

South Carolina Department of Natural Resources

Board Meeting Agenda and Materials and Monthly Division Reports



DNR

**Board Meeting Scheduled
for**

Videoconference
<https://scdnr2.webex.com/scdnr2/j.php?MTID=mb786d66feafef8aa7e4e0a0438488318>
Meeting number (access code): 132 319 2411
Telephone: 1-844-992-4726
Access Code: 132 319 2411##

March 18, 2021 10:00 AM

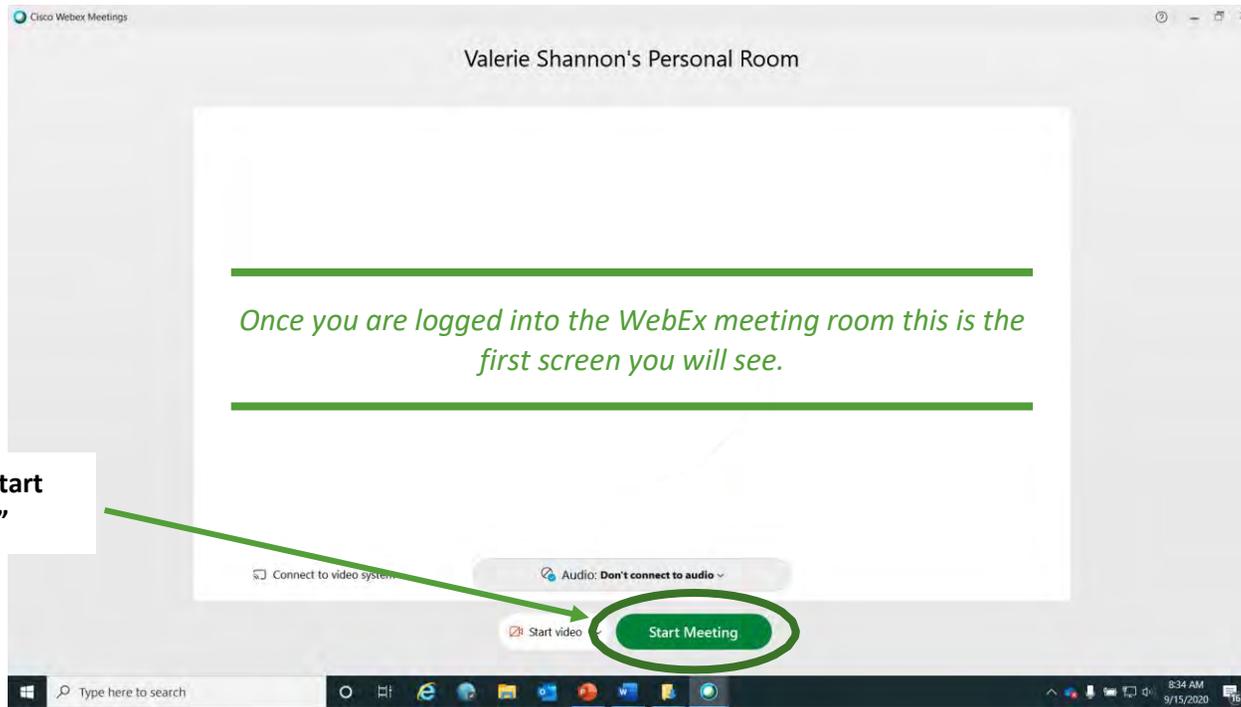
Quick Tips and Logistics



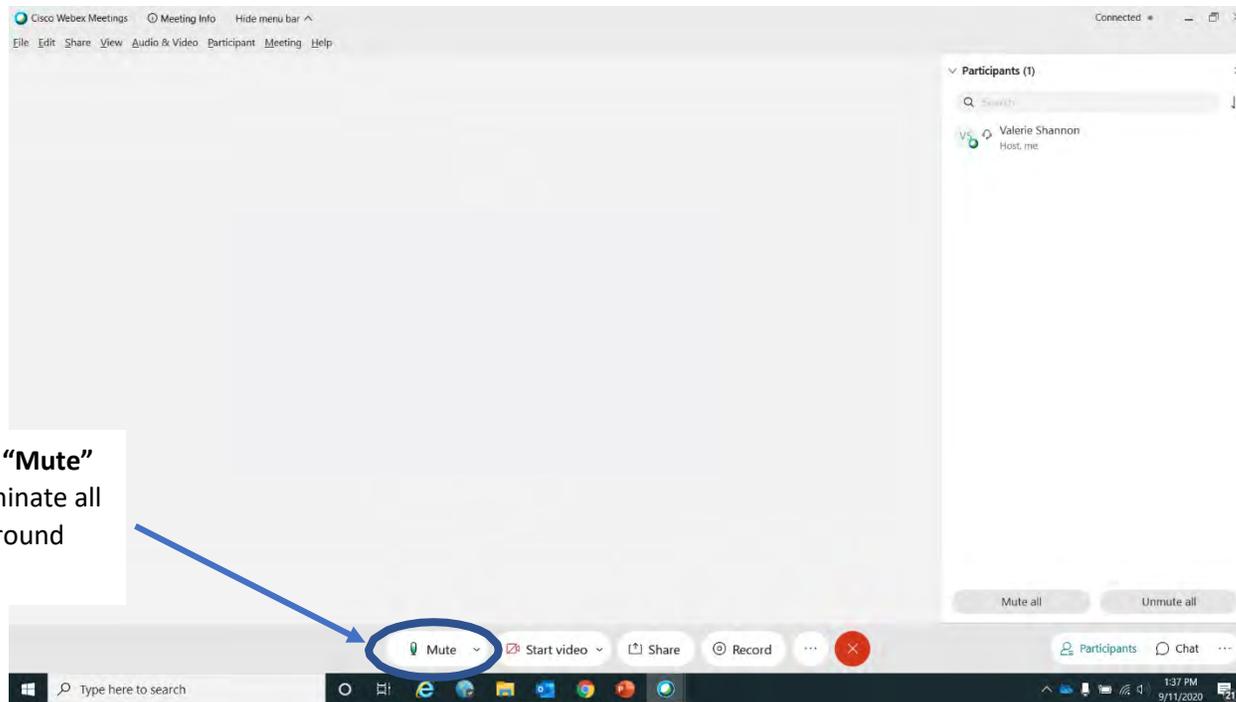
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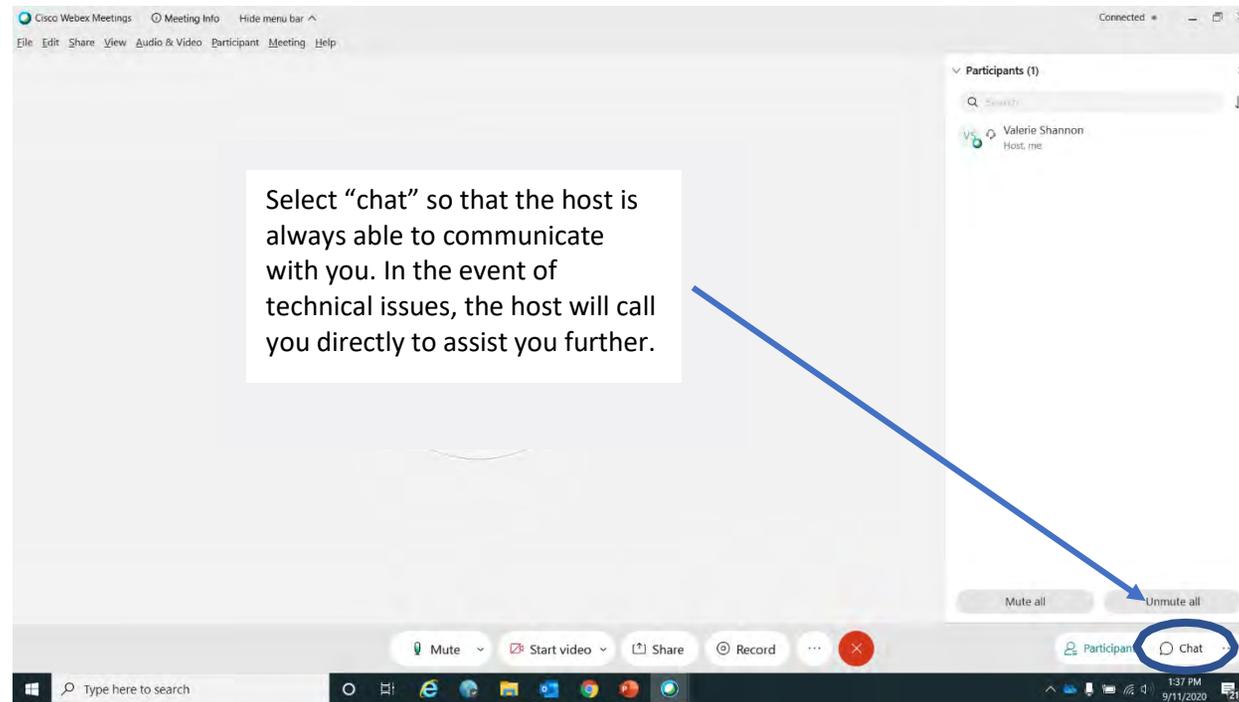
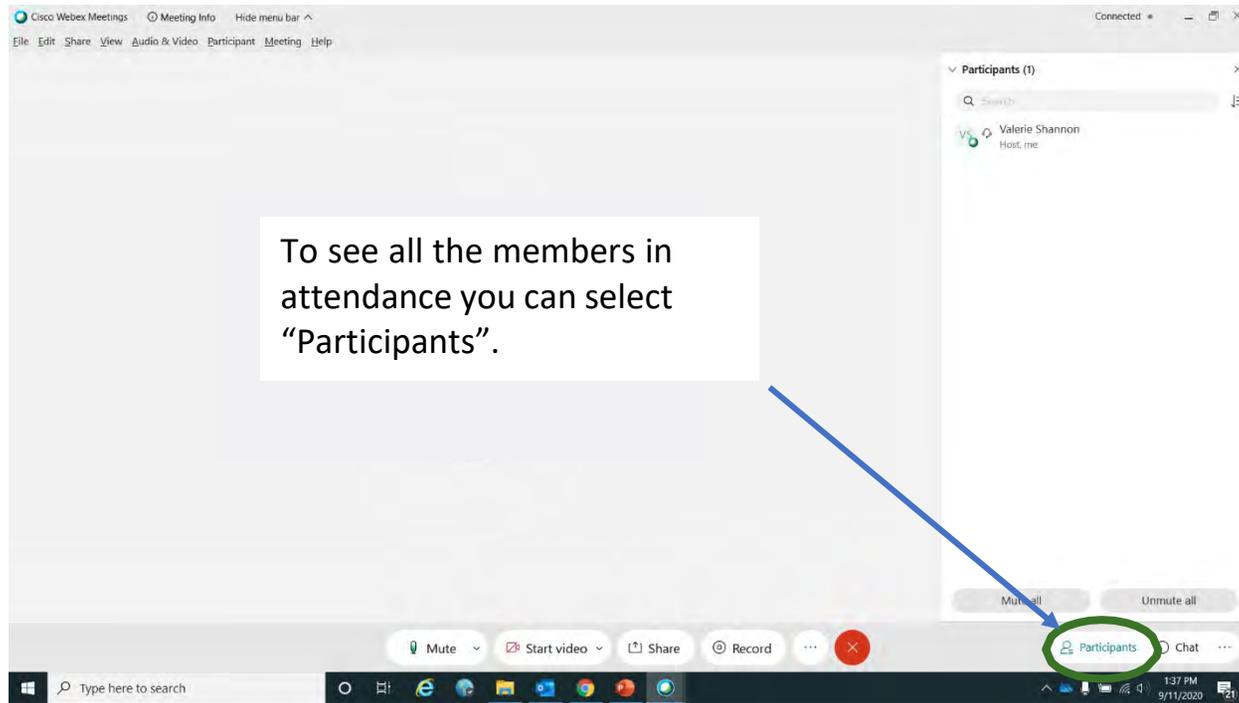
Quick Tips



Select "Start Meeting"



Select "Mute" to eliminate all background noise.



Agenda

AGENDA
SC DEPARTMENT OF NATURAL RESOURCES BOARD

Virtual Meeting
March 18, 2021 10:00 AM

<https://scdnr2.webex.com/scdnr2/j.php?MTID=mb786d66feafef8aa7e4e0a0438488318>

Meeting number (access code): 132 319 2411

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- 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 GuestsEmily Cope, Deputy Director for Wildlife and Freshwater Fisheries
- VII. Constituent Comments (Comments are limited to 5 minutes) Emily Cope
- VIII. Approval of Minutes from February 18, 2021 meeting
- IX. Presentations/Commendations
- X. Advisory Committee Reports
 - A. Governor's Cup Billfishing Series Carlisle Oxner, DNR Board Representative
 - B. Wildlife and Freshwater Fisheries..... Mike Hutchins, Chairman
- XI. Item(s) for Board Information
 - A. Climate Update..... Hope Mizzell, Land, Water and Conservation Division
 - B. Use of Prescribed Fire on DNR Properties Johnny Stowe
Wildlife and Freshwater Fisheries Division
 - C. Overview of Category 1 Waterfowl Management Activities Emily Cope
Deputy Director for Wildlife and Freshwater Fisheries
 - D. Dewees Island Short Term Rental Framework Proposal Wendell Reilly
President, Dewees Island POA
- XII. Director's Briefings
 - A. Executive OfficeRobert H. Boyles, Jr., Director
 - 1. Legislative Report..... Kevin R. Ryan, Director, Government Affairs
 - 2. Environmental Report..... Lorianne Riggin, Director, Office of Environmental Programs
 - B. Deputy Directors' Reports
 - 1. Wildlife and Freshwater Fisheries Emily Cope
 - 2. Law Enforcement..... COL Chisolm Frampton
 - 3. Marine Resources.....Phil Maier
 - 4. Administration.....Angie Cassella
 - 5. Land, Water and Conservation Ken Rentiers

- XIII. Item(s) for Board Action
 - A. Dewees Island.....Shannon Bobertz, General Counsel
 - B. Migratory Bird Season Recommendations.....Billy Dukes
Wildlife and Freshwater Fisheries Division
 - C. Conservation District Commissioner Appointments/Reappointments..... Ken Rentiers
Deputy Director for Land, Water and Conservation
 - D. Property Acquisition in Colleton County Ken Prosser
Assistant Deputy Director, Wildlife and Freshwater Fisheries
 - E. Property Acquisition in Chester County Ken Prosser
 - F. Property Acquisition in Laurens County Ken Prosser

- XIV. Executive Session (if necessary)

- XV. Comments..... Board Members

- XVI. Time and Location of Next Board Meeting..... Board Members

- XVII. Adjournment

Minutes

Revised Minutes
Board of the South Carolina Department of Natural Resources
Videoconference Meeting
February 18, 2021 10:00 AM

The regular meeting of the Board of the South Carolina Department of Natural Resources was held by videoconference at 10:00 a.m., February 18, 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 Dave Tafaoa, 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, in person or virtually, for this meeting. Chairman Pulliam expressed his appreciation to staff for keeping business going during this difficult time.

V. Introduction of Guests

Ken Rentiers, Deputy Director for Land, Water and Conservation, introduced Phil Goss, US Association of Reptile Keepers, Scott Whitaker, Coastal Conservation Association; and Austin Smallwood, SC Realtors Association.

VI. Constituent Comments

Mr. Rentiers informed the Board that Zybryus Heard has requested to comment to the Board. Mr. Heard did not respond when called on for comment.

VII. Approval of Minutes

Chairman Pulliam asked if there were any additions, deletions or corrections to the January 21, 2021, January 26, 2021 meeting minutes and the February 4, 2021 public meeting minutes. *Mr. Hutchins made a motion that the Board approve the minutes of the January 21, 2021, January 26, 2021 and February 4, 2021 meetings as presented. Mr. Oxner seconded the motion and the motion carried unanimously.*

VIII. Presentations/Commendations

A. Director Boyles commended Will Dillman, Emily Cope, Kevin Ryan, Van Whitehead, Sandy Rucker, Shannon Bobertz, Valerie Shannon and Melissa Griffin for their assistance in coordinating the February 4, 2021 Public Meeting on Nonnative Wildlife.

- B. Director Boyles commended a diverse group of employees from all divisions and the Executive Office who served on the Employee Morale Task Force that was formed following our employee survey to develop actionable items to address employee concerns. Members included: Lorianne Riggin, Keya Jackson, Shari Tolen, FSGT Dale Gibson, INV Damian Yongue, FSGT Brian Crawford, LCPL Kendall Lownsbury, LCPL Shawn Hanna, PFC Jordan Hawkins, PFC Brant Elliott, Hope Mizzell, Sean Taylor, Jacky Steen, Deanne Myrick, Joshua Boatwright, Matthew Brown, Maia Ingle, Ben Dyar, Tracey Smart, Olivia Bueno, Tony Reed, Tiffany Haggins, Tanner Arrington, Terrence Tomlin, Bonnie Greenwood, Jenni Chrislip, Willie Simmons, Sarah Chabaane, Will Dillman, Preston Chrisman, Alicia Farrell, and Ken Forrester.
- C. Director Boyles commended Stephen Czwartacki and Jeff Brunson of Marine Resources for going above and beyond to assist a stranded commercial fisherman.
- D. Director Boyles commended Bill Marshall of Land, Water and Conservation for completing the Scenic River Management Plan for the Black River.

IX. Advisory Committee Reports

A. Heritage Trust

Mr. Rasor reported that the Heritage Trust Advisory Board met virtually on February 11, 2021. The Advisory Board received an overview on Lewis Ocean Bay Heritage Preserve. The Advisory Board received updates on the Botany and Plant Conservation Program and the Cultural Heritage Trust Program. The Advisory Board approved several property items which will come before the Board later in the meeting.

B. Land, Water and Conservation

Mr. Rentiers reported that the Land, Water and Conservation Advisory Committee met virtually on February 16, 2021. The Advisory Committee received updates on the Climatology Program and the Flood Mitigation Program. The Advisory Committee approved conservation district commissioner appointments and reappointments, which will come before the Board at the March 2021 meeting.

X. Items for Board Information

A. Climate Update

Hope Mizzell, Land, Water and Conservation Division, provided an overview of recent winter weather. Dr. Mizzell provided rainfall totals, precipitation percentiles, streamflow, lake levels, ground-water monitoring wells around the state, precipitation forecast and temperature forecast.

B. Sunday Hunting on Wildlife Management Areas

Emily Cope, Deputy Director for Wildlife and Freshwater Fisheries, informed the Board that there has been some interest in opening WMA's to Sunday Hunting. Mrs. Cope noted that Sunday hunting is allowed on private lands but, historically, has not been allowed on WMA's. Mrs. Cope reported that the department has been working on an agreement with Clemson University to conduct a public input process and compile a report that will be used for recommendations for the Board's approval.

C. **Deweese Island Update**

Shannon Bobertz, General Counsel, gave the Board a brief update on the progress with Deweese Island Conservation Easement. Mrs. Bobertz reviewed changes made since the last discussion. There has been a Community Residence Board that would assist with enforcing the short-term rental rules. There will be a maximum of six residences at any given time that could be rented on the island. There can be no more than 56 days per calendar year that a residence can be rented. In lieu of doing a 14-day minimum stay they would like to have two seven-day rentals. The community will be holding a straw poll regarding the rentals and will hopefully provide the results prior to the March 18, 2021 Board meeting.

XI. **Director's Briefings**

Director Boyles reminded the Board that their Statement of Economic Interest form is due to the Ethics Commission by March 30, 2021.

Director Boyles participated in the inaugural Lunch and Learn series presented by Van Whitehead, Deputy General Counsel, on preparing contracts and agreements.

Director Boyles met with staff, Board members and Senator Campsen about the request for a public hearing on draft Tegu regulations.

Director Boyles participated in discussions of the Southeast Aquatic Resources Partnership about its future and governance.

