, DHEC, requested the geologic map of Little Mountain quadrangle. Robby Morrow assisted Ron Andrus, Civil Engineering Clemson, and a request for shape files showing distribution of nonfoliated rocks versus foliated rocks in Piedmont to be used in a seismic design study. Will Doar answered questions about rocks found in Beaufort County; most likely the rocks are fill material from over a century ago; referred an out-of-state inquiry to State Museum for questions about fossil shells from Marion County; and answered questions about early Pleistocene stratigraphy of Horry County from a consultant. Robby Morrow spoke with Todd Beasley, USC College of Education, about presenting to a group of pre-service teachers-senior students on how to teach earth science concepts to elementary students. The class would take place in October. Will Doar, Katie Luciano, Andy Wykel, Kyle Gawinski, Zach Zelaya, and Robby Morrow assisted Abbey Stevens, Project Coordinator South Carolina Heritage Corridor, with filming video short film segments on geologic features for the South Carolina 7 Expedition team, a program of the South Carolina Floodwater Commission, the South Carolina Lt. Governor and Governor offices, and the South Carolina National Heritage Corridor. Luciano and Doar demonstrated the SET project at Fig Island SET. The film will be released in July.

Partnering:

Furman University	USC-School of Earth, Ocean, and Environment	ECU - UNC Coastal Studies Institute
USGS – Earth Surface Processes Team, NCGMP, Energy and Minerals	SCDHEC-OCRM	UGA-Skidaway Oceanographic Institute
	BOEM	MRD-NERR, MRR
College of Charleston	SCDOT	USC-Civil and Mechanical Engineering
Coastal Carolina University	SGS Canada	Clemson U. Civil Engineering

HYDROLOGY

Water Planning

Edisto River Basin Planning: Scott Harder, Andy Wachob and Joe Gellici attended an in-person Edisto River Basin Council (RBC) meeting on June 21st, while Priyanka More and Alex Pellett attended the meeting virtually. Mr. Harder, Mr. Gellici and Mr. Wachob participated in a Planning Team meeting on June 4th to plan for June RBC meeting. Mr. Harder periodically coordinated with various Planning Team members and RBC presenters regarding the administration of the planning process and to prepare for the June RBC meeting. The Planning Team includes representatives from Clemson University, CDM Smith, Inc, SCDNR, the South Carolina Department of Health and Environmental Control (SCDHEC) and the United States Geological Survey (USGS).

Mr. Harder began developing a South Carolina State Planning Framework Addendum to document revisions approved by the Planning Process Advisory Committee (PPAC).

State Water Planning Process Advisory Committee (PPAC): Mr. Harder worked with Clemson University to develop an agenda for the July 15th PPAC meeting.

Surface Water Program

Surface Water Modeling: Ms. More reviewed the updated Broad SWAM model received from CDM Smith, Inc. and met with Mr. Harder to discuss the model. Feedback was provided to CDM Smith, Inc. Ms. More also began a review of the updated Saluda SWAM model. Mr. Harder and Ms. More met with CDM Smith, Inc. and Dominion Energy to discuss consumptive use rates at the McMeekin generating station to ensure it was accurately represented in the Saluda SWAM model.

Water-Demand Projections: Mr. Pellett formatted the most recent SCDHEC water use data and the water demand projections for use as input to the groundwater model. He also modified the high-demand scenario projections for use in the groundwater model by removing the high-impact factors component, while keeping the high driver projections.

Drought Monitoring: Ms. More continued to prepare weekly drought status updates for streamflow, lake levels and groundwater levels for publication on the State drought website. Mr. Harder and Ms. More attended the June 9th State Drought Committee meeting and the June 23rd committee meeting. Ms. More prepared information on the hydrologic conditions of the State for drought assessment purposes for both meetings and presented the material for the June 9th meeting.

Mr. Harder and Ms. More attended the annual Catawba-Wateree Drought Management Advisory Group Meeting on June 9th.

Mr. Pellett continued the development of a groundwater monitoring app by testing different methods to interpolate groundwater level and baseflow contours.

Streamflow Monitoring: Mr. Harder met with staff from SCDHEC and the USGS to discuss a South Carolina low-flow study proposed by the USGS.

SC Bio Flow Standards: Mr. Harder participated in several meetings with staff from Clemson University, The Nature Conservancy, and CDM Smith, Inc. to prepare documentation and a presentation on the application of biological flow standards in the Edisto basin planning process. Final recommendations were accepted by the Edisto RBC at the June meeting.

R-Program Training: Mr. Pellett continued a series of R-training workshops on a weekly basis with Ms. More. The purpose of these workshops is to expand the surface water program's R-programming capacity by building successful R-packages. Specifically, Mr. Pellett is working with Ms. More to develop validation procedures for each table in the SCDHEC water use database. A quality control exercise for the individual database tables in the package is nearly complete, and the quality control of inter-tables is in progress. Ms. More is working to check if individually-reporting sourceids in the water use monitoring table are present in the ground, surface, and permit database tables. This work is ongoing.

Mr. Pellett provided feedback to Ms. More on methods for plotting data from the Soil Water Balance recharge model using R.

Other:

Mr. Pellett and Mr. Harder attended a GIS webinar on June 13th hosted by Tanner Arrington, the agency's GIS manager. Mr. Harder participated in an Everything DiSC Workplace Profile Workshop session on June 10th. Mr. Harder responded to two public requests for information.

Groundwater Program

Groundwater Modeling

Jess McDaniel used the Soil-Water-Balance (SWB) model, which generates aquifer-recharge data for input into the Coastal Plain groundwater flow model, to calculate recharge rates for the years 2017 through 2020. Mr. McDaniel and Ms. More continued working to understand why there is a difference between the recharge rates produced by the SWB model and those reportedly used in the USGS Coastal Plain groundwater model. Mr. Harder, Mr. Gellici, Mr. Wachob, Mr. McDaniel, and Ms. More met with the USGS and SCDHEC several times to try to resolve this problem; further investigation by the USGS suggested that much of the observed discrepancy may be the result of incorrect reporting of the actual recharge values used in the USGS model.

Mr. Wachob hosted a meeting of the State Groundwater Technical Advisory Committee (GWTAC), primarily to discuss methods for developing aquifer recharge values for use in the groundwater flow model for the simulations of groundwater conditions for the years 2021 through 2070. The GWTAC supported SCDNR's plan to repeat historical recharge rates (from the years 1979 through 2020, as calculated by the SWB model) for the years 2021 through 2062, and recharge rates from 2005–2012 for the years 2063–2070.

Mr. Harder, Mr. Gellici, Mr. Wachob, and Mr. Pellett met with the USGS and SCDHEC to discuss problems Mr. Pellet found while preparing SCDHEC's well coverage for input into the groundwater flow model. Mr. Pellet developed tests to ensure the water-use data provided by SCDHEC is acceptable for use as an input into the groundwater model and formatted the most recent SCDHEC water-use data and the water-demand projections to be input into the groundwater model. Mr. Pellet also modified the high-demand scenario projections for groundwater users by removing the high-impact factors but keeping the high-driver projections.

Groundwater Monitoring Network

Two new monitoring wells were drilled and added to the SCDNR network. One well is in eastern Richland County (Region 3) at the SCDNR Wateree Range; the other well is located at Cheraw State Park in Chesterfield County (Region 2). Both wells are screened in the McQueen Branch aquifer and have been equipped with automated water-level recorders.

Josh Williams downloaded water-level data and recorded manual measurements from 22 wells in Aiken, Calhoun, Chesterfield, Kershaw, Lee, Lexington, and Orangeburg Counties (Regions 2 and 3) and processed most of that recorded water-level data. Mr. McDaniel downloaded water-level data and recorded manual measurements from 21 wells in Beaufort, Colleton, Richland, Sumter, and Williamsburg Counties (Regions 2, 3, and 4). Brooke Czwartacki downloaded and processed water-level and conductivity data and made manual measurements from network wells in Berkeley, Charleston, Colleton, Dorchester, Florence, Georgetown, Horry, Marion, and Williamsburg Counties (Regions 3 and 4).

Ms. Czwartacki oversaw the pumping of 12 network wells in Florence, Georgetown, Horry, Marion, Sumter, and Williamsburg Counties (Regions 2, 3, and 4). The pumping, much of which was funded by a grant from the National Groundwater Monitoring Network program, helps ensure the monitoring wells maintain a good connection to the aquifers. Water samples were collected from the pumped wells and sent to a laboratory for chemical analysis.

Mr. Williams removed the water-level recorder and telemetry equipment from well JAS-425 at the C-15 cluster site (Jasper County, Region 4) because the USGS has taken over monitoring of this well. Ms. Czwartacki met with representatives from the Town of Hemingway (Williamsburg County, Region 2) to discuss converting a recently drilled but unused public-supply well into a water-level monitoring well and adding it to the SCDNR network.

A draft of a report describing changes in the SCDNR Groundwater Monitoring Network from 2014 through 2019 has been completed and undergoing a final review before publication next month.

Saltwater Intrusion

Ms. Czwartacki and Mr. Wachob completed the report describing chloride concentrations in the Charleston aquifer of Berkeley, Charleston, and Dorchester Counties (Region 4). SCDNR Report 64, *An Assessment of Groundwater-Quality Conditions and Chloride Distribution in the Charleston and Gramling Aquifers in Berkeley, Charleston, and Dorchester Counties, 2020*, is now available from the Hydrology Section web page.

Ms. Czwartacki oversaw the pumping of three SCDNR monitoring network wells in Georgetown and Horry Counties (Region 4) screened in the Crouch Branch or McQueen Branch aquifers. Water samples were collected from each well and sent to a laboratory for chemical analyses to look for changes in chloride concentration since 2016.

Geophysical Logging

Mr. Williams logged the new 330-foot-deep monitoring well drilled at the SCDNR Wateree Range in Richland County (Region 3). The logging was complicated by difficulties getting the logging probe to the bottom of the borehole, and then by wiring problems inside the cable head connection.

Potentiometric Mapping

Ms. Czwartacki completed an initial draft of a contour map showing groundwater levels for the Crouch Branch aquifer based on water-level data collected in late 2020. The map was sent to Mr. Wachob for review.

Outreach and Other Work

Mr. Wachob and Ms. Czwartacki provided hydrologic and water-well information and other technical assistance to 5 groundwater customers. Ms. Czwartacki attended the monthly IRT meeting via WebEx on June 2nd and attended the Clemson Advisory Committee meeting via Zoom on June 8th. Mr. Harder, Mr. Wachob, Mr. Williams, Mr. McDaniel, Ms. Czwartacki, and Mr. Gellici participated in one virtual meeting to discuss ongoing work and upcoming projects within the Groundwater Program.

FLOOD MITIGATION

All the Flood Mitigation Program staff continue to assisting communities with post disaster requirements pertaining to the October 2015 flood event, Hurricane Matthew, Hurricane Irma, Hurricane Florence, Hurricane Dorian, February 2020 flood event, April 2020 tornado outbreak, May 2020 riot damage, May 2020 flooding, Hurricane Isaias, Hurricane Sally, and the February 2021 flooding. The staff responded to 35 technical assistance requests. Jessica Artz conducted 4 community assistance telephone contacts (CAC-T), followed up on 3 CAC-T and closed 1 CAC-T. Jessica also followed up on 5 Community Assistance Contact Visits, closed 3 Community Assistance Visits and followed up on 20 Community Assistance Visits. Jessica also reviewed 7 ordinances. Jessica continues to manage the 2017 and 2018 Flood Mitigation Assistance Grants. Jessica provided assistance regarding the FMA grant program regarding scope of work changes, quarterly reports, questions from sub-applicants and fielded questions from potential new applicants. Jessica attended the SCAHM Board call (6/11), monthly mitigation call with SCEMD and SCOR (6/2), Monthly FEMA mitigation coordination call (6/3) and the SC Safe Home Commission meeting (6/24). Jessica has also been participating in the SC Mitigation Roadshow with the SC Office of Resiliency and SCEMD (6/22,6/28, & 6/30). Jessica participated in a Mitigation Training by teaching the FMA portion (6/22). Jessica and Maria attended a meeting with FEMA Region IV and FEMA Headquarters regarding an FMA grant at Isle of Palms (6/9) and the FEMA/ SC coordination consultation call (6/30). Maria participated in the SC Monthly Mapping Study update call (6/15), met with Senator Scott's office regarding NFIP reauthorization (6/16), and met with SCDOT about grant funding (6/23). Maria also taught the training "Flood Risk Products for Floodplain Managers (6/23). Maria is also working on the HMGP grant that is building the SC Flood IMPACT website. Maria is the Co-Chair of the Association of State Floodplain Managers Mapping and Engineering Policy Committee. As part of this committee Maria has been providing comments on FEMAs updates to the mapping guidance. Laura continues to manage our extensive filing system, administrative processes and scanning invoices. She has processed our mapping invoices and uploads the programs, entered the General Technical Assistance information into the FEMA database. She also handled all the registrations and certificates of attendance for the following training classes held this month and sent out bulletins on Gov Delivery for upcoming trainings and Silver Jackets monthly webinar series. She is also working with communities to obtain the project Charters in the Little Pee Dee watershed.

LAND, WATER & CONSERVATION

STATE CLIMATE OFFICE

The SCO answered 16 data requests on various topics from the general public, law firms as well as various state and federal agencies. Two requests were certified.

Melissa is the primary point of contact for the State Climate Office service program answering 11 data requests. She drafted and posted four weekly weather summaries on the SC State Climate Office website. She worked with Elliot to coordinate drought impacts from across the state for the US Drought Monitor. She was a guest speaker at the Teachers on the Estuary professional development program sponsored by NOAA and SCDNR (July 20). She provided a presentation for the SCDNR Archaeology Interns (July 27). She coordinated with Maria Cox Lamm and her contractors about potential rainfall forecasts with Tropical Storm Elsa. Melissa wrote an article about South Carolina Weather and Climate which was published in the July/August 2021 issue of the national magazine Weatherwise.

Elliot led the efforts of USDM input for SC for 4 weeks and wrote 4 drought narratives. He created 4 infographics to help explain and communicate weekly changes in USDM conditions that were released on social media and to the SCDNR Drought Listserv on GovDelivery. He created weekly maps of the Palmer Drought Severity Index and the Crop Moisture Index. He conducted calls with six potential Drought Response Committee members. He takes the lead on updating the SC Drought Program website which includes at least seven weekly updates. He helped with collecting and analyzing the climate normals data for South Carolina; and created the precipitation map for the Tropical Storm Elsa report. He participated in the NIDIS Webinar: Western Drought Crisis (July 20th)

Frank Strait joined the SC State Climate Office team on July 2 as the new Severe Weather Liaison. A considerable amount of his time was spent with tasks related to Human Resources. He spent time meeting SCDNR staff and leadership. Hope and Frank visited the SC Emergency Management Division and the State's Emergency Operations Center (July 7). Frank provided customized forecasts for the Edisto Billfish Tournament. He issued six Weather Alerts. Two alerts focused on Tropical Storm Elsa (July 5 and 6) and four were regular weekly tropical alerts issued every Friday. He began writing the Executive Summary for the SC Winter Weather Database. He composed an Open File Report on Tropical Storm Elsa https://www.dnr.sc.gov/climate/sco/Publications/TSElsa_OpenFile.pdf

Hope answered calls from SCDNR staff and Law Enforcement about the potential impacts from Tropical Storm Elsa. Hope was a participant in another round of DISC Training with staff from SCDNR Legal Counsel and Executive Office (July 12). Hope and Grayson created a presentation on South Carolina Tropical Storms and Hurricanes. Hope gave the presentation during the SCDHEC Environmental Affairs Lunch and Learn Series (July 14). She participated in a zoom meeting with staff from SCDHEC Dam Safety to discuss SC precipitation trends. Following the meeting she provided graphics and data to support their request. She held a meeting with staff from the Carolina's Integrated Science and Assessment group to discuss another series of Climate Connection workshops and 2022 collaboration opportunities (July 27). She provided forecast guidance for SC Governor's Cup Billfish Series. She participated on several calls with Elliot and potential new Drought Committee members. Hope was a guest participant in the SCDNR Roundtable for the South Carolina Envirothon Team (July 28). She provided regular guidance for office interns and staff.

The Summer Research Intern, Grayson Murray, worked on creating holiday climatology infographics. She also spent time viewing and organizing 40 years of Kodak slides (1954-1994). She compiled each of the states' climatological year in review for 2020 into one document for the annual release of the national year in review. She also coded the website for the updated 2020 County Atlas, which is now available online. She started work on the Winter Weather Executive Summary.

Staff participated in one State Emergency Response Team conference call for Tropical Storm Elsa (July 6). Staff attended a site visit to SCDNR Marine Resources Division. The Team met with leadership to discuss networking and collaboration opportunities (July 15).

Additional Information on Staff Activities

- Melissa serves as a co-host with Valerie Shannon to help facilitate SCDNR and Harry Hampton virtual board meetings.
- Hope participated in two calls with AASC leadership.
- Frank completed his 8-hour Fleet Safety Driver Training (July 27-28).
- Hope completed the 2022-2023 budget request spreadsheet for the State Climate Office.
- Hope organized a call with AASC leadership and Kyle Michel to discuss AASC legislative opportunities and challenges.

GEOGRAPHIC INFORMATION SYSTEMS

General

Work this month saw the completion of the FEMA Flood Mitigation LiDAR Review and included work with the Climatology Group, State Scenic Rivers Program, Law Enforcement, Natural Heritage Program, and the Earth Science Group. Several webinars were attended including the annual ESRI User Conference.

The Horry County ICW Idle Speed application was refined to improve functionality. At the request of DNR's Governmental Affairs group a presentation was given to Captain Michael Paul Thomas in preparation to showing the application during a community outreach meeting in Horry County. His feedback was very positive, and expectations are to continue supporting this application.

Joe Lemeris and Anna Smith of the Natural Heritage Program requested geospatial data relating to springs in the Piedmont from the Geological Survey. Specifically, they were looking at areas south of the Chestnut Ridge Heritage Preserve. NHP was provided with data from mapped spring locations throughout the Piedmont.

The 2021 ESRI User Conference was attended, and it was held virtually. Presentations attended included: Spatial Analytics in ArcGIS, Data Mining using ArcGIS Pro, Natural Resource Management using ArcGIS Online and Field Apps, What's New in ArcGIS Hub, Python Programming using ArcGIS API, among others. Another ESRI webinar was attended dealing with geospatial analytics research using ArcGIS Pro.

A meeting with Tanner Arrington, Bill Marshall, and ESRI staff discussed implementation and further adoption of the ESRI Hub application package. This package is being developed to use as part of the Beach Sweep River Sweep Program. Meeting dealt with the development of the dashboard along with plans to expand our outreach using the service.

Flood Mitigation Program

Finished work on the FEMA Flood Mitigation LiDAR Review Project. Union County was reviewed in its entirety followed by a full review of Cherokee County. Requests for final revisions were sent to ESP Associates. When final changes are made, deliverables will be created and submitted to Maria Cox Lamm for implementation.

State Climate Office

Completed edits to the Hurricane Database and creation of interpolated precipitation layers from Hurricane Elsa. Edits to Hurricane Database included correction of storm landfalls along with the revision of numerous storm descriptions.

Geological Survey

Created a mosaiced DEM of counties along the I-73 corridor. This DEM was made to temporarily replace the statewide DEM which has been affected by the corrupted Calhoun and Cherokee County DEM's. This temporary mosaic will be used to create quad level elevation models for use in upcoming STATEMAP geologic drafting.

Several meetings took place with the SCGS staff and Tanner Arrington to discuss creating a Borehole Database. Literature from the Delaware Geological Survey and other state well databases are being evaluated. The next step will be to design a database structure and then experiment with data input.

Scenic Rivers

Discussion with Bill Marshall about the formulation of a site suitability analysis that quantifies the geomorphology of rivers around the state using multiple criteria. This model would be used moving forward to direct State Scenic Rivers personnel in prioritizing projects.

Work on the Ashley River watershed used the NLCD (National Landcover Dataset, 2019) to visualize changes in impervious infrastructure and development.

Hydrology

No GIS work.

South Carolina Conservation Bank

No GIS work.

Archaeology

No GIS work.

Cultural Heritage Preserves

No GIS work.

RIVER CONSERVATION PROGRAM

River Conservation / Scenic Rivers:

- Black River: Staff participated in July 13 meeting of the advisory council to address membership on the council, the proposed Black River state park and water trail project, litter issues and potential measures to reduce litter; local DNR-LE staff participated in this meeting.
- Ashley River: Staff met with Ashley River partners to discuss concerns for a proposed development (convenience store gas station) at Cooks Crossroads that is inconsistent with county zoning and presents an undesired land use at the gateway to the historic district of Hwy 61 and potential polluted runoff to the Ashley
- Beach Sweep/River Sweep: Staff began public outreach and recruitment of volunteers about the planned 2021 Sweep event to include a social media release. Additions of new website capabilities for the registration of volunteers and map display of cleanup sites were completed and posted online. Continuing to develop a website for data input of trash collection results.

FERC Hydroelectric Projects:

- Saluda Hydroelectric Project: Staff met with partners to identify needed measures to mitigate low dissolved oxygen impacts to the Saluda River when Dominion Energy must release large flows in order to lower reservoir levels at Lake Murray in response to major rain-inflow events.
- Neal Shoals Hydroelectric Project: Staff provided comments to the FERC recommending Dominion Energy's proposed summertime plans for project maintenance dewater the project reservoir and release sediment to the downstream river reach.

Heritage Trust: Staff participated in a July 27 meeting of the Habitat Protection Committee, and developed proposed budget requests for the coming fiscal year

S.C. Environmental Awareness Award: Staff drafted changes to the Award Nomination Form for the purpose of improving and standardizing information requirements for all future nominations submitted to the Environmental Awareness Award Committee.

BOTANY AND PLANT CONSERVATION PROGRAM

Tracked Plant List Revision:

Major efforts to revise the Track Species List have continued through July, though at a slower rate because of the height of field season. The research conducted by the Assistant Botanist; Samantha Tessel has contributed to a more thorough understanding of the distributions of tracked species.

- Continued re-ranking of species already on tracked species list
- Worked with Joe Lemeris to update existing Element Occurrence records
- Samantha Tessel has conducted specimen evaluations at Furman University Herbarium, virtual specimen evaluations in the Southeast Regional Network of Expertise and Collections (SERNEC) and used specimen data and the Heritage Trust database to calculate proposed ranks using NatureServe's Rank Calculator. These efforts have centered on tracked species but have also included species being evaluated for addition to the tracked species list. In the process, she has been resolving taxonomic problems that affect ranking of tracked species, and has been learning the Tracked Species list, NatureServe ranking criteria, and the Heritage Trust database.
- Technicians (Csilla Czako, Celeste Gross) have made great progress in georeferencing and digitizing herbarium specimens of tracked plant species, and species under evaluation for tracking, at the University of South Carolina. This effort is now leading to a major improvement in the DNR tracked species database as a result of DNRs long-term history of the development of the SERNEC herbarium portal. The team is now incorporating on a weekly basis EO records of newly tracked plant species to the Heritage Trust database

Field Surveys and Monitoring:

- Conducted surveys of rare plants, invasive plants, and assessed management needs at Bunched Arrowhead HP Core Tract, Blackwell HP, Cartwheel Bay HP, Buzzard Roost HP, Ashmore HP, Eva Russell Chandler HP, Chestnut Ridge HP, Cohen Campbell Fish Hatchery, Fort Moultrie National Historic Park, Greystone Preserve, Janet Harrison High Pond HP, Lewis Ocean Bay HP, McDowell Preserve, Poinsett Electronic Combat Range, and Mountain Bridge Wilderness Area.

- Documented new occurrences of Venus flytrap (*Dionaea muscipula*) adjacent to Cartwheel Bay HP
- Processed data from 2021 field surveys and entered rare plant data into Heritage Trust database.

Conservation Actions:

- Conducted field surveys with USFWS and NRCS staff to advise and strategize for Venus Flytrap conservation on private and public lands
- Conducted field survey with USFWS staff in Aiken County for Ocmulgee skullcap conservation, and coordinated FWS Partners Program funding for the Central Savannah River Land Trust for restoration
- Conducted rare plant rescue at Shealey's Pond HP associated with a culvert replacement

Habitat Protection Committee:

- Surveyed potential acquisition site, Spence Pond, in Greenville County
- Surveyed potential acquisition site, Carter Stilley Phase II, in Horry County
- Surveyed potential conservation site, Monroe tract, in Greenville County

Other:

- Submitted grant proposal, and received approval, to USFWS to fund a botany technician for one year to update all botanical data for Federally listed species and Federal species of concern
- Submitted DNR response to USFWS delisting proposal of the Federally Threatened Dwarf-flowered heartleaf (*Hexastylis naniflora*)
- Surveyed Fort Moultrie National Historic Park and advised National Park Service on invasive species threats and coastal grassland restoration needs
- Spot checked contractor botanical survey of Grand Strand Water & Sewer project at Lewis Ocean Bay HP
- Reviewed FERC Terrestrial Invasive Plant Management Plan Compliance Report
- Participated in Piedmont Prairie Indicator meeting
- Participated in Relict trillium status meeting
- Participated in steering committee conference calls with University of South Carolina A.C. Moore Herbarium
- Advised on rare plant EOs for the Brasstown Creek HP management plan
- Peer reviewed paper for the botany journal *Castanea*
- Processed herbarium specimens collected in 2020/2021 for deposit at the University of South Carolina A.C. Moore Herbarium

CULTURAL PRESERVES PROGRAM

This month Meg Gaillard managed the SCDNR Archaeology summer internship program with 19 in person and virtual interns. Had North American Heritage at Risk (NAHAR) meetings each Friday and worked on logistics for the Sept/Oct 2021 Pockoy Island Shell Ring Complex excavation. She also screened and graded documentary films to be included in the Arkhaios Cultural Heritage at Archaeology Film Festival (Oct. 2021). This is her 8th year on the Screening Committee for the festival. There was also maintenance of Parker Annex (HVAC, dishwasher, janitorial services). Worked on the logistics for the NOLS/Landmark Learning wilderness first aid course. She also drafted RFPs for historical research and the production of films/StoryMaps. On July 1st, the Archaeology monthly newsletter was distributed. Currently there are 12,429 people registered to receive the monthly newsletter. On July 27th, provided a tour of Parker Annex and talk about archaeology to the Envirothon participants from Spartanburg. And provided a virtual talk to the Project Archaeology Teachers' Academy (Bozeman, MT) July 30th.