Director Boyles and Chairman Pulliam represented DNR at the House Ways and Means Law Enforcement and Criminal Justice Subcommittee meeting for the DNR budget hearing.

Director Boyles reported that 57 – 74% of staff are reporting to their work site, 21 – 34% of staff are telecommuting and to date 87 staff have tested positive for COVID-19

XII. **Legislative Report**

Kevin Ryan, Director of Government Affairs, reported on the budget process, flounder, idle speed distance in wake zones, Boater Education and DHEC restructuring.

XIII. **Environmental Report**

Lorianne Riggan, Director, Office of Environmental Programs, reviewed the Horry County rezoning request for a parcel adjacent to Lewis Ocean Bay Heritage Preserve.

XIV. **Deputy Directors' Reports**

A. **Land, Water and Conservation**

No further report.

B. **Wildlife and Freshwater Fisheries**

Mrs. Cope reported on potential flooding at Samworth WMA. She stated that water is not yet over top of the dikes, but staff are anticipating it to overtop later today or tomorrow.

C. Law Enforcement

LTC Jamie Landrum reported that officers are currently on standby for flooding of the Waccamaw River. Law enforcement have talked with the Coast Guard about temporary wake zones, if necessary. Three officers along with SLED are stationed at the State House throughout the day today. LTC Landrum reported on vaccine runs and statehouse details.

D. Marine Resources

No further report.

E. Administration

Angie Cassella, Deputy Director for Administration, reported on the status of the new Horry County Office and the enterprise Sales System.

XV. Items for Board Action

A. Proposed Regulations for Nonnative Wildlife

Mrs. Cope reviewed the efforts in trying to develop regulations that would impact black and white tegu in South Carolina. There was a public meeting held on February 4, 2021 where information was gathered, and comments were heard. Mrs. Cope reminded the Board of the restrictions these regulations place on black and white tegu in South Carolina. *Mr. Hutchins made a motion that based on the public hearing and documents submitted, that the DNR Board find need and reasonableness of Proposed Regulation for Nonnative wildlife Regulation 123-152, Document number 5027, and grant approval for submission to the General Assembly for review. Mr. Lee seconded the motion and the motion carried unanimously.*

B. Emergency Regulation for Turkey Hunting at Santee Coastal Reserve

Billy Dukes, Wildlife and Freshwater Fisheries Division, briefly reviewed the Proposed Emergency Regulations for turkey hunting at Santee Coastal Reserve. *Mr. Lee made a motion that upon the recommendation of DNR staff, the DNR Board approve the Emergency Regulation 123-51 for turkey hunting at Santee Coastal Reserve, as presented. Mr. Swygert seconded the motion and the motion carried unanimously.*

C. License Agreement for Temporary Monitoring for SC DOT, Henderson Heritage Preserve, Jackson Tract

Mrs. Riggin briefly reviewed the license agreement. *Mr. Oxner made a motion that upon the recommendation of the Heritage Trust Advisory Board, the DNR Board approve the proposed license agreement with the SC DOT for temporary monitoring at the Jackson Tract of the Henderson Heritage Preserve as presented. Mr. Swygert seconded the motion and the motion carried unanimously.*

XVI. 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 appointments to advisory committees related to Items for Board Action (D) and to discuss contractual matters

related to Items for Board Action (E and F). Mr. Lee seconded the motion and the motion carried unanimously.

XVII. Open Session

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

XVIII. Item for Board Action

D. Wildlife and Freshwater Fisheries Advisory Committee Appointments

Mr. Hutchins made a motion that upon the recommendation of staff, the DNR Board appoint Mr. William McKelvey Baughman of Summerville, SC and Mr. Woodrow Wilson Watford, III of Cameron, SC to each serve a four-year term on the Wildlife and Freshwater Fisheries Advisory Committee with their initial terms being March 1, 2021 – February 28, 2025. Mr. Swygert seconded the motion and the motion carried unanimously.

E. Potential Property Acquisition in Aiken County

Mr. Rasor made a motion that upon the recommendation of the Heritage Trust Advisory Board, the DNR Board grant preliminary approval to investigate a potential property acquisition of approximately 31 acres adjoining Henderson Heritage Preserve/WMA in Aiken County that would be dedicated as a heritage preserve and placed into the corpus of the SC Heritage Trust, and the expenditure of up to \$20,000 in Heritage Trust funds to conduct due diligence activities. Mr. Lee seconded the motion and the motion carried unanimously.

F. Potential Land Trade in Oconee County

Mr. Rasor made a motion that upon the recommendation of the Heritage Trust Advisory Board, the DNR Board grant preliminary approval to investigate a potential land trade of approximately 1.3 acres of SC DNR land for approximately 1.3 acres of privately owned land adjoining Stumphouse Mountain Heritage Preserve/WMA in Oconee County, and the expenditure of up to \$20,000 in Heritage Trust funds for due diligence activities. The 1.3 acres property obtained by SC DNR would be dedicated as a heritage preserve and placed into the corpus of the SC Heritage Trust. Mr. Oxner seconded the motion and the motion carried unanimously.

XIX. Time and Location of Next Board Meeting

The next meeting is scheduled for March 18, 2021.

XX. Adjournment

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

Item(s) for Action

2021-22 MIGRATORY BIRD FRAMEWORKS

SPECIES	OUTSIDE DATES	TOTAL POSSIBLE DAYS	MAXIMUM DAILY BAG LIMIT	MAXIMUM POSSESSION LIMIT
MOURNING DOVE	Sept. 1--Jan. 31	90 DAYS W/ 3 POSSIBLE SEGMENTS	15	45
MARSH HENS/RAILS (King, Clapper, Sora & Virginia)	Sept. 1--Jan. 31	70 DAYS W/ 2 POSSIBLE SEGMENTS	15 (King & Clapper) 25 (Sora & Va.)	45 (King & Clapper) 75(Sora & Va.)
EARLY TEAL	Sept. 1--Sept. 30	16 CONSECUTIVE DAYS	6	18
WOODCOCK	Sept. 13--Jan. 31	45 DAYS W/ 2 POSSIBLE SEGMENTS	3	9
COMMON SNIPE (Wilson's)	Sept. 1--Feb. 28	107 DAYS W/ 2 POSSIBLE SEGMENTS	8	24
COMMON MOORHENS & PURPLE GALLINULES	Sept. 1--Jan. 31	70 DAYS W/ 2 POSSIBLE SEGMENTS	15	45
EARLY CANADA GEESE	Sept. 1--Sept. 30	30 DAYS	15	45
DUCKS (Excluding Sea Ducks)	Sept. 25--Jan. 31	60 (3 Segments)	6 total-not to include more than 2 mallards (1 hen), 2 black ducks, 1 pintail, 1 mottled duck, 1 fulvous whistling duck, 3 wood ducks, 2 redheads, 2 canvasbacks, 4 scoters, 4 eiders and 4 long-tailed ducks. Scaup 1/day for 40 days, 2/day for 20 days.	Three times the Daily Bag
MERGANSERS	Same as ducks	60 (3 Segments)	5 (not to include more than 2 Hooded Merganser)	Three times the Daily Bag
COOTS	Same as ducks	60 (3 Segments)	15	Three times the Daily Bag
CANADA /WHITE FRONTED GEESE (Late Season)	Oct. 1--Mar. 10	80 (3 Segments)	5	Three times the Daily Bag
BLUE and SNOW GEESE	Oct. 1--Mar. 10	107 (3 Segments)	25	no limit
BRANT	Sept. 25--Jan. 31	50 (2 Segments)	2	6
SEA DUCKS	Sept. 15--Jan. 31	60	5 (no more than 4 of eiders, scoters, or long-tailed ducks)	15

**2021-22 Migratory Bird Season
Staff Recommendations**

SPECIES	OPEN DATES (All Dates Inclusive)	SHOOTING HOURS	DAILY BAG LIMIT	POSSESSION LIMIT
MOURNING DOVE	Sept. 4--Sept. 6 Sept. 7--Oct. 2 Nov. 13--Nov. 27 Dec. 17--Jan. 31	12 Noon until Sunset 1/2 Hour before Sunrise until Sunset 1/2 Hour before Sunrise until Sunset 1/2 Hour before Sunrise until Sunset	15	45
MARSH HENS/RAILS (King, Clapper, Sora & Virginia)	Sept.8--Sept. 12 Oct. 4--Dec.7	1/2 Hour before Sunrise until Sunset	15 (King & Clapper) 25 (Sora & Va.)	45(King & Clapper) 75 (Sora & Va.)
EARLY TEAL	Sept.10--Sept. 25	Sunrise until Sunset	6	18
WOODCOCK	Dec. 18--Jan. 31	1/2 Hour before Sunrise until Sunset	3	9
COMMON SNIPE (Wilson's)	Nov. 14--Feb. 28	1/2 Hour before Sunrise until Sunset	8	24
COMMON MOORHENS & PURPLE GALLINULES	Sept.8--Sept. 12 Oct. 4--Dec.7	1/2 Hour before Sunrise until Sunset	15	45
EARLY CANADA GEESE	Sept. 1--Sept. 30	1/2 Hour before Sunrise until Sunset	15	45
DUCKS (Including Sea Ducks) (There is no open season for harlequin ducks)	Nov. 20--Nov. 27 Dec. 12--Jan. 31	1/2 Hour before Sunrise until Sunset	6 total-not to include more than 2 mallards (1 hen), 2 black ducks, 1 pintail, 1 mottled duck, 1 black-bellied whistling duck, 1 fulvous whistling duck, 3 wood ducks, 2 redheads, 2 canvasbacks, 4 scoters, 4 eiders and 4 long-tailed ducks. The 6 total shall include no more than 2 scaup for the period Nov. 13, Nov. 20 --Nov. 27 and Dec. 12--Dec. 22. The 6 total shall include no more than 1 scaup for the period Dec. 23--Jan. 31	18 total, Not to include more than 3 times the daily bag limit for a given species.
MERGANSERS	Nov. 20--Nov. 27 Dec. 12--Jan. 31	1/2 Hour before Sunrise until Sunset	5 (not to include more than 1 Hooded Merganser)	15 (not to include more than 3 Hooded Mergansers)
COOTS	Nov. 20--Nov. 27 Dec. 12--Jan. 31	1/2 Hour before Sunrise until Sunset	15	45
**CANADA GEESE/ WHITE FRONTED GEESE (Late Seasons)	Nov. 20--Nov. 27 Dec. 12--Jan. 31 Feb. 15--Mar. 1	1/2 Hour before Sunrise until Sunset	5 (not to include more than 2 white-fronted geese)	15 (not to include more than 6 white-fronted geese)
BLUE and SNOW GEESE	Nov. 20--Nov. 27 Dec. 12--Jan. 31 Feb. 15--Mar. 1	1/2 Hour before Sunrise until Sunset	25	No Limit
BRANT	Dec. 13--Jan. 31	1/2 Hour before Sunrise until Sunset	2	6

2021-22 Migratory Bird Season Staff Recommendations

***Black ducks/mottled ducks, the limit is as follows:** For areas east of I-95, one black duck or one mottled duck in the total bag of no more than six. For areas west of I-95, two black ducks or one black duck and one mottled duck in the total bag of no more than six.

****Canada Goose Hunting Area:** During the September 1—September 30 segment hunting for Canada Geese is allowed statewide. During the remaining three segments, the hunting area excludes that portion of Clarendon County bounded to the north by S-14-25; to the east by Hwy 260; and to the south by the markers delineating the channel of the Santee River. It also excludes that portion of Clarendon County bounded on the north by S-14-26 and extending southward to that portion of Orangeburg County bordered by Hwy #6.

State Youth Day: Nov. 13, 2021 (Legal Species: Ducks, mergansers, coots.) Only youth who are 17 years of age or younger may hunt, but they must be accompanied by an adult of at least 21 years of age who is fully licensed. Youth who are 16 or 17 years of age who hunt must possess a Migratory Bird Permit and a valid Federal Waterfowl Stamp. Daily and possession bag limits are the same as indicated for regular seasons, except the scaup limit is two.

Federal Youth Days: Feb. 5 and Feb. 12, 2022 (Legal Species: Ducks, geese, mergansers, coots, moorhens, gallinules.) Only hunters 17 of age or younger may hunt on these days but must be accompanied by a person at least 18 years of age. Youth who are 16 and 17 years of age, who hunt on these days, must possess a valid South Carolina hunting license, Migratory Bird Permit, Migratory Waterfowl Permit, and a valid Federal Waterfowl Stamp. Daily and possession bag limits are the same as shown above.

Veteran/Active Duty Military Days: Feb. 5 and Feb. 12, 2022 (Legal Species: Ducks, geese, mergansers, coots, moorhens, gallinules.) Veterans and active duty military who hunt on this day must possess a valid South Carolina hunting license, Migratory Bird Permit, Migratory Waterfowl Permit, and a valid Federal Waterfowl Stamp. Daily and possession bag limits are the same as shown above.

Sea Duck Area and Duck Limits Within this Area: The sea duck area is the Atlantic Ocean waters separated from any shore, island or emergent vegetation by at least one mile of open water. In this area, the sea duck limit is 5 with no more than 4 scoters, 4 eiders or 4 long-tailed ducks. In addition and within this area, a hunter may take up to 6 other ducks as described for the rest of the state but not including sea ducks. The shooting

Extended Falconry Season: Falconry is a permitted means of taking ducks, coots and mergansers in South Carolina. The extended season for falconry shall be Nov. 1, 2021 through Nov. 19, 2021 and Dec. 1, 2021 through Dec. 11, 2021. Daily bag and possession limits for these birds shall not exceed 3 and 9 birds, respectively, singly or in the aggregate. Statewide hunting hours shall be one-half hour before sunrise to sunset.

Environmental Report



Office of Environmental Programs

DNR Board Briefing Document – March 18, 2021

Highlights

Crab Bank Restoration

Crab Bank is a dedicated Heritage Trust Property and Seabird Sanctuary owned and managed by SCDNR located in the Charleston Harbor, near the mouth of Shem Creek. The island was originally formed with the placement of dredged materials in the 1950s, but has eroded significantly over time. In the early 2000s, Crab Bank was approximately 23 acres and, although small in size, the island served as a predator-free refuge for nesting seabirds and shorebirds, including brown pelicans, black skimmer, gull-billed tern, royal tern and sandwich tern. In 2017, Hurricane Irma removed the remaining high ground and nesting has not occurred there since.

The U.S. Army Corps of Engineers (USACE), as a part of the Post-45 Charleston Harbor Deepening, evaluated the renourishment of Crab Bank as beneficial use placement of the associated dredged material. However, because the project was not determined the least cost disposal alternative, the USACE could only move forward with this beneficial use project with a cost-share sponsor. The SCDNR officially became the cost-share sponsor on July 27, 2018.

The plan calls for the placement of 660,000 cubic yards of suitable dredged material on Crab Bank, which will make available 28 acres of Brown Pelican nesting habitat above mean high water. Through modeling, USACE estimates that approximately 0.64 acres of the island would remain in 50 years following renourishment.

The Town of Mount Pleasant (TOMP) has expressed concerns regarding the footprint and the amount of material to be placed on Crab Bank and how it would affect Shem Creek. As such, the USACE and SCDNR leadership and staff have had multiple meetings and communications on this matter. The USACE and the TOMP ran coastal modeling to show the change of sediments after placement on the initial footprint. The TOMP modeling results suggested a change in footprint from Medium A Alternative to TOMP's ATM660 that was similar to the Medium B Alternative footprint. Because Medium B provided the same amount of habitat for the same amount of time and the fact that the footprint was evaluated through the NEPA process, the USACE and SCDNR agreed to alter the footprint of the project. This was included as a part of a second solicitation for a contractor conducted by the USACE in April 2019. Currently, the TOMP is suggesting an additional footprint that they feel would further address their concerns regarding siltation in Shem Creek and the Hog Island Channel. The USACE and the SCDNR have committed to exploring other alternative footprints. The USACE is currently analyzing current LiDAR data and working to evaluate the final footprint. Once the USACE has completed this task, they will meet with Norfolk Dredging Company, the contractor to construct the project, to see if the proposed options are constructible and do not increase the costs of the project. After the USACE meets with the contractor, they will meet with SCDNR on the final footprint. Subsequently, the USACE and SCDNR will meet with the TOMP.

Department of Natural Resources
Office of Environmental Programs
DNR Board Briefing Document – March 18, 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) later this year. 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 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.** DNR project manager: Greg Mixon mixon@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 will host 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 will provide comments in response to the noticed mine modification by 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 Riggin 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 Gunters 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

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

http://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/March2018_PN/SAC_%202016-756_Cainhoy_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. DNR Project manager: Stacie Crowe crowes@dnr.sc.gov

Dewees Island POA. P/N SAC-2020-00305, Charleston County. See

https://www.sac.usace.army.mil/Portals/43/docs/regulatory/publicnotices/Aug_2020_PN/SAC-2020-00305_Charleston_Lake_Timicau_Restoration.pdf?ver=2020-08-31-123223-053.

The proposed work consists of a dune restoration and resiliency project within the Lake Timicau impoundment of Dewees Island. The applicant proposes to restore a dune that was breached in early 2019 that separates the Lake Timicau impoundment area from the Atlantic Ocean. This will involve harvesting sand from the intertidal beach along accretional areas of the island and constructing a new dune spanning the channel breach. The constructed dune will be approximately 300 feet long with a crest width of 25 feet and crest elevation of +12 ft NAVD. An additional ~200 linear feet of dune may be constructed along the eastern end of the dike to connect the closure area to the existing high ground along the ocean dune ridge. Approximately 15,000 cubic yards of sand will be required for the closure dike. The project also involves constructing a new dike to serve as secondary protection for Lake Timicau in the event of a future breach of the ocean dune. The new dike will span ~950 linear feet and will consist of a 25-foot-wide berm section at an elevation of +8 feet NAVD, and side slopes grading 1:4. Approximately 8,000 cubic yards of sand will be required to construct the dike. The two primary project purposes of the proposed project are to restore the functionality of the Lake Timicau impoundment and to eliminate the risk of additional erosion to upland properties. On September 29, 2020, OEP staff submitted comments on the project, expressing natural resource concerns regarding impacts from excavation in intertidal areas and the construction of a new dike (resiliency dike) within the impoundment. Comments included several recommendations to avoid and minimize project impacts and opposition to the construction of the new resiliency dike based on natural resource impacts and inconsistency with the

terms and conditions of the Conservation Easement (CE) held by SCDNR on Dewees Island. In December of 2020, DNR staff met with Dewees Island residents and staff to discuss issues raised in SCDNR's comments. OEP staff reviewed the additional information provided by the applicant and determined that the resiliency dike has the potential to further the benefits provided by Lake Timicau as critical wintering and migrating habitat for a number of waterfowl, wading and shorebird species. A letter stated that DNR no longer recommended the elimination of the resiliency dike as previously stated in the letter dated September 29, 2020 was provided to Dewees Island Property Owner Association and the regulatory agencies on January 8, 2021. In late January, the DNR considered a request to extend the work window for this project and after review of additional information regarding shorebird usage and current beachfront conditions, the DNR recommended approval to extending the work window until the end of April. DNR project manager: Susan Davis daviss@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. 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, 2019, 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, 2019, 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, 2020, 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. 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 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 modeling start-up run report be available early 2021 for review.