Jacob Hamill worked on archived documents at Parker Annex this month. He also added materials to Parker Annex Library and gave a presentation on writing lesson plans to summer interns. He lastly participated in the DAACS workshop.

Ella Goulding completed research on and created historical report for the Taylor Tract and worked with interns to catalog and shelve Edgefield pottery collection this month. She also continued research on the asylum and completed ICS-100 certification.

This month Lelia Rice designed a sewing sampler activity to be printed on bandanas and drafted the steps and activity sheet for the sewing sampler. She also received and set up on her work cell phone the 8th, along with her ID Badge. This month was spent working with interns and Ella to catalog and shelve the JG Baynham jugs/Built the shelves with other members of parker and researched JG Baynham's career.

She researched how to make a traveling exhibit and completed driver training on July 27th and 28th. Lastly attended a webinar on how the pandemic impacted institutions revenue 15th and attended talks and workshops that took place at Parker Annex.

AQUATIC NUISANCE SPECIES PROGRAM

Technical

- Management staff met with Deputy Director concerning budget items for the upcoming session
- Staff treated invasive plants on Black River, Black Mingo, and Back River Reservoir. In all 281 acres of control work was accomplished.
- Staff surveyed, Goose Creek Reservoir, Back River Reservoir, Cooper River, and Black River.
- Agreement was reached between ANS staff, SCDNR Wildlife Staff, Santee Cooper, SC Waterfowl Association and Ducks Unlimited about a cost share plan for increased habitat on the Santee Cooper lakes for hunting and fishing opportunities.

Outreach

- Staff provided control recommendations to Lake Greenwood staff.
- Staff assisted several homeowners with aquatic plant ID and control plans.
- Staff informed individuals of the benefits of invasive aquatic plant management while in the field.
- Staff attended South Carolina Aquatic Plant Management Society Board meeting

Other

- Staff conducted maintenance on boat, trailer, and other equipment.

CONSERVATION DISTRICTS

Statewide Projects

Staff attended/participated in:

- Conservation District Board Meetings in Charleston; Berkeley; Chester; Clarendon; Fairfield; Florence; Georgetown; Horry; Lexington; Marlboro; Newberry; Richland; Saluda; Laurens; Pickens; York; Spartanburg
- Performed swearing-in of newly appointed Conservation District Commissioners in Chester, Fairfield, and Marlboro counties
- Represented the Southeast on the NCF-Envirothon Operating Committee virtual meeting
- South Carolina Conservation Districts Foundation Annual Meeting
- Continued involvement in the PLEAF (Palmetto Leadership...) program
- Hosted the SC Envirothon State Champions for the virtual NCF-Envirothon international competition
- Our State Envirothon Champions, Spartanburg High School Team A, placed 3rd overall in the National Competition and won top score overall in the "Soils" portion of the test, Congratulations to Spartanburg High School!

Staff also:

- Assisted with meeting planning/hosting for Water Planning Process Advisory Committee
- Assisted with meeting planning for upcoming Land, Water and Conservation Advisory Committee, also organized and distributed Conservation District Commissioner applications to members for review
- Processed SC Envirothon scholarship information for current winners and distribution of awards for former winners who are enrolled in college

Technical:

- Continued to visit sites and provide the NRCS with the proper documentation for easements on the 2021 easement monitoring list
- On-site monitoring events have been conducted in the Jasper, Aiken, Saluda, Beaufort, Barnwell, and Bamberg districts
- Landowners have been contacted in other districts to setup future on-site visits
- Assisted Williamsburg, Darlington, and Clarendon Districts with Farm Bill programs

Watershed:

- Attended SCFGLC teleconference
- Collaborated with partners regarding multiple watershed endeavors in their areas to address concerns

- Continued working on easement issues with multiple stakeholders
- Disseminated information to watershed districts on training opportunities and upcoming webinars (7 Principles for Selling Conservation).
- Worked with partners from local, state, and federal agencies to address concerns and issues in multiple areas
- Prepared information for upcoming roundtable discussion at SENACD meeting.

Conservation Districts

Aiken District – hosted the Edisto/Savannah area meeting in Aiken at the Train Depot visitors center. We had 33 in attendance. We heard reports from Jeff Wilson (SCACD), Tyler Brown (SCDNR), Staci Henry (NRCS) and other Conservation Districts. We ended the meeting with a tour of Aiken Historic District on the Aiken Trolley. Still working on EQIP applications; grain drill usage is slowing down for now.

Abbeville District – staff is busy helping NRCS. Continuing to work on our annual affiliate membership drive for this year and we have almost reached our goal. Our monthly meetings have changed to every 2nd Wednesday of each month at 11:30am for lunch that will be held at a local restaurant located at 105 South Main St., Abbeville, SC 29620. We presented an award of \$75.00 to Grady King, a rising 2nd grader, the winner of our poster contest at our June meeting as well as award \$1,000.00 to our scholarship winner Ann Marie Brooks, a rising sophomore for this year, with their parents in attendance for. A reporter, Henry Green, from our local newspaper came for lunch with us all and took photos of our winners to be published in the local “Press & Banner” newspaper. Coursey is also continuing to work on our annual report.

Anderson District – hosted a litter pick-up with First Presbyterian Church and presented Project WET activities with the kids. We also partnered with the Anderson County Library - Main Branch for a Rain Barrel Program. This program was to teach the community about rain barrels, how to install them, and different ways to conserve water. We had 25 attendees and we've sold 15 Ivy rain barrels so far. We still have a few in stock. Our Education Coordinator also attended an Adopt-A-Stream incentives project kick-off via zoom to figure out ways to promote AAS around the county and upstate. We just restocked and updated our supplies for our AAS kit, and it is available to loan out to volunteers in the area. We have been busy packing seeds and getting ready for our fall launch for our Seed Library on August 2nd. Pop-up Seed Libraries will also be available each Thursday from 12-2 at different library branches around the county. District employees also participated in the Prescribed Fire Training and the Threatened & Endangered Species Training for NRCS. We have assisted both Anderson and Oconee field offices with 30+ applications for obligations. Anderson has been preparing packets for producers to send contract details. We are excited to have received a 2021 NACD Technical Assistance Grant to increase our assistance to NRCS with various field office tasks, planning, and field work.

Beaufort District - Staff was very busy hosting programs at Crystal Lake Park & Hunting Island State Park. Elementary aged children had interpretive hikes, learning about fish, snakes, owl pellets, and marsh ecology. We also had a program from Lowcountry Raptors. Programs were also presented to summer camps with Belfair Plantation and Coosa Elementary Reading Program and helped 4-H Coordinator with program materials. Staff also participated in the NACD Webinar, the South Atlantic Strategic Trash Collaboration, and the Take Action for a Cleaner Tomorrow Workshop.

Berkeley District - *The Berkeley Walkways*, part of the new *Berkeley Outdoor Life* program, is now completed. *The Walkways* now consists of 23 hiking/walking routes that cover over 180 miles of trails in Berkeley County. Work on the *Berkeley Bikeways* program will begin in August. *Berkeley Earth Team* volunteers continue to fervently work toward their cleanup goal at the Bushy Landing Boat Ramp as well as other opportunities to “Keep Berkeley Beautiful.” *Land Services Specialist* Nick Yoder has been focusing on locating the dry hydrants in our County and entering the GPS coordinates into the Berkeley County GIS system. Once completed he will work with Fire Chiefs to confirm our data, as well as get a better idea of which existing hydrants are functional and can be used. Nick is also in the process of getting maintenance schedules for the NL Harvey drainage project and hopes to have a better idea of when we can expect crews to work these drainage areas in the future.

Chester District – Vice Chair Jeff Wilson completed the audit for FY 2020-21 on July 20. SCDNR’s Brooke Myers and Deanne Myrick attended our July 20 Board meeting at the Cabin @ Cotton Hills Farm and brought the MOA to be signed by Chairman Beer. In addition, notary Brooke also administered Vice Chair Jeff Wilson’s Oath of Office. Both of our Allen L. Beer Scholarship recipients along with a parent attended the meeting that day as well so that Chairman Beer could present their scholarships in person. Chester SWCD, and several other non-profits related to water, was asked to have a display at the Chester County Chamber of Commerce banquet on July 22 at the Gateway. Our display consisted of a slideshow, an *enviroscape*, a trifold with district programs and photos, and the SCACD banners. Contact information forms were completed online for the South Carolina Ethics Commission for CSWCD and our 2 watershed districts on July 26. Two Camp Woodie campers were partially reimbursed for their tuition thanks to our Synthomer Foundation

grant which helps pay for conservation camps, seminars, and workshops. Our no-till seed drills were utilized on 4 Chester County acres.

Colleton District – our Commissioners are making plans for FY 2021-2022. Chairman Herndon will appoint committees to conduct the Annual Audit and update the Annual Plan of work. Secretary/ Treasurer Hiott and staff will be working on the FY 2021-2022 Proposed Budget. Commissioners are also making plans to attend the SCACD Policy Positions and Business Meeting September 14th at Phillips Market Place. Commissioners Benton and Hiott attended the County Farm Bureau Meeting in Lodge, SC and the District Farm Bureau Meeting in Walterboro, SC.

Dorchester District - did not hold a board meeting for the month of July. In lieu of our annual banquet, the district's annual newsletter was sent out to all affiliate members due to COVID-19 and the fact that Dorchester County's COVID-19 numbers are slowing increasing again. We are working on organizing our outreach projects for 2021/2022.

Fairfield District - Grazing Land Studies were completed on two Fairfield Co. Farms. Sammy Soil Booklets have been distributed young children. Completed and mailed the Direct Deposit Form. Tyler Brown administered the Oath of Office to Commissioner Matthews. Board discussed and signed the MOA. Youth Commissioners are in the process of adopting a stream and a highway. Staff and Commissioners met with Watershed Director. WildWood Campers returned from their week at camp. Made site visits with NRCS personnel. We continue to assist NRCS with the Farm Bill Program.

Greenville District –continued education on stormwater pollution including pet waste and riparian buffers. We distributed 13 “There is no Poop Fairy” signs, and developed buffer signage for a lake that the County owns. We are creating a series of stormwater videos that are highlighting these pollutants as well as yard waste and pesticide, herbicides and fertilizers. We taught Water Cycle lessons to about 40 students at LEAD Academy, tabled at Roper Mountain Science Center's Summer Adventure (7/9), tabled at the Fountain Inn Farmer's Market with Stormwater games + education (7/10), and led a Triple Facilitator (Project WET, Project WILD and Project Learning Tree) workshop in Awendaw, SC. For our Soil Your Undies class in partnership with the Greenville library, we hosted the second of a series of soil health experiments. We continue to meet with individual citizens giving technical advice regarding erosion, streambanks, and flooding.

Hampton District - staff participated in the DHEC Action for a Cleaner Tomorrow virtual workshop and received a lot of valuable information regarding energy, solid waste, recycling, and water; as well as programs and grants from other organizations that are available.

Keep Hampton County Beautiful assisted in one litter sweep at Stokes Bluff boat landing that resulted in 300 pounds of litter being removed as well as 7 pounds of aluminum cans that were recycled. KHCB also joined in a training workday with PalmettoPride to more accurately learn how to complete reports that are required by Keep America Beautiful.

Jasper District - is assisting NRCS with following up on EQIP and CSP programs with our new District Conservationist. Two applicants are obligated and NRCS is still providing technical assistance for practice management, practice certifications and payments. We currently have one (rollover) application for CSP. Our NRCS office is still closed due to COVID-19 but is assisting customers through JSWCD and phone and emails. The District has contacted all schools for conservation education for the upcoming year and for litter and recycling education presentations. We held two litter prevention education seminars at the Blue Heron Nature Center in July with 20-25 business owners and citizens in attendance to present our BIZ FOR BUTTS anti cigarette butts campaign. We are working closely with SCDOT with our Adopt A Highway program and have gained 12 new groups for 2021. We were closed for a week for maintenance and vacation.

Laurens District – our annual Earth & Sky Photo Contest is underway. We have been doing this since about 2012 & participation increases every year. The winners & honorable mentions are featured in our school year calendar. Over 100 of these calendars have been distributed this month. We like to think this contest reminds residents that we are surrounded by beauty & so we must protect our natural resources in order to preserve this little patch of country life. If you would like to see previous entries, please follow us on Facebook & Instagram. We also held our Local Workgroup Meeting at the Adair Outdoor Education Center. Input from local farmers is vital to determine our most important resource concerns.

Lee District – we have processed many CSP and EQIP applications over the past month and we are very excited about that. We have also been working on the re-appointment of one of our long-standing commissioners, Mr. Robert A. (Bob) Boyce. Mr. Bob has served as a commissioner on our board for over 30 years and we look forward to continuing this

relationship. Commissioner Boyce brings a wealth of knowledge and expertise to serve the citizens of Lee County. We will patiently await the final results of this re-appointment application once the DNR concludes their September meeting.

Newberry District – a new District Coordinator was hired, Crista Lukoski. NSWCD has its annual Camp Conservation June 21-25, 48 campers enjoyed programs about recycling including a puppet show, a fishing clinic, and other fun activities learning about soil, water, and nature.

This past month has been spent training on all things DNR, NCRS, and planning out activities for future events. We participated at the Newberry Opera House on July 14 where the SC7 featured the Green Carpet Premiere of their Documentary "Higher Ground". The film explores the Seven Wonders of South Carolina and the local impact on Climate Change. SC Governor McMaster and Lt Gov Everette were in attendance. NSWCD presented information.

Orangeburg District - staff finished up some summer workshops and is gearing up for fall programs. Office staff has been busy closing out Fiscal Year 2020/2021 and preparing the 2021/2022 budget to present at the August Board Meeting for approval. Staff completed and submitted the NACD financial and accomplishment portions of the Quarterly Report for the NACD Task Support Grant. Diane and Lisa participated in the Take Action South Carolina Environmental Education Virtual Workshop on July 27 where so much valuable information was presented.

Richland District – completed our FY22 plan of work, budget, and advocacy planning processes. Commissioners signed a Memorandum of Agreement and Unfunded Cooperative Agreement with federal and state partners. The District co-hosted a Midlands Meetup for 20 environmental educators at Sonoco Recycling. Staff recruited 7 more Seed Sanctuary volunteers, and staff and volunteers are busy preparing for fall seed distributions. The District's monthly e-newsletter reached >3,000 subscribers. Staff provided support for the Environmental Education Association of SC, Southeastern Environmental Education Alliance, SC Forage and Grazing Lands Coalition, and SC Project Learning Tree Steering Committee. Staff participated in professional development opportunities including the SC Project Learning Tree Facilitator Refresher and Take Action SC Workshop.

Spartanburg District - It has been hot and sticky in the garden this month. The weeding and mulching have had a big impact on the water retention and has cut down on the weeds. I am no big fan of being in videos, but I am constantly surprised at how many people tune in each week.

Sumter District – launched rental of two feral hog traps. These traps will be available to producers at no charge in exchange for completing a data report. The rental program was featured in the Sumter Item, and a piece ran on WACH FOX to promote them. The Sumter SWCD Fellowship program has been released to colleges throughout the Midlands. Sumter SWCD continues to rent out the grain drill and support NRCS.

York District – Chasity completed 4 weekly lessons on the *EnviroScope* at Curtin Farms in Clover, SC as part of their weekly camps. Black's Peaches was part of the Ag+Art Tour in York County. YSWCD took that opportunity to share information about our programs and share resources concerning clean water and NRCS. Chasity made homemade bird feeders out of toilet paper rolls and bird seed and gave them out at the event. We also gave out "lettuce cups" to encourage people to learn to grow their own local produce.

EARTH SCIENCE GROUP

Earthquake Activity: Three (3) earthquakes in July: M2.0, 7/17; M1.3, 7/22; and M1.1, 7/22 All three were in the vicinity of Summerville, Dorchester County. No reports of damage.

South Carolina Geological Survey Geological Information

STATEMAP: Zach Zelaya, Jordan Suttles, Brian Lockerbie, and Andy Wykel hand augered four (4) holes in Marion and Horry Counties; also went to the type of section of the Peedee Formation in Florence County to verify map relations. Andy Wykel and Kyle Gawinski continued drafting the Centenary, Fork, and Mullins maps (FY20). Robby Morrow completed four (4) traverses were in the southern half of Edgefield Quadrangle, Edgefield County; mapping focused on delineating the contact between a quartz diorite-tonalite intrusion and the surrounding Carolina terrane rock types, and continued work within the Modoc Shear Zone; work continued drafting Geologic Map of southern half of Edgefield 7.5-Minute Quadrangle. The FY20 No-Costs Extension was approved; new end date is 12/31/21. Zach Zelaya transferred lithologic logs into Strater formats for use in map development and building cross sections.

Other Mapping including Outsource Mapping: Acquired GPR data from Dr. Ron Counts (U. Mississippi). Dr. Counts collected this data in 2016 in Horry County with Will Doar. Circumstances have prevented Dr. Counts from processing the data, and he has agreed to let us process it. We have asked him to provide QA for our results.

Earth Mapping Resources Initiative: Robby Morrow, Andy Wykel, and Zach Zelaya spent two days in the field with Anji Shah, USGS, collecting gamma-ray spectrometry data and grab samples within the Earth MRI geophysical survey footprint. The data are being used to test the hypothesis of whether heavy mineral sands or kaolinite deposits are responsible for thorium anomalies in the new geophysical data. Katie Luciano and Will Doar coordinated field work for Anji Shah (US Geological Survey) to collect samples on non-renourished beaches including Dewees Island that will help calibrate her aeroradiometric studies. Earth MRI field work and sample processing continued in Calhoun and Orangeburg Counties. Blake Stubbins, Jordan Suttles, Brian Lockerbie, and Robby Morrow collected an additional 33 samples to be processed for geochemistry from Gilbert, Barr Lake, and Steedman Quadrangles, Lexington, and Saluda Counties. All 108 samples (per project specifications) have been collected, processed, and shipped to the USGS for analysis. No drilling this month, six (6) hand augers were completed, and several new exposures were located, measured, and described. Megan James and Taylor Turbyfill accompanied field crew one day to observe field methods to better understand how to make digital workflows in the office. Andy Wykel, Zach Zelaya, and Brian Lockerbie located 10 new drill sites and survey several outcrops in Wolfton and Stales Crossroads (Orangeburg and Calhoun Counties).

General: Budget requests for FY23 were discussed among staff and submitted to business office. Scott Howard reviewed a PhD defense proposal by Lance Tully (USC, Dr. Dave Barbeau, advisor).

Staffing

Blake Stubbins left his drilling assistant position to return to graduate school. Kyle Gawinski left his Geologist II position to work for Haile Gold Mine. A new Geologist II position was advertised: applications close second week of August.

Drilling Services and Core Repository

Zach Zelaya instructed Brian Lockerbie on collecting and updating the vehicle mileage workbook.

Digital Products and the Digital Information Program (DIP).

STATEMAP and Earth MRI: Taylor Turbyfill created Adobe Illustrator templates for FY20 STATEMAP and FY19 Earth MRI deliverables and created topographic base maps and legends for the upcoming quadrangles.

Other Mapping including Outsource Mapping: Taylor Turbyfill and Scott Howard made edits to the final edits of the Middendorf quadrangle geologic map. Map author, Chris Swezey, USGS, will submit again for final USGS approval, so the map can be released. Katie Luciano and Darby DeBruhl tested a new digitization method that uses Adobe Photoshop or a similar graphics editor. This method is of particular use when handling low-quality aerial photographs that need pre-processing, as the photo editing capabilities of ArcGIS are very limited.

Data Preservation: Project completed.

Geologic Map Schema (GeMS): Megan James and Darby DeBruhl continued work on creating map symbols; Ms. James also created a guide on how to make polygon fills so that Ms. DeBruhl could help work on them. A GeMS meeting with USGS (Dave Soller, Ralph Haugerud, and Evan Thoms) discussed work to date on the style file and how to handle problem symbols; Megan James, Tanner Arrington, Darby DeBruhl, Taylor Turbyfill, and Scott Howard attended.

General: Robert Clark and Robby Morrow provided Joe Lemeris, SCDNR, with a dataset compiled from geologic maps showing spring locations located during geologic mapping efforts. Staff met with Robert Clark to discuss the preliminary work for a borehole database. Mr. Clark produced a draft template of the possible fields the SCGS would require for 3D map data and reviewed with staff. Andy Wykel, Zach Zelaya, and Will Doar developed a workflow for data collection from the field to the final map and cross section generation and then from the final map units assignments to GeMS; they identified what data GeMS requires that are not currently captured by the workflow, what alterations to the workflow are required, and what additional data the final drill-hole database will require. Katie Luciano organized a Coastal GIS Users Group meeting at Ft. Johnson and gave a presentation. Megan James, Taylor Turbyfill, and Darby DeBruhl attended the ESRI-User Conference; topics included the transition to ArcPro, tools to enhance cartography within ArcPro, the future of 3D mapping, and a session on ESRI products for the environmental sectors of government agencies.

Coastal Program (Ft. Johnson Satellite Office)

Coastal Vulnerability

Murrells Inlet to Capers Island Coastal Vulnerability Project: Katie Luciano continued digitizing 2020 imagery for Yawkey Nature Center (Georgetown County); worked with Darby DeBruhl throughout the month on a comparative analysis between three different digitizing techniques – after consulting with other researchers doing shoreline-change analysis within the Marine Resource Division and the University of Georgia, statistical methods to evaluate digitizing techniques are being established.

Surface Elevation Tables-SET

Katie Luciano and Dr. Will Doar made GPS measurements at two (2) SET stations. Dr. Doar continued working on the SET manuscripts.

USACE-South Atlantic Coastal Study (SACS)

Katie Luciano organized a meeting of the Regional Sediment Management (RSM) Working Group’s Subgroup #1, which is tasked with writing outreach documents related to RSM and the beneficial use of dredged sediment for South Carolina. This group consists of representatives from The Nature Conservancy, Audubon, the College of Charleston (CofC), SCDNR, US Army Corps of Engineers (USACE), BOEM, and private industry.

Botany Bay and Pockoy Island Projects

Katie Luciano measured erosion transects at Pockoy Island on with student volunteer Carly Hill (undergraduate Geology major from Haverford College). Will Doar and Ms. Luciano continued proposal writing in collaboration with researchers at Coastal Carolina University (Till Hanebuth) and the College of Charleston (Scott Harris) on a project to reconstruct Holocene sea-level positions for LWC-Archaeology.

BOEM – Bureau of Ocean Energy Management

Katie Luciano, Scott Howard, Evan Cook (SCDNR Marine Resources Division – GIS), and Josh Long (US Geological Survey) worked on and completed requested edits to the BOEM South Carolina Cooperative Phase II Technical Report and BOEM Southeast Regional Cooperative Technical Report originally submitted at the end of 2019. Ms. Luciano and Scott Howard met with Ashley Long (BOEM) and Clark Alexander (University of Georgia – Skidaway Institute of Oceanography) to discuss possible collaborative work with BOEM.

General and Outreach

General: General information was provided to 19 customers; 4 meteorite ID; 2 gold RFI; 1 sinkhole inquiries; no requests for blue granite. One (1) Rock and Mineral kits ordered, and Eleven (11) map and publication orders.

Robby Morrow and Andy Wykel provided a core sample for Jean Self-Trail (USGS) from the Clubhouse Crossroads Core #1; Dr. Self-Trail will do micro-paleontological studies that provide age and climate information. Will Doar, Andy Wykel and Zack Zelaya visited a sink hole site in Holly Hill, eastern Orangeburg County; most likely a collapse related to the near surface subcrop of the Santee Limestone. Dr. Doar answered questions from Dorchester County about rocks available in Orangeburg County, suggested locations for fossil collection in Horry and Charleston Counties to a professor from Grand Valley State University in Michigan, and suggested locations to a UNC-W professor for parasequences exposed in the Coastal Plain. Katie Luciano gave a presentation on coastal geology and collaborative work with LWC-Heritage Trust, Archaeology to the Archaeology interns and Archaeology staff.

Partnering:

USGS – Earth Surface Processes Team, NCGMP, Energy and Minerals	SCDHEC-OCRM	UGA-Skidaway Oceanographic Institute
USC-School of Earth, Ocean, and Environment	BOEM	MRD-NERR, MRRI
College of Charleston	SCDOT	USC-Civil and Mechanical Engineering
Coastal Carolina University	SGS Canada	Clemson U. Civil Engineering

HYDROLOGY

Water Planning

Edisto River Basin Planning: Andy Wachob, Brooke Czwartacki, Joe Gellici, and Priyanka More attended an Edisto River Basin Council (RBC) field trip on July 21st, which included a canoe trip on the river and a site visit to Charleston Public Water’s intake at Givhans Ferry State Park. Mr. Harder and Mr. Gellici periodically coordinated with Planning Team staff to prepare for the July field trip. The Planning Team includes representatives from Clemson University, CDM Smith, Inc, SCDNR, the South Carolina Department of Health and Environmental Control (SCDHEC) and the United States Geological Survey (USGS).