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

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. **During the fourth quarter of 2020, Hydroland Omega LLC. bought the Cherokee Hydroelectric Project and intends to continue to pursue the subsequent license.**

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. **During the fourth quarter of 2020, Hydroland Omega LLC. purchased the Coneross Hydroelectric Project and intends to continue to pursue the subsequent license.**

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. 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 and draft Upper Pelzer RMP on December 8, 2020. **The Lower Pelzer's RMP is currently under review.**

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

Brosnan Forest Coldwater Branch Mitigation Bank Mitigation Banking Instrument

The proposed bank is located in the 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

Canadys Mitigation Bank Mitigation Banking Instrument

The proposed bank is located in the Edisto watershed (8-digit Hydrologic Unit Code 03050206) located in the Level III Southeastern Plains Ecoregion. The proposed 427-acre mitigation site includes approximately 336 acres of freshwater wetlands. The proposal is to preserve 162 acres of bottomland hardwood floodplain wetlands along 10,500 linear feet of the Edisto River. In addition, 174 acres of former timberland will be enhanced by removal of roads and bedded pines and re-planting native bottomland hardwood species. The bank is owned and sponsored by Dominion Energy SC and will be protected using a conservation easement held by Lord Berkeley Conservation Trust. Prospectus comments were submitted to the USACE by DNR on September 17, 2018 and DMBI comments were submitted on February 20, 2020. The Final MBI was approved on December 14, 2020. The project will enter the construction phase and then monitoring. Project Manager: Susan Davis

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 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

Eagle House Mitigation Bank – Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Wateree watershed (8-digit Hydrologic Unit Code 03050104) located in the Level III Piedmont Ecoregion near Lake Wateree in Fairfield County (34.433632; -80.919653). The 97.56 acre mitigation site is located adjacent to the existing Taylors Creek Mitigation Bank and includes approximately 12,095 linear feet of stream and 4.6 acres of wetlands. In detail, the project proposes to enhance 10,317 linear feet of stream, preserve 1,778 linear feet of stream, enhance 2.32 acres of wetlands and preserve 2.28 acres of wetlands. The bank owner and sponsor is Eagle House Farms, LLC and the conservation easement will be held by Congaree Land Trust. DNR reviewed a Draft MBI and provided comments dated June 19, 2020 and subsequently DNR reviewed a revised Draft MBI and provided comments dated February 16, 2021. Project Manager: Greg Mixon.

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.

Great Pee Dee Mitigation Bank Final Mitigation Banking Instrument

The proposed project consists of establishing a freshwater wetland and stream mitigation bank in the Lower Pee Dee River watershed (8-digit Hydrologic Unit Code 03040201) located in the Level III Southeastern Plains Ecoregion. The proposed 1093.86-acre mitigation site includes approximately 55,503 linear feet of nontidal stream and approximately 1,183.26 acres of freshwater wetlands. The site contains 1,019.7 acres of impaired to fully functional jurisdictional wetlands and 38,450 linear feet of existing stream channels. Of the 1,093.86 acres making up the Bank, 56.42 acres of upland occurring within the watersheds of the Great Pee Dee River, Mill Creek and Pocosin Swamp will be preserved (2.04 acres) or enhanced (54.38 acres). Additionally, 305.28 acres of riparian buffer along all streams are being preserved (226.94) or enhanced (78.34). The bank owner and sponsor are Pee Dee Wetland and Stream Mitigation, LLC and the site will be protected with a conservation easement held by Pee Dee Land Trust. DNR provided comments on a proposed Prospectus on January 16, 2018 and comments were provided on the Draft MBI on December 17, 2020 and January 13, 2021. The Final MBI was approved on January 25, 2021. The project will enter the construction phase and then monitoring. The DNR was slated to become the long-term steward of this property once the monitoring phase ended, but at this time due to issues with public access to and on the property DNR is not planning to accept the property and the long-term stewardship role. 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. 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

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

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. Project Manager: Susan Davis

Point Farms Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a saltwater mitigation bank in the Edisto watershed (8-digit Hydrologic Unit Code 03050206) located in the Level III Southeastern Plains Ecoregion. The proposed 251-acre mitigation site includes approximately 169.3 acres of tidal wetlands. The proposal is to preserve 122.82 acres of tidal marsh along the North Edisto River and Leadenwah Creek. In addition, 39.90 acres of tidal wetlands will be restored or enhanced by increasing tidal flow through breaching or removal of berms to allow full range of tidal flows. Approximately 6.56 acres of tidal marsh will be created in areas that were converted to agricultural land. An upland buffer will be placed around all wetland resources. The bank sponsor, using a conservation easement (Unique Places to Save), will protect the mitigation bank site. Prospectus comments were submitted to the USACE by DNR on July 10, 2018 and DMBI comments on April 10, 2020. The Final MBI was approved on December 14, 2020. The project will enter the construction phase and then monitoring. 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

Saluda Mitigation Bank Mitigation Banking Instrument

The proposed bank is located in the Saluda River watershed (8-digit Hydrologic Unit Code 03050109) located in the Level III Piedmont Ecoregion near the DNR Belfast WMA. The proposed 3,446-acre mitigation site includes approximately 75,879 linear feet of streams and approximately 4.38 acres of freshwater wetlands. The proposal is to preserve 54,095 linear feet of stream; enhance 1,726 linear feet of stream by replacing degraded culverts, removing debris, and minor stabilization of stream dimension; and restore 20,057 linear feet of stream by restoring appropriate and stable stream pattern, profile, and dimension. In addition, the proposed bank would enhance or preserve 4.38 acres of headwater wetlands. The bank owner and proposed long-term steward is Wiley Fork Laurens, LLC and the conservation easement holder is anticipated to be Upstate Forever. Prospectus comments were submitted to the USACE by DNR on July 13, 2018 and DMBI comments were submitted on January 31, 2020. A revised DMBI, dated June 2020, was reviewed and comments submitted July 17, 2020 and again on September 4, 2020 in response to the Bank Sponsor's comments on August 12, 2020. Several additional discussions have occurred and DNR staff are awaiting additional information to review to resolve outstanding concerns related to stream crossing reservations. DNR staff reviewed a revised MBI dated October 16, 2020 and provided comments dated November 10, 2020. Further in response to additional information provided, DNR provided comments again on November 20, 2020. The Final MBI was approved on December 14, 2020. The project will enter the construction phase and then monitoring. DNR project manager: Greg Mixon

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. Project manager: Susan Davis

Toms Branch Mitigation Bank Draft Mitigation Banking Instrument

The proposed project consists of establishing a freshwater stream and wetland mitigation bank in the Congaree River watershed (8-digit Hydrologic Unit Code 03050110) located in the Level III Southeastern Plains Ecoregion near Columbia, Richland County, SC (33.9015, -81.0201). The proposed 533 acre bank is part of a larger 753 acre tract that includes the confluence of Toms Branch with the Congaree River. The site includes 25,772 linear feet of stream of which 5,492 linear feet will be restored and 20,280 will be preserved. The site also includes 483.04 acres of wetlands of which 325.5 will be preserved and 157.54 will be restored or enhanced. The bank owner and long-term steward is Blanchard Machinery Company and the conservation easement will be held by Congaree Land Trust. Prospectus comments were submitted to the USACE by DNR on August 30, 2017 and DMBI comments were submitted on April 17, 2020. DNR staff reviewed a revised DMBI, dated August 7, 2020, and comments were submitted on September 24, 2020. DNR staff reviewed additional revisions to the DMBI and provided comments on November 5, 2020. The Final MBI was approved on December 14, 2020. The project will enter the construction phase and then monitoring. DNR project manager: Greg Mixon

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



Lewis Ocean Bay Heritage Preserve

Prescribed Fire Management

Prescribed fire management at Lewis Ocean Bay Heritage Preserve (LOBHP) is required to protect both the urban interface from catastrophic wildfires and promote habitat for fire-dependent plants, animals, and ecosystems. Prescribed fire reduces fuel loads and consequently the damage associated with wildfires. When a wildfire occurs on a landscape managed with prescribed fire, there is less material to burn and therefore the fire does not grow in intensity (temperature, height of flames, smoke production, etc.). This can assist those fighting wildfires in getting them under control.

Figure 1 below is a great example of the benefit of reducing fuel loads to decrease the intensity and degree of wildfires. This photograph was taken following the 2009 Hwy 31 Wildfire; the property on the left, the proposed Horry County Mitigation Bank, was not maintained with prescribed fire management like the property on the right, which is LOBHP. The LOBHP on the right was burned the prior spring to the Hwy 31 Wildfire, which occurred in April. When the wildfire jumped the road between the two properties, you can visually see the benefit that prescribed management afforded the LOBHP as there is a noticeable reduction in the intensity of the fire and its ability to burn the canopy or tops of the trees, resulting in far less tree mortality. When the pine tree canopy burns, there is also a greater change of the fire spotting to new places.

The more prescribed fire management is applied at LOBHP, the safer the urban interface and the longer the rare and sensitive resources remain that make LOBHP unique globally for future generations to enjoy.

Figure 1: Post 2009 Hwy 31 Wildfire, Horry County Mitigation Bank Site on the left and LOBHP on the right.



Prescribed Fire Management Challenges

In general, there are always challenges or limiting factors in when to conduct a prescribed burn because of the dependency on certain climatic and atmospheric conditions such as temperature, humidity, steady wind directions and a relatively dry landscape. The SCDNR's goal at LOBHP includes the application of prescribed fire management annually, rotated at regular two-to-three-year intervals for the various burn blocks on the property to maintain habitat for ecological integrity and reduce wildfire fuel loads. However, outside of climatic and atmospheric conditions, prescribed fire managers have to consider smoke sensitive areas. Smoke sensitive areas are defined by the South Carolina Forestry Commission (SCFC) Smoke Management Guidelines¹ as "any area downwind or down-drainage where smoke may be dangerous or offensive." Smoke sensitive area examples from both the SCFC Smoke Management Guidelines and the National Wildfire Coordinating Group Smoke Management Guide for Prescribed and Wildland Fire Management² include: roads, towns, poultry farms, communities, airports, and medical facilities.



Figure 2: Prescribed fire management at Lewis Ocean Bay Heritage Preserve.

To apply prescribed fire at LOBHP, prescribed fire managers have to consider multiple factors. These greatly reduce the number of suitable burn days in a year. These include the following:

1. **Proximity to Urban Development** for consideration currently includes current and planned housing (including a retirement community), other infrastructure (an elementary and a high school), major smoke sensitive areas such as schools, hospitals (two proposed hospitals to the south), major highways/roads (International Drive and highways 90, 22 and 31). Even though the agreement between Horry County and SCDNR allows for the closure of International Drive, closures require a minimum of three days-notice that a prescribed fire is being planned and 18 hours-notice that a prescribed burn is scheduled, along with an estimate of the duration of each burn. This notification process is difficult due to the varying climatic and atmospheric conditions that are hard to predict and can often alter which blocks will be burned the morning of a planned burn.
2. **International Drive Road Closure** procedures are outlined in an agreement between Horry County and SCDNR as a result of the development of International Drive. This agreement restricts when closures may occur to the months of November, December (1st through 15th), January (16th through 31st), February, March and April each year

¹ <https://www.state.sc.us/forest/smg05.pdf>

² <https://www.nwcg.gov/sites/default/files/publications/pms420-2.pdf>

associated with the road closure. The closure of International Drive is important for the safety of those that would otherwise utilize the roadway due to limited visibility and the safety of the SCDNR and SCFC staff that also use the roadway to monitor the prescribed burn with ATVs, pumper truck units, and bulldozers.

3. **Unpredictable Sea Breezes** can occur mid-day and alter smoke movements after or during the execution of a prescribed fire plan.
4. **Volatile/Flashy Bay Fuels** are more combustible in nature and can create spot overs, where the fire may jump the controlled area more readily.
5. **Peat Soils** found in Carolina bays and much of the Preserve can smolder, even burning underground for months, after they are ignited causing smoke management concerns.
6. **Carolina Bays** are generally wet in winter and dry in summer. This leads to management challenges given that fire is needed in these bays to manage peat accumulation from organic material buildup. Yet in winter, when you could safely burn the bays, they are too wet. In the summer, when the bay is dry enough to successfully burn, they are typically too dry to burn as it would cause smoldering for long periods of time. Smoldering of organic material can inundate smoke sensitive areas and require the closure of major highways due to safety concerns.

State Smoke Management Guidelines

The Clean Air Act, under the regulatory authority of the Department of Health and Environmental Control (DHEC) regulates open burning to reduce the amount of particulate matter being released into smoke sensitive areas. Open burning is prohibited unless it is conducted as described in S.C. Code of Regulations 61-62.2³. For prescribed burning, the DHEC regulations require fires set to abide with the Smoke Management Guidelines for Vegetative Debris Burning Operation in South Carolina administered with the SCFC. For SCDNR prescribed fire managers to conduct burns, they must be in compliance with the SCFC's Smoke Management Guidelines to comply with the Clean Air Act.

The SCFC's Smoke Management Guidelines limit burning based on the following:

- Category Days defined by weather parameters that indicates how well smoke will disperse in a given day;
- Fuel Loading which indicates the average tonnage per acre for most types of vegetative fuels; and
- Smoke Sensitive Areas which define where smoke may be harmful or offensive.

To be in compliance, the SCDNR must notify the SCFC prior to a burn with the following information:

- Time of burn (planned);
- County and location;
- Type of burn;
- Tonnage and/or acreage to be burned;
- Identify of and distance to nearest downwind smoke sensitive area; and
- Person in charge of the burn and their contact information.

³ <https://www.scstatehouse.gov/coderegs/Chapter%2061-62.pdf>

While smoke easements are helpful to limit liability and reduce contention of smoke within an area, the SCDNR is still limited by the presence of a smoke sensitive area per the requirements under the Clean Air Act and the SCFC's Smoke Management Guidelines. Thus, any additional smoke sensitive areas near LOBHP further complicates and limits the agency's ability to apply prescribed fire management compounding the challenges and constraints that already exist.

Prescribed burn taking place at Lewis Ocean Bay Heritage Preserve in Horry County



A prescribed burn in Horry County is taking place Friday. (Source: S.C. Forestry Commission)

By [WMBF News Staff](#) | March 13, 2020 at 10:00 AM EDT - Updated March 13 at 10:00 AM

T HORRY COUNTY, S.C. (WMBF) – The South Carolina Forestry Commission is carrying out a prescribed burn in the Lewis Ocean Bay Heritage Preserve in Horry County.

f According to a Facebook post from the SCFC, the prescribed burn is for 200 acres.

M Crews with Horry County Fire Rescue said smoke around the area of International Drive, Highway 90, Highway 31, and Highway 22 is expected.

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Figure 3: Public notification published by WMBF News regarding planned prescribed burn at Lewis Ocean Bay Heritage Preserve in 2020.



Lewis Ocean Bay Heritage Preserve

Unique Biodiversity & Fire Dependency

Lewis Ocean Bay Heritage Preserve (LOBHP) was acquired to protect South Carolina's best assemblage of Carolina Bays which are found in a mosaic of pine savannas and blackwater swamp forests. Because of the complex ecosystem mosaic and the long history of fire, the site harbors high biodiversity with a diverse assemblage of rare plants and animals that depend on a fire regime to persist. Prior to European settlement, Coastal Plain ecosystems, in particular pine savannas, were subject to both natural and anthropogenic ignitions and these fires typically occurred at least two to three times per decade¹. The South Carolina Department of Natural Resources (SCDNR) burns portions of LOBHP annually. Without annual burns, ecosystem quality and biodiversity would decline rapidly due to encroachment of hardwood species and the chance of accidental wildfires that pose a risk to both ecosystem integrity and adjacent landowners would increase.

Rare Plants

At least 37 rare plant species, most of which are fire dependent, have been documented at LOBHP, the highest richness of any of the State's 76 Heritage Preserves. Prescribed burning mimics natural fires started by frequent lightning. These rare plants evolved with these fire cycles² which help maintain the habitat requirements that promotes the growth of these rare plant species. Prescribed fire aids in removing competing woody vegetation and allows sunlight to reach the forest floor. Additionally, prescribed fire also promotes pollinators and nutrient cycling.



Figure 1: Isolated wetlands in pine savanna at Lewis Ocean Bay Heritage Preserve.

Two species of global conservation importance that are found on LOBHP include the Venus flytrap (*Dionaea muscipula*) and Raven's primrose willow (*Ludwigia ravenii*).

¹ Henderson, J.P. 2006. Dendroclimatological analysis and fire history of longleaf pine (*Pinus palustris* Mill.) in the Atlantic and Gulf Coastal Plain. Ph.D. dissertation. The University of Tennessee.

² Roberts, P.R. and H. J. Oosting. 1958. Responses of Venus flytrap (*Dionaea Muscipula*) to factors involved in its endemism. Ecological Monographs 28:193-218.

Venus flytrap

Globally Imperiled, Federal At-Risk Species

The abundance and range of Venus flytrap has been decimated by fire suppression and land conversion. It is now known from only a few populations in the world – two populations in Horry County, SC and in a few coastal counties of NC. The largest population of Venus flytrap in the state of South Carolina is found centered at LOBHP and is the only population within the state that is considered to have long-term viability. The species is thought to be extirpated from Georgetown and Berkeley counties because of fire suppression and land use changes.

Raven's primrose willow

Globally Critically Imperiled, Federal At-Risk Species

Raven's primrose willow is another rare plant species found at LOBHP. The species is known globally from a few other locations in North Carolina and Virginia; it is thought to be extirpated from its historic range in Florida. Like Venus flytrap, a smaller population of this species also exists at the proposed Horry County Mitigation Bank property, but it not known to exist anywhere else in South Carolina.



Figure 2: Venus flytraps located on the proposed Horry County Mitigation Bank property.

Rare Animals

The unique fire-dependent habitats found at LOBHP provide quality habitat for a suite of animal species. Many of the species that inhabit these ecosystems depend on the fire to open the understory and canopy to provide the exact habitat components they require: including the federally endangered red-cockaded woodpecker (*Picoides borealis*) and the pine snake (*Pituophis melanoleucas*), both high conservation priority species in the State's Wildlife Action Plan due to loss of fire-maintained open canopy habitat, and black bear (*Ursus americanus*) a moderate conservation priority in the State Wildlife Action Plan. LOBHP supports habitat for a large stronghold for the coastal black bear population in South Carolina. The coastal bear population used to be one of the State's largest populations but is no longer due to development pressure and loss of habitat. Today's LOBHP coastal black bears move from the Carolina Forest area to the Waccamaw River to interact with populations of black bears in the Coastal Plain of North Carolina, maintaining genetic diversity for continued success of this population.



Figure 3: Camera trap photo of a black bear sow with cubs at a DNR scent station on Lewis Ocean Bay Heritage Preserve. Scent stations set up with camera traps aid DNR wildlife biologists to assess the coastal bear population.

Unique Habitats

LOBHP gets its name from the unique feature of Carolina bays found throughout the property. Though there was once a mystery on how these often isolated elliptical or oval shallow depressions formed, the majority of data collected over the years indicate that ancient wind and water currents are responsible for these features. Due to the acidic nature of the water within the bay, they also host a plethora of species ranging from unique flora and fauna of rare plants, crayfish, amphibians, reptiles, wading birds and mammals.

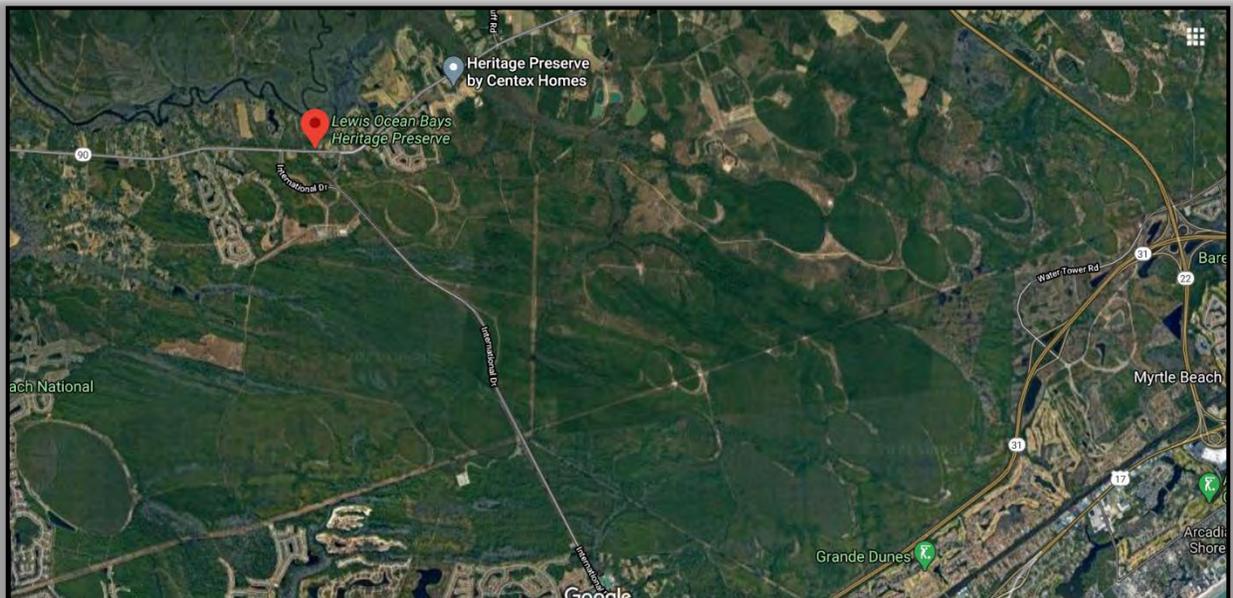


Figure 4: Google aerial imagery of the Carolina bays found at Lewis Ocean Bay Heritage Preserve and the proposed Horry County Mitigation Bank property.