Mr. Harder, Mr. Gellici, and Mr. Wachob participated in a Planning Team meeting on July 30th to plan for the August RBC meeting. Mr. Harder began preparing a presentation on methods used to assess groundwater availability for the August RBC meeting. Mr. Harder, Mr. Gellici, Mr. Wachob, and Ms. Czwartacki met to discuss the presentation.

Mr. Pellet developed a shapefile from the NHD-Plus 2.0 (National Hydrography Dataset) with stream classifications from McManamay and DeRolph (2019). This dataset supports the application of SC bio-flow standards in Edisto SWAM modeling exercises and can be used to inform the Edisto RBC in their planning process.

Broad and Pee Dee River Basin Planning: Mr. Harder, Mr. Gellici, Mr. Wachob, Mrs. Czwartacki, and Mr. Pellet met with South Carolina Water Resource Center (SCWRC) staff on July 6th to begin preparing for river basin planning in the Broad and Pee Dee basins. Mr. Harder prepared a Request for Proposals (RFP) document and formed a panel review team regarding facilitation services for the Broad basin planning process. Mr. Harder also began working on an RFP for surface water technical support services for the Broad and Pee Dee basins.

State Water Planning: Mr. Harder, Mr. Wachob, Ms. More, and Mr. Pellett attended the July 15th PPAC meeting. Mr. Harder prepared and gave a presentation to the PPAC at the meeting. Topics included river basin planning schedules, Edisto RBC membership, South Carolina State Water Planning Framework (Planning Framework) revisions, and GW modeling.

Mr. Harder prepared a memorandum which documented revisions to the Planning Framework recently approved by the PPAC. Mr. Harder also prepared a set of updates to the water planning pages on the Hydrology Section's website.

Mr. Harder planned and hosted a Surface Water Technical Advisory Committee (SWTAC) meeting on July 15th. Ms. More and Mr. Pellett participated in the meeting. Topics covered at the meeting included a water planning budget update, an Edisto planning update, and the potential application of a recently completed study on SC biological flow standards to the river basin planning process. Mr. Pellet and Mr. Harder prepared a meeting summary, and the summary was distributed to the SWTAC for review. Mr. Harder also met with staff from Clemson University, The Nature Conservancy, and CDM Smith, Inc. on July 14th to prepare for the SWTAC meeting.

Surface Water Program

Surface Water Modeling: Mr. Harder met with Ms. More to discuss her review of the updated Saluda SWAM model. Mr. Harder and Ms. More met with staff from CDM Smith, Inc. on July 12th to discuss the representation of irrigation user objects in SWAM.

Water-Demand Projections: Mr. Pellett submitted final proof revisions to the Journal of the SCWRC for his paper on mapping irrigation in the state. Mr. Pellett also continued work on his review article regarding agricultural water use in SC, and the review now includes subsections on aquaculture and livestock water use. The paper, "Mapping and Quantifying Agricultural Irrigation in Heterogeneous Landscapes Using Google Earth Engine", co-authored with Dr. Hamdi Zurqani (Clemson University) and others, was accepted for publication in Remote Sensing Applications: Society and Environment.

Drought Monitoring: Ms. More continued to prepare weekly drought status updates for streamflow, lake levels and groundwater levels for publication on the State drought website.

Ms. More prepared a draft R-script to access groundwater and lake level data and compute monthly statistical summaries to support drought products developed by the SC Climate Office. Ms. More reviewed the script with Mr. Pellet to receive feedback and guidance on how to improve the efficiency of the script.

Mr. Pellett began incorporating the SCDNR telemetry data into the drought monitoring dashboard used to assess hydrologic conditions in the state. Mr. Pellet also implemented the USGS method for calculating percentiles for groundwater levels.

Streamflow Monitoring: Mr. Harder coordinated with USGS staff to finalize surface water and groundwater monitoring contracts.

R-Program Training: Mr. Pellet continued to meet with Ms. More on a periodic basis for R-program training purposes. Ms. More completed a quality control of individual tables and inter-tables included in the SCDHEC water use database and is now working on applying the quality control process on new datasets. The goal for the R-package is to have it applied on every updated SCDHEC water use database and to compare the new dataset to the older version to keep track of changes in their database. Mr. Pellett worked with Ms. More to implement a method for converting climate data in Netcdf format to ascii format for the Soil Water Balance model.

Groundwater Program

Groundwater Modeling

Jess McDaniel used the Soil-Water-Balance (SWB) model to calculate aquifer-recharge rates for the years 2016 through 2020, using 2019 land-use data for the years 2019 and 2020. The SWB model output was then provided to the USGS for incorporation into the Coastal Plain groundwater flow model. Mr. McDaniel continued training Ms. More on the SWB model and on techniques for preprocessing land-use and climate input data. Ms. More continued testing version 2 of the SWB model and worked with Mr. Pellet to develop scripts to improve the preprocessing of input data needed by the SWB model.

While preparing the water well data for use in the groundwater flow model, the USGS identified several hundred wells having no aquifer designation and, therefore, could not be used in the model. Mr. Gellici worked to determine which aquifers those wells pumped water from, and Mr. Pellet assisted him by developing an interactive map showing the locations of these wells. Mr. Pellet also helped clean up the well coverage by identifying wells with duplicate locations and developing tests to quickly identify invalid permit limits included in the water well data. The USGS informed us they

would not have results from the groundwater model available for the August Edisto RBC meeting but expected to present results from several model runs at the September RBC meeting.

Groundwater Monitoring Network

Josh Williams downloaded water-level data and recorded manual measurements from 39 wells in Aiken, Barnwell, Colleton, Florence, Hampton, Jasper, Marion, Richland, and Sumter Counties (Regions 2, 3, and 4) and processed most of the uploaded water-level data.

Mrs. Czwartacki continued working with representatives from the Town of Hemingway (Williamsburg County, Region 2) to convert a recently drilled but unused public-supply well into a water-level monitoring well and add it to the SCDNR network.

A report describing changes in the SCDNR Groundwater Monitoring Network from 2014 through 2019 was completed. The report, Water Resources Report 65, *SCDNR Groundwater Monitoring Network Status Report, July 2014 through June 2019* by Joshua M. Williams, Brooke Czwartacki, Jess McDaniel, and Andrew Wachob, will be available from the Hydrology Section web page in early August.

Saltwater Intrusion

Mrs. Czwartacki oversaw the pumping of three wells in Georgetown County (Region 4) screened in the Crouch Branch or McQueen Branch aquifers. Water samples were collected from each well and sent to a laboratory for chemical analyses to look for changes in chloride concentration since 2016.

Geophysical Logging

Mr. Williams and Mr. Wachob spent two days repairing and rebuilding the geophysical logger's cablehead, which connects the logging tools to the spooled cable. A new multi-function logging tool that was ordered in April arrived and is ready for use.

Outreach and Other Work

Mr. Wachob and Mrs. Czwartacki provided hydrologic and water-well information and other technical assistance to 6 groundwater customers. Mrs. Czwartacki attended the monthly IRT meeting via WebEx on July 7th.

Handouts and Presentations

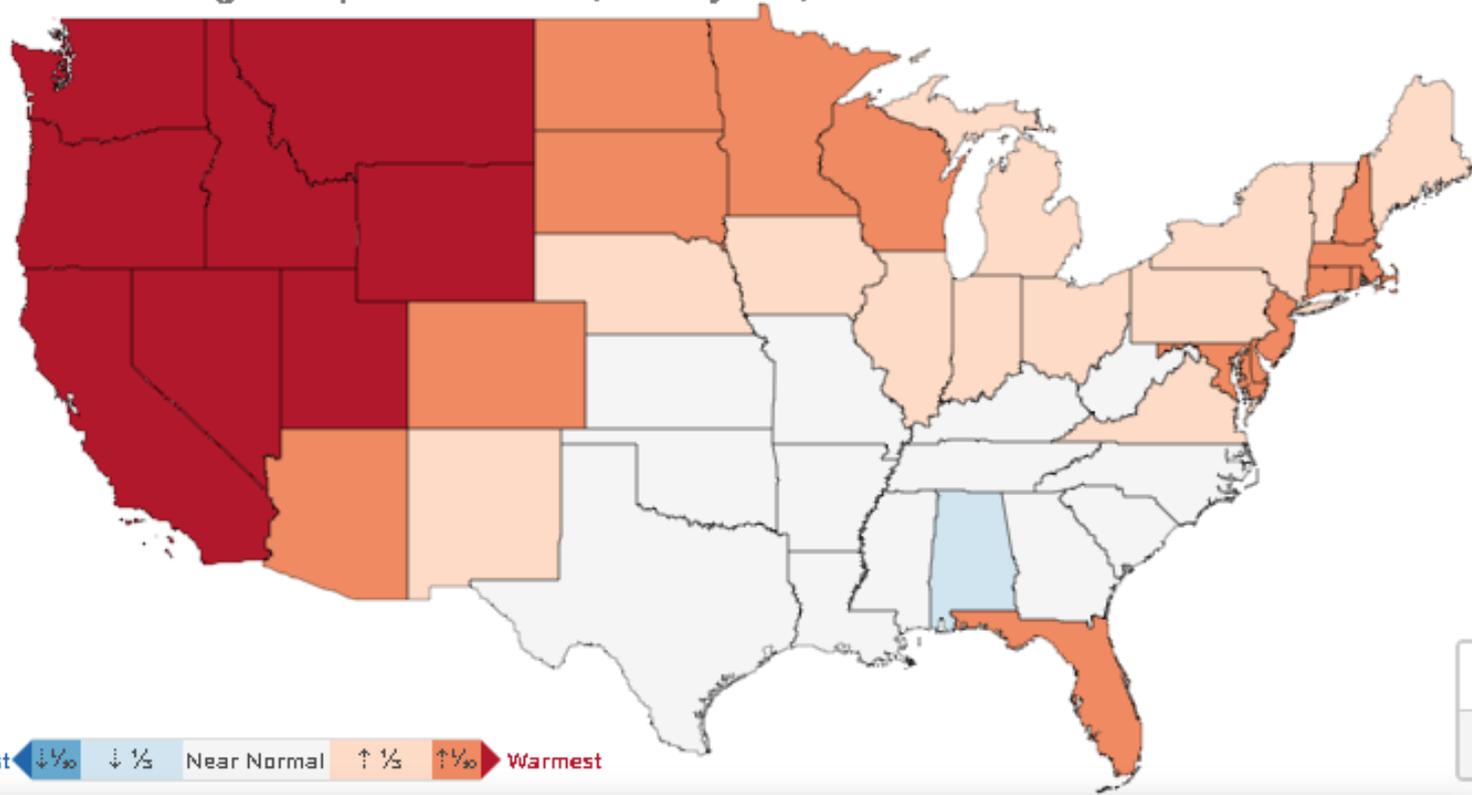
AUGUST 2021 DNR BOARD MEETING

Hope Mizzell, Ph.D.
SC State Climatologist



Statewide Average Temperature Rank (of 127 years)

June - July 2021



Coldest $\downarrow 1/50$ $\downarrow 1/5$ Near Normal $\uparrow 1/5$ $\uparrow 1/50$ Warmest

Contiguous U.S. (Hover over a state)
Temp: 74.1°F **Rank:** Warmest **Anomaly:** 3.0°F **Mean:** 71.1°F



South Carolina	78.4°F	55	-0.1°F	78.5°F
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Year	Charleston (1937-2021)		Columbia Area (1887-2021)		Florence (1948-2021)		Greenville Area (1884-2021)	
	# of Days (≥ 90°F)	# of Days (≥ 100°F)	# of Days (≥ 90°F)	# of Days (≥ 100°F)	# of Days (≥ 90°F)	# of Days (≥ 100°F)	# of Days (≥ 90°F)	# of Days (≥ 100°F)
2021*	34	0	54	0	53	0	39	0
2020	72	0	66	0	65	0	55	0
2019	82	4	108	9	107	5	81	0
2018	89	0	111	3	100	0	47	0
2017	62	0	100	0	57	0	35	0
2016	98	2	109	21	94	0	78	1
2015	71	0	99	17	88	9	60	1
Max	98 (2016)	11 (1986)	116 (2010)	28 (1954)	108 (1954)	26 (1954)	88 (2011)	13 (1887)

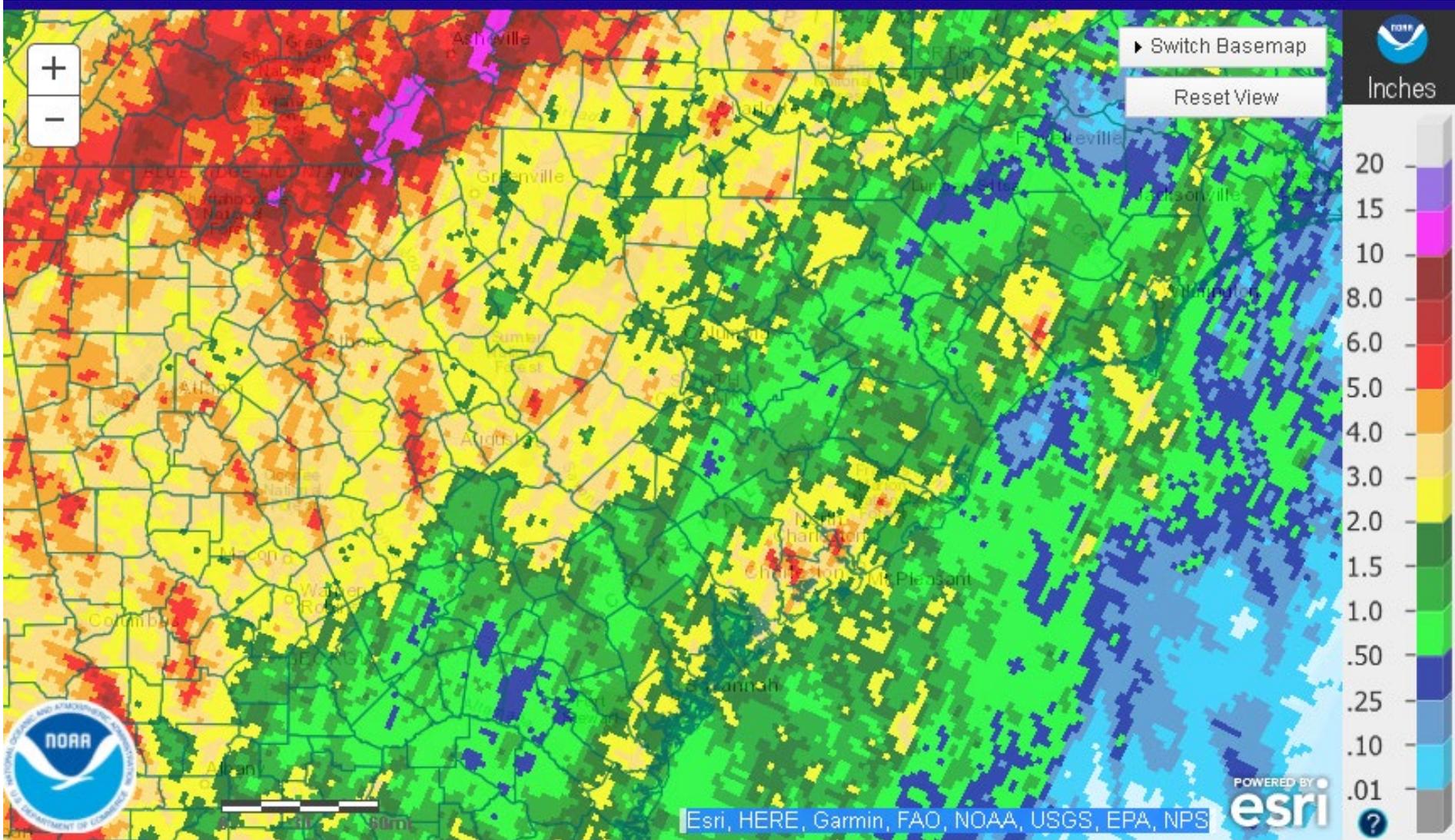
STORM SOAKS SOUTHEAST

Evan Fisher via Twitter
Henderson & Rutherford Counties, NC
August 17, 2021

The
Weather
Channel



7-Day Precipitation Ending August 18, 2021



30-Day Precipitation Ending August 18, 2021

Displaying Last 30-Day Observed Precipitation
Valid on: August 18, 2021 12:00 UTC

[What is UTC time?](#)

[Map Help](#)

[HI-HI-86](#)

Wainaku 2.5 W

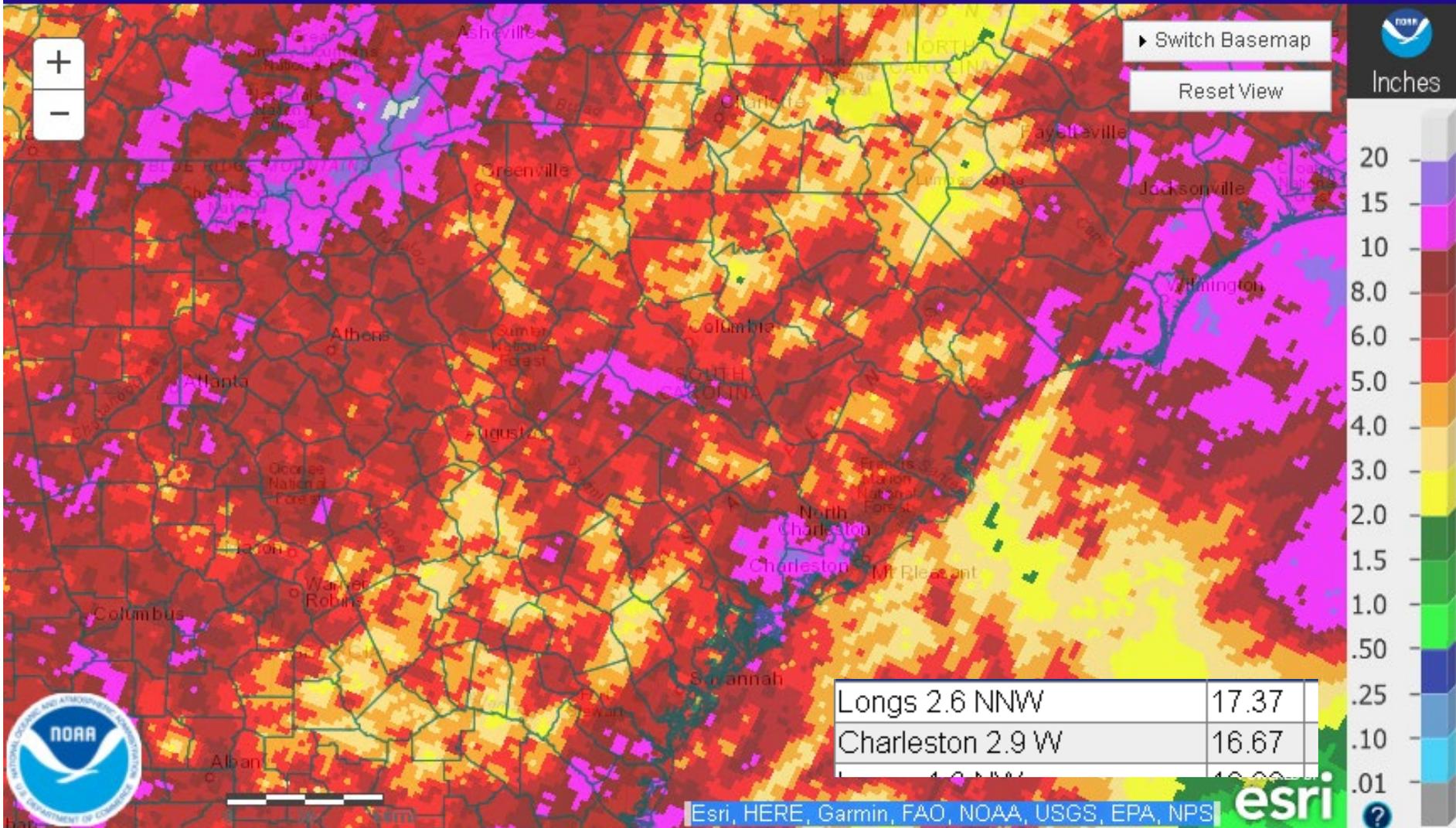
24.86

[NC-TR-36](#)

Lake Toxaway 1.7 W

20.71

Find address or location

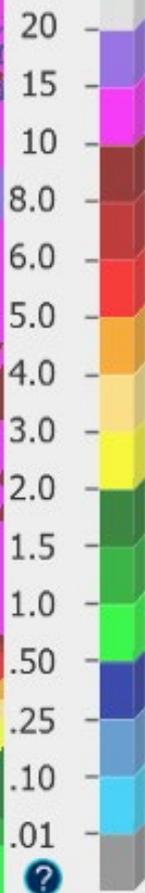


Switch Basemap

Reset View



Inches

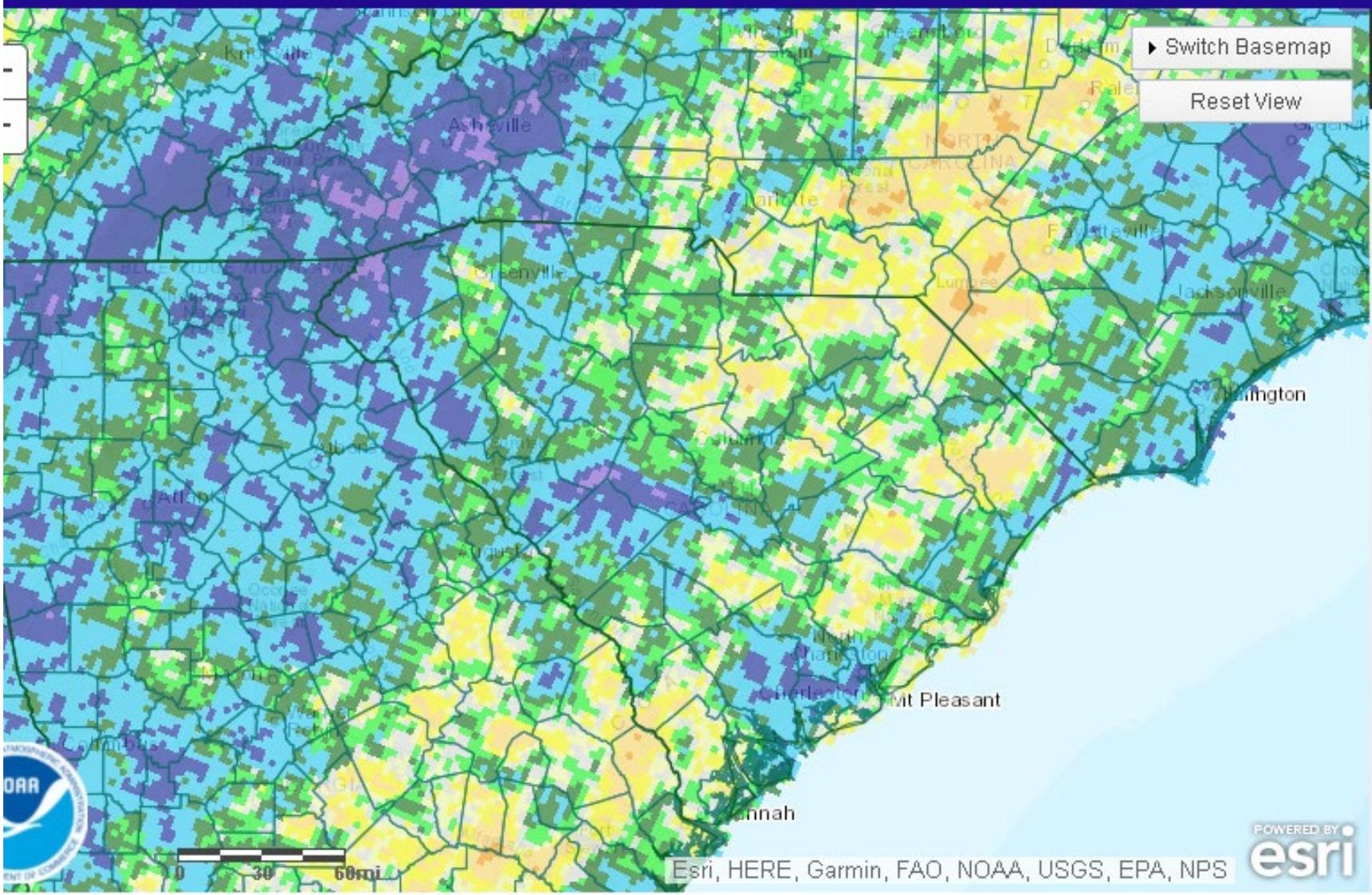


Longs 2.6 NNW	17.37
Charleston 2.9 W	16.67
4.0 NNW	10.00

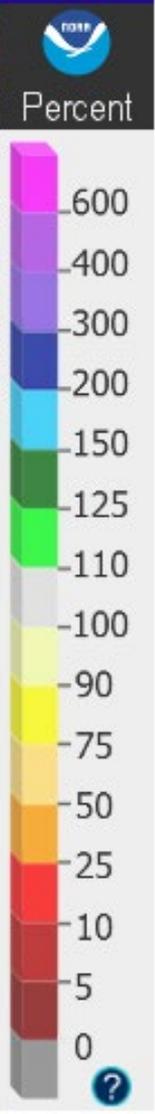
Displaying Last 30-Day Percent of Normal Precipitation
on: August 18, 2021 12:00 UTC