Isolated wetlands like Carolina bays are important as numerous amphibian species utilize these habitats to breed in these predominantly fish-free wetlands. The ecotone or transition zone on the edges of bays also are areas where rare plants, such as the Venus flytrap³, thrive and where many wildlife seek refuge during fires. Carolina bays and other isolated wetlands also serve to filter sediments and other nutrients, recharge groundwater aquifers and mitigate impacts from flooding. Beyond their numerous benefits, the waxy evergreen vegetation of Carolina bays is a volatile source of wildfire fuel. Additionally, the peat soils found in these habitat types ignited under dry conditions can burn underground for months. Uncontrollable peat fires often cause smoke management concerns on International Drive and S.C. Highway 22, 31 and 90. Not only is it beneficial to manage the bays for wildlife by opening the canopy to promote an herbaceous understory, it is important to manage the bays to reduce fuel loads to minimize the intensity of future wildfires.



Figure 5: Pine savanna habitat at Lewis Ocean Bay Heritage Preserve.

Outside of the Carolina bays, LOBHP is comprised of longleaf and pond pine savannas. These habitat types consist of widely spaced trees of varying ages with an open understory that is dominated by a variety of native grasses and herbaceous species. The groundcover plant life in a

³ Luken, J.O. 2005. Habitats of *Dionaea muscipula* (Venus flytrap), Droseraceae, associated with Carolina bays. Southeastern Naturalist 4: 573-584.

longleaf pine savanna has been said to be more diverse than those in a tropical rainforest.⁴ These unique habitats require fire every two to three years to maintain the open early successional ground cover. Longleaf pine and pond pine are fire-adapted species and will not successfully reproduce long-term in the absence of fire. The longleaf pine ecosystem has been reduced drastically from its historical range and is now an endangered ecosystem⁵

Prescribed Fire Management

The habitats and the species at LOBHP require the use of prescribed burns to regularly encourage sustainability of the species that SCDNR is statutorily required to protect. Each year, it is the goal of the SCDNR to burn at a minimum 1,500 acres of the 10,000 acres of LOBHP. The SCDNR staff must make decisions on when and where to burn based on many atmospheric factors, including wind, temperature and humidity. During these prescribed burns, smoke can remain in the area for a few days after the burn, depending on weather conditions that can cause inversion (an atmospheric phenomenon that occurs when climate and meteorological conditions combine to trap smoke close to the ground at night). Some of these prescribed burns, and the incidental inversion that can occur, require the closure of International Drive, as reflected in the earlier agreement between the SCDNR and Horry County related to International Drive. Because of the agreement, the SCDNR is further restricted on the ability to apply prescribed fire at LOBHP only during the months of November, December (1st through 15th), January (16th through 31st), February, March and April each year. The closure of International Drive is important for the safety of those that would otherwise utilize the roadway due to limited visibility and the safety of the SCDNR and SC Forestry Commission staff that also use the roadway to monitor the prescribed burn with ATVs, pumper truck units, and bulldozers.



Figure 6: Pine savanna habitat at Lewis Ocean Bay Heritage Preserve following a prescribed fire.

⁴ Peet, R.K., and D.J. Allard. 1993. Longleaf pine-dominated vegetation of the southern Atlantic and eastern Gulf Coast region, USA. Proceedings, Tall Timbers Fire Ecology Conference 18. Tallahassee, FL: Tall Timbers.

⁵ Noss, R.F. 1989. Longleaf pine and wiregrass: keystone components of an endangered ecosystem. *Natural Areas Journal* 9:211-213.

History of Wildfires in Horry County

The SCDNR uses prescribed burns to not only maintain the viability of the habitat that is necessary to sustain threatened and endangered species that occur on LOBHP, but also as a means to reduce the fuel load to help minimize the degree of intensity of future wildfires. Wildfires are common on the Horry County landscape around the LOBHP. There seems to be a cycle of a large wildfire occurring every 15-20 years. Prior to the most destructive wildfire occurring in 2009, the area formerly known as the Buist tract, that included all of LOBHP, burned as a result of wildfire nine times from 1954 to 2002. The Bombing Range Fire burned 10,162 acres in June 1954. Thirteen years later, a wildfire burned on the Buist Tract in April 1967, known as the Socastee Plantation Fire, burning 6,005 acres. In 1976, the Clear Pond Fire became the largest forest fire in South Carolina history burning 30,000 acres of the Buist tract. Subsequently, there was the Cotton Patch Bay Fire (2,500 acres) in 1981, the Forestbrook Fire (844 acres) in 1996, the Long Bay Fire (1,911 acres) in 2001 and the Legends Fire (1,658 acres) in 2002. Then, the most destructive wildfire occurred in 2009, the Hwy 31 Fire, burning 19,130 acres, of which approximately 9,000 acres was a part of the LOBHP. This fire destroyed 76 homes and damaged 97 others before it was controlled. The most recent wildfire occurred in June 2016, the Golden Triangle Fire, on LOBHP, just across International Drive from the proposed hospital site. Fortunately, this wildfire event was quickly dissipated by a heavy rainfall event.



Figure 7: Horry County Hwy 31 Fire in 2009.

While there are other mechanical means such as mowing and mulching that can be utilized instead of prescribed fire, they have proven to be less effective for the suite of ecological benefits that fire⁶ provides for the long-term sustainability of pine savanna habitat, especially for rare plant species⁷ that evolved with fire. Mechanical means are not effective at removing fine fuels to expose mineral soils. When fire is removed, undesirable woody late-successional species (e.g., sweetgum trees and other hardwoods) begin to encroach upon fire dependent early successional ones⁸. The buildup of living and dead plant matter is fuel for wildfires so periodically removing those safely in a prescribed fire protects the forest from more volatile wildfire risks⁹. Historically, fires would have created a patchwork of burned and unburned areas

⁶ Wade, D.D. 1989. A guide for prescribed fire in southern forests. US Department of Agriculture, Forest Service, Southern Region.

⁷ Luken, J.O. 2012. Long-term outcomes of Venus flytrap (*Dionaea muscipula*) establishment. *Restoration Ecology* 20:669-670.

⁸ Ryan, K.C., E.E. Knapp, and J.M. Varner. 2013. Prescribed fire in North American forests and woodlands: history, current practice, and challenges. *Frontiers in Ecology and the Environment*. 11 (Online Issue 1): e15–e24.

⁹ Stephens, S.L. 1998. Effects of fuels and silvicultural treatments on potential fire behavior in mixed conifer forests of the Sierra Nevada, CA. *Forest Ecology and Management* 105:21–34.

with the unburned areas providing refuge for wildlife. With fuel buildups, fires burn more uniformly and intensely across the landscape and few unburned refugia are left for cover for wildlife⁸. When fire suppression occurs and is subsequently reintroduced, even those species that are fire dependent can be damaged. Fire suppression ultimately equates to a greater risk of wildfire which threatens human infrastructure and ecosystem damage.

Mechanical treatments can easily cause soil disturbance, especially in uneven terrain, that is detrimental to plants with shallow root systems like the Venus flytrap. Additionally, many rare and declining reptiles and amphibians, such as pine snakes, depend on underground refugia and tunnels from moles and old burned roots and stumps that can be compacted by the use of heavy equipment. Fire also happens to be more cost effective in large areas such as LOBHP¹⁰. Mechanical treatments can be at least 20 times more expensive, and chemical treatments more than 10 times as expensive¹¹.

In summary, prescribed fire is identified as an essential management tool for rare plants and animals and is necessary for these fire dependent species to thrive in the unique pine savanna habitats.



Figure 8: Flourishing pine savanna habitat at Lewis Ocean Bay Heritage Preserve.

¹⁰ Luken, J.O. 1990. Directing ecological succession. Chapman and Hall, London, United Kingdom.

¹¹ Wade, D.D. 1989. A guide for prescribed fire in southern forests. US Department of Agriculture, Forest Service, Southern Region.

Monthly Division Reports

EXECUTIVE OFFICE

OFFICE OF THE DIRECTOR

FEBRUARY 2021 HIGHLIGHTS

Director Robert Boyles continued to coordinate the agency's response to the COVID-19 pandemic in February. Director Boyles participated in Governor Henry McMaster's weekly conference calls on the pandemic. He also participated in daily telephone conversations/meetings with staff, Deputy Directors, Board Members, legislators, and constituents.

Director Boyles chaired the monthly WebEx meeting with the Deputy Directors and Senior Staff and the monthly WebEx meeting with the Deputy Directors in preparation for the February Board Meeting.

Director Boyles participated in the February Lunch & Learn event – OEP Who? - hosted by Lorianne Riggin who introduced the members of the Office of Environmental Programs and highlighted what they do. The event was well attended and informative.

Director Boyles participated in the Southeastern Association of Fish and Wildlife Agencies (SEAFWA) Executive Committee ZOOM meeting.

Director Boyles participated in the February 4th DNR Board Public Hearing on Nonnative (Tegu) Regulations that included public comments. Director Boyles also participated in the State Agency Vaccine Update SCEMD conference call that afternoon.

Director Boyles participated in a staff discussion on Sunday hunting. He participated in a conference call meeting of the Association of Fish & Wildlife Agencies (AFWA) Legislative & Budget Committee.

Director Boyles met with Chairman Pulliam in preparation for the February Board Meeting and to discuss legislation and constituent concerns.

Director Boyles participated in the AFWA New Directors Orientation two-day WebEx event. He also participated in the Heritage Trust Advisory Board virtual meeting.

Director Boyles and Lorianne Riggin met virtually with staff of the state's Congressional Delegation and the Corps of Engineers about Crab Bank. He also met virtually with staff to discuss Senate Bill S.0002 to restructure SCDHEC.

Director Boyles and Ross Self met with Neil Paul of Anderson County about fishing tournaments and attended the SC Boating & Fishing Alliance press event with Governor Henry McMaster and several members of the House and Senate in attendance.

Director Boyles had a telephone meeting with Mallory Martin of the US Fish and Wildlife Service about the Southeast Aquatic Resources Partnership (SARP) and its future and governance.

Director Boyles and Deputy Director Maier met with Senator Chip Campsen and Senator Stephen Goldfinch about flounder. Director Boyles and Chairman Pulliam met with Senator Chip Campsen and Representative Phillip Lowe for a discussion about waterfowl.

Director Boyles participated in the SCDNR Board Meeting held virtually and in the Board Room in the Dennis Building on February 18.

Director Boyles participated in the monthly AFWA meeting held virtually for agency directors to gather and exchange information.

Director Boyles participated in the DNR monthly internal online event "Coffee & Conversation with Director Boyles" during which staff are invited to reserve time to talk with the Director about anything and as part of an effort to facilitate discussion and communication among staff.

Director Boyles met with staff about Lewis Ocean Bay and the Grand Strand Water & Sewer easement request. He and Shannon Bobertz met virtually with Jill Hufnagel about leadership development and training possibilities.

Director Boyles participated virtually in the Law Enforcement Training Council monthly meeting. He also participated in a Southeast Aquatic Resources Partnership Work Group virtual discussion of governance and administrative procedures.

Director Boyles, Deputy Director Rentiers and Tyler Brown met with officials of the South Carolina Association of Conservation Districts at their request to discuss future plans and opportunities.

Director Boyles and Ross Self toured the Cohen Campbell Fish Hatchery and met with staff.

Director Boyles and Lorianne Riggin met with staff of Senator Tim Scott, Senator Lindsay Graham and Congresswoman Nancy Mace, the Corps of Engineers, and the Town of Mount Pleasant to discuss Crab Bank.

Director Boyles and Deputy Director Maier had a meeting with Tom Mullikin of the SC Floodwater Commission, Will Grimsley of the SC Department of Veterans Affairs, and Ben Duncan of the SC Disaster Recovery Office to discuss partnership opportunities.

Director Boyles participated in the SC Governor's Cup Billfishing Series Advisory Board virtual meeting. He met with Deputy Director Cassella and outreach staff to discuss an agency branding initiative.

Director Boyles participated in a WebEx meeting with Gettys Brannon of the SC Boating & Fishing Alliance and staff to discuss legislation and partnership opportunities.

Director Boyles participated in the Recreational Boating & Fishing Foundation (RBFF) State Marketing Workshop's directors' session during their virtual meeting. Director Boyles and Mary Lucas met about digital outreach and information security. Director Boyles, Shannon Bobertz and Lorianne Riggin had a telephone briefing on the New Savannah Bluff Lock and Dam project.

Marine Resources Division

Marine Resources Research Institute (MRR)

Grant Proposals

Funded: Kingsley-Smith, P.R. Continuation of living shorelines monitoring. DHEC 309 funding. January 1, 2021 - December 31, 2022. \$99,249 awarded to the SCDNR. No match required.

Submitted: Bowman, Jr., L. L., T. L. Darden, P. R. Kingsley-Smith, R. B. Carnegie. 2021. Development and validation of a qPCR-based detection tool for *Roseovarius* oyster disease (ROD) in the Eastern oyster, *Crassostrea virginica*. USDA-NIFA Southern Regional Aquaculture Center Emerging Aquatic Animal Pathogens RFP pre-proposal. Federal Funds Requested: \$49,375.

Submitted: Sanger, D., A. Locatis Prochaska, B. Keppler, E. Smith (USC), M. Snyder (USC), R. Dunn. Identifying appropriate methods to assess wetland health to inform marsh management at local and state scales. NOAA National Estuarine Research Reserve Science Collaborative Capacity Building Proposal, \$10,000 (DNR).

Submitted: “Estimating the absolute abundance of Red Snapper in the US South Atlantic.” SARSRP (Great Red Snapper Count) proposal submitted on February 1, 2021 to SC SeaGrant. W. Buble & T. Darden (PIs). Funding \$1,491,427 for 20 months (March 2021 - August 2023). No Match required.

Funded: “South Atlantic Deepwater Longline Survey.” Additional funding \$298,214 from NOAA. No match required.

Funded: “SEAMAP -SA”. Funding from NOAA for year one (July 1, 2021 to June 30, 2022) of the new five-year SEAMAP grant. Funding: \$1,293,253 (Trawl Survey: \$575,198, Reef Fish: 501,055, Data Management: \$130,106, and Red Drum and Coastal Shark Longline Survey: \$86,894). No match required.

Funded: “MARMAP”. Funding from NOAA for year one (July 1, 2021 to June 30, 2022) of the new five-year MARMAP grant. Funding: \$729,321. No match required.

Publications

Accepted: Kendrick, M.R, J.F. Brunson, D. A. Sasson, K. L. Hamilton, E. L. Gooding, S. L. Pound, & P. R. Kingsley-Smith. Assessing the viability of American horseshoe crab (*Limulus polyphemus*) embryos in salt marsh and sandy beach habitats. *Biological Bulletin*.

Accepted: Kendrick, M.R, J.F. Brunson, M. E. Frischer, & P. R. Kingsley-Smith. Climate indices predict black gill prevalence in white shrimp *Penaeus setiferus* (Linnaeus, 1767), in South Carolina and Georgia, USA. *Journal of Shellfish Research*.

Published: Frazier B. S., D. M. Bethea, R. E. Hueter, C. T. McCandless, J. P. Tyminski, & W. B. Driggers III. 2020. Growth rates of bonnetheads (*Sphyrna tiburo*) estimated from tag-recapture data. *Fishery Bulletin* 118: 329-345.

Accepted: Cope, W. R., T. J. Kwak, T. R. Black, K. Pacifici, S. C. Harris, C. M. Miller, M. R. Raley, E. M. Hallerman. Genetic Structure and Diversity of the Endemic Carolina Madtom and Conservation Implications. *North American Journal of Fisheries Management*.

Submitted: Jacoby, D.M.P., B.S. Fairbairn, B.S. Frazier, A.J. Gallagher, M.R. Heithaus, S.J. Cooke & N. Hammerschlag. Social network analysis reveals the subtle impacts of tourist provisioning on the social behaviour of a generalist marine apex predator. *Frontiers in Marine Science*.

Submitted: Nash, C.S., J. Hendon, E. Hoffmayer, B.S. Frazier, P.C. Darby, and T.S. Daly-Engel. Multiple paternity in two populations of the finetooth shark, *Carcharhinus isodon*, with varying reproductive periodicity. *Journal of Evolutionary Biology*.

Submitted: Holdridge, E. M. and L. L. Bowman, Jr. On defining, measuring, and interpreting trade-offs. *Nature: Ecology and Evolution*.

Accepted: Pickens, C., T. Smart, M.J.M. Reichert, G.R. Sedberry, and D. McGlenn. Evaluating the effectiveness of marine protected areas for reef fish species in the U.S. southeast Atlantic. *Regional Studies in Marine Science*.

Accepted with minor revisions: Glasgow, D.M., M.J.M Reichert, and J. Quattro 2020. Effects of environmental factors on reef fish assemblage structure in the southeastern U.S. Atlantic. *Mar. Ecol. Prog. Ser.*

Accepted: Perrault JR, Arendt MD, Schwenter JA, Byrd JL, Tuxbury KA, Stacy NI. Comparison of 2 glucose analytical methodologies in immature Kemp’s ridley sea turtles: dry chemistry of plasma versus point-of-care glucometer analysis of whole blood. *Journal of Veterinary Diagnostic Investigation*.

Re-submitted: Turner, R.C., C.J. Innis, B.A. Stacy, J.A. Hernandez, R.C. Hill, K.C. Scott, S. Frasca Jr, M.M. Garnder, R.E. Burns, M.D. Arendt, J. Brisson, T.M. Norton, S.R. Williams, A. Kennedy, A.B. Alexander, and N.I. Stacy. “Steatitis in cold-stunned Kemp’s ridley sea turtles (*Lepidochelys kempii*).” Withdrawn from *Diseases of Aquatic Organisms*, submitted to *Animals* (Special Issue).

Presentations

Peter Kingsley-Smith. Protecting Charleston's salt marshes through the creation of living shorelines. Robert Lunz Group of the Sierra Club. Zoom presentation. February 4, 2021. 74 online attendees.

Tweel, A., N. Shea, S. Johnson. Wetland Plant Communities and Landscapes in the Charleston Region. Master of Resilient Urban Design Program, Clemson University. February 10, 2021. 10 attendees, technical audience.

Bowman, Jr., L. L. Paper presentation: A complex phenotype in salmon controlled by a simple change in migratory timing. Thompson et al. 2020. 08 February 2021. EFR Presentation, 30 attendees, technical audience.

Farrae, D. SCDNR Genetics updates. SCDNR Hatchery and State Lakes Meeting. 11 February 2021. 40 attendees, technical audience.

Watson, A. Update on SCSG Brewery By-Product Evaluation Project. February 1st, 2021. EFR Presentation, 20 attendees, technical audience.

Jason Broach and Jake Morgenstern presented at the Freshwater Hatchery Meeting on Feb 10 to describe current system upgrades, operating capacity, and specific project updates from WMC. 40 attendees, technical audience.