What is UTC time? Map Help

Find address or location



Switch Basemap
Reset View

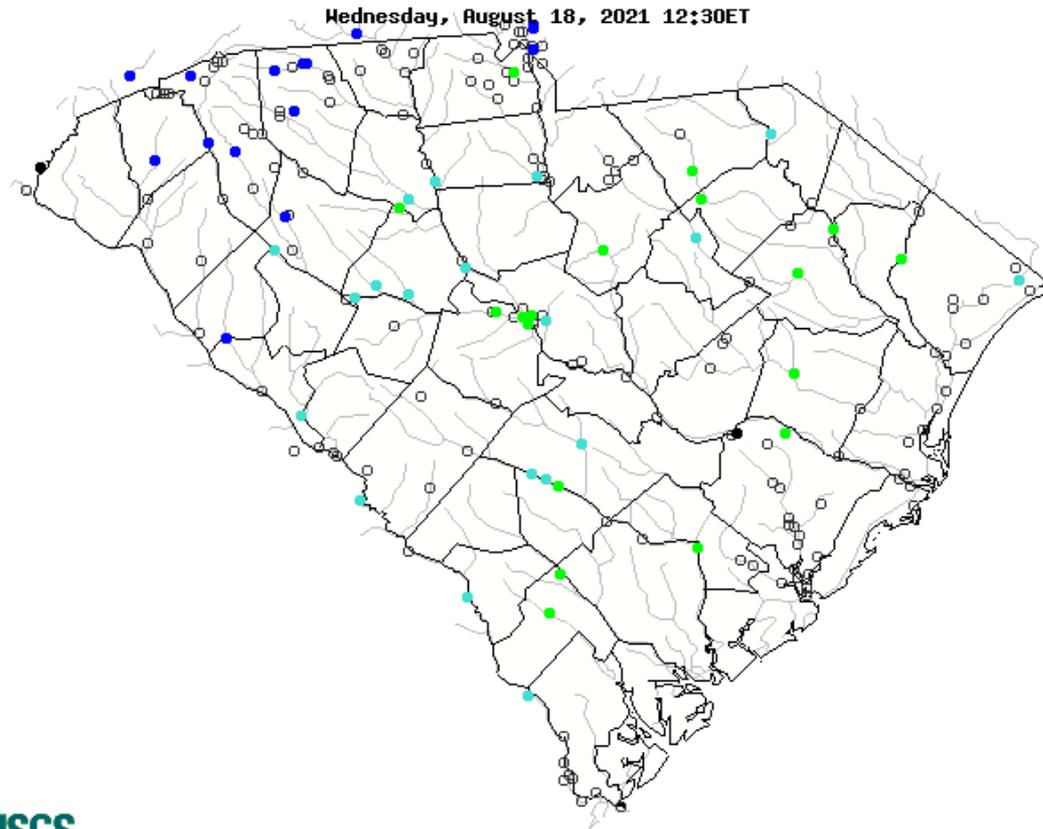


Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS



Map of real-time streamflow compared to historical streamflow for the day of the year (South Carolina)

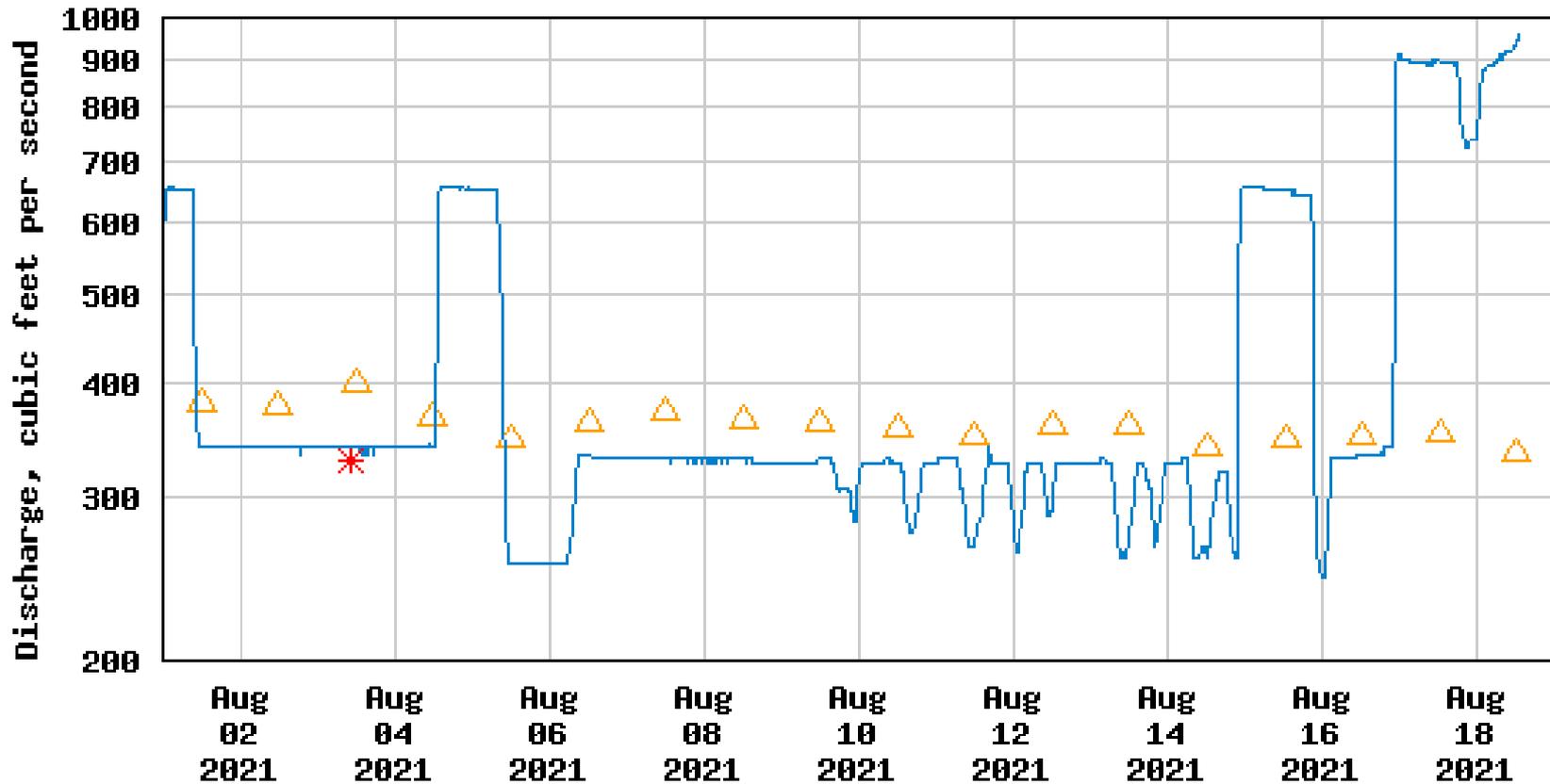
South Carolina ▼ or Water-Resources Regions ▼



Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		



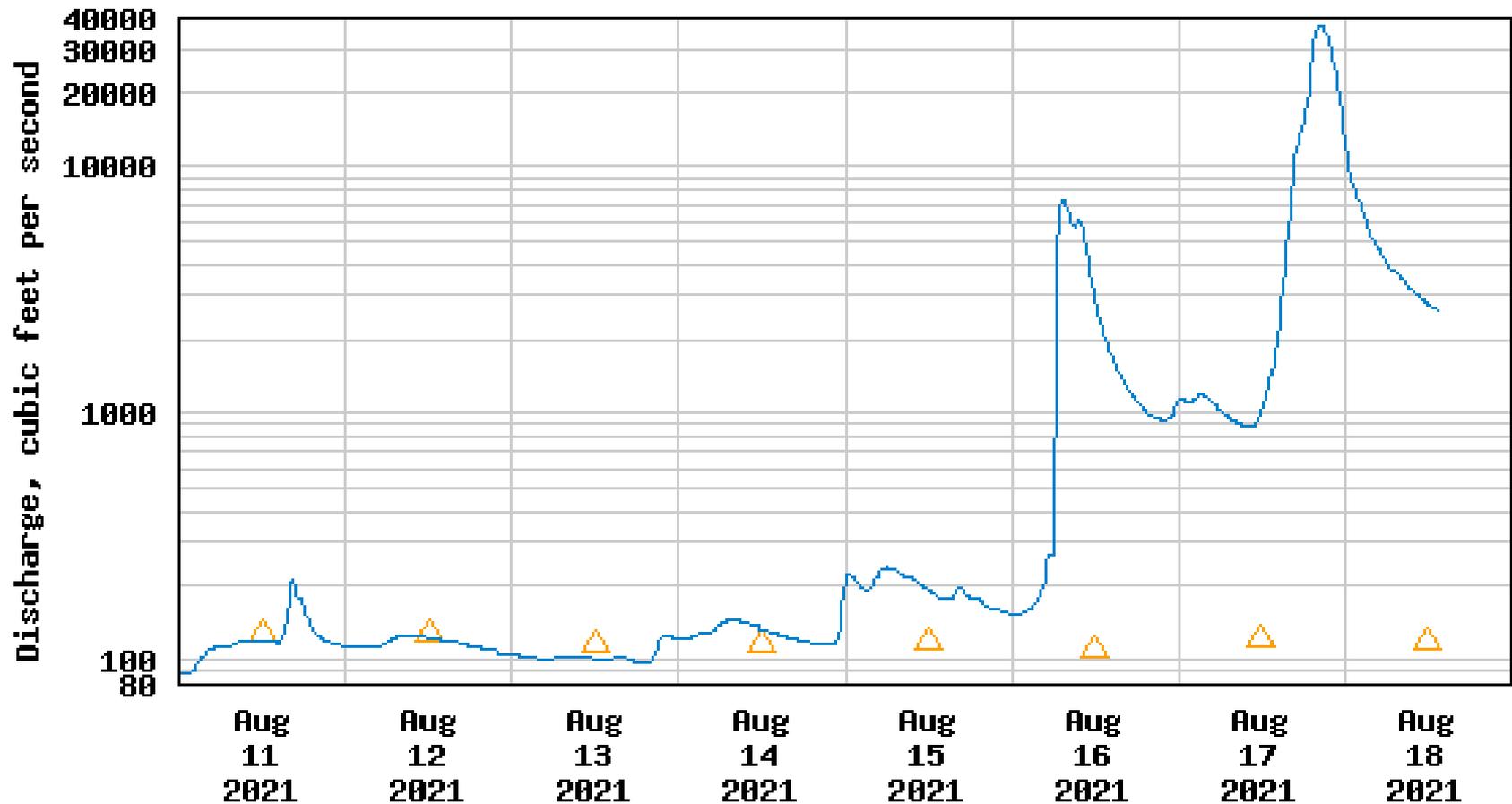
USGS 02162500 SALUDA RIVER NEAR GREENVILLE, SC



---- Provisional Data Subject to Revision ----

- △ Median daily statistic (68 years)
- * Measured discharge
- Discharge

USGS 03456991 PIGEON RIVER NEAR CANTON, NC

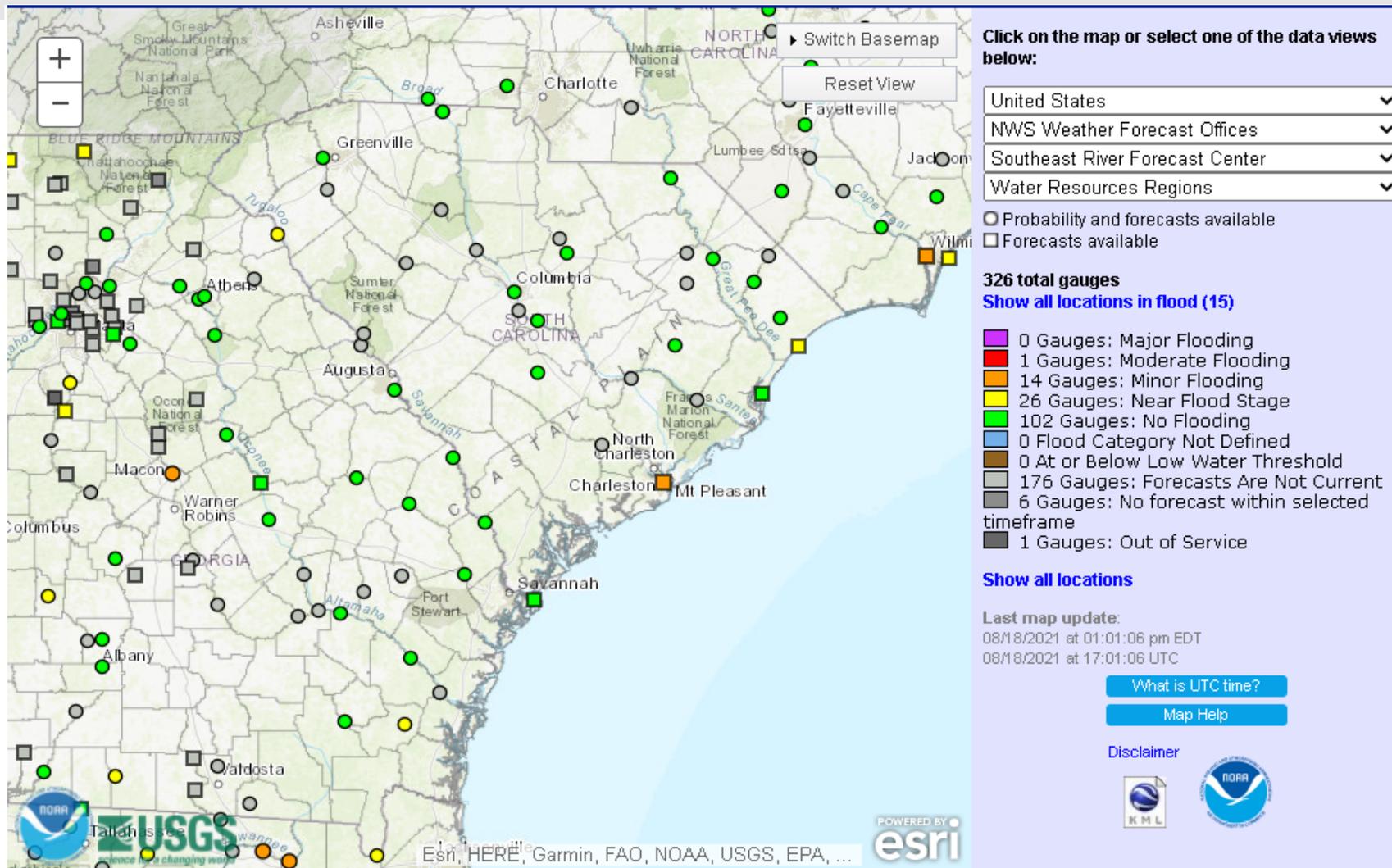


---- Provisional Data Subject to Revision ----

△ Median daily statistic (87 years) — Discharge

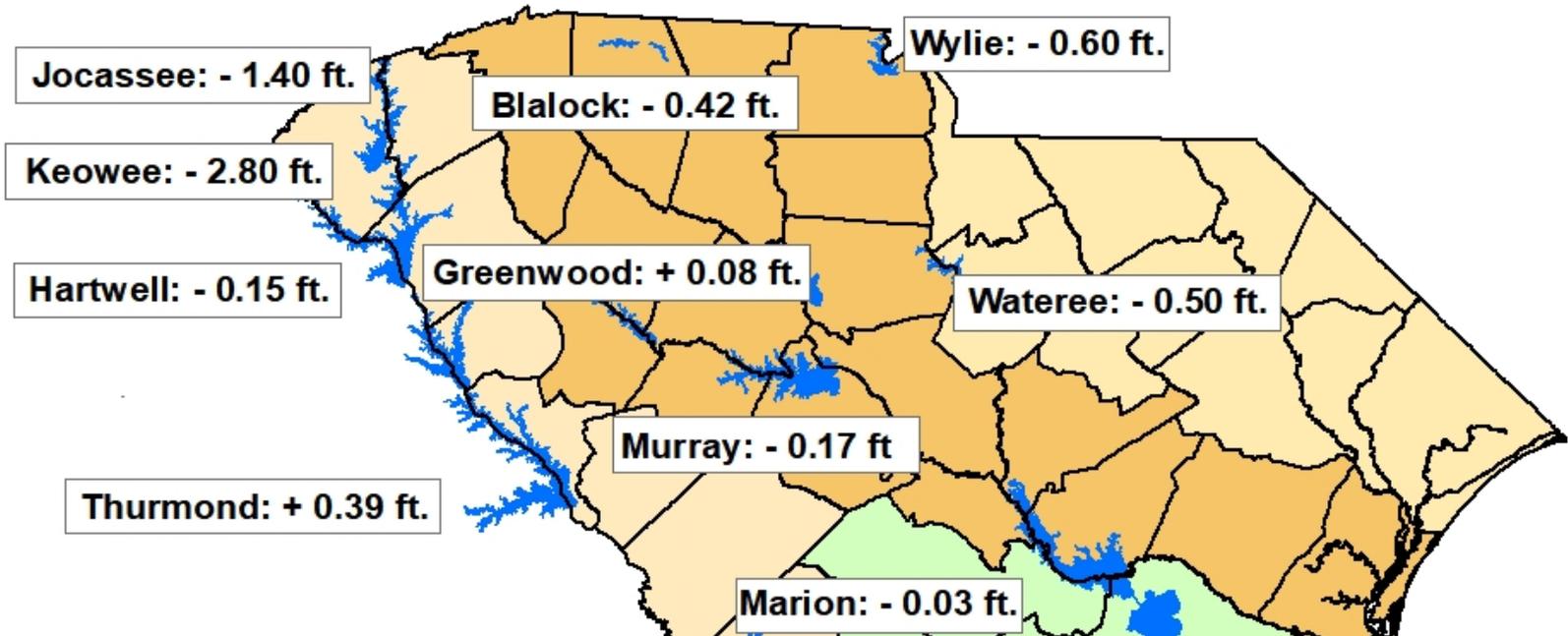
Moderate Flooding Occurring or Forecast

X



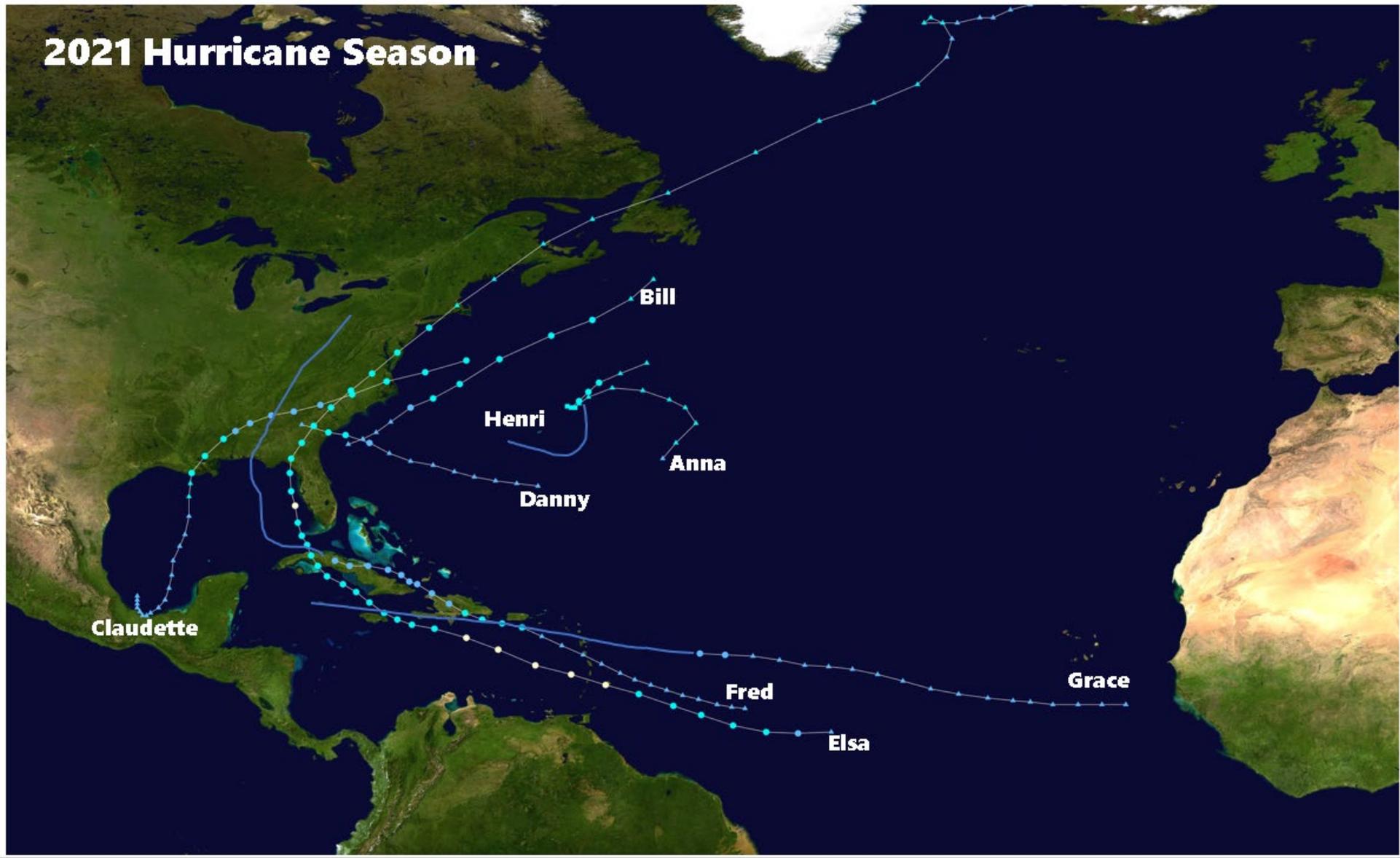
Lake Level Deficit/Surplus on August 09, 2021

(Deficit/surplus values are referenced to guide curves, except Jocassee and Keowee which are referenced to full pool)



Lake	Elevation (ft)	Target (ft)	Full Pool (ft)	Deviation from	
				Guide Curve	Full Pool
Greenwood	439.08	439.00	439.00	0.08	0.08
Murray	357.83	358.00	360.00	-0.17	-2.17
Marion	75.61	75.64	75.60	-0.03	0.01
Jocassee	98.60	NA	100.00	NA	-1.40
Keowee	97.20	NA	100.00	NA	-2.80
Wateree	96.50	97.00	100.00	-0.50	-3.50
Wylie	96.40	97.00	100.00	-0.60	-3.60
Hartwell	659.85	660.00	660.00	-0.15	-0.15
Thurmond	330.39	330.00	330.00	0.39	0.39
Blalock	709.58	710.00	710.00	-0.42	-0.42

2021 Hurricane Season



2021 Hurricane Season SC Impacts

CLAUDETTE



1– 2” of rain in the Upstate



62 mph gust at the Isle of Palms Pier



Funnel Cloud, no confirmed touched down in Aiken County



No Reported Storm Surge

DANNY



3 – 6” of rain in the Lowcountry



50 mph gust at Forest Beach and the Isle of Palms Pier



No Confirmed Tornadoes



No Reported Storm Surge

2021 Hurricane Season SC Impacts

ELSA



2 – 3" of rain in the Pee Dee, 4+'' in the Lowcountry (up to 8'' in Beaufort County)



81 mph gust at Calibogue Sound*
54 mph gust at Myrtle Beach
50 mph gust at Beaufort MCAS
*elevated platform



5 Confirmed Tornadoes, 4 EF1 and 1 EF0 in Beaufort (2), Charleston (2) and Clarendon (1) counties



1 – 2-foot Storm Surge reported along the coast, near high tide

FRED



4 – 7" of rain in the Upstate, 2 – 4" in Charleston Metro Area



No Significant Wind Gusts Reported



Unknown number of tornadoes, storm surveys planned for Aiken, Anderson, Edgefield, Greenville, Laurens, Lexington, Newberry, Saluda counties.



No Reported Storm Surge



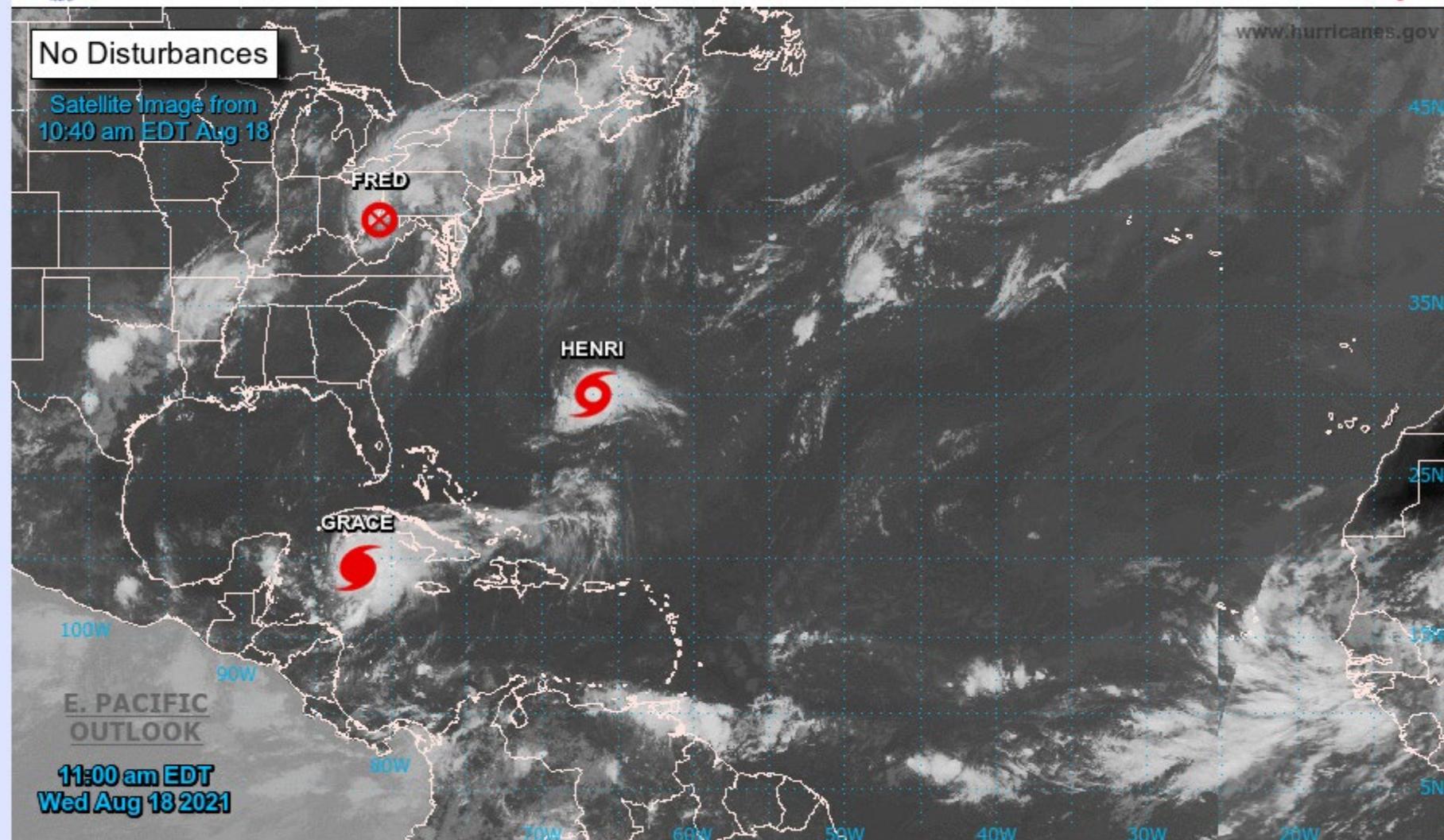
Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



No Disturbances

Satellite image from 10:40 am EDT Aug 18



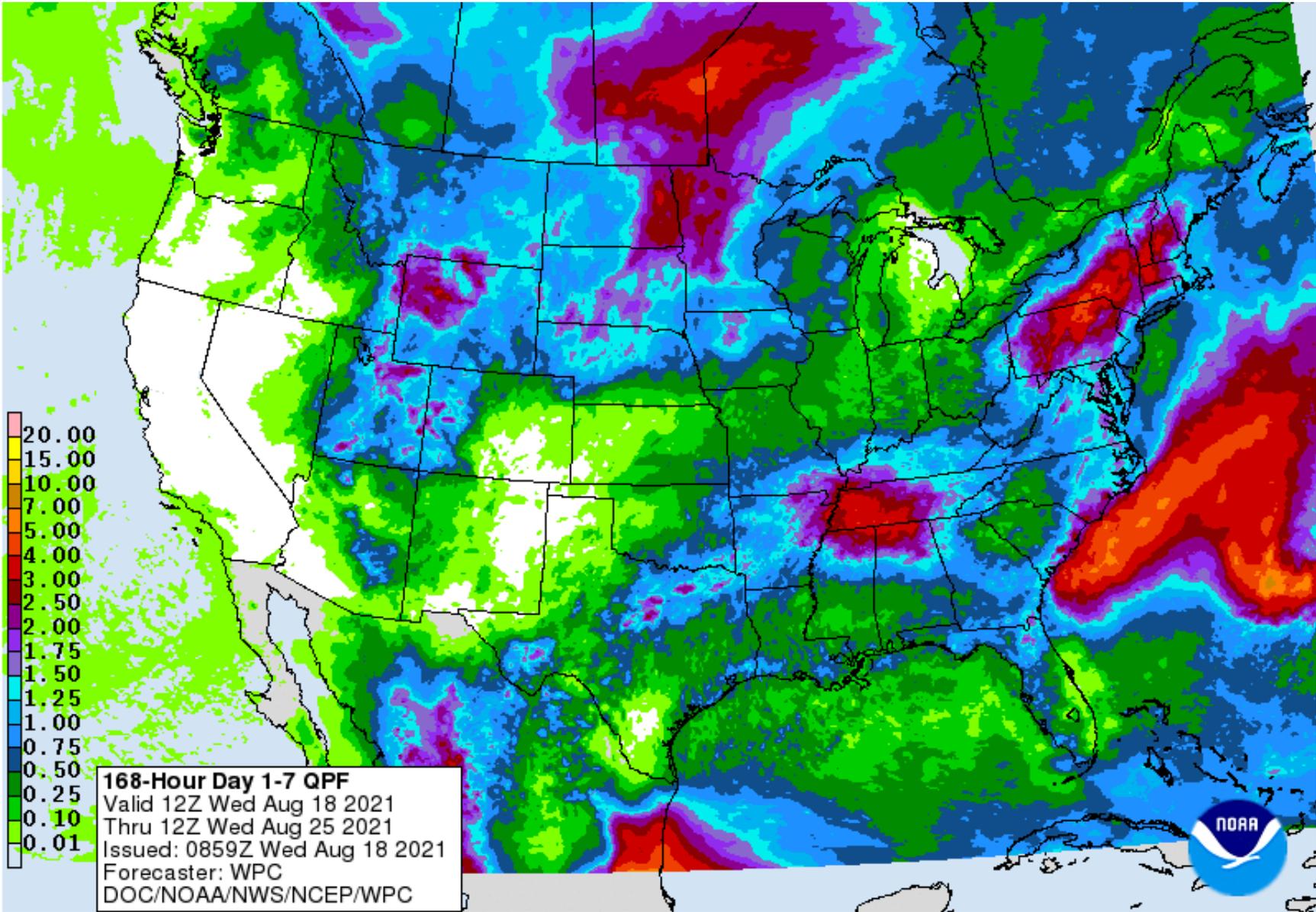
11:00 am EDT
Wed Aug 18 2021

Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

7- Day Precipitation Forecast





Coyote Harvest Update and Trends

SCDNR Board Meeting

August 19, 2021

Lethal Coyote Control

Hunting/Shooting*

- No closed hunting season (hunting license required)
- Depredation permit (no license required)
- Shooting at night (see night hunting laws)
- 100-yard exemption



**Check local ordinances regarding discharging firearms*

Lethal Coyote Control

Trapping

- ▶ *Trapping season: Dec. 1 to Mar. 1*
- ▶ *Predator Management Permits (free) Mar. 1 – Nov. 30*
- ▶ *Depredation permit (no license required)*
- ▶ *100-yard exemption*



Depredation Permits

100 Yard Exemption :

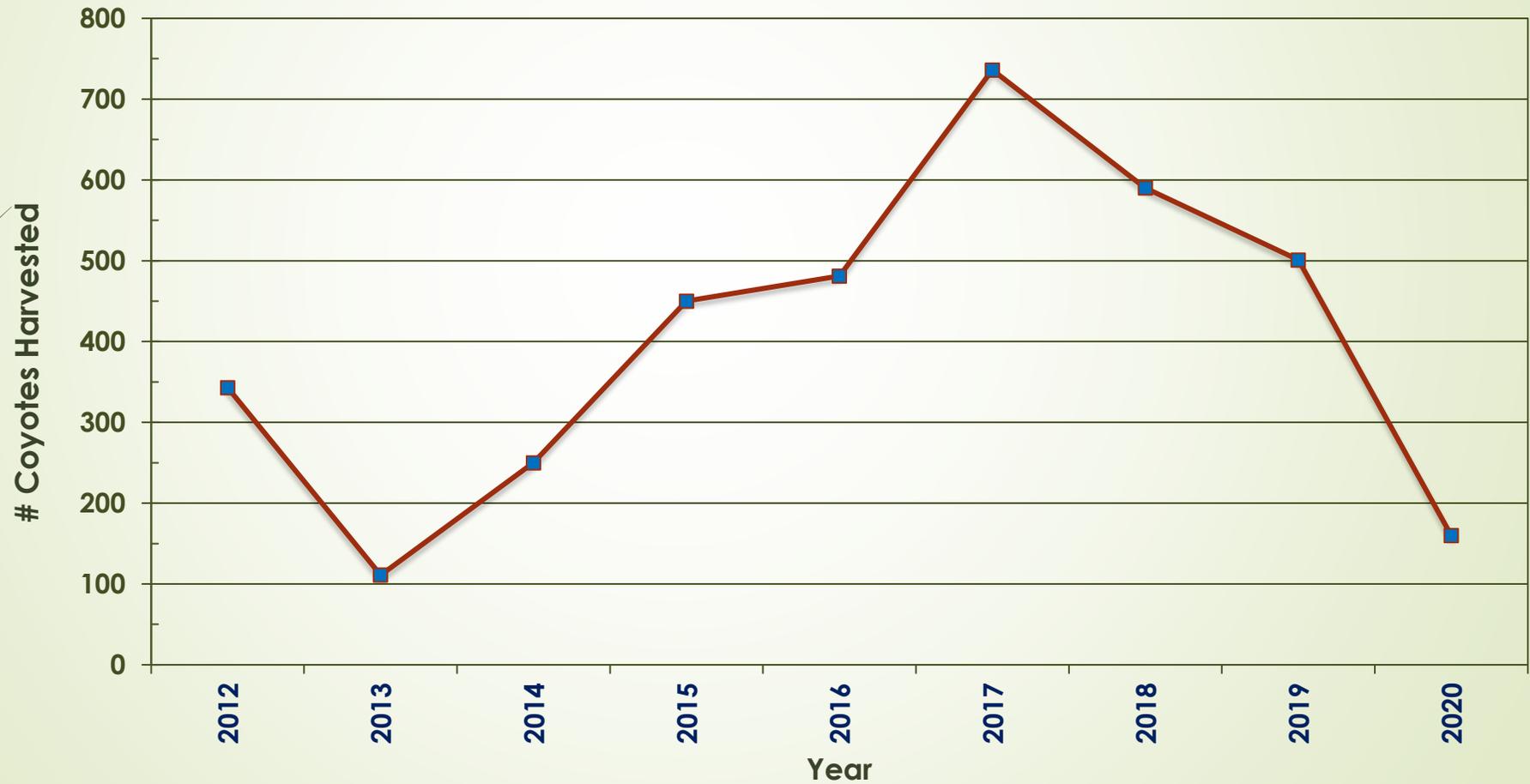
A property owner or *their designee* may trap (or shoot if in an area where firearms may be used) furbearing animals or *squirrels* within 100 yards of their residence without any license or permit from SCDNR (50-11-2570)



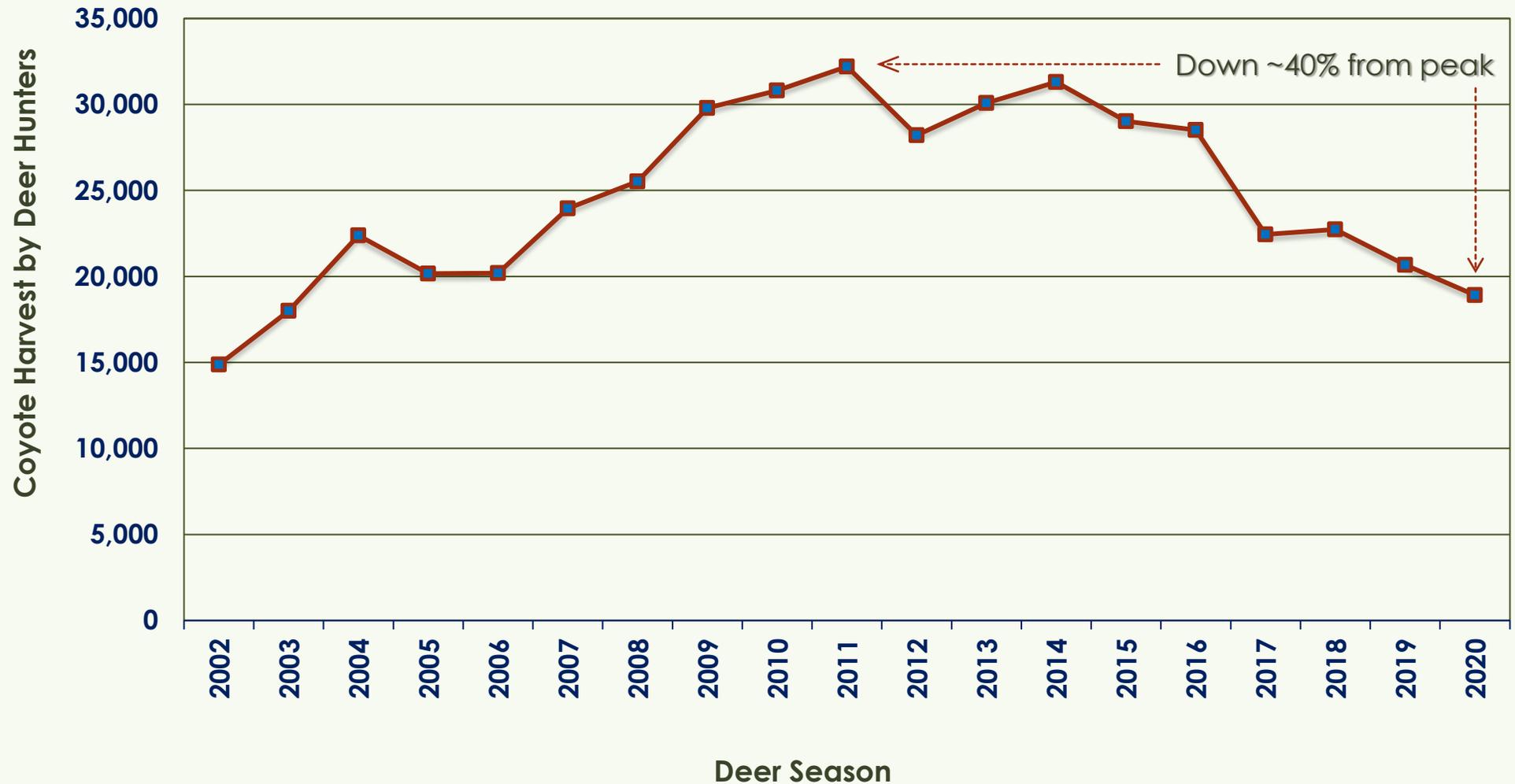
Reported Coyote Harvest by Registered Night Hunters



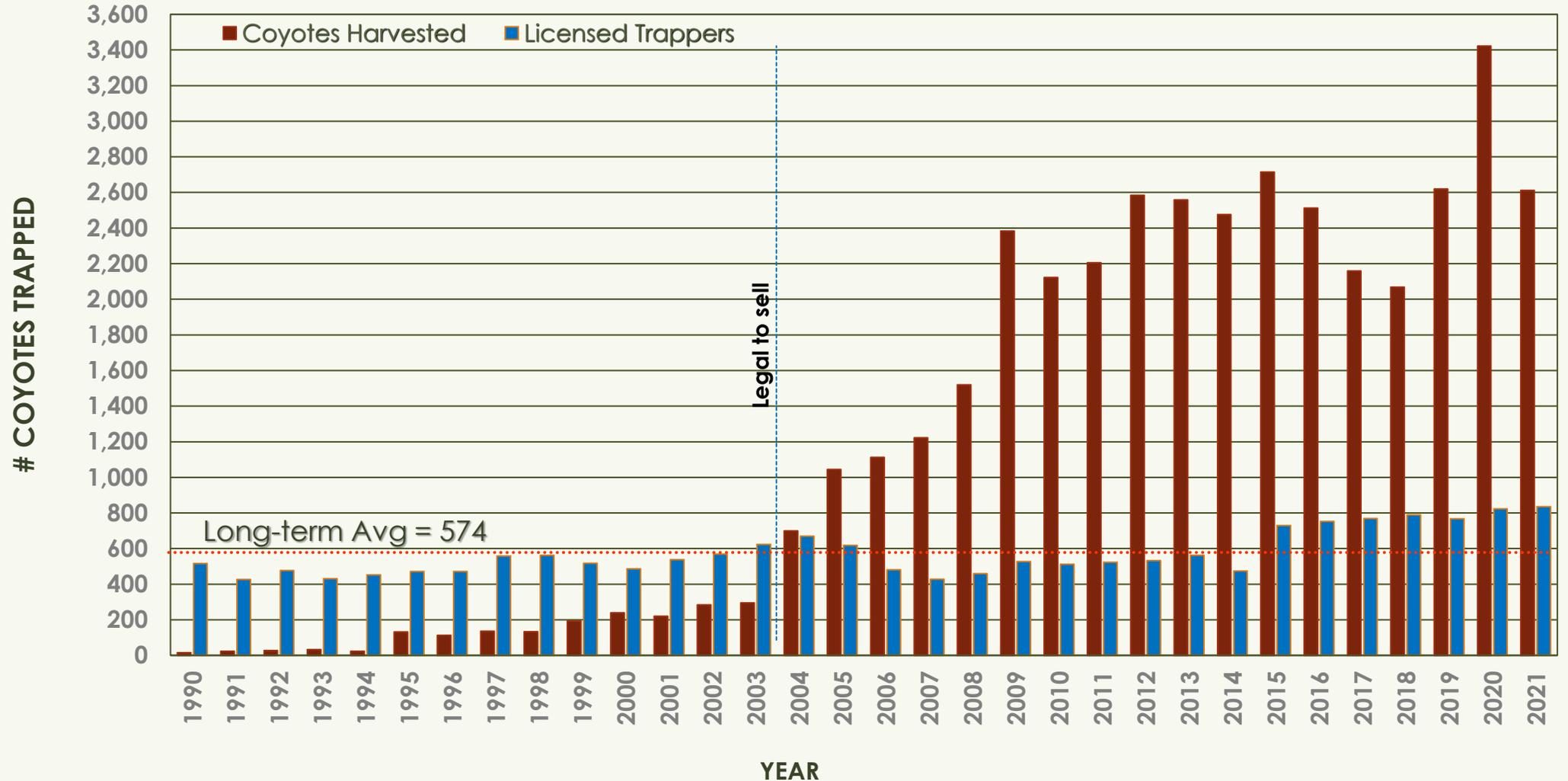
Trapping/Shooting (Predator Management Permittees)



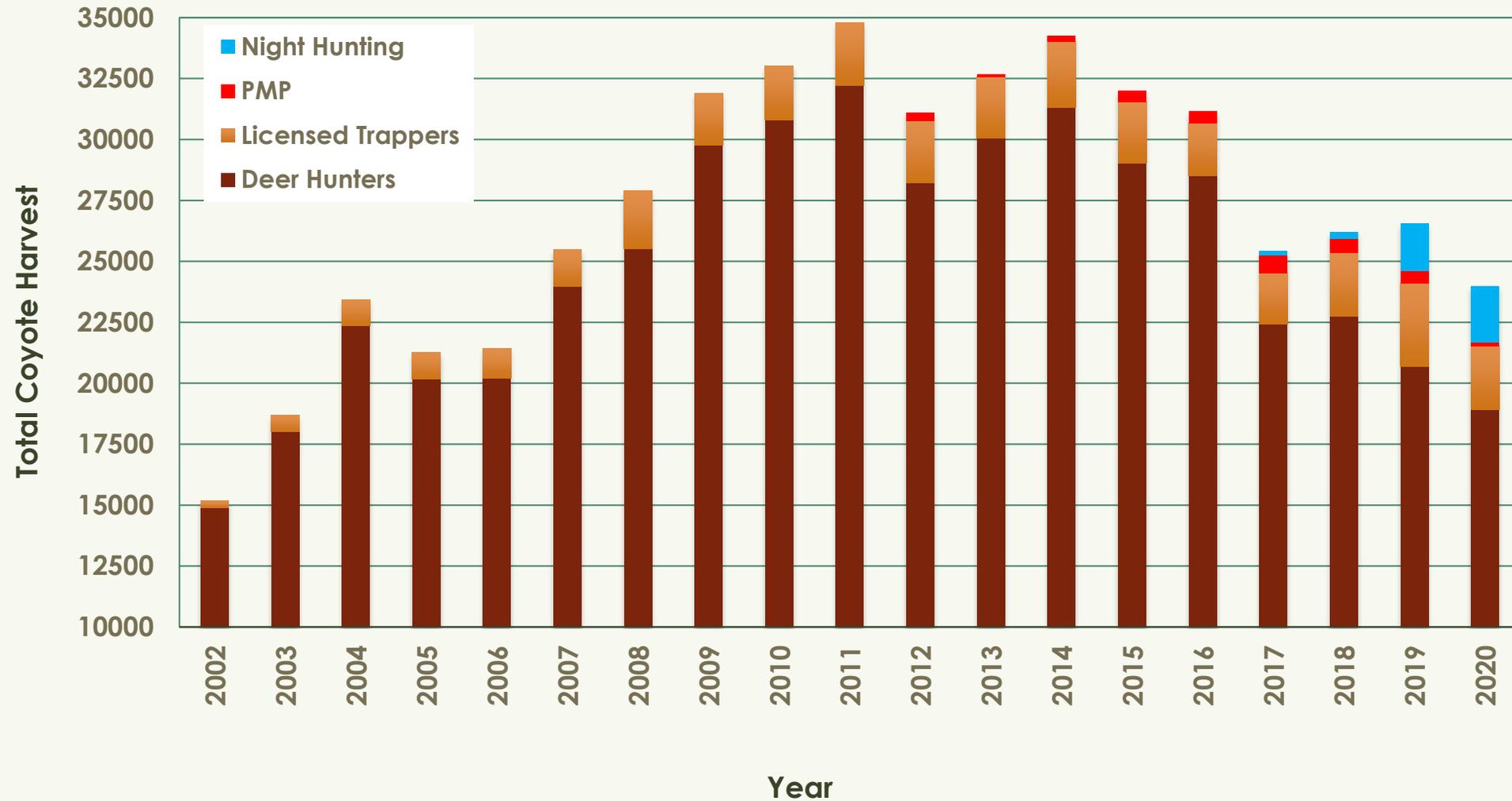
Estimated Coyote Take by Deer Hunters



Coyote Harvest By Licensed Trappers in South Carolina 1990-2021



Estimated Annual Coyote Harvest



Coyote Incentive Program Update

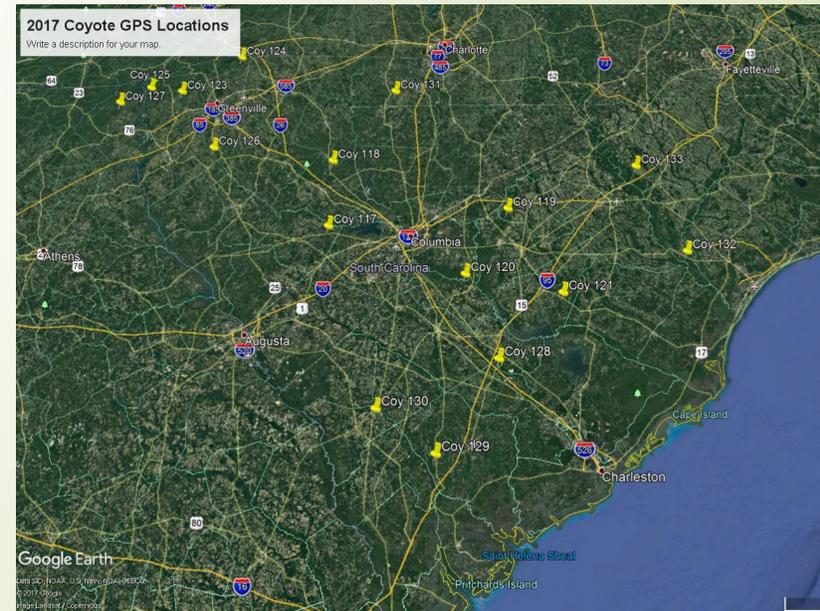
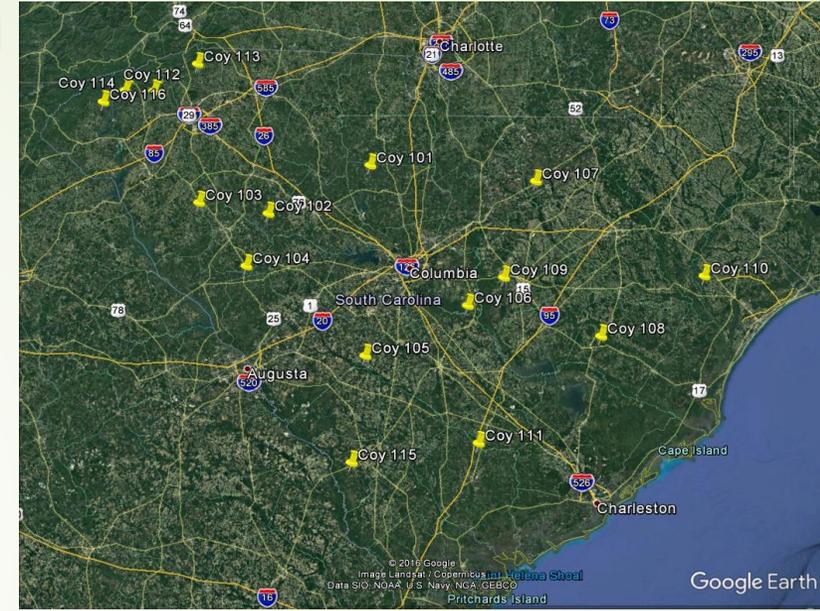
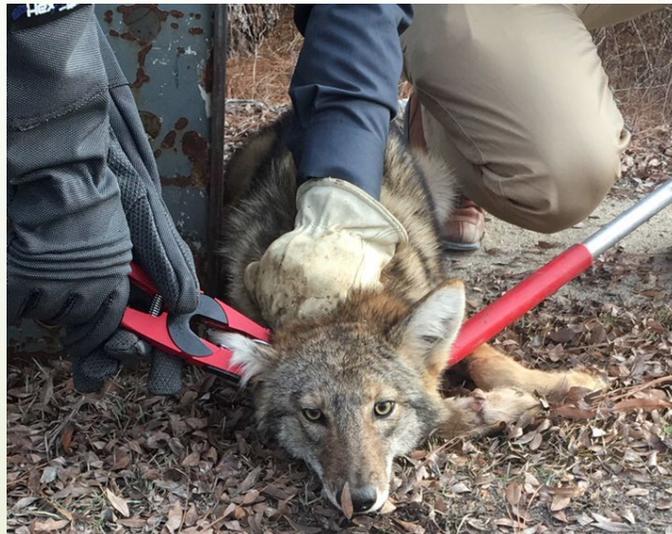
- Created in 2016 by Budget Proviso 47.10
- Remains as a DNR Budget Proviso for 2021

“Of the funds authorized and appropriated in this Act, the Department of Natural Resources is directed to develop and implement a coyote tagging and reward program within this state. They must tag and release four coyotes in each of the four game zones and apply a reward of a complimentary lifetime hunting license per tagged coyote to the hunter/trapper, or his designee.”