Galloway, A. S. Update on Trophic Ecology Investigation of Scalloped and Carolina Hammerheads using stomach content and stable isotope analyses. EFR Science Discussions, 2/22/2021. 30 attendees, technical audience.

Tracey Smart gave an update on SEAMAP-SA survey activities at the annual NEAMAP meeting on February 22, which was held via webinar. The presentation highlighted the consequences of the COVID-19 pandemic on sampling and program activities.

Outreach

A news article by The State newspaper, based out of Columbia, SC, was published on February 11, 2021. [The article](#) presents a range of topics related to horseshoe crabs in South Carolina and quotes multiple SCDNR employees including Phil Maier, Mel Bell, and Michael Kendrick. In addition, the article references published research conducted by CRMS and uses [360° video footage](#) produced by CRO, featuring Michael Kendrick and Greg Rothman.

Inshore staff, along with representatives of the ERS and crustacean research sections met with a representative of Spring Island Trust regarding funding to describe the Port Royal Sound and St. Helena Sound estuarine finfish communities based on observations made in our long-term trammel net, longline, and estuarine trawl surveys. Long-term, the hope is to build upon these early descriptions to develop mechanistic arguments leading to the community structures observed, in particular comparing the two systems.

Staff have also been approached by members of a Duke University Coastal Habitat Mapping Project about assistance with identification of data sets and stakeholders/interest groups who could use such a mapping project along coastal South Carolina to inform policy decisions. We received a presentation from the group and internal discussions regarding DNR's role are ongoing.

L. Bowman is coordinating the next DISTEM meeting which will be on 02 March 2021 12:30-14:00. The topic for this meeting is Mental Health in the Workplace. If anyone is available to be a small group facilitator, we are looking for volunteers.

L. Bowman and Julie Binz made final edits to two K-12 resources planned to be released in March: 1) a video explaining our use of eDNA and 2) defining parentage with chromatograms for our stock enhancement. Fabio Casu is contacting potential speakers for an "Omics Approaches" session at the Aquaculture America conference 2021 (San Antonio, TX), which has been postponed to August 2021.

Aaron Watson reviewed manuscripts for the Journal of Applied Aquaculture and Marine Drugs.

Justin Yost met with CRO about pilot grant looking at aquaponics with spartina and red drum for potential school education as part of the seeds to shoreline.

Aaron Watson participated in the annual United States Aquaculture Society Board meeting and annual business meeting. Aaron continues to be the Vice President of the society for another year before his two-year term ends.

Progress Report and Activities

Coastal Research Section

Ciera McQuaid resigned her hourly position with the turtle survey and will be leaving the agency on 26 February. We thanked her for her contribution to the Section and the agency and wish her well in her new endeavors.

Renewals for the Federal Letter Of Acknowledgement (LOA) for the Coastal Trawl Survey and the Reef Fish Survey were submitted to the NOAA Fisheries South East Regional Office on January 25. The current LOAs expire on March 30, 2021. Marcel Reichert had a follow-up conference calls with Mary Vara (NMFS), who is processing these requests, on February 4 and 23 to provide details.

Marcel Reichert and Walter Bublely had several conference calls with Todd Kellison (Southeast Fisheries Science Center and MARMAP's Technical Monitor) and Kelly Donnelly (MARMAP's NOAA Grants manager) to discuss MARMAP funding, including SEFIS and SADLS (see also below).

The SARSRP proposal was submitted (see above) and we expect to hear Mid-March about funding. Tracey Smart and Marcel Reichert participated in the interviews for the R/V *Lady Lisa* Captain position on February 2, 3, and 5.

On February 8 we were informed that the FY21 SEAMAP -SA funding (1st year of our new 5-year funding cycle) will be \$1,293,253. This is 1.4% under FY20, but slightly above what we received in the 4 years prior to FY20. This translates to the \$575,198 for the Trawl Survey, \$501,055 for Reef Fish, \$130,106 for Data Management, and \$86,894 for Bryan's longline survey. We are working on adjusting the budgets and the scope of work.

David Wyanski gave a lecture in Marcel Reicher and Joey Ballenger's Introduction to Fishery Science graduate course at the College of Charleston on February 4.

Marcel Reichert participated in the comprehensive exam of Michelle Passerotti, a University of South Carolina PhD Candidate, on February 4, which Michelle successfully passed.

Section staff completed the annual Section lab safety training on February 5. This training was done on-line and was prepared and presented by Kevin Kolmos and Kevin Spanik. Kevin Kolmos is also preparing the annual lab safety training for the histology suite.

Tracey Smart met with other MRD members of the DNR Morale Task Force and Phil Maier to review recommendations and brainstorm MRD-specific suggestions.

Marcel Reichert had a conference call with Chip Collier and Todd Kellison on February 8 to discuss the formation of the "Southeast Reef Fish Survey (SERFS) Planning Team". Forming this group to provide feedback and guidance to the collaborative SERFS efforts was a recommendation of the SERFS review workshop held in February of 2020. This team will consist of two representatives of the SCDNR Reef Fish Survey (MARMAP and SEAMAP-SA), two representatives from the Southeast Fisheries Science Center's (SEFSC) SE Reef Fish Survey (SEFIS), a SEFSC stock assessment scientist, a South Atlantic Fisheries Management Council staff member, and possible a member of the Council's Scientific and Statistical Committee. This group will meet for the first time on March 16.

Several staff attended a webinar by Erik Williams (SEFSC) on Stock Assessment data on February 10. Paulette Mikelles scheduled a vessel meeting for March 1 with senior MRD leadership to discuss COVID, cruise, and vessel crew related issues for the R/V *Palmetto* and R/V *Lady Lisa*. Marcel Reichert and Tracey Smart will attend.

Kevin Kolmos, Dave Wyanski, Keilin Gamboa-Salazar, Kevin Spanik, and Wiley Sinkus participated in the 4th National Maturity Assessment and Reproductive Variability of Life Stages (MARVLS) Conference held via webinar on the reproductive biology of fishes. Feb 10th was the first of 4 potential meetings.

Mike Arendt compiled a steering committee for the 2021 MRD Conference, with representation from MRRI (Mike Arendt), OFM (Shonda Miller), CRO (Joey Coz and Perry Fennel), Vessels/Maintenance (Fred Dockery), and OSS (Kim Joyner); the first planning meeting will occur in mid-February.

Mike Arendt coordinated the Quarterly Fort Johnson Blood Drive on February 2 with the American Red Cross. The drive was very successful and yielded 26 pints.

Tracey Smart, Kevin Spanik, Dawn Glasgow, and Will McNew continued to participate and review the SAFMC's FISHStory process.

Annual NEAMAP meeting will be held on February 22. Marcel and Tracey will attend, and Marcel will provide an update for SEAMAP-SA, in particular the impacts of COVID on program activities.

Tracey Smart attended a SECOORA webinar "Regional Ocean Data Sharing: Southeast Sand Resources Project" by Mary Conley at the Nature Conservancy on February 22 and a PEW Charitable Trusts webinar "New Research to Understand the Role of Habitat and Life History in Fisheries Vulnerable to Climate Change" on February 25.

Several staff attended the virtual South Carolina Chapter of the American Fisheries Society Annual Meeting on February 25.

Kevin Kolmos provided a lab safety training for all users of the Histology Suite on February 24.

Mike Arendt compiled a steering committee for the 2021 MRD Conference, with representation from MRRI (Mike Arendt), OFM (Shonda Miller), CRO (Joey Coz and Perry Fennel), Vessels/Maintenance (Fred Dockery), and OSS (Kim Joyner); the first planning meeting occurred on 25 February.

Mike Arendt coordinated a very successful Quarterly Fort Johnson Blood Drive with the American Red Cross on 2 February (26 pints).

James Brooks is monitoring roof leaks at the Reef Fish Survey Q-Hut. Temporary treatments are being applied at the request of Physical-Plant personnel. Secure outside storage space at the Q-hut has been extended to the Sea Turtle Program to temporarily store hardware for protecting sea turtle nests.

Reef Fish Survey (MARMAP and SEAMAP-SA) - Wally Bubleby, Dawn Glasgow, and Tracey Smart met on January 4 to finalize reading methods and timeline of chevron video trap videos from the 2020 site variability sampling. In preparation for submitting a full proposal to the SC SeaGrant South Atlantic Red Snapper Count request for proposals, Wally Bubleby, Marcel Reichert, Tracey Smart, and others participated in several proposal development meetings. The

meetings include a webinar with the program's Steering Committee 1/7 (with Tanya Darden) and with potential collaborators at Skidaway Institute of Oceanography (1/8) and Florida Atlantic University Institute (1/12). Wally Bubley and Tracey Smart also completed some data analyses to assist with the final design of the fieldwork component of the project. Tracey Smart fulfilled a data request for Brendan Runde at NC State for length and ages of fish collected within and near the Snowy Wreck MPA.

FEED software modifications for NTL made by Michelle Willis are seemingly successful. Minor errors discovered during testing phase have been corrected.

Tracey Smart completed the conversion of reconnaissance deployments to chevron trap and short bottom longline stations and conducted the random selection of stations for 2021.

Tracey Smart, Wally Bubley, and Marcel Reichert participated in a conference call with Nate Bacheler, Todd Kellison, Erik Williams and Kyle Shertzer (all from the Southeast Fisheries Science Center 's Beaufort, NC lab) to discuss the 2021 Southeast Reef Fish Survey (SERFS) plans. We are planning for overnight cruises and concentrate on optimizing the deployment of video traps in lieu of processing a full suite of life history samples. Further details will be discussed in the SCDNR vessel ops meeting on March 1 and a follow-up meeting with all SERFS parties involved on March 16. Joe Evans are nearing the completion of individual reads of ~14,000 Red Porgy otoliths missing edge codes (~500 ea. remain) and a plan for consensus has been developed.

Staff is coordinating procurement of stereo cameras and associated software for the upcoming field season. He also adjusted the SBE 25 Plus CTD to better shield the temperature and conductivity sensors from costly damage during handling and deployment. A custom support bracket was fabricated, allowing the vulnerable sensors to be better protected with adjusted plumbing. No off-the-shelf solution was available, and this proved to be the most cost-effective, least cumbersome, and reversible of options considered.

James Brooks reviewed the condition of the long bottom longline reel aboard the R/V *Lady Lisa*, manually stripping ~1 mile of cable off for inspection. Aboard the R/V *Palmetto*, measurements were taken and supplies purchased to create a continuous gunnel at the stern for short bottom longline deployments.

Short Bottom Longline Survey (MARFIN)- Walter Bubley, Dawn Glasgow, and Tracey Smart met on February 8 to review deep water video footage and discussed deployment and housing modifications for the upcoming sampling season. Staff drafted plans for a new 360-degree deepwater camera array consisting of a rebar cage and 3 mounted cameras and lights to assess habitats at SBLL stations and potential stations.

Data Management - Michelle Willis completed the importation of SADLS sampling data into the Reef Fish database. Staff continue to work on Coastal Trawl Survey database development and review of online database documentation.

Southeast Deep-water Longline Survey (SADLS) - Wally Bubley participated in calls with NMFS Beaufort partners and participating fishermen February 2 and 9. Details about funding, sampling design, and potential collaborators were discussed.

Wreckfish - We completed all port sampling for this project. Staff continue to process the samples and Kevin Spanik and Tracey Smart read ~400 otoliths with median age ~40 yrs.

Coastal Trawl Survey (SEAMAP-SA) - Amy Zimney has continued to format historic data and add it to the archive database, conducted other QA/QC on the database, and is working on a manuscript. She also listened to the ASMFC 2021 Winter Meeting of the Bluefish Management Board (February 4) and the Joint Bluefish Board and Council meeting, held (February 10) to discuss the draft amendment to the Interstate Fishery Management Plan for Bluefish. Jonathan Jones has completed quality review of Spanish Mackerel otoliths for NIRS analysis, totaling 267 Spanish Mackerel otoliths reviewed, and passed 155 Spanish Mackerel otoliths to Joe Evans to read via NIRS. Jonathan has processed 323 out of 410 Spanish Mackerel stomachs to investigate diet, and has also reviewed the tracks of Coastal Trawl Survey stations and created a table which indicates which net would be on the inshore side, on a given heading. This should allow Amy to run an analysis of our historic data to determine whether an onshore/offshore effect is evident. Pearse Webster has completed consensus review with Homer Hiers of 53 problematic historic histological sections from the Trawl Survey archive, worked on ideas for mounting trawl geometry sensors to our gear, and is consulting with Mike Arendt on a manuscript on Kemp's ridley turtle data generated by both the Turtle Survey and the Coastal Trawl Survey. Pearse, Amy, and Jonathan observed two taxonomic webinars on non-commercial and commercial shrimp, hosted by SEAMAP-Gulf staff on Feb. 3 and 24, The trawl survey crew (Jonathan Jones, Tracey Smart, Pearse Webster, and Amy Zimney) and Wally Bubley met to discuss objectives, schedules, and potential research questions for the CTS Spring Cruise window based on the use of day trips only. Although not finalized, we anticipate 10-12 field days focused on the collection of net mensuration data and catch data to address variability within the survey.

Pearse attended a NOAA Fisheries' presentation "Cooperative Research Field Work in a Pandemic" on February 25.

In-water sea turtle research - Mike Arendt completed long-standing revisions as well as included new analyses/writing for two manuscripts originally prepared during his dissertation work at USC; both manuscripts are under review with co-authors. Christopher Evans and Ciera McQuaid completed preliminary cross-sectioned keratin analysis, and a list of image feature questions was sent to experts to review prior to recording metrics for testing association with reported specimen epoxy break strengths (Hoffman, 2020). NMFS SERO personnel provided a very favorable review for the draft NA21* research proposal that will begin in September 2021; thus, we are in a holding pattern until being provided an award amount for year one (of five) and formally submit online. Mike Arendt began preparing a manuscript on Kemp's ridley relative abundance and size distribution in the trawl survey, which represents a companion analysis to the loggerhead manuscript currently in review with *Population Ecology*. Mike Arendt, Christopher Evans, and Julie Dingle (OFM) met with Joey Ballenger and multiple staff from Inshore Fisheries to discuss green sea turtle fieldwork in 2021. Mike Arendt attended the Florida Marine Turtle Permit Holder (FLMTPH) meeting online (5 hours across 2/9 & 2/10) and provided a summary of relevant findings to other MRRI and CRO personnel as appropriate.

Diamondback terrapin research - No citizen-scientist reports were received.

Coastal acoustic receivers (multiple funding sources) - Annual dive gear inspection/repair is underway, anticipate gear return in the first half of March. Christopher Evans completed operational upgrades to the RV *Regulator*, including installation of new dive tank racks that can accommodate smaller (Steel) tanks that contain more air, as well as long-standing improvements on the 'to-do' list.

Mitigation Reef Monitoring - The USACE accepted the 2020 Annual Report following a minor edit, which coincided with a data request that Mike Arendt responded to.

Stock Assessment activities - SEDAR 68 Scamp Research Track: Walter Buble, Marcel Reichert, Tracey Smart, Dawn Glasgow, Michelle Willis, and Keilin Gamboa-Salazar attended an assessment webinar on February 12.

SEDAR 66 Tilefish Standard Assessment: There will be an Assessment webinar on Feb. 18.

SEDAR 71 Gag standard assessment: Marcel Reichert, Wally Buble, Keilin Gamboa-Salazar, Dawn Glasgow, David Wyanski, and Michelle Willis participated in an Assessment webinar on February 9. A base model run was discussed, and a list of sensitivity runs was finalized. This assessment is nearing its completion.

SEDAR 73 Red Snapper operational assessment: Walter Buble, Marcel Reichert, and Tracey Smart (others?) attended the SEDAR 73 Red Snapper Assessment webinar 2/17 which addressed the model base run and sensitivity runs. The base model supported that the stock was overfished and overfishing was occurring, but was improved over the previous assessment (SEDAR 41).

SEDAR 79 Mutton Snapper: This assessment is starting in August of this year. Given that we do not have much data for this species we informed SAFMC staff that we will not provide panel members or can provide much in terms of data analyses for this assessment.

Ecosystem Research Section

SCECAP/NCCA: Staff sampled 42 sites in the summer of 2020 and samples are being processed. Kim Sitta has now sorted 16 of the NCCA samples out of 33. Catharine Parker has sorted 10 of the 51 SCECAP 2020 samples. Joe Cowan is identifying the species in the NCCA macrobenthic samples and has completed 16 so far. Catharine Parker has completed sediment processing. Sharleen Johnson has completed the 2019 sediment chemistry data import into the SCECAP database. Sharleen imported and processed the 2020 nutrient data provided by DHEC into the SCECAP database. Denise Sanger continues to work with NOAA regarding payment for sample processing. Denise Sanger and David Chestnut (SCDHEC) met with two faculty members and three undergraduate engineering students from the University of San Diego to discuss the water quality index developed for SCECAP. The students are working on a Capstone project for graduation and will be developing a water quality index for the SWMP stations in the Tijuana River Estuary National Estuarine Research Reserve.

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 Genetics), and other geomorphic attributes. Initial planning and outreach meetings have begun. Shorebird populations are declining globally, and factors driving these declines are believed to stem from degradation of overwintering habitats, including those in South Carolina. Stakeholder outreach will be a significant component of this project, with a goal to promote better protection of key habitats through the permitting process and development of beach management plans. Sharleen Johnson compiled data from five previous ERS shorebird prey projects (SWG Intertidal, Hilton Head Plover, Captain Sam's, Kiawah North End, and Kiawah East End Erosion Project -- KEEEP) into a single database for reanalysis for analysis. Planning for the spring stakeholder meeting is underway, as well as analysis of existing data to inform site selection. Janet Thibault has graciously offered to collect fecal samples during her routine surveys. The project webpage has also been constructed (<http://www.nerrsciencecollaborative.org/project/Tweel20>). Sharleen processed piping plover survey and sightings data provided by USFWS, imported them into the Plover Habitat database, and summarized sightings by location by month by unit effort (individual survey). Sharleen optimized the organization of elevation data in the Plover Habitat database, sourced

location and elevation data from archived RTK GPS files, populated piping plover “occupied” status for the Hilton Head Plover and Kiawah East End Erosion Project projects, and generated queries to organize location, elevation, sediment, and benthic community data for preliminary data analysis.

Kiawah Pond Project: The February sampling of the stormwater ponds was conducted on February 25, 2021 by Kim Sitta and Catharine Parker. No additional information is available from that sampling event.

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 beginning to assess the benthic biomass for key taxonomic groups at the 16 study sites. Sharleen Johnson is adapting the M-AMBI (index of integrity) for the benthic community analysis.

Myrtle Beach Reach 2 Area Monitoring: Sample processing is nearly complete. Kim Sitta, Catharine Parker, and Ciera McQuaid put in a strong effort and have sorted all samples. Joseph Cowan has identified all of the benthic samples and entered the data. Sharleen Johnson has begun phi (sand grain size), as well as organic matter analysis of sediments, and has analyzed 64 phi samples. Only 20 samples remain for the full sediment analysis. Norm Shea is conducting the QA on the sediment samples.

SECOORA: One of the goals of this effort is to determine how well the Fort Johnson water quality site represents conditions in the harbor as a whole, and to assess other aspects such as variability of water quality with depth and in the various contributing water bodies, the Ashley, Cooper, and Wando Rivers. A harbor-wide profiling survey was conducted by Catharine Parker, Norm Shea, and Joseph Cowan on February 23, 2021 to characterize low tide water quality variability in Charleston Harbor. The Fort Johnson logger data have been downloaded and imported, the boat survey data has been downloaded, the boat collection data have been entered, and the boat survey data have been time-matched with site/depth collection data and imported into the DB. The Fort Johnson sonde was swapped on February 18, 2021 by Saundra Upchurch.