Coyote Incentive Program Implementation

- 16 coyotes tagged annually
- 4 coyotes per game zone (4 Game Zones)
- Attempted to distribute as evenly as possible
- 80 Coyotes have been tagged and released



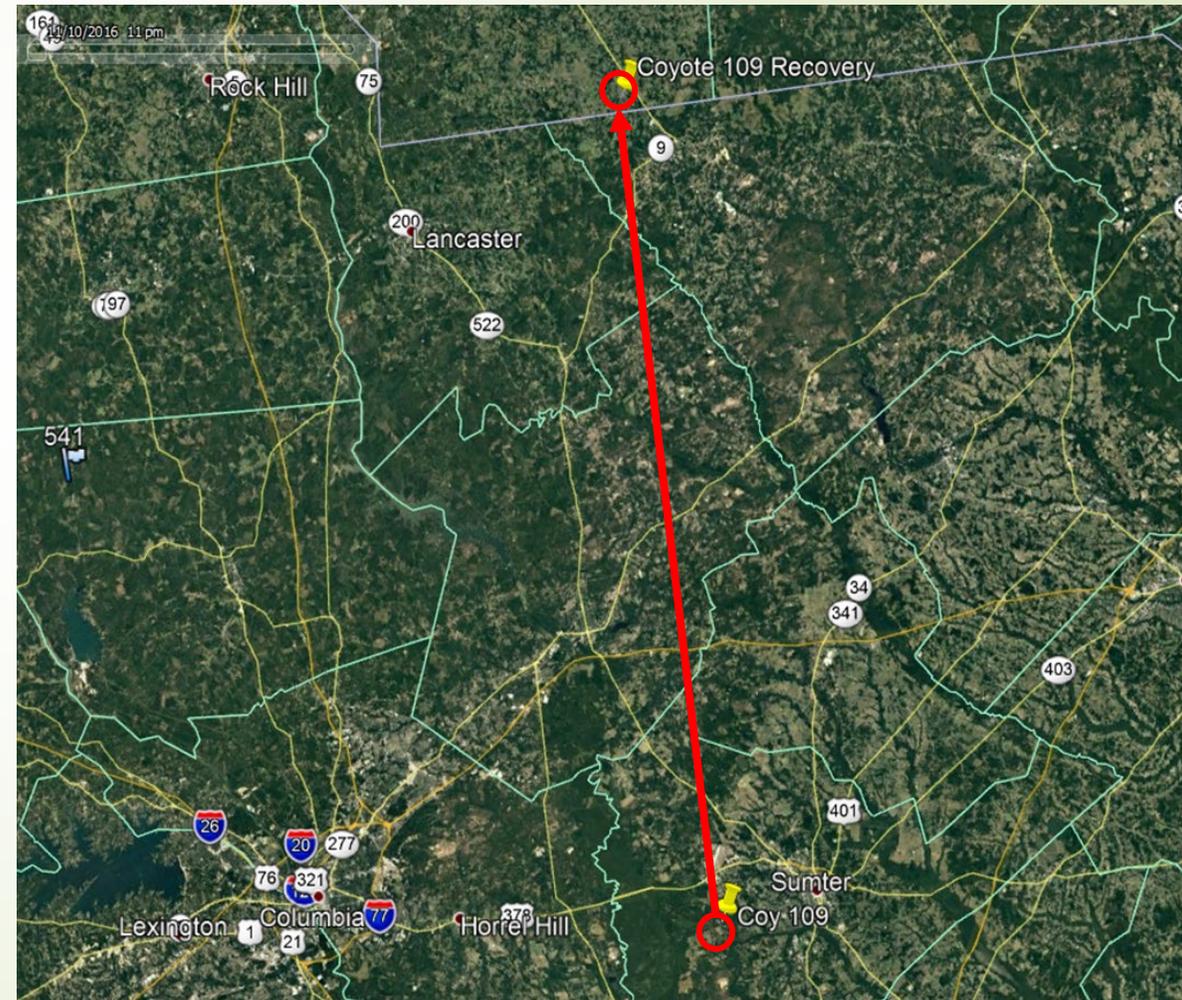
Coyote Incentive Program - Implementation

- All releases done at night to minimize detection from the public
- To date, 38 of the 80 tagged coyotes have been reported.
- Relatively inexpensive.



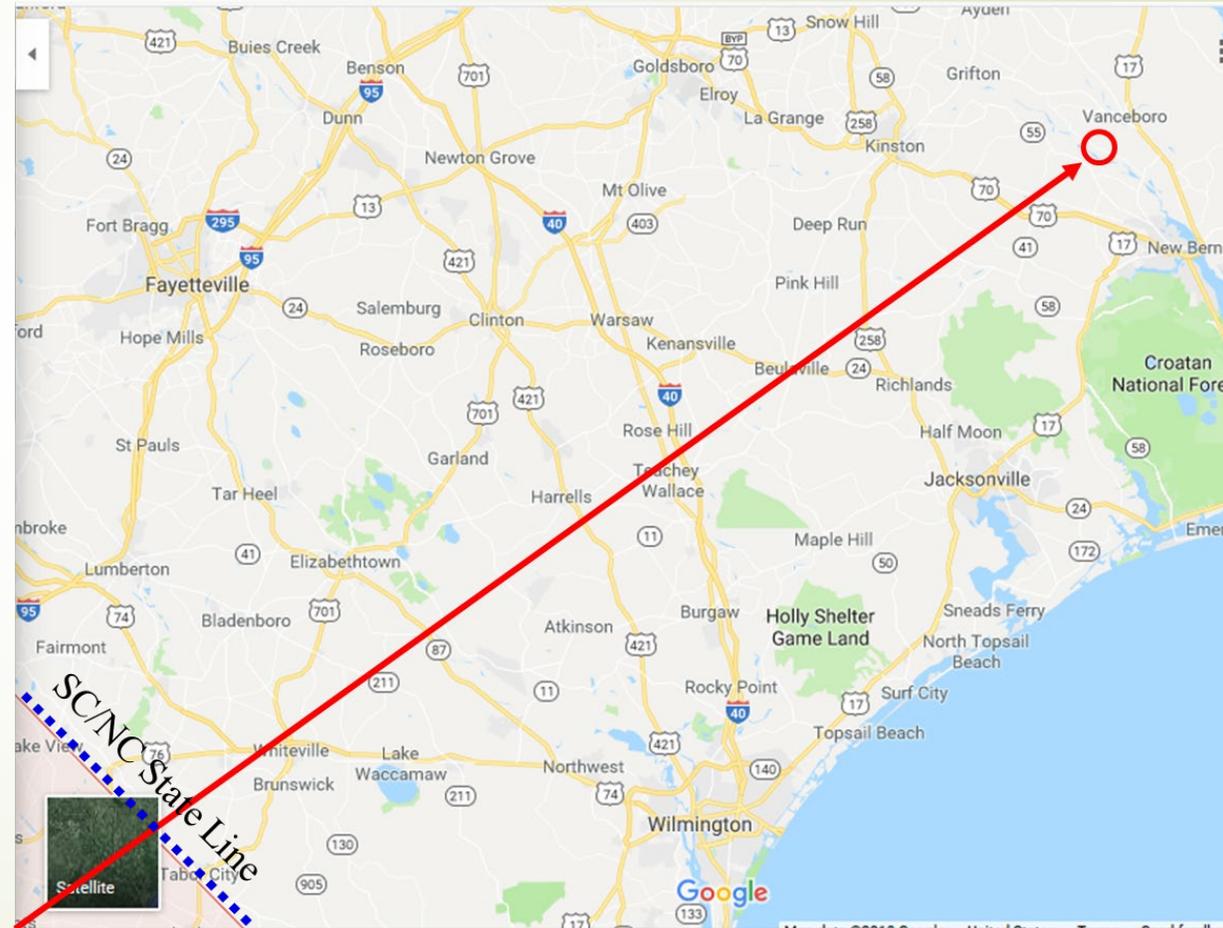
Notable Recoveries

- Coyote #109
- ~65 mi. (straight line) over about a 4-month period
- Shot by a “true” coyote hunter in North Carolina

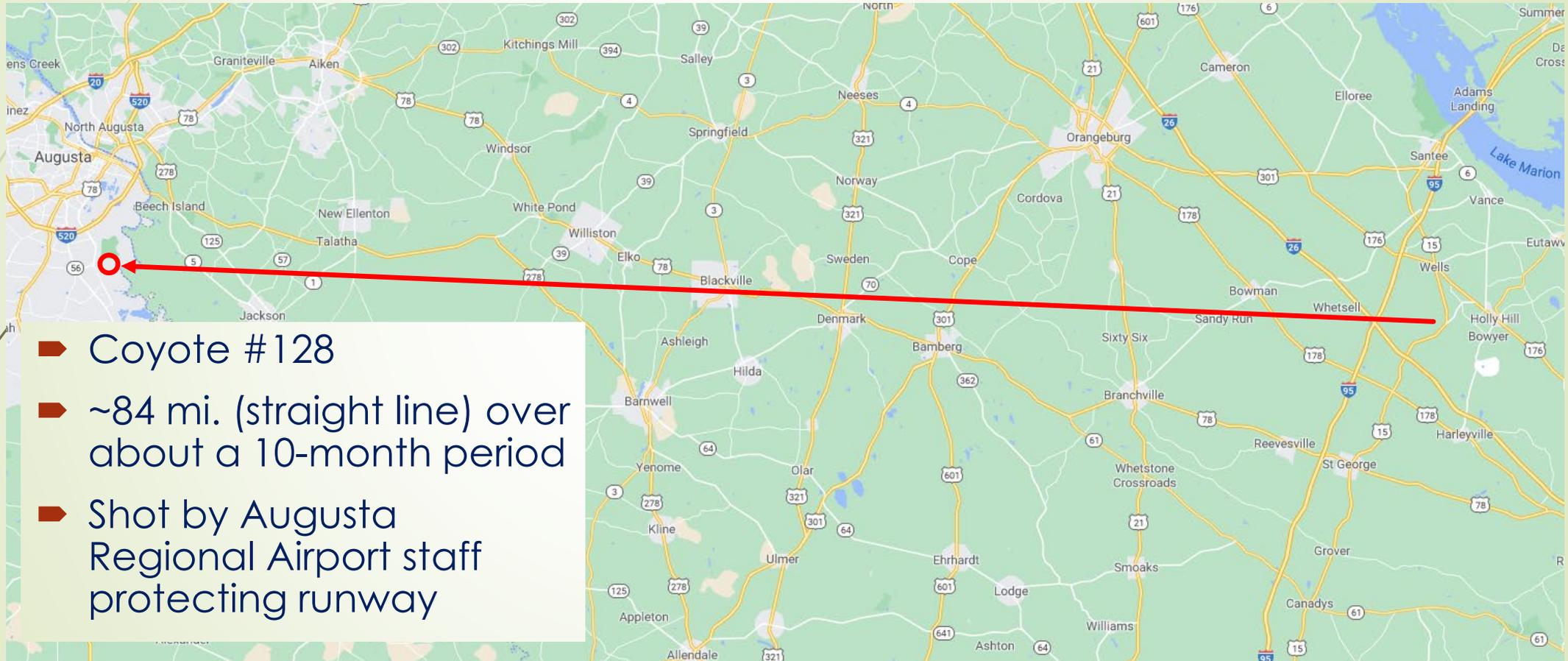


Notable Recoveries

- Coyote #108
- ~190 mi. (straight line) distance to Vanceboro, NC
- Found dead on private property across the Neuse River about 12 months from date of release in Williamsburg County.



Notable Recoveries



Coyote Harvest

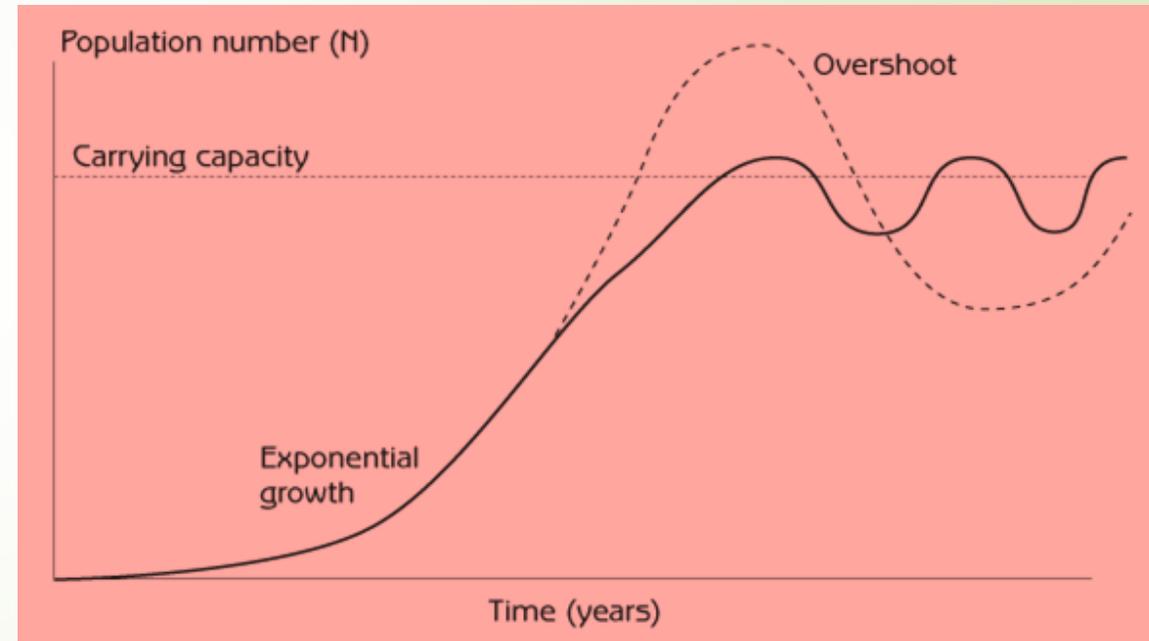
- Harvest appears to be trending downward
 - Mainly driven by lower numbers from deer hunters
- “New” inputs into coyote take
 - Predator management permittees
 - Night hunting and potentially increasing number of coyote hunters.
 - More licensed trappers

Reporting is always an issue



Coyote Harvest

- ▶ Could be a function of normal population growth
 - ▶ Overshoot at first as population expands
 - ▶ Settle down at some level with annual fluctuations
- ▶ Could simply be cyclical in nature
- ▶ Current DNA “mark - recapture” research may lead to better population/density estimation on a larger regional scale

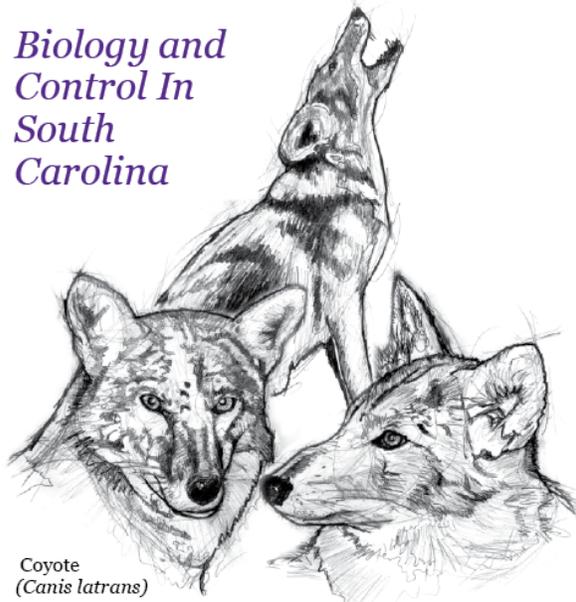


Lastly....Updated Coyote Brochure with expanded trapping section

Increase from 15 to 24 pages

COYOTE

Biology and Control In South Carolina



Coyote
(*Canis latrans*)

South Carolina Department of Natural Resources
Division of Wildlife and Freshwater Fisheries



Furbearer Project
P.O. Box 167
Columbia, SC 29202

COYOTE TRAP SETS

Dirt-Hole Set

This set uses a dug hole along with a food bait or food lure to help attract the attention of coyotes. Only one trap is set per site. Locate a suitable area where a coyote is likely to travel as suggested in the Trapping section. It is recommended that the trap site be located where one is able to dig a hole with relative ease. Rocky ground and low wet areas that cause the hole to fill with water should be avoided when choosing this set. Wear gloves except when placing bait to avoid contaminating the gloves with scent.

Step 1. Select a site where a coyote is likely to travel. This set must be closer to the coyote's path than the scent post set. Preferably there should be some kind of prominent backing (tuft of grass, embankment, rock, fence, etc.) behind the trap site that prevents the animal from approaching the trap from behind, if not it can be added when the trap set is completed.

Step 2. Place the cloth on the ground to kneel on while preparing the trap site. Wearing clean, odor-free gloves, dig a hole about 8 to 10" deep at an angle under the backing. The hole should be about 3 to 5" round. Place the dirt from the hole into the sifter for later use (Fig 3).

Step 3. Dig a bowl-shaped depression for the trap to rest in approximately 8 to 10" from the dirt hole. This trap bed should be made so the trap will sit just below flush with the ground when covered with a thin layer of dirt (Fig 4). Place the dirt from the depression on the kneeling cloth and some into the sifter for later use. Leave some loose soil in the bottom of the trap bed. In wet or damp areas, dry soil must be brought for finishing the trap set since damp soil will not sift properly.

Step 4. Drive the earth anchor into the bottom of the trap bed until fully seated up to the trap chain attachment point. If using rebar for a trap anchor, drive two stakes crisscrossed at the end of the trap chain in the center of the hole to secure the trap (Fig. 5).



Figure 3. Digging the dirt hole.



Figure 4. Digging bowl shaped trap bed in front of the dirt hole.



Figure 5. Driving earth anchor in trap bed.

Step 5. Set the trap, being sure that the pan sits level with the jaws of the trap. Place trap in trap bed, and press it into the loose soil. It is imperative that the trap does not rock or move when pressure is applied to the trap jaws. Any trap movement may cause the coyote to shy away from the trap site or dig up the trap. Take loose soil to pack under and outside the trap jaws to ensure that the trap is firmly bedded in the soil. Some trappers will begin bedding with the loose jaw of the trap up to prevent getting caught if the trap is accidentally set off while bedding trap (Fig. 6). Make sure that the soil outside of the trap jaws is firmly packed as well since loose dirt around the trap may prompt the coyote to dig up the trap. If desired, a cover can be placed over the trap pan at this time to prevent dirt from getting under the pan. Polyester fiber fill can also be used under the pan for the same purpose. If no cover or fiber fill is used, be sure not to place too much soil under the pan to prevent the trap from being sprung. Flipping up the loose jaw will make placing poly-fill under the trap pan easier (Fig. 7). Lay loose jaw back down again (if turned up) and confirm trap is solidly bedded.

Step 6. Carefully sift dirt over the trap, completely covering the set trap (Fig 8.) Using a trowel, a stick, whisk broom or the side of your hand, carefully smooth the covered trap to ensure the trap pan is set slightly below the level of the surrounding ground, exposing the trap if necessary (Fig. 9).

Step 7. Finish covering trap with a layer of dirt, and smooth over again if trap was exposed in the previous step (Fig. 10). Pick up the kneeling cloth and discard any unused soil away from the trap site.



Figure 6. Bedding trap (with loose jaw up).



Figure 7. Poly-fill added under trap pan.



Figure 8. Sifting dirt over trap.



Figure 9. Location of trap.



Jay Butfiloski

SC Department of Natural Resources
Furbearer & Alligator Program Coordinator

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Columbia, SC 29202

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SCDNR Coastal Beaches Survey

Blaik Keppler; Marine Resource Division

August 19, 2021









SCDNR Coastal Lands With Marine Beaches









A fluffy white and grey bird chick is sitting on a nest made of dry sticks and twigs. The chick is positioned in the lower center of the frame, facing right. The background is a blurred field of similar sticks and twigs, creating a natural, textured environment. The lighting is soft, highlighting the texture of the chick's feathers and the dry wood.

1

Graduate
project
characterizing
public use in
the ACE Basin

2

SCDNR
beaches
public survey



WE WANT TO HEAR FROM YOU

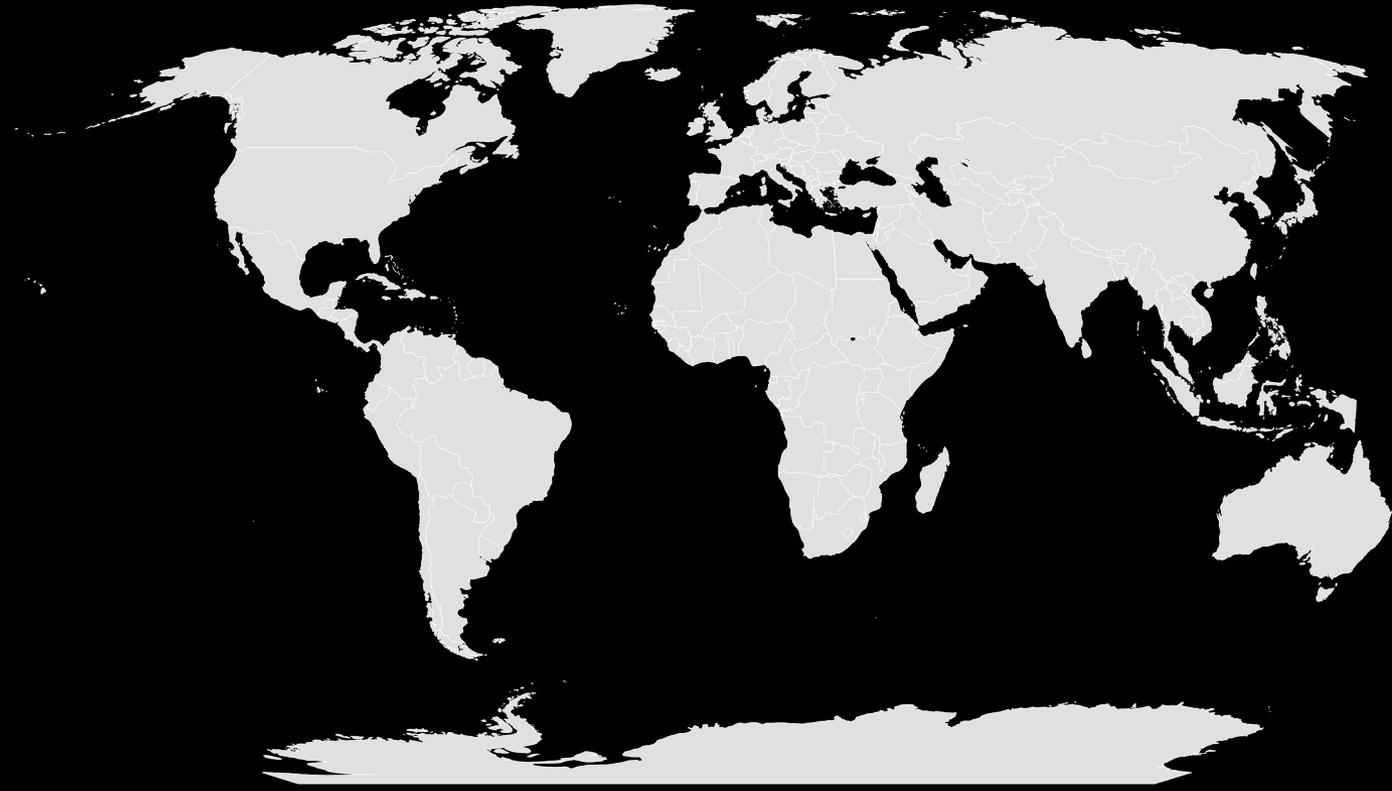
There's room for all of us on South Carolina's beaches. Humans and wildlife can coexist in these special places, but it's clear that shorebirds need safe, quiet places to survive.