ACE Basin NERR: Nicole King and Lauton Sutley swapped sondes, collected grabs (Saundra collected EI grabs), and deployed ISCO sampler at ACE sites on February 9th; Nicole and Joe Cowan retrieved the ISCO sampler and swapped EI sonde on February 10th; they also assessed the EI WQ deployment tube because one of the struts is missing and the sonde moving a lot - will have to replace the strut this month. Saundra Upchurch processed the nutrient and chlorophyll a samples. The processed nutrient samples were shipped to Maryland but were delayed beyond their frozen hold time due to the extreme cold weather. Nicole King showed Saundra Upchurch and Kim Sitta how to calibrate and clean the EXO sondes via GoToMeeting in February. The ACE staff is also preparing checklists and reviewing, updating as needed, SOP manuals. Denise Sanger submitted the quarter 4 WQ datafiles and metadata were submitted on Monday, February 1. Nicole King, Lauton Sutley, and Kim Sitta read the Jehossee Island SETs on February 17, 2021. Kim Sitta downloaded the weather data on February 23, 2021.

Kim Sitta and Saundra Upchurch met with Will Doar and Katie Luciano on February 26 to discuss analyzing SET data. A meeting was held with Blaik Keppler, Lauton Sutley, and Denise Sanger to discuss formalizing Lauton’s help with the research program at the ACE Basin NERR. We are working to give Lauton Sutley access to ERS online schedule and to ACE laboratory.

Denise Sanger participated in an Edisto Island Watershed Advisory Committee meeting. Denise Sanger participated in the HiTIDER (History and Topography to Improve Decision-making for Estuary Restoration) Kickoff Meeting as a member of the Steering Committee. A suite of general presentations were made to a wide NERR audience followed by an Advisory Committee meeting to discuss eventual products from the effort.

Miscellaneous: Andrew Tweel participated in the SRCC Coastal Climatologies Workshop on February 11th. Andrew Tweel and Denise Sanger met with Kelly Sloan of the Sanibel-Captiva Conservation Foundation to discuss a potential project assessing nourishment impacts to shorebird habitat and prey. Denise Sanger participated in a Technical Committee meeting for the James Island Water Quality Task Force. She is pulling together previously collected DNR studies from the past 20 years. Sharleen Johnson pulled southern flounder data (capture date, location, and length) from the SCECAP, Tidal Creek Project, and Folly Beach databases for Justin Yost in Mariculture. Catharine Parker participated in the dolphin survey. Staff cleaned out the two ERS cages in the Q-hut. Andrew Tweel and Denise Sanger met with James Daugomah about the NOAA cage. Staff are assessing various laboratory spaces to determine if space can be made available to USGS. ERS staff met to discuss potential ideas for SC Sea Grant Consortium Omnibus projects. Andrew Tweel is working on two concept letters. One on microbial source tracking in tidal creeks with Larry Bowman and Tanya Darden in Genetics. The other is focused on sampling stormwater ponds inside and in the receiving tidal creeks to assess the movement of pollutants out of stormwater ponds. He is coordinating with the Charleston County and Mount Pleasant stormwater engineers.

Estuarine Finfish Research Section

Acoustic Receivers: Staff downloaded the North Edisto River receiver array. All receivers were located and appeared to be in good working order. Downloaded detection data are being QA/QC and will be available in the near future.

Adult Red Drum & Shark Longline Survey: Efforts continue to ready 2021 data, QA/QC efforts are 75% completed.

Age & Growth Studies: Staff have begun the process of developing teaching and calibration sets of age structures of various species for use by Inshore staff. This should improve the quality and reliability of age data generated by the group by allowing for the efficient training of new staff (teaching set) and annual calibration of age determinations to historical methodologies (calibration set).

American Eel Life History: Staff continue to compile a draft final report for the American Eel Life History state wildlife grant. A draft will be available by the end of February.

Bonnethead Post-Release Mortality Study: Staff are preparing for the 2021 Bonnethead PRM study field season. Efforts will focus on continued tagging of hook-&-line captured individuals to evaluate post-release mortality associated with the recreational fishery. Additionally, staff are working to initiate the portion of the project designed to evaluate the post-release mortality of bonnetheads encountered in the nearshore shrimp trawl fishery.

Electrofishing Survey: All five electrofishing strata were scheduled and sampled during the month of February.

Estuarine Trawl Survey: The estuarine trawl survey was conducted on Feb 11. Fish workup was completed on all four trawls and data from all trawls have been entered.

SC SG Proposal Development: Staff are in preliminary stages of discussions regarding several Sea Grant RFP pre-proposals, including several collaborative efforts. Potential topics include re-submission of several earlier proposals after addressing reviewer concerns; these include proposals evaluating 1) the use of UAS for identification of fine-scale habitat patterns and relating to fish communities, 2) the prevalence of mercury in Sheepshead, 3) broad-scale land use and climatic pattern effects on estuarine finfish communities, 4) Genetic tool development for southern flounder, 5) Metabolomic effects of black gill disease, 6) Effects of prebiotic supplementation in juvenile cobia fed soy diet formulas, 7) Assessing impacts of environmental contaminants on metabolomic profiles of oysters, 8) Live feed nutritional profiling to maximize production in marine fish larvae, and 9) Spatiotemporal survey for presence of an invasive eel parasite. We are also considering drafting a new pre-proposal geared at evaluating the use of NIRS for fish ageing in estuarine finfish species of varying life histories.

Red Drum Simulation Assessment: Staff are preparing for the Red Drum Simulation Assessment to be held via webinar March 1-4, 2021.

Reproductive Studies: All sheepshead, southern flounder, spot, striped bass, hickory shad, bluefish, and snook histology samples from the 2020 collection year have been cut. Final reads for 2017 spot, sheepshead, and hardhead were completed this week. Katie completed first reads on 2016 hardhead catfish. On the organizational side of our reproductive work, new slide cabinets were ordered and received, archived slides have been rearranged to make way for new samples, and several sets of slides with finished reads were archived. Katie, Michelle, and Maggie have been attending weekly sessions of the MARVLS Gonad Histology Virtual Meeting. This has provided an excellent opportunity to review ovarian features with some of the top experts in the field.

South Carolina AFS virtual conference: Multiple staff attended the first day of the Annual SCAFS Virtual Meeting.

Southern Flounder Stock Enhancement: Staff are working to develop a work plan and budget to determine the feasibility of implementing a Responsible Approach stock enhancement program for southern flounder. population.

Trammel Net Survey: Poor weather led to the cancelling of one trammel net strata during January (Charleston Harbor), with makeup of this strata planned for March. Five trammel net strata were scheduled for sampling in February. Due to poor weather, four were completed, with the remaining strata (ACE Basina) rescheduled for March. Also, discussions are ongoing with staff of the Coastal Research Section regarding how our trammel net survey activities can continue to support their juvenile green sea turtle monitoring work along coastal South Carolina. We reviewed 2020 activities and identified priorities for the 2021 field season. The #1 priority identified for the 2021 field season was to have Coastal Research Section staff onboard trammel boat field activities when the likelihood of encountering a sea turtle is greatest; therefore we are evaluating having members of their group participate as a boat crew member on all trammel net field days from April thru November in the Port Royal Sound, ACE Basin, Charleston Harbor, and Cape Romain trammel net strata.

Metabolomics: Work continues on a manuscript summarizing the results from a yellow perch feeding study in collaboration with the University of Wisconsin-Milwaukee looking at the effects of microplastics on metabolite profiles in liver extracts using NMR-based metabolomics.

SAA FIGLU: Results from the analysis of liver and muscle samples from this Soy Aquaculture Alliance/United Soybean Board-funded juvenile red drum feeding trial are currently being summarized in a manuscript to be submitted for publication.

SAA Lipidomics: Aaron Watson and Mike Napolitano are working on finalizing a manuscript from the orbitrap lipidomics data from an SAA funded graded soy oil inclusion study.

SCSG Brewery By-Product Evaluation: February monthly samples were collected and currently being dried and processed.

SRAC Artemia Replacement: The first round of feeding experiments began this week for the SRAC funded Artemia replacement grant. 7,500 larvae were divided into treatment tanks and are being fed one of 2 different micro-feeds, Artemia or a combination. Injected pinfish, collected spawns and rearing larvae for another round of micro-feed experiments to start in the first week of March.

Waddell Hatchery: All electrical outlets and switches for systems in the hatchery have been redesigned to accommodate lighting, YSIs, heat/cooling and filtration. Repairs to RAS on the 20-foot cobia broodstock tank.

Cobia Mariculture and Stock Enhancement: Mariculture and genetics staff sampled gonad and muscle tissue from juvenile cobia for additional high molecular weight DNA which was sent off for long-read sequencing; these samples are now being sexed histologically. Short reads sequencing for 8 cobia has been completed, and the remaining two samples have been sent/are being prepared for long reads sequencing. The annual report for the sex-marker sequencing project has been written and submitted. Staff have completed the data analysis of the 2020 genetic samples and preparing a report. 2020 cobia data is being entered into access database. Final samples from FL should arrive within the week and samples will be given to the genetics section for analysis. Manuscript review for the multi-state cobia migration using acoustic telemetry is ongoing. A preliminary eDNA sampling trip was completed in PRS.

Red Drum Mariculture and Stock Enhancement: Moved red drum juveniles to tank pad to make room for approximately 200 juvenile cobia being brought to MRRI from WMC. 201 2017 YC red drum were harvested from a pond at WMC and released into the Colleton River. The pond still contains approximately 100-150 more fish that will be harvested in the coming weeks. Released 2,800 2020YC juvenile red drum (TL = 194mm) into the Colleton River. WMC currently has about 2,900 juvenile red drum reserved for brewery by-product studies. These fish were split from 6 hatchery tanks to 10 tanks to decrease density to allow for higher feeding rates and greater growth potential. North Edisto red drum genetic samples have been entered and samples given to the genetic group for processing.

Spotted Seatrout Mariculture and Stock Enhancement: Work is continuing on the individual-based-modelling Sea Grant project for seatrout populations, incorporating genetics and demography. Genetics staff have completed the genotyping and data analyses of the 2018 pond samples that were into the Charleston Harbor system; a report is in preparation. Collation of life history data for the model is ongoing. The annual report for the SeaGrant project has been written and submitted. SC Sea Grant Tripletail Culture: Travel request and permit submitted to collect tripletail broodstock from FL.

MRRI Systems: Work order put in for OWL chiller which has stopped fully functioning. Staff replaced UV bulbs in all systems. New recirculating system in OWL, that is an upgrade from the 6 stand-alone tanks, is up and running, temperature control system is the only remaining work item. New cooperating angler shirts have arrived, and the back log of anglers will be receiving their reward soon. Expired O2 bottles swapped out with Airgas.

Bartram's Bass: Data analyses are ongoing and reports are in preparation.

Striped Bass: Genetics staff are continuing to genotype the 2020 Striped Bass samples from NCWRC. Staff submitted the FY22 annual work plan for Striped Bass to WFF. Staff have coordinated with potential collaborators at Francis Marion University on an undergraduate project in the Pee Dee system that would benefit from genetic identification of hatchery fish. White Seabass Genetics: Staff are continuing to isolate DNA from otoliths and genotyping field samples.

Crayfish Genetics: Isolation and screening of field samples for WSSV is complete; all field samples were negative for WSSV. Genotyping of field samples with the new microsatellite marker panel is ongoing. Staff collaborated with M. Kendrick on a DOT proposal to explore utilization of roadside ditches by native crayfish.

Oyster Community: Darden and Kingsley-Smith met with a potential collaborator to discuss the use of eDNA to describe oyster communities.

Snakehead eDNA Tool Development: Staff have begun working on the development of an eDNA tool for detecting presence of multiple invasive snakehead species. Primers are being design and should be ordered soon for testing.

WSSV: Genetics staff have completed isolating shrimp samples for testing for WSSV. Analysis of those results will commence when qPCR capabilities resume.

Carolina Heelsplitters: Genetics staff are continuing to coordinate with Clemson collaborators to start work on a project to genetically identify glochidia present on fish gills.

Black Banded Sunfish eDNA: Processing of those remaining sites is completed, with positive detections at an historic collection location.

Robust Redhorse eDNA tool: Work has begun on the development of a Robust Redhorse eDNA tool for detecting presence of the species. Primers have been designed and are being ordered for testing.

ASMFC Cobia Contract: Staff have identified and organized the samples for re-genotyping; genotyping is already underway.

Genetics Tissue Archive: A request has been received from USGS for American shad tissues from our repository and is being processed. Cownose ray samples from 2018-2020 have been subsampled for a tissue request from University of Massachusetts. A tissue request for diamond back terrapins has also been received from FLFWC.

Bat Species identification: Genetics staff prepared sampling kits for bat hair samples from caves in the upstate for the identification of endangered species potentially present in the state.

Microbial source tracking: Darden and Bowman met with Andrew Tweel and Denise Sanger to discuss potential collaborations on microbial source tracking in coastal ecosystems.

Hatchery and State Lakes Meeting: Darden, Bowman, Farrae, Levesque, and Broach attended the annual meeting virtually.

HML Safety Committee: As an alternate representative for SCDNR in the HML Safety Committee, Fabio Casu reviewed the existing HML Chemical Hygiene Plan and MRD Chemical Hygiene Plan looking for potential conflicts between the two documents. Comments/edits were sent to Paul Pennington (NOAA). Fabio Casu had a virtual meeting with Raluca Semeniuc (NCCOS Charleston Safety Office) on 02/08/2021 to go over an overview of HML Lab Safety requirements. Fabio Casu is the new Mariculture Safety Officer and Safety Committee member along with Aaron Watson. Facilities: The qPCR thermocycler is non-functioning, and staff are coordinating its replacement. HML and Grice Milli-Q water systems are down; staff are exploring alternative options. Staff are still exploring options of repairing/replacing the broken -80 freezer as well. The Taq polymerase that the genetics group has used for years is no longer available/manufactured. Staff have begun testing new alternatives and have identified two promising candidates that they will begin testing across different species reactions for comparability to our previous enzyme. Fabio Casu was trained by David Klett on Water Quality monitoring for the mariculture section on 02/24/2021.

HML: HML is continuing to operate in the limited Phase I reopening plan. Staff continue coordinating with other HML groups to allow for limited work within the building as well as assisting in the movement of staff into the building from CCHEBR. Staff provided an overview of DNR work occurring in HML to be included in a NOAA coordinated meeting between NOAA HML -omics staff and NOAA's AOML -omics staff in Florida to explore future potential collaborations. Personnel: Molly Milstein, new mariculture hourly, started 2/17/2021. She has been busy training with mariculture staff.

Shellfish Research Section

309 DHEC living shorelines contractual monitoring: Greg Rothman has continued processing sediment samples and this is now >71% complete. Greg Rothman and Tanner Malkasian completed digitizing all remaining oyster quadrat photos samples and QA/QC has been completed. Graham Wagner and Gary Sundin have continued working on analyses of the 2020 monitoring data, including using mixed linear models with the spatial data to explain variation in marsh edge horizontal position change. Gary corresponded with a contractor working on a living shoreline siting tool for DHEC, providing her with basic information on coastal boat landing locations. Molluscan Research and Monitoring Section (MRMS) staff and Andrew Tweel met with staff from the CofC Levine GIS lab to share knowledge about the DNR living shoreline project with the goal of informing a Kiawah-specific siting tool that CofC is developing.

Unoccupied Aerial Vehicle (UAV) research: MRMS staff attended a South Carolina Interagency Drone Users Consortium (SCiDUC) meeting and demonstration held outside in Columbia, SC. Graham Wagner built two "bucket bushes" which are UAV flight training structures based on a NIST design. Gary participated in the monthly SCiDUC Board of Directors virtual meeting. MRMS staff, with helpful cooperation from Charleston County Parks staff, arranged a UAV practical day at Mullet Hall Equestrian Center at Johns Island County Park. The event had 12 attendees, 5 SCDNR and 7 SCDHEC staff from Charleston and Myrtle Beach. Graham's bucket bush course worked well and the event was a success.

MRMS staff mapped the front beach of Pockoy Island in Botany Bay WMA to measure erosion, particularly around an archaeological site there. The data will be useful for property managers and will also be used by geologist Katie Luciano and Archaeologist Meg Gaillard.

South Carolina Oyster Demographic Assessment (SCODA) survey: MRMS staff collected samples from Beaufort River, Coosaw River, Warsaw Flats, Colleton River, Chechessee River, South Santee River, and Cape Romain, completing all fieldwork for this project for the 2020-2021 season. All 20-21 samples have been processed in the lab and Graham Wagner has begun summarizing and analyzing the data.

NMFS Community-Based Restoration project: MRMS staff met with SCORE staff to work out a partial 2021 field schedule for the project. Greg Rothman and Tanner Malkasian have resumed building manufactured wire reefs (MWRs) which will be installed this spring and summer.

Dingell-Johnson / SRFAC funding: New wire and other supplies arrived and are being prepared for building MWR structures for the upcoming season. Gary Sundin completed four OFM shellfish permit map requests. Graham Wagner corresponded with a member of the public interested in donating derelict crab traps and was able to collect 5 traps from her while in Beaufort for fieldwork.

Estuarine trawl survey: The monthly Estuarine Trawl Survey (ETS) aboard the *R/V Silver Crescent*, sampling stations in the Charleston Harbor and Ashley River, was conducted on February 11. The catch of white shrimp was above average for stations in Charleston Harbor and at the Lower Ashley station but below average at the Upper Ashley station. Overall, the catch was above the long-term average. White shrimp size was below average at all stations. The presence of black gill was not detected in shrimp samples, which is typical for this time of year. Blue crab catch varied across stations and overall was similar to the long-term mean.

Creek trawl survey: This survey has been expanded into the fall and winter months to better our understanding of juvenile shrimp and blue crab life stages. Creek trawl sampling was conducted in the Ashley River on February 22 and in the Wando River on February 24. One 15mm white shrimp was caught at the James Island Creek station. Many blue crab (N=23) were caught across the 7 stations sampled, most of which were juvenile (<60mm carapace width; n=21). Next monthly sampling will occur March 22 and 23.

Blue crab (adult and juvenile) salinity gradient potting survey: The salinity gradient crab potting survey was conducted on February 3 and 4 in the Ashley River. The February 2021 catch of 15 crabs was well below the February (2016-2020) average (\bar{x} =50.5). Average water temperature at sampling locations (\bar{x} =10.3°C) was the lowest for any February sampling since the survey's inception (2017). Two juvenile crabs were caught in pots from all stations during the February sampling event. This was well below the long-term (2018-2020) February mean (\bar{x} =17) for the survey (2018-2020). Next monthly sampling will occur March 3 and 4.

Savannah River Basin crayfish: Sampling for the State Wildlife Grant Program-funded Savannah crayfish project has begun. Michael Kendrick, Elizabeth Gooding, and Jeanette Huber sampled six sites in the Savannah watershed on February 1. Elizabeth and Jeanette sampled an additional 16 sites on February 4, 9, and 10. Native crayfish species were caught at 21 sites, and invasive red swamp crayfish, *Procambarus clarkii* were caught at one site. Jeff Brunson, Elizabeth Gooding, and Jeanette Huber sampled sites on an overnight trip to the Blue Ridge and Piedmont ecoregions in the northwest area of South Carolina on February 24-25.

Photographs of freshwater mussel specimens from this sampling have been sent to Morgan Kern (SCDNR Malacologist) for identification.

Invasive species: The date for the spring virtual meeting of the Gulf and South Atlantic Regional Panel (GSARP) on Invasive Species (Chair - Peter Kingsley-Smith; Research member - Michael Kendrick) has been set for April 21, 2021. In addition, the Aquatic Nuisance Species Task Force will meet virtually on May 4-6, 2021, at which Peter Kingsley-Smith will represent GSARP. Presentations are being solicited for the agenda for both meetings.

Elizabeth Gooding has scheduled summer and fall island apple snail surveys to document the spread of the species in West Ashley, SC.

SERTC: Following advice from SCDNR's legal counsel, it has been determined that the photo gallery available online constitutes copyrightable material, such that permission for use should be requested and appropriate acknowledgement given when used. The section is grateful to Mary Lucas for her thorough and expert guidance in coming to this determination.