We'd like to hear from you about how you use and enjoy our beach/island properties. SCDNR staff are evaluating how to best balance human recreation and wildlife needs on important coastal properties. **If you visit SCDNR-managed beaches/islands such as Botany Bay, Capers Island, Otter Island, or Cedar Island, please take the below survey.**

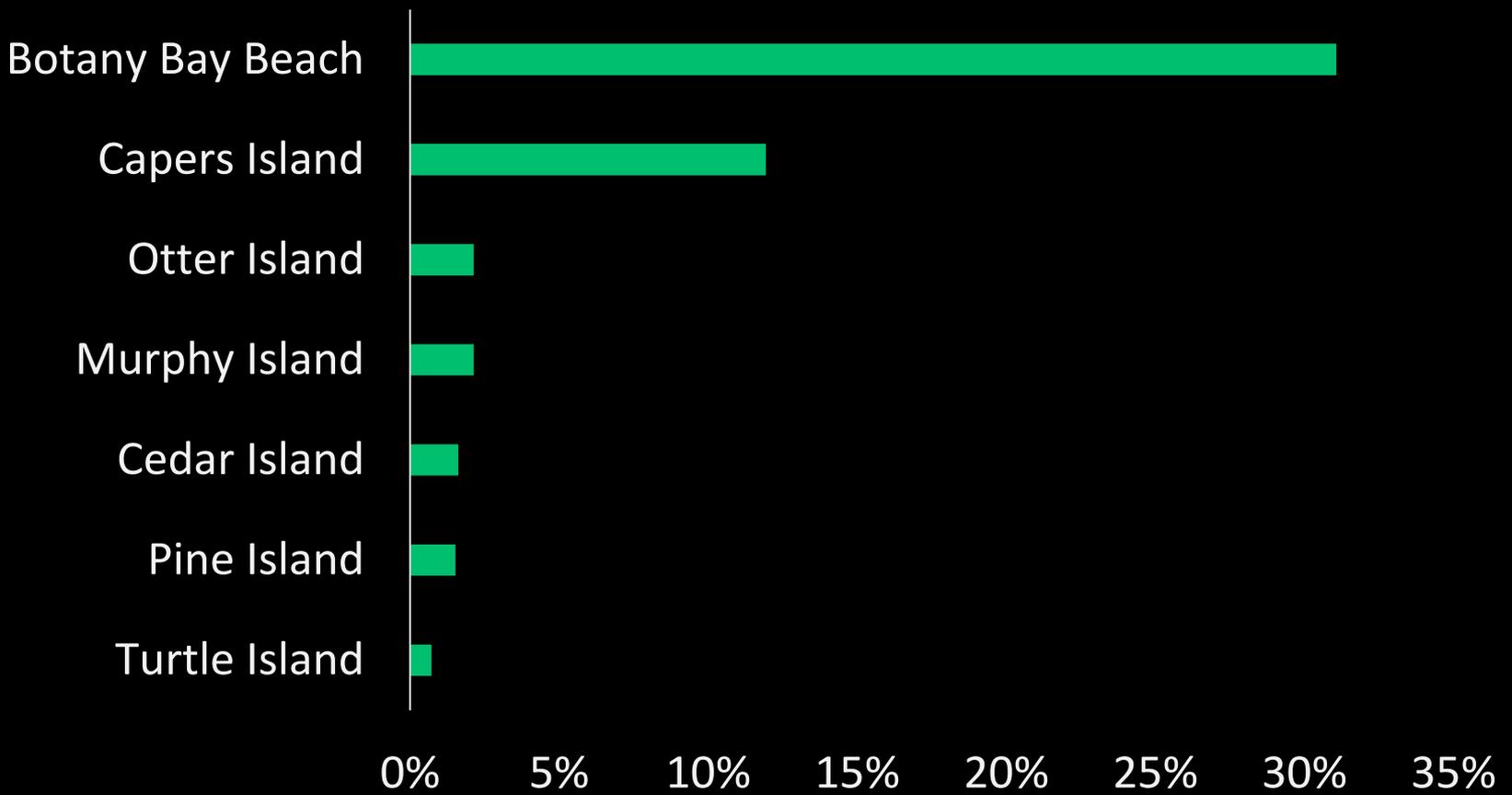
This survey should take approximately five minutes to complete and all answers are anonymous.

[Take the Survey Here](#)

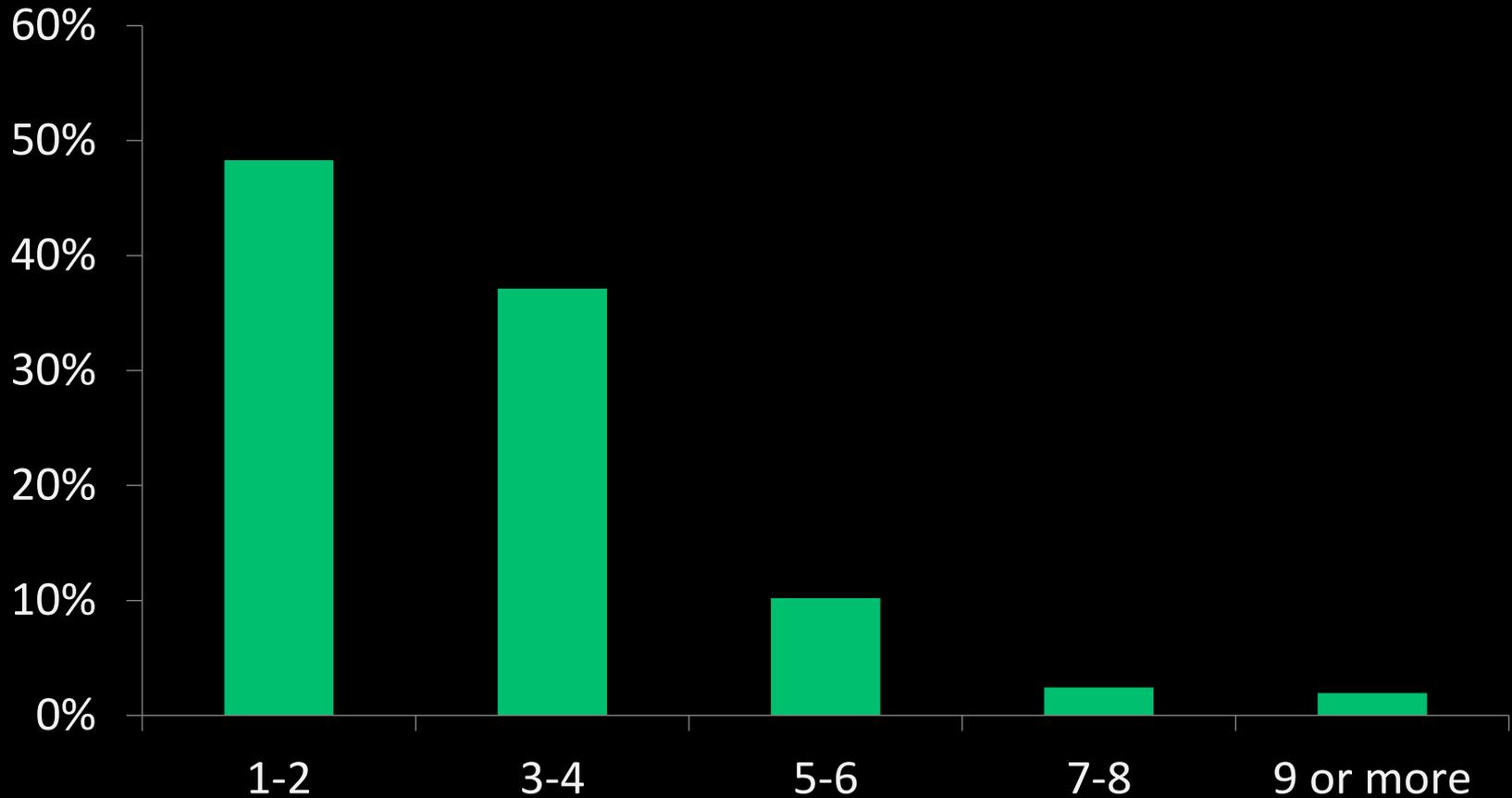
Most South Carolina counties were represented



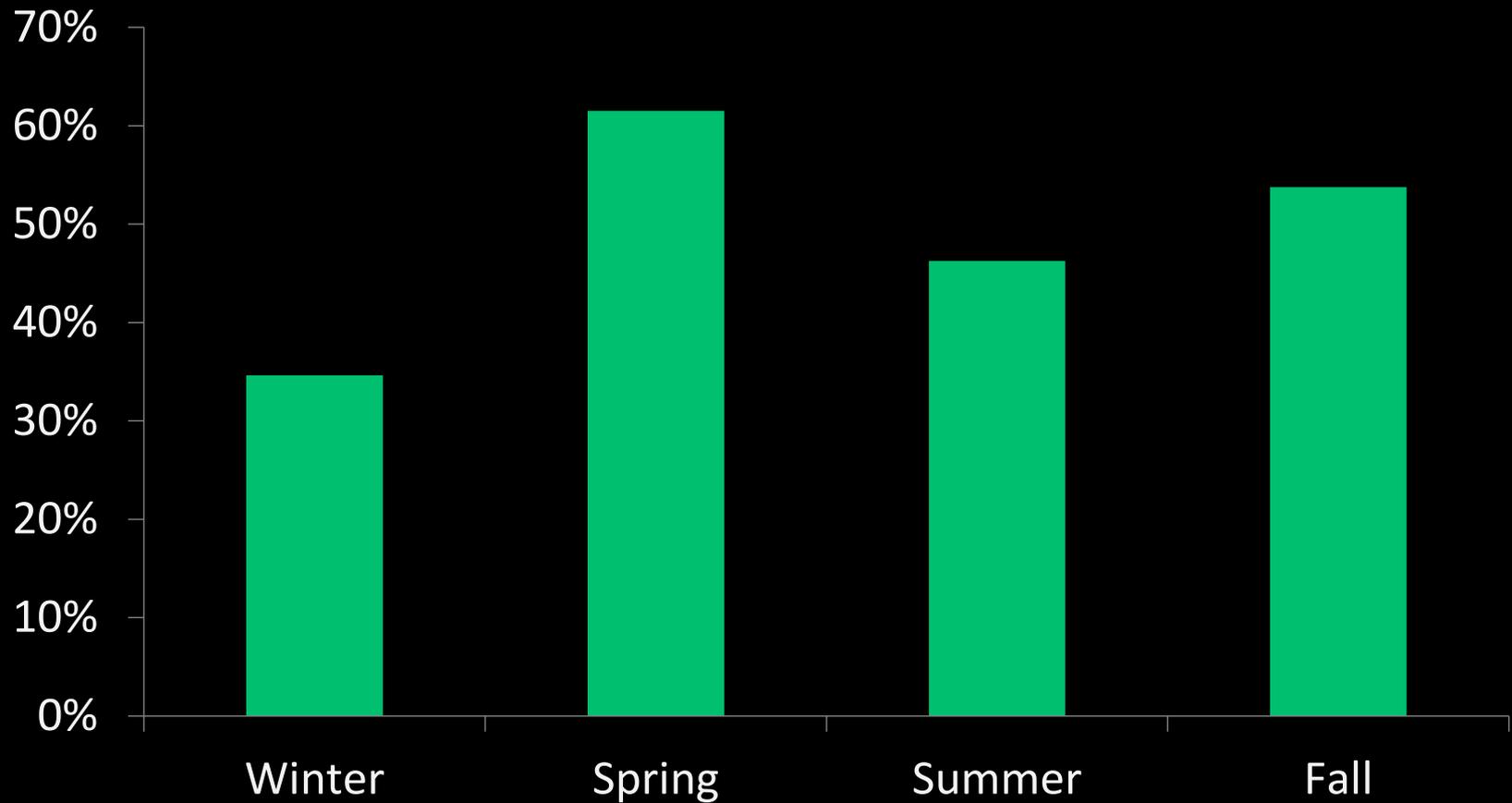
Which SCDNR beach do you visit most often?



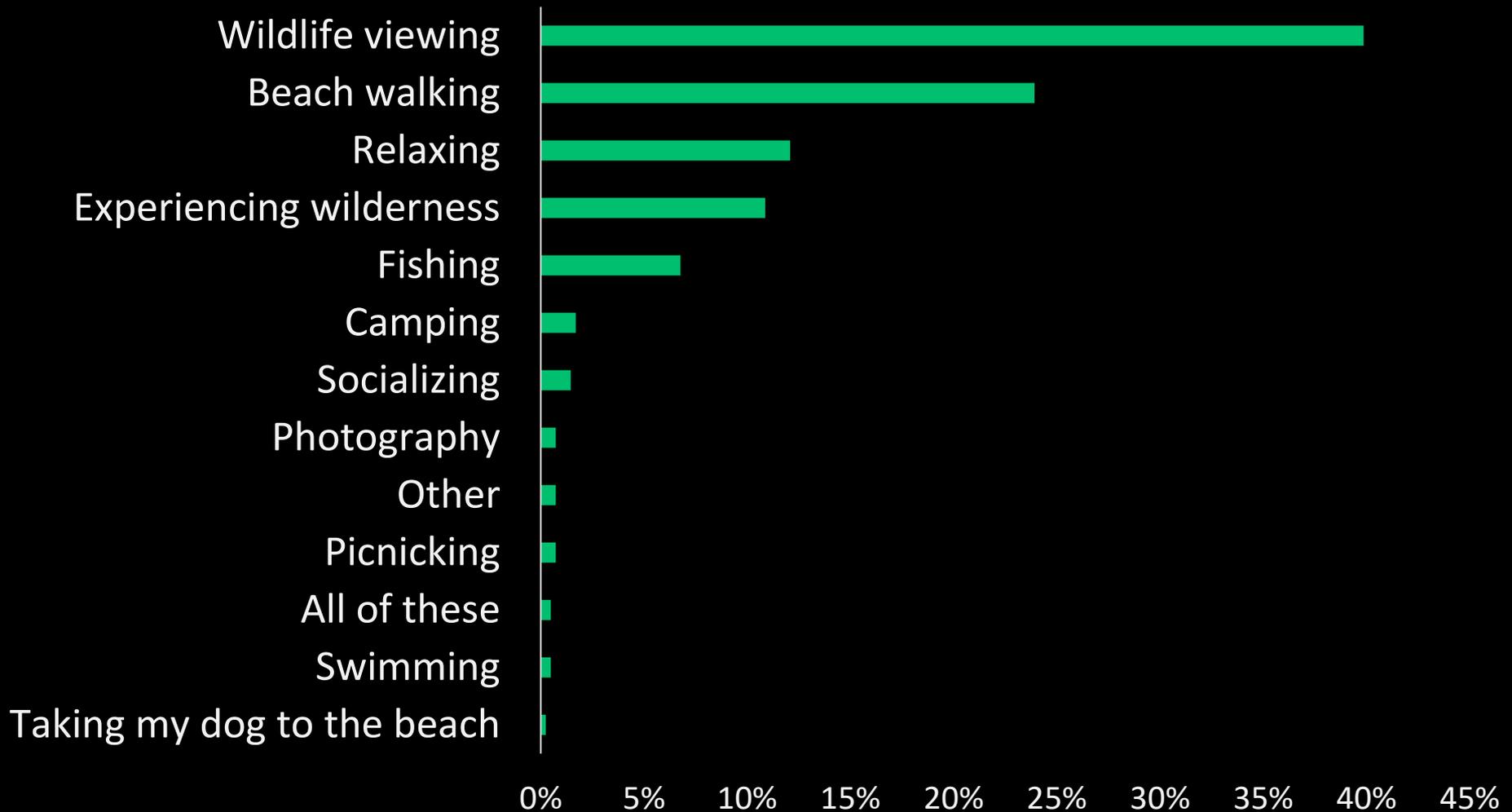
Number of people in group



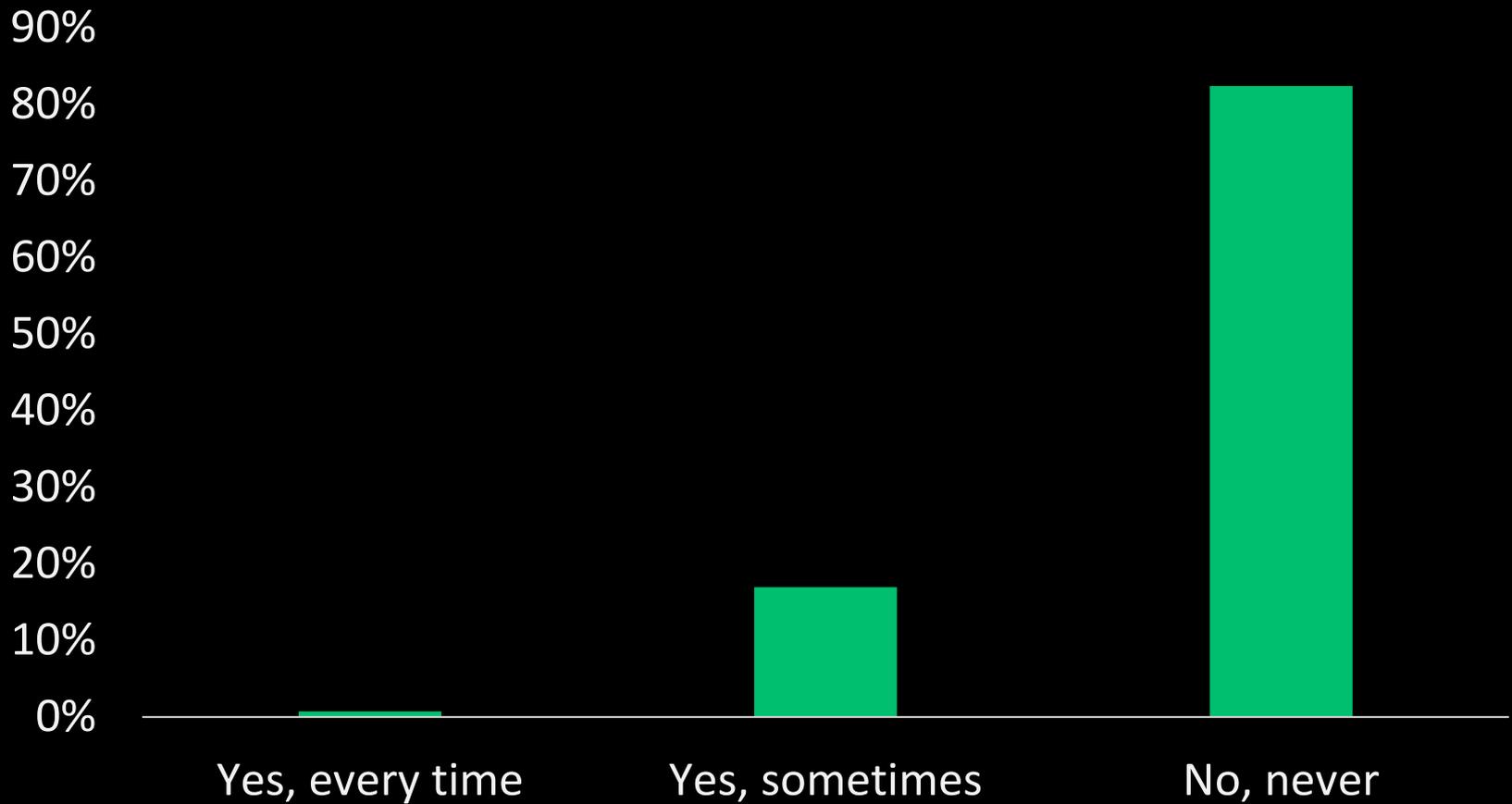
What time of year?



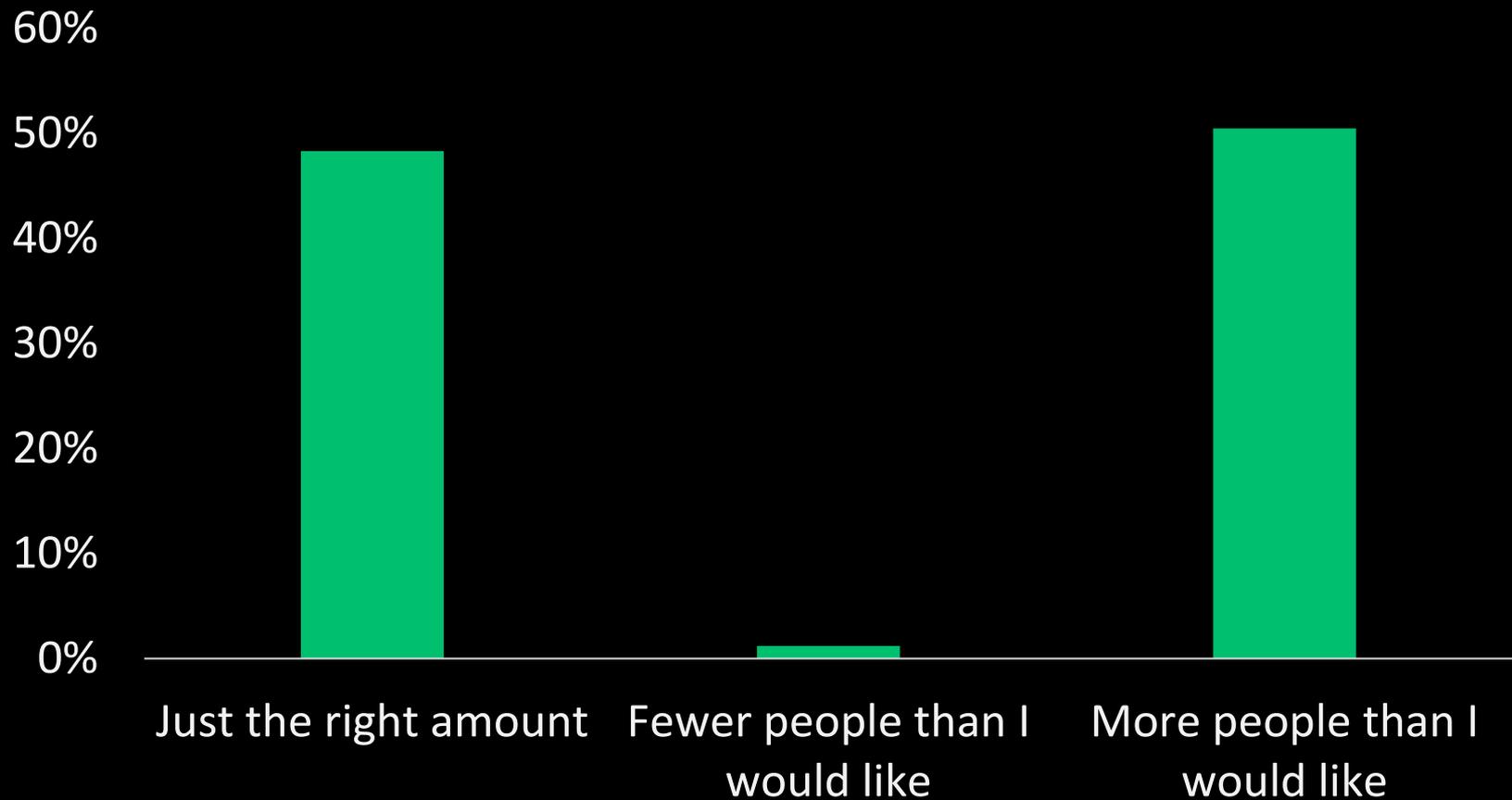
Primary reason for visiting



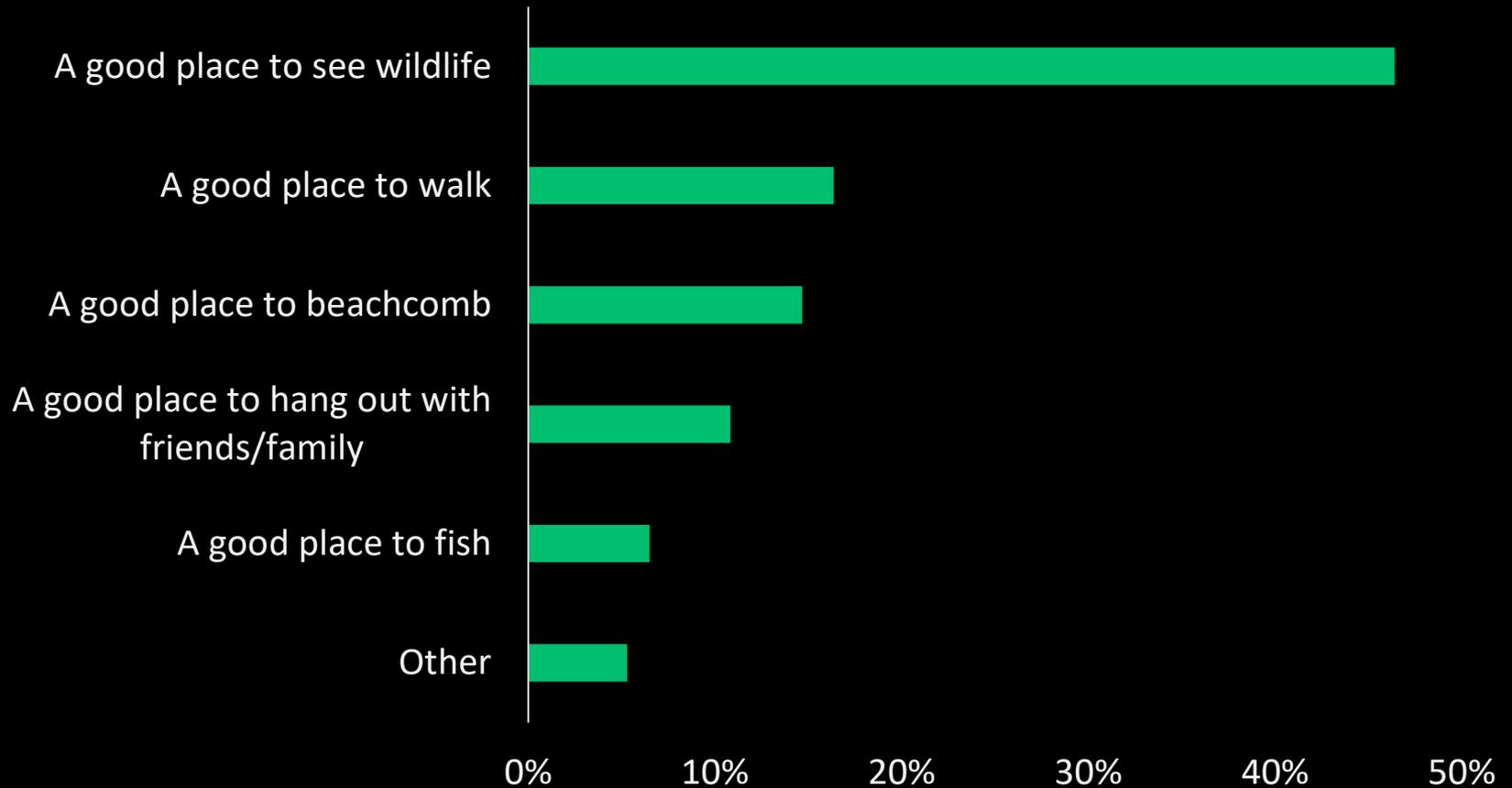
Do you bring a dog?