Elizabeth Gooding completed requests for educational guides and posters. Elizabeth also located specific collection specimens to loan to Craig Plante (CofC) to be used for educational purposes.

Horseshoe crabs: Planning for the upcoming field season continues. Staff met to compile a tentative schedule of survey and fieldwork dates and personnel. Daniel Sasson met with John Holloway at Parris Island to tour potential survey sites for the C-SWG project. Daniel has also submitted a dig permit request to sample on Parris Island.

Work continues on a Sea Grant concept letter addressing factors affecting blood histochemistry and mortality in harvested horseshoe crabs. This proposal is a collaboration between Drs. Daniel Sasson, Jody Beers, and Fabio Casu. The group has a meeting scheduled for Friday with Graham Gaines at Sea Grant to discuss engaging stakeholders and outreach possibilities. Daniel and Jody Beers also worked on setting up a system to measure the heart rate of horseshoe crabs.

Miscellaneous: Peter Kingsley-Smith participated in the successful thesis defense for Deja Best, a graduate student at the University of South Carolina (Dr. Geoff Scott, major advisor), whose advisory committee he recently joined. Her proposal is entitled "Identifying the association between Dermo disease infection intensity and salinity, temperature, and sex along the Gulf of Mexico and South Carolina coast."

Peter Kingsley-Smith submitted a report for the first quarterly newsletter of 2021 from the National Shellfisheries Association summarizing activities of its Student Endowment Fund Committee for which he serves as co-chair. These activities included the student registration waivers and student presentation awards arrangements related to the Association's upcoming Annual Meeting which will be held virtually on March 22-25, 2021.

Daniel Sasson met with a College of Charleston graduate student about the possibility of joining his committee. Daniel also met with Dr. Robert Podolsky about the possibility of working with an REU student this summer. After conversations with managers and members of the CRMS, Daniel relayed to Dr. Podolsky that we would be uncomfortable due to Covid concerns having additional personnel using our facilities. The conversation is ongoing about the possibility of acting as a co-advisor to an REU student who could be housed in Grice.

Gary Sundin participated in a call involving several groups at DNR and researchers from Duke University about potential datasets and approaches for a predictive marsh migration modeling project for South Carolina.

Peter Kingsley-Smith participated in the South Carolina Shellfish Aquaculture Research and Development Work group meeting coordinated by SC Sea Grant Consortium on the afternoon of February 24, 2021.

Michael Kendrick completed a review on February 4 of a manuscript on black gill in shrimp for the *Journal of Invertebrate Pathology*.

Elizabeth Gooding and Jeanette Huber watched the recorded SEAMAP webinar regarding identification techniques for non-commercial shrimp. Staff expect these identification methods to be useful for identifying more taxa on the Estuarine Trawl Survey.

Michael Kendrick led annual safety training on February 3 for OFM Shellfish Management Section staff planning to use MRRI Shellfish Research Section lab spaces (labs 16 & 23).

Graduate students Brooke Blosser (GPMB, microplastics, Kingsley-Smith committee member) and Jeff Good (GPMB, brief squid ecology, Kingsley-Smith major advisor) both held full committee meetings this month and both intend to defend their theses this summer.

Peter Kingsley-Smith renewed his First Aid / CPR certification on February 18, 2021. Jeanette Huber completed the LinkedIn Learning: Excel Tips and Tricks training.

The section made significant progress discarding unwanted materials from the Q-Hut to create new available storage space.

Daniel Sasson submitted an abstract to the 2021 Ecological Society of America (ESA) conference that will take place in August. His talk will focus on the use of salt marsh as spawning habitat for horseshoe crabs.

Office of Fisheries Management (OFM):

Shellfish Management:

Culture Permits and State Grounds: 6 permit holders requested verification of legally required shellfish culture permit plantings for 6 permits during February. Through calendar year 2021, permit holders have requested planting verifications on 7 permits with 3 completing planting quotas for 2021. A total of 7,664 U.S. bushels (4,519 U.S. bushels for credit & 3,145 in overages) of shellfish seed, green oyster shell, clam cover or approved cultch, cultivation, or equivalent has been planted (630 BU on state or public grounds). The assessed planting quota for the state's 103 culture permits is 96,096.7 U.S. bushels after taking into consideration permit cancellations, acreage reductions or increases, boundary modifications and approved variances, leaving 91,577.7 BU (95%) 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.

5 culture permits were posted as available for application.

One permit was reduced by 50% for non-planting in 2020.

Mariculture/Importation

Mariculture staff advised 2 potential floating gear applicants. Discussed and disseminated all pertinent literature regarding site selection and permitting agencies' requirements.

3 new hatchery affirmation forms were received and approved for the 2021 calendar year.

5 importation applications were received. 3 for oysters and 2 for clams

1 seed inspection for imported hard clam seed from Bayshellfish in Florida was conducted. Staff found the seed to be very uniform and clean.

Mariculture staff conducted compliance inspections on 4 permits. M-010, M-602B, M-198A, and M-257. Found all permits to be in compliance with all permit conditions.

Mariculture staff attended a webinar concerning birds being attracted to floating mariculture gear and how to best deter them from resting on the gear.

A letter of support from Runningtides hatchery in Maine in favor of SCDNR's proposal for development of a detection assay that could detect ROD in oyster seed. Mariculture staff sat in on the first round of virtual interviews for the new SEAGRANT extension agent position.

SCORE – South Carolina Oyster Recycling and Enhancement

Shell recycling and planting; Recreational management

Shell Recycling

In the February recycling period, 3,254 bushels were recycled. The public drop-off locations at Carrigg's Seafood, Charleston Outdoor Catering, Ft. Johnson, Greenville, Clothing World, City Roots, Garris Landing, Trask Landing, McClellanville Town Hall, Red's Ice House, Gilligan's Seafood – Goose Creek, Gilligan's Seafood – Monk's Corner, and Gilligan's Seafood – Summerville were emptied totaling 1,642.5 bushels. There were 20 Events totaling 714.5 bushels. The

restaurant route contributed 897 bushels across 25 partner restaurants. No new partners were added to the restaurant route. During the reporting period, Bohemian Bull had their final roast for the season. Their numbers were totaled, and they received a certificate of appreciation for their contributions. The public drop off location at Red's Ice House has been temporarily removed due to construction and maintenance of the parking lot where it was housed. The nearby restaurants that contributed to this trailer were NICO, Red's Ice House, and Tavern and Table. They are all currently being transitioned over to the restaurant route.

The volunteer recycling team is now actively on board and servicing restaurants as well as roast events as needed. To date, the Charleston area volunteer recycling team has recycled a total of 141 bushels. They have also begun assisting with can cleanings and repairs. The Beaufort area volunteers have recycled 78.25 bushels. The Greenville area volunteers recycled 88 bushels.

Equipment maintenance continued during this recycling period. The deck-over 150 bushels had a flat tire replaced. The deck-over 185-bushel had its plug and one taillight replaced. The lined 60-bushel trailer had two new tires put on to replace old, cracked tires, had new door hardware installed for safety purposes, and had a hydraulic hose leak fixed. The dump truck "Rusty" was towed to Palmetto Diesel for repair. The F-250 went into the shop for a PM and a flat tire.

Volunteer Oyster Shell Recycling Program (Beaufort, Charleston, Greenville, Columbia) - Charleston shell recycling volunteers donated 55 hours to recycle a total of 185 bushels of shell from five roasts and restaurants outside of downtown Charleston. Beaufort shell recycling volunteers donated 34.5 hours to recycle 72 bushels of shell from eight different restaurants and one oyster roast. Greenville shell recycling volunteers donated 34.5 volunteer hours to recycle 109 bushels of shell from 4 different restaurants. Columbia shell recycling volunteers serviced two oyster roasts in the area. Columbia volunteer hours and bushel counts are in progress. The Oyster Factory and Captain Woody's, both on Hilton Head Island, have joined the volunteer restaurant recycling route.

Shell Planting for State Managed Grounds - Staff have completed the processing of samples retrieved from 1-year post-planting sites. Scouting for potential planting sites occurred during this reporting period. Sites were scouted in Charleston County, Beaufort County and Georgetown County. Staff worked with US Forest Service staff to identify locations populated with bamboo in the Francis Marion National Forest. US Forest Service has given SCDNR permission to harvest the invasive bamboo so that it can contractually be planted on state shellfish grounds during the 2021 planting season. Paperwork to purchase and haul 9,750 bushels of oyster shell was submitted and the purchase orders have been issued.

Grant and Contract-funded Projects

Community Based Restoration - The SCORE Program hosted seven volunteer events totaling 101 volunteer hours. Volunteer events activities included making manufactured wire reefs, picking trash from recycled oyster shells and planting marsh seedlings. Work requests were submitted, and approved, for oyster reef builds, making manufactured wire reefs and in person presentations to community groups. SCORE staff have begun to host volunteer events making manufactured wire reefs and have begun scheduling them with groups related to our recreational fishing grant. SCORE staff have been germinating, picking and planting *Sporobolus alterniflorus* seeds for with the assistance of volunteers from Charleston Waterkeeper. Planting supplies were delivered to Camp Road Middle School for a science class to plant marsh seedling at the school. In February, a total of 122 trays were planted, bringing the tray count to date to 158 trays planted (10,744 plants). Oyster recruitment and population samples were retrieved during this reporting period. Oyster recruitment trays were retrieved from Five Fathom Creek, Murrells Inlet, Ashepoo-Coosaw Cut, Trask Landing, Hunting Island, Wappoo Cut, Elliot Cut, Ashley River, Fort Johnson and Big Bay Creek. Oyster population samples were retrieved from Ashepoo-Coosaw Cut, Palmetto Bluff, Drum Island and Shutes Folly.

Miscellaneous - Interviews began this month to fill vacant Bio II position as coordinator for shellfish recycling and planting program. Interview will wrap up beginning of March.

Christian Sergent started his employment, as an hourly, with SCDNR

Lee Taylor attended DNR defensive driver training

Ella DiPetto attended Lab and Workplace safety training.

Kevin Swain attended First Aid, CPR and AED training. Holly Kight-Sommers worked with a Boy Scout, at an oyster roast, to educate participants about the value of oysters and to prevent trash from ending up in the recycled shell.

Meetings:

Ben Dyar and Henry Davega 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 met with TNC and Sea Grant on continuing discussions for the implementation and funding for a recreational oyster harvesting survey.

Holly Kight-Sommers met with Jean Fruh, The Outside Foundation, to learn more about how they manage volunteers at oyster roasts.

Ben Dyar and Wally Jenkins attended several meetings for the collaboration of whelk fisheries and management among the Atlantic states in a coordinated workshop.

Henry Davega and Ben Dyar sat on interview panel for Sea Grant Aquaculture Specialist position.

Ben Dyar, Peter Kinglsey-Smith and Gary Sunding met with historical biologists from Cornell University and Florida Dept of Environmental Protection on working to set up a workgroup including other State regulators to allow Integrating historical data and approaches into oyster conservation and restoration.

Michael Hodges and Ben Dyar met with Lora Clark from PEW to discuss opportunities for funding oyster restoration through SERRPAS.

Finfish:

STOCK AND HABITAT ENHANCEMENT PROGRAM

ARTIFICIAL REEF MANAGEMENT AND DEVELOPMENT

The Artificial Reef Program has acquired four more vessels that will be prepared and deployed at reef sites off multiple coastal counties in the coming months. Two of the vessels will be ready and deployed this month, off Horry and Charleston Counties. Bid packages have been prepared for the other vessels and should be finalized shortly.

Reef program personnel gave an online presentation on the subway car reefs, sponsored by the New York Transit Museum. Over 75 participants registered and attended the presentation.

Statistics:

- Delinquent letters for late submission of January 2021 mandatory logbooks were mailed on February 17th, 2021 (193 letters) to license holders for Wholesale Seafood Dealers and For-Hire Charter Vessels for January 2021 reports not yet received by the February 10th, 2021 deadline. The affidavit list was provided to Law Enforcement on March 4th, 2021.
- Several data requests were completed during this month for commercial data including the following annual species summaries: Overall 2020 landing by species grouping, and specifically on clams, oysters, and pinfish. SCDNR charter database also had data requests including specific species catch and effort for Red Drum, and vessel catch and effort. An annual summary for 2020 recreational shrimp baiting was also created and provided to OFM Director.
- Final 2020 commercial data, including catch and effort as well as participation data, was provided to Atlantic Coastal Cooperative Statistics Program (ACCSP), which SCDNR is a program partner, prior to the March 5th deadline. This is a huge “teamwork” based undertaking by the section, ensuring that all fisheries data are entered, verified through QA/QC efforts, and disseminated in the correct format. In 2020, there were over 25,000 trips recorded, accounting for ~13.6 million pounds of products equating to ~ \$25 million dollars in dock value.
- Extensive work continued with the CARES funds, which the first allocations being distributed to the state’s commercial fishermen, wholesale seafood dealers and for-hire fishermen to qualifying constituents distributed by ASMFC. The second allocation of funds SCDNR will be receiving to be distributed to this sector will arrive later this year, and staff continue to work to determine the best way to determine eligibility.
- Several staff participated in numerous ASSCP Committee webinars to ensure that all data collection standards are being met with biological and commercial catch/effort data. Staff are working diligently to increase electronic data collections and efficiency for both recreational for-hire and commercial data.

Commercial Trip Interview Program

- During the month of February, OFM Port Agents intercepted 6 commercial trips and collected 84 length frequencies along with obtaining 83 associated age structures from primarily snapper grouper species.

Recreational Statistics Section Summary

- In February 2021, OFM staff conducted the state recreational angler survey. January and February survey data is currently being reviewed and data entry performed.
- OFM staff attended an online meeting of ACCSP’s Recreational Technical Committee.
- 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 and freezer program, 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 Coastal Exploration Series is a series of public programs to inspire appreciation of our state's coastal wildlife and landscapes. Since April, staff have translated this series into a virtual "Outside In" webinar series. In February, 193 viewers watched the Seabirds of South Carolina webinar.
- At Botany Bay Plantation Wildlife Management Area/Heritage Preserve, staff is working on revamping the Botany Volunteer Program and creating specific activities for volunteers to educate visitors. Botany staff and 3 Certified SCDNR Fishing Instructors led a fishing clinic at Jason's Lake. 12 students participated.
- 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 February, diversity staff assisted NERR staff in developing JEDI initiatives for the Reserve, archived messages and posts from the public, and provided content on the SCDNR's Diversity Facebook pages for 2021.
- Through the Marine Game Outreach to Saltwater Anglers and Boaters Fish Tagging Program, 9 active participants tagged and released 93 fish, primarily red drum and black drum. Additionally, 49 recaptures were reported. Of these recaptures, 86% were re-released. Staff processed the tagging and recapture data, and rewards were mailed to anglers who reported recapture(s).
- Staff provided an update on the southern flounder population in the Marine Game Fish Tagging Program Newsletter and responded to 14 emails and 4 phone calls related to the update.
- Staff responded to an additional 7 fishing-related inquiries.
- Staff authored two entries for the Coastal Resources Blog: "Release Over 20 Gives a Boost to Spotted Seatrout" and "Angler Actions Can Make a Big Difference: An Interview with Dave Fladd."
- Staff completed bi-annual publications deliveries, delivering saltwater publications to 126 coastal vendors and provided clean/safe boating flyer to coastal vendors.
- Staff hosted the virtual Certified SCDNR Fishing Instructor training. 43 attended and 39 became certified.
- Community members (6) volunteered to plant marsh grass seedlings as part of the From Seeds to Shoreline community salt marsh restoration effort. They will continue to help cultivate these plants until the summer, when they will restore areas of eroded salt marsh.

Media and Communications

- In February 2021, media and communications staff began work drafting an outreach campaign to collect public sightings of spawning horseshoe crabs. Initiated in 2019, this campaign was suspended in 2020 and we look forward to resurrecting it in March or April 2021.
- Staff supported MRD by providing design, multimedia, and writing/editing services for seven projects, including updates to the Sea Science publication series, the 2020 edition of Loggerheadlines, the 'Outside In' webinar series, videos for wetlands trainings and more.
- Staff completed a beautiful new edition of Loggerheadlines, the sea turtle nesting program's annual newsletter for volunteers and partners.
- Staff continued work on a clean/safe boating social media campaign that will run April - September 2021.
- Staff responded directly to seven reporter inquiries on topics ranging from horseshoe crab management to COVID-19's impact on large oyster roasts.
- A total of eight print, digital and broadcast media stories referenced division programs/staff in February, on topics ranging from horseshoe crab management to proposed flounder legislation.

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 February, 326 students attended school programs, field trips, and/or virtual marine science programs.
- Educators rolled out the first Marsh Madness Tournament! A weekly, online educational competition where students submit brackets predicting which species of South Carolina wildlife will win the fight for survival! Over 840 students are participating, from public, private, and homeschools across the state.

Support for Coastal Communities and Partners

- The Boating Infrastructure Grant (BIG) Program is a competitive US Fish and Wildlife Service funded program providing 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. As part of the annual grant cycle, SCDNR is

planning a spring workshop for interested applicants to discuss this year's application process and the federal and SCDNR rules and regulations of the program. The workshop is geared towards marina owners and managers, municipalities, and consultants.

- The Clean Vessel Act (CVA) provides USFWS funding to install and operate marine sanitary pumpout programs to divert overboard discharges and protect water quality. SCDNR recently entered into a partnership with Isle of Palms Marina to install an integrated fixed pumpout system to serve boaters at the facility. This will be operated by the marina for at least 7 years and will help protect water quality along Isle of Palms. The CVA program is also working to develop new partnerships with a number of marinas to install sanitary pumpouts, including Harborage on the Ashley, and Harbourgate Marina in North Myrtle Beach.
- The Coastal Training Program (CTP) provides training, assistance, and resources to coastal decision-makers. In February, the coordinator along with partners developing a Watershed Based Plan for Edisto Island continued analyzing survey results and planned outreach to share results with the community.
- The CTP coordinator began planning a stakeholder workshop for a NERRS Science Collaborative project "Identifying optimal foraging characteristics to inform piping plover and red knot habitat management."
- The CTP coordinator planned for three upcoming workshops; one follow-up wetland buffer training, one 'healthy pond series' program for homeowner association audiences as well as the 'Charleston Stormwater Pond Management Conference.'
- Staff provided virtual meeting facilitation and logistics for the SCDNR Heritage Trust Advisory Board meeting.
- The ecotour workshops are a series of events dedicated to providing the most up-to-date research, hands-on materials, and education to local ecotour businesses and guides. Topics include archaeology, fisheries, coastal management and shorebirds. During February, staff held the "SCDHEC Ocean and Coastal Management" workshop virtually with 11 participants.
- Staff continues to provide support and consultation on Motus Wildlife Tracking Systems for various federal, state and private partners. In February, SCDNR assisted Nemours, Harbor Island, Fort Moultrie, and Port Royal Sound Maritime Center, Spring Island Trust, Edisto Beach State Park, Audubon and Daufuskie Island, with the construction, maintenance and data collection of Motus towers.

Coastal Reserves

- 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 initiated an effort to manage Chinese Tallow within the St. Helena Sound WMA and South Fenwick Island WMA. A volunteer group of 6 people from the Sustainability Institute helped manage Chinese Tallow.
- In January, staff distributed 3 camping permits for Otter Island and 3 camping permits for South Fenwick Island.
- In February there were 95 campers over 19 permits for capers island, a relatively average month. Camping numbers have already begun to grow and the season is expected to be record breaking. Day user surveys have begun and on our last trip we were able to get 7 surveys between both the north and south beaches.
- In February, 5,863 people visited Botany Bay Plantation HP/WMA. Volunteers provided 138 hours of service, performing maintenance activities on the office building and property, preparing duck boxes, and hosting a small, socially-distanced kids fishing clinic.
- Staff coordinated with and provided a tour of the ACE Basin to a Clemson Ph.D. student working on characterizing visitor use in the ACE Basin through NOAA's Margaret A. Davidson Research Fellowship Program.