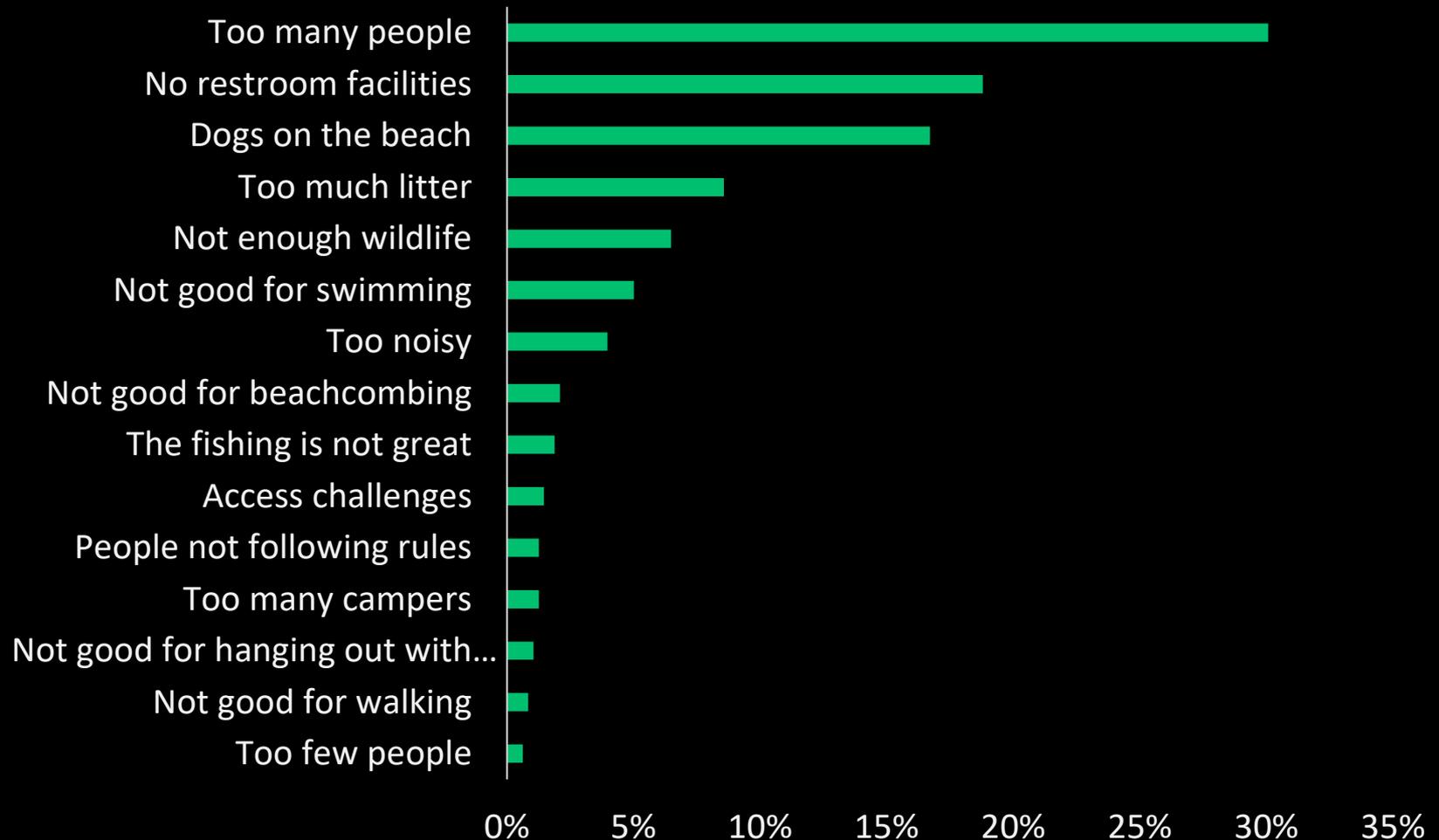
The number of people I see on the beach is...



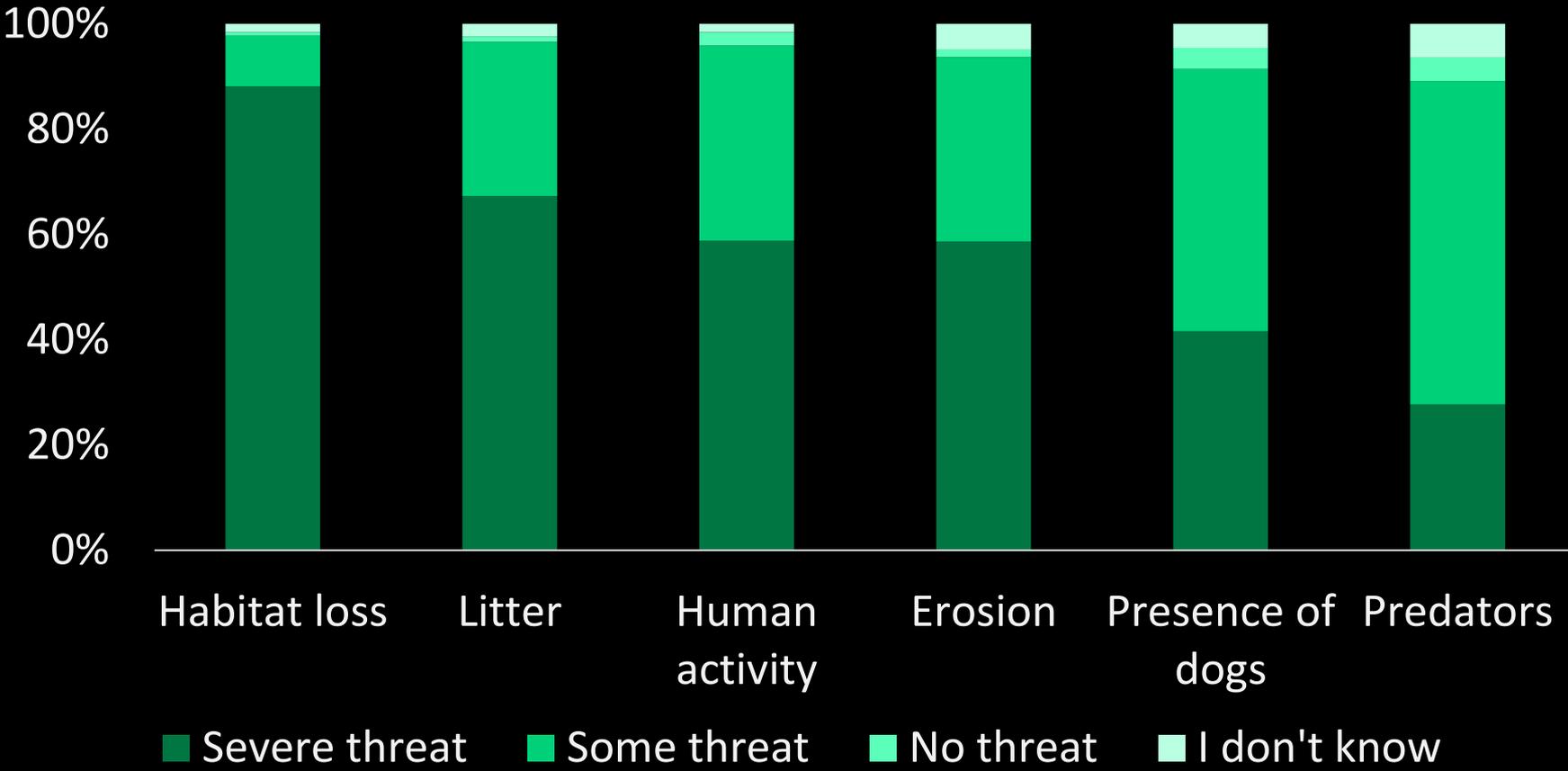
What do you like most about visiting that beach?



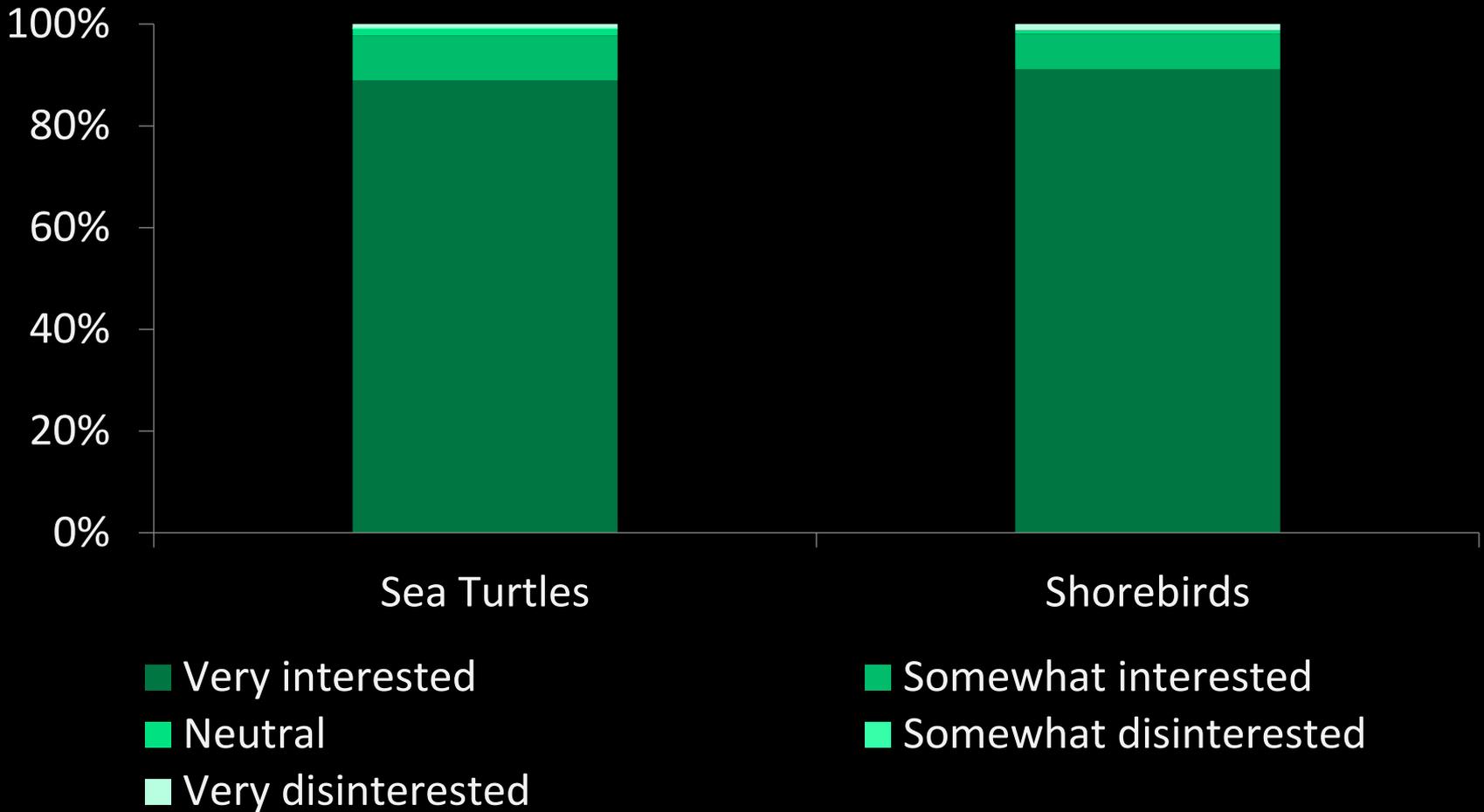
What do you dislike most about visiting that beach?



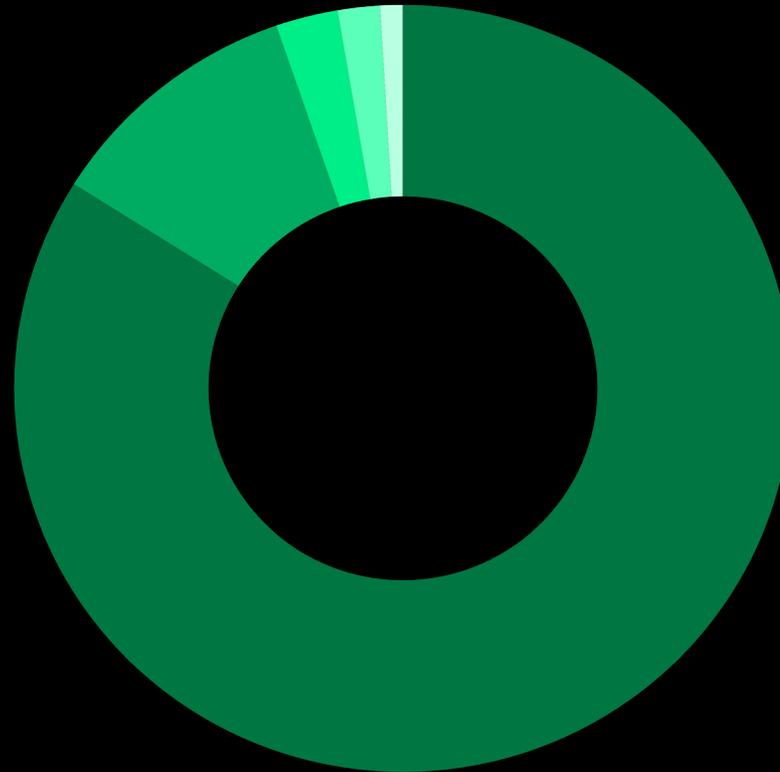
Habitat loss, litter, human activity, and erosion perceived as threats



How interested are you in protecting...



Most are supportive of management for the protection of wildlife



■ Very supportive

■ Somewhat supportive

■ Neither

■ Somewhat unsupportive

■ Very unsupportive



1

SCDNR beach users seek a nature-based experience

2

Balance high-quality wildlife habitats and provide a unique visitor experience

3

Continue to understand visitor use and values



Staff Recommendations for Changes to Regulation Sections 123-204

Executive Summary

The following recommendations are made to protect wildlife at beaches owned and managed by SCDNR. These beaches provide critical nesting, feeding, and stopover sites for multiple imperiled sea and shorebird species, sea turtles, and other wildlife. Loss of required habitat coupled with constant disturbance places these species at risk. Disturbance in these areas by humans and dogs is known to cause nest and colony failure, which contributes to declines in populations of these species. Through thoughtful regulation, SCDNR can minimize disturbance at these locations and help to ensure that conservation efforts for these species are successful. SCDNR recognizes the popularity of these beaches and will continue to allow limited public use at times and locations that are not detrimental to the wildlife species that rely on these areas for survival. Recent surveys of SCDNR Beach users show overwhelming support for the appropriate management and protection of these species and special places. The proposed regulations prohibit dogs and designate camping areas, where appropriate, to minimize disturbance of these sensitive areas. Without the implementation of these regulation changes many of these sensitive species, including those that are already listed as threatened and endangered, will likely continue to decrease in population numbers.

123-204 Additional Regulations Applicable to Specific Properties

- F. Caper's Island Heritage Preserve – adds provision prohibiting dogs.
- T. St. Helena Sound Heritage Preserve (Otter Island) – provides for camping at designated areas between October 16 and March 14.
- V. Santee Coastal Reserve – Specifies that beaches are open during daylight hours and that no one may enter any area designated as critical for wildlife. Provides for camping on Cedar and Murphy islands at designated areas between October 16 and March 14. Prohibits dogs on Cedar and Murphy Islands except during scheduled hunts.
- Z. Tom Yawkey Wildlife Center - provides for camping at designated areas between October 16 and March 14, and prohibits dogs on beaches.
- NN. Turtle Island WMA - Prohibits dogs except during scheduled hunts, and provides for camping at designated areas between October 16 and March 14.
- OO. Pine Island - adds provision prohibiting dogs.

Red Text=Any Change

Strikethrough=Text to be deleted

Underline=Text to be inserted

Changes to Chapter 123: Section 204

123–204. Additional Regulations Applicable to Specific Properties.

F. Caper's Island Heritage Preserve.

(1) Overnight Camping on Capers Island is by permit only. Permit may be obtained from the DNR Charleston office. No more than 80 people will be allowed to camp per night. These 80 people may be divided into no more than 20 different groups.

(2) Permits will be issued on a first come first served basis.

(3) Campsites will be occupied on a first come first served basis.

(4) Permits are not required for day use.

(5) Persons without permits must be off the island by one hour after sunset.

(6) No trash is to be placed in any fire or buried.

(7) Department maintenance facilities on the island are not open to the public.

(8) No crab or fish pots or traps are allowed in impoundments.

(9) No motorized vehicles, non-motorized vehicles, off road vehicles, or all-terrain vehicles are allowed on Capers Island.

(10) No fishing is allowed from the impoundment tide gate.

(11) No dogs are allowed.

T. St. Helena Sound Heritage Preserve (Otter Island).

(1) No dogs are allowed.

(2) Primitive camping only is allowed by permit issued by the Department.

Primitive camping is restricted to designated areas and will be allowed only between ~~November 1 and March 31.~~ October 16 and March 14.

V. Santee Coastal Reserve.

(1) The Santee Coastal Reserve is open during daylight hours (1/2 hour before sunrise to 1/2 hour after sunset) for limited public use year round except as listed below.

(2) Managed wetlands will be open for wildlife observation, bird watching, photography, or nature study during daylight hours (1/2 hour before sunrise to 1/2 hour after sunset) from February 9 through October 31 each year except during special hunts and events regulated by the Department.

(3) The dikes around the waterfowl impoundments will be closed, except by prior arrangement, during the period of November 1 through February 8 of the next year.

(4) Prior arrangements must be made with the Reserve Manager to use observation blinds for waterfowl.

(5) Upland trails will be available during open periods stated above.

(6) The beaches on Cedar and Murphy Islands will be open year round, during daylight hours. No person may enter any area designated as a critical area for wildlife. seven days a week.

(7) Bicycles may be ridden on upland trails year round and on dikes from February 9 - October 31.

(8) Fishing is permitted from the Santee River dock and the Hog Pen impoundment except during scheduled waterfowl hunts. Fishing will be allowed during daylight hours (1/2 hour before sunrise to 1/2 hour after sunset). Fishing is permitted on Murphy and Cedar Island beaches at any time on a year round basis.

(9) ~~Primitive camping is allowed year round with no registration on the beaches of Murphy and Cedar Islands.~~ Primitive camping on Cedar and Murphy Islands is restricted to designated areas and will be allowed only between October 16 and March 14. Camping on the mainland portion is restricted to the designated campground. Mainland camping registration is required at the campground self-serve kiosk. Advance registration is required for groups greater than 15 people.

(10) No dogs are allowed on Cedar and Murphy Islands except for scheduled hunts.

Z. Tom Yawkey Wildlife Center.

The Center is a wildlife sanctuary. Boating, fishing and wildlife viewing from navigable waters is allowed.

(1) Public visitation is by pre-scheduled educational field trips only. The scheduling of educational field trips is at the discretion of SCDNR.

(2) Primitive camping is allowed by permit only. Requests for permits should be no less than 2 weeks prior to their effective date. Primitive camping is allowed only at Department designated locations along the beach front from ~~September 16 – May 14.~~ October 16 and March 14. Only one permit will be issued for each location at a time. Camping is allowed for a period of not more than 4 consecutive nights per individual permit holder.

(3) No dogs are allowed on beaches.

NN. Turtle Island WMA

(1) No dogs allowed except for scheduled hunts.

(2) Primitive camping is restricted to designated areas and will be allowed only between October 16 and March 14.

OO. Pine Island

(1) No dogs allowed.

SOUTH CAROLINA HERITAGE LAND TRUST FUND

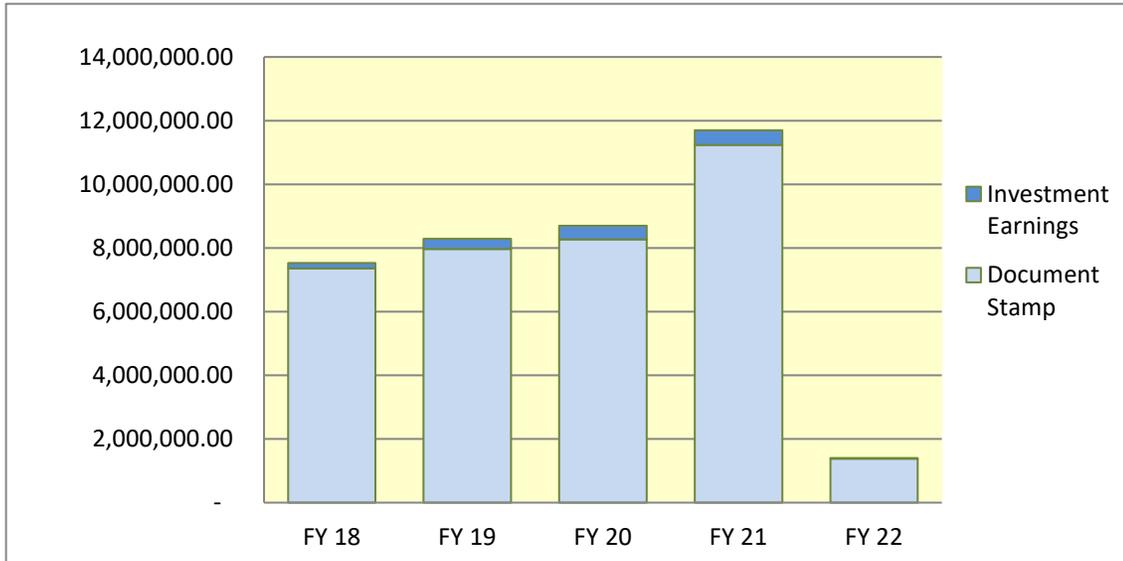
July 31, 2021

Month	FY 18	FY 19	FY 20	FY 21	FY 22
JUL	736,417.55	760,534.81	830,430.80	746,272.81	1,384,834.97
AUG	602,902.86	678,318.01	797,484.46	846,478.03	-
SEP	664,624.02	855,196.02	719,819.56	895,673.28	-
OCT	635,412.47	546,415.94	682,935.54	948,160.71	-
NOV	575,466.77	621,191.30	775,126.83	964,199.53	-
DEC	580,843.05	752,905.53	641,226.13	880,082.90	-
JAN	623,003.59	653,052.08	658,884.15	1,086,846.33	-
FEB	501,406.74	499,835.85	739,825.36	847,023.42	-
MAR	491,830.10	475,980.46	584,365.59	710,464.62	-
APR	603,235.13	670,919.04	723,029.78	1,105,651.07	-
MAY	633,855.61	692,192.89	559,057.34	996,369.80	-
JUN	705,287.66	767,310.70	556,401.14	1,208,628.94	-
Document Stamp Fee	7,354,285.55	7,973,852.63	8,268,586.68	11,235,851.44	1,384,834.97
% Change vs Previous Fiscal Yr	7.3%	8.4%	3.7%	35.9%	
\$ Change vs Previous Fiscal Yr	499,646.94	619,567.08	294,734.05	2,967,264.76	

Month	FY 18	FY 19	FY 20	FY 21	FY 22
JUL	7,622.39	5,897.39	39,076.40	31,001.15	15,862.03
AUG	12,672.47	18,826.80	38,592.10	47,598.07	-
SEP	13,411.57	15,200.02	35,498.88	28,189.91	-
OCT	8,748.23	29,456.39	23,592.73	14,446.83	-
NOV	18,741.67	43,329.55	26,197.31	67,458.01	-
DEC	11,762.75	21,493.05	54,725.11	41,613.55	-
JAN	8,605.48	24,163.26	30,742.54	19,211.62	-
FEB	15,885.71	27,876.43	17,154.36	41,871.06	-
MAR	17,876.46	14,862.73	57,420.12	60,757.68	-
APR	20,196.47	43,833.23	30,401.75	38,936.12	-
MAY	26,960.47	48,848.21	24,839.99	23,445.61	-
JUN	7,921.16	21,951.61	50,240.66	47,063.00	-
Investment Earnings	170,404.83	315,738.67	428,481.95	461,592.61	15,862.03
% Change vs Previous Fiscal Yr	61.4%	85.3%	35.7%	7.7%	

	FY 18	FY 19	FY 20	FY 21	FY 22
TOTAL REVENUE	7,524,690.38	8,289,591.30	8,697,068.63	11,697,444.05	1,400,697.00
% Change vs Previous Fiscal Yr	8.1%	10.2%	4.9%	34.5%	
\$ Change vs Previous Fiscal Yr	564,499.24	764,900.92	407,477.33	3,000,375.42	

Document Stamp Receipts & Investment Earnings for FY 2018-2022



July (only)	FY 18	FY 19	FY 20	FY 21	FY 22
Document Stamp	736,417.55	760,534.81	830,430.80	746,272.81	1,384,834.97
Investment Earnings	7,622.39	5,897.39	39,076.40	31,001.15	15,862.03
Comparable Period Revenue	744,039.94	766,432.20	869,507.20	777,273.96	1,400,697.00
% Change vs Previous Fiscal Yr	5.5%	3.0%	13.4%	-10.6%	80.2%

Document Stamp Receipts & Investment Earnings for FY 2018-2022
Comparable Period: July (only)