Sea Turtle Nesting Program

- Staff finalized 2020 tagging records and submitted annual report to Univ. of FL CMTTP.
- One sea turtle stranding event of a juvenile endangered Kemp's ridley was reported. The turtle was entrained in the hopper dredge Ellis Island currenting operating in the Charleston Shipping Channel as part of the Post-45 Charleston Harbor Deepening Project.
- Staff members continue to provide 24 hour on-call coverage of sea turtle hotline during the week, weekends and on holidays.
- Coordinator continues to work on QA/QC and data entry of historical nesting data into the database as time allows.
- Coordinator and Biologist attended two-day annual Florida Sea Turtle Permit Holders training.
- Staff Biologist continued with solicitation and awarding of bid package for 2021 predator management.

- Coordinator and Biologist met with NOAA regarding transfer of necropsy operations to new lab space on Fort Johnson campus.
- Coordinator continued with season preparation of the program's vessel, purchase of supplies and began issuing sea turtle program permits for 2021.
- Coordinator continued with creation of annual sea turtle training presentations and webinar setup for virtual training.
- Staff worked with SCDNR Aviation to develop protocol for Biologists flying in law enforcement planes.
- Staff worked with MRD media to complete the annual Loggerheadlines publication and edits to manuscript.
- Eagle Biologist provided technical assistance through emails and calls for five eagle nest territories, conducted two site visits and three days of aerial surveys to check 81 territories.

NOTE: Staff present below the Coastal Reserves and Outreach report in a new format (the content is dated). We seek input on whether the new format improves the value of the report to our Board members. We welcome suggestions from the Board around making the report more valuable to them.

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

The **Coastal Exploration Series** is a series of public programs to inspire appreciation and promote stewardship of our state's coastal wildlife and coasts. Staff have translated this series into a virtual "Outside In" webinar series since April 2020. Staff are organizing six webinars for the Spring including topics such as mariculture, stormwater management, and common turtles of South Carolina.

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 January, diversity staff assisted ACE Basin NERR staff in developing diversity initiatives and completed archiving messages and posts from the public on the SCDNR's Diversity Facebook pages for 2020.

Saltwater fishing outreach provides anglers with the information, tools, and resources to successfully and sustainably fish in South Carolina's coastal waters. In January, staff worked towards partnerships with five organizations along the coast to provide loaner tackle for anglers. Staff authored two Coastal Resources blog posts ("Release Over 20' gives a boost to spotted seatrout" and "Angler Actions Can Make a Big Difference: An Interview with Dave Fladd") and responded to numerous emails and calls for further information from readers.

Through the **Marine Game Fish Tagging Program**, 41 active participants tagged and released 463 fish, primarily red drum, sheepshead, black drum and flounder. Additionally, 75 recaptures were reported. Of these recaptures, 83% were re-released. Staff processed the tagging and recapture data, and rewards were mailed to anglers who reported recapture(s).

Media and Public Relations Staff support the community and Division by providing media relations, communications, and multimedia support. In January, staff captured multimedia for the forthcoming series of interpretive signage for Botany Bay Plantation HP/WMA, provided design, multimedia, and writing/editing services for eight projects including updates to the Sea Science publication series, the 2020 edition of Loggerheadlines, the "Outside In" webinar series, videos for wetlands trainings and more, began working with MRD **clean boater outreach** and OMO staff on a clean/safe boating social media campaign that will run April - September 2021, and responded directly to seven reporter inquiries on topics ranging from right whale migration to horseshoe crab management. Two new articles were posted on the Coastal Resources blog and ten print, digital, and broadcast media stories referenced MRD programs or staff on topics ranging from the decline in flounder population to artificial reef deployments.

Volunteers provide support for section programs, helping to educate members of the community and protect wildlife. In January, volunteers contributed 91 hours to helping maintain Botany Bay Plantation HP/WMA. 4 volunteers provided two saltwater family fishing clinics to 34 participants. 21 volunteers tagged Monarch butterflies for the Division's winter Monarch Tagging Program.

Student and Teacher Education

The **Carolina Coastal Discovery Education Program** for students focuses on conservation of the state's coastal natural resources as well as relevant science standards. Staff provide field-based and classroom science-based lessons that promote self-inquiry and scientific method skills. In January, educators rolled out the first '*Marsh Madness Tournament!*,' an online educational competition where students submit brackets predicting which species of South Carolina wildlife will win the fight for survival.

Teacher professional development opportunities throughout the year provide educators with the knowledge and resources to improve their science literacy. The Education Coordinator continues to serve as an instructor for the Palmetto Environmental Educators Certification Program and trained 16 teachers and nonformal environmental educators from South Carolina on Education Program Planning and Evaluation in January.

Community and Partner Support

The **Boating Infrastructure Grant (BIG) Program** is a competitive US Fish and Wildlife Service program providing funding for marina infrastructure to serve large transient recreational boats and provides access to recreational, historic and natural resources. In January, two BIG grants were completed and inspected at Plum Branch Yacht Club. These grants provided for the installation of 6 new covered boat slips at the McCormick County facility, which increases access to Lake Strom Thurmond and provided a total of \$214,721 in funding which was utilized primarily for locally constructed materials. This is the first BIG project completed in an inland SC county.

The **Clean Vessel Act Program** mirrors the model of the BIG program and provides funding to install and operate marine sanitary pumpout programs to divert overboard discharges and protect water quality. In January, the CVA program entered into Subrecipient Agreements to provide funding for sanitary pumpout programs at SHM Bristol Marina in Charleston and Harbortown Yacht Basin on Hilton Head Island. The program is currently working to partner with Clemson Marina, SHM Skull Creek Marina, Dolphin Cove Marina, and Isle of Palms Marina to provide CVA pumpout activities at those locations.

The **Coastal Training Program** provides science-based training and assistance to coastal decision-makers, whose decisions impact our coastal resources. In January, the coordinator along with partners developing a Watershed Based Plan for Edisto Island continued analyzing survey results and planned how to share results with the community. Staff continued to participate in the US Climate Resilience Toolkit Southeast Region Development working group, creating and reviewing website content. And in January, the program provided the "Coastal Lifestyle for Clean Water" training to 25 real estate professionals through partnership with the Charleston Trident Association of Realtors.

An annual, winter **ecotour training series** provides natural resources-related information to the nature-based tourism industry, allowing them to provide timely, science-based information to their resident and visitor clients. In January, staff provided a shorebird identification workshop to 15 participants, and are planning three additional virtual workshops and two field days.

Staff continues to provide support and consultation on **Motus Wildlife Tracking Systems** for various federal, state and private partners. In January, SCDNR assisted Nemours, Harbor Island, Fort Moultrie, and Port Royal Sound Maritime Center, Spring Island Trust, Edisto Beach State Park, Audubon and Daufuskie Island, with the construction, maintenance and data collection of Motus towers.

Coastal Resource Management

The **McKenzie Field Station** provides researchers, students, and others with access to the ACE Basin. In January, staff engaged in routine facilities maintenance.

Caper's Island Heritage Preserve (HP), **Botany Bay** HP/Wildlife Management Area (WMA), **South Fenwick Island** WMA, and the **Saint Helena Sound** HP/WMA offer recreational opportunities and wildlife protection. In January, ACE Basin NERR staff continued to maintain South Fenwick Island to provide public access and high-quality habitats. Activities included mowing, spraying, and clearing trails and fields of invasive species, constructing fire breaks, and installing a 500-gallon cistern. 5,000 people visited Botany Bay. 2 camping permits were issued for Otter Island. 21 camping permits were issued for 134 campers on Caper's Island, the third highest level of camping use in the last 13 years of records. Surveys of day users on Caper's Island began and will continue throughout the spring to better understand the level and type of use on the island. A survey of previous campers on the island closed with responses from over 800 people, and staff will analyze data throughout the spring.

The **Sea Turtle Conservation** Program protects nesting sea turtles by coordinating a large volunteer network that monitors the state's sea turtle nests and responds to reports of sick, injured, and dead turtles. In January staff completed remaining data quality control and assurance for the 2020 nesting season data, reviewing over 12,000 total records. Additionally, staff continue to QA/QC historical nesting data as time allows. In January, staff summarized 2020 depredation data to develop a predator management plan for 2021.

Staff finalized the outstanding **sea turtle stranding** records and maintained the real-time online stranding database. In January, two stranded sea turtles were reported (juvenile loggerhead and Kemp's ridley), both entrained in the hopper dredge associated with the Charleston Harbor deepening project. Formal necropsies were performed. Staff continue to provide 24/7 on-call coverage of the sea turtle stranding hotline.

The **Bald Eagle monitoring program** provided technical assistance for several eagle nest territories and conducted four site visits.

WILDLIFE AND FRESHWATER FISHERIES

ASSISTANT DEPUTY DIRECTOR'S OFFICE

Completed administrative and budgetary tasks. Participated on interview panel for division business manager and submitted recommendation to Human Resources. Collected nominations for division employee of the year award. Completed property purchase at Barnwell Fish Hatchery in Barnwell. Completed property purchase at Wadakoe Mountain HP in Pickens County. Received appraisal and ESA on pending property purchase in Colleton County and submitted documentation requesting final approval by the Dept. of Administration (DOA). Prepared and submitted documentation requesting final approval by DOA on property purchase in Chester County. Prepared and submitted documentation to DOA for preliminary approval to investigate a potential property purchase in Aiken County. Submitted letter to DOA regarding request for further information on access easement request in Oconee County. Prepared summaries on two real estate matters for the Heritage Trust Advisory Board and the DNR Board. Continued work on seven other real estate acquisitions. Spoke to landowner about property for sale in Jasper County. Examined tract for sale in Aiken County. Investigated two tracts for sale in Horry County. 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 and public hearing, Heritage Trust Advisory Board meeting, State Fiscal Accountability Authority meeting, Habitat Protection Committee conference call, Southeast Regional Partnership for Planning and Sustainability conference call, Southeast Adaptation Strategy conference call, Sentinel Landscapes conference call, conference call with TNC, and conference call about conservation easement violation on property in Charleston County.

SWG/Forest Legacy Coordinator

State Wildlife Action Plan (SWAP) Implementation & State Wildlife Grants (SWG) Coordination [Anna Smith]

All 3 of SCDNR's National Coastal Wetlands Conservation Grants were funded at \$1M each! The SCCB also received 2 so that all 5 proposals from the State of South Carolina were funded. SCDNR's projects included Meyer Lake, River Oaks, and Santee Island. Smith facilitated a contract with Virginia Tech for a Wildlife Viewing Study. She will participate in working groups and emails. A memo was created authorizing LLT to harvest timber off the Meyer Lake Tract according to SCDNR's specifications. Conference calls with SCDNR staff and Natureland Trust about Bunched Arrowhead HP additions (Spence Pond Tract and Burns Tract) were conducted as a consideration for USFWS Recovery Lands Acquisition Grants funding. An evaluation for Cartwheel Bay tract additions was completed and sent to the HPC for comments. A Section 7 was completed for the new C-SWG Horseshoe Crab grant SC was awarded. Since 2009, SCDNR has been an applicant in 19 C-SWG grants; 11 have been funded (a 58% success rate). This is very impressive for such a highly competitive national program. A reminder email was sent to all PIs about upcoming due dates for interim and final SWG/C-SWG reports. Two were submitted this month and were read, edited, and submitted to Grant Solutions. A parcel adjacent to Tillman HP was evaluated, sent to the HPC for comment, and passed on to OSI for purchase considerations. Smith had consultation conference call with Riggan (OEP) about projects in the mill. Smith informally reviewed the Santee Corridor parcels and Weatherex Tract by Waccamaw River HP. Smith investigated the SECAS University Consortium FY22 Funding Opportunity (NC State, Auburn, DU, Univ. of FL, USC, UT-K, USGS Centers, etc.) and passed the funding announcement along to relevant staff. A University of Massachusetts grad student was assisted with permissions to survey for Frosted Elfin in South Carolina. A no-cost time extension form was filed for Kindel's NABat SWG grant. A RAWA Team email of updates was sent to SCDNR staff. The new federal "30 By 30 Initiative" was investigated. The SEAFWA-WDC had discussions about the 2025 SWAPs and how our states could create more standardized habitat definitions. Smith worked with Lora Clarke, PhD with the Pew Charitable Trust as SCDNR's working group member for an upcoming salt marsh conservation initiative. The Baxter Tract was reanalyzed for potential acquisition. The Sentinel Landscapes program was investigated through a webinar. See list of meetings, conference calls, and webinars below.

Forest Legacy Program (FLP) Coordination [Anna Smith]

The annual Edisto easement compliance check was completed this month in three phases: a phone interview with each landowner or representative, a site visit on 2/3/21 to see the west side of the river and another site visit on 2/17/2021 to see the east side of the river. The report was submitted to SCDNR and USFS and FLIS updated. Another phone interview was conducted with the landowner for the Mead "Private Easement" which will be visited in the Spring after logging operations have been completed and the ground dries out from the frequent winter rains. The Mead property has been divided among relatives and the new deeds have been given to SCDNR. We are

checking them for compliance (required language) with the FLP. Smith participated in the Forest Legacy State Coordinators Virtual Meeting (2/9/21).

Other Activities / USFWS Liaison [Anna Smith]

Smith presented two out of three planned NatureServe/NatureServe Network/AFWA presentations discussing the SEAFWA-WDC's role in the pilot project to determine regional ranks (R-ranks) for three priority herp species and complete a habitat suitability model for one of them. The webinar series is entitled, "Collaborative Analyses to Support Regional Conservation and SGCN Management" with Smith's portion entitled, "Southeastern Cooperative Conservation: Data Sharing Project Motivations." Smith gave a presentation on Animal Adaptations for 6 4th grade classes (~150 students) at a Charleston County School. SEAFWA requested a spreadsheet of questions be completed so that AFWA could compile the results for a report. Smith compiled all of SCDNR's comments for the Wildlife Diversity Committee as well as Wildlife and Fisheries. The RSGCN subcommittee of the WDC met virtually to consider next steps. The TWS Newsfeed is read monthly. Smith assisted Grosse and Riverbanks Zoo staff with the collection of Gopher Frog eggs at Cainhoy for a trial hatchery study (2/24/21). Smith found two egg masses in one of the wetlands.

Summary of meetings attended / conference calls / webinars watched / training programs or workshops:

- Wildlife Viewer Survey Project Steering Committee conference call #1 (2/4/21)
- Savannah River CWF Mapping Stakeholder Virtual Meeting (2/5/21)
- Forest Legacy State Coordinators Virtual Meeting (2/9/21)
- "Collaborative Analyses to Support Regional Conservation and SGCN Management" webinar for NatureServe Network [Smith presented] (2/12/21) and for AFWA regions (2/26/21)
- SRCC/LSU Coastal Climatology Virtual Workshop (2/11/21)
- Watched TWS Talks "Northern Long-eared Bats on the Mid-Atlantic Coastal Plain of North Carolina and Virginia" [DeLaCruz et al. 2020] (2/12/21)
- RSGCN Subcommittee conference call (2/16/21)
- SECAS presentation: "Structural Decision Making: A Strategy for Collaboration and Conservation of Imperiled Herpetofauna" (2/16/21)
- Wildlife Diversity Program Managers Bi-Monthly Call (2/17/21)
- SEAFWA-WDC Monthly Call (2/18/21)
- SC/MAJIC Sentinel Landscape Update Teams Meeting (2/23/21)

Natural Heritage Database Program [Joe Lemeris:

Meetings:

- 2/1 – Lemeris and Arrington met with Riggin, Mixon and Daniel to discuss specifics related to converting paper field forms to Survey123 format to measure large woody debris and other stream survey metrics.
- 2/2 – Lemeris attended NatureServe's Habitat Suitability Modeling in the Network series, which focused on updates to modeling standard initiatives and plans for NS to work with regional AFWAs to produce models for SCGNs.
- 2/3 – Lemeris attended the February US Section Council Meeting for the NatureServe Network. Topics included officer elections, habitat model expert review (similar to previous day's meeting), updates to NS's strategic planning, and updates to the NS Explorer/Pro application.
- 2/5 – Lemeris, Arrington and Thachik attended a bi-weekly check-in meeting with Esri EAP staff, to discuss current project status, updates, form plans for next steps, and discuss new technology.
- 2/11 – Lemeris and Turner met to go over/assign Turner's next GIS project, involving digitizing/georeferencing historic soil maps for use by Cultural Heritage staff.
- 2/11 – Lemeris attended the February Heritage Trust Advisory Board Meeting
- 2/11 – Lemeris met with Esri EAP staff to kick off a new activity related to habitat distribution modelling, specifically building pre-processing workflows to pull data from various sources for species data.
- 2/11 – Lemeris and Grosse met with a student from Colorado State University to discuss various datasets available to her for use in a GIS-based senior project. SC agreed to provide copies of data that are already publicly available on a county/HUC scale.
- 2/12 – Lemeris attended a NatureServe webinar focused on collaborative analyses to support SCGN work at the regional AFWA level.

- 2/17 – Lemeris, Arrington and Thachik met to debrief after instructor-led versioning training, to discuss potential next steps to apply what was learned to our situations at SCDNR.
- 2/17 – Lemeris met with Esri technical support to discuss issues related to publishing web tools to our Enterprise server – a resolution was found after it was discovered that prior versions of ArcGIS Pro toolboxes are no longer compatible with current version of ArcGIS Pro.
- 2/18 – Lemeris met with McCarron and Goharian (SCDOT) to walk them through how to add Natural Heritage datasets to SCDOT web applications through the GIS portal.
- 2/19 – Lemeris attended the February installment of SCDNR’s Coffee and Conversation with Director Boyles.
- 2/19 – Lemeris, Arrington and Thachik attended a bi-weekly check-in meeting with Esri EAP staff, to discuss current project status, updates, form plans for next steps, and discuss new technology.
- 2/19 – Lemeris, Arrington and several Cultural Heritage staff met with NAHAR partners to discuss their work using SLAMM sea level rise predictor models to discover and rank cultural resources by risk of loss due to rising sea levels.
- 2/22 – Lemeris met with Morgan Kern to finalize data migration from ArcGIS online to the enterprise portal, and a few details surrounding SCDOT funds for species of concern surveys near road features.
- 2/24 – Lemeris met with Esri EAP team to discuss progress that has been made on designing workflows to pull datasets from public data sources for species distribution modeling pre-processing.
- 2/25 – Lemeris presented an overview of the SC Natural Heritage Program and how it uses GIS to the Introductory GIS class at Catawba College in NC (virtual presentation)
- 2/26 – Lemeris met with Kindel to discuss various project status updates for bat-related work, as well as details surrounding DOT funds for species of concern surveys near road features.

Training:

- 2/8 – 2/10: Lemeris and Thachik attended a 3-day instructor-led online training by Esri focused on implementing versioned workflows on an ArcGIS Enterprise geodatabase. This training focused on versioning theory, best practices, and several common scenarios for setting up and maintaining a geodatabase with versioned datasets.

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.
 - An intern has been hired by TDP to assist in pulling/updating all boat/fishing related data into a central GIS dataset on our Enterprise portal for incorporation into the managed lands dataset.
 - Lemeris has met with Esri staff dedicated to creating a distribution modeling workflow for predicting suitable habitat in South Carolina. Esri staff began working on draft versions in February and have so far developed draft workflows for 3 of the 5 desired models, as well as a workflow to pull data from public data sources for presence points.
- SCDNR/SCCB Joint position update:
 - Lemeris/Arrington continue to wait on SCCB to sign the MOU to contribute funding to a temporary grant position housed in the Heritage Program; they have been waiting until budgets are confirmed for their agency (likely in February). Position Descriptions are ready to be submitted once the MOU is signed by both parties.
- **The Natural Heritage Hub Site has been viewed 650 times in February (9,250 since April 2020), and 12 new users (total of 236 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.
- **91 of 391** Users accessed the Heritage Trust GIS Portal in February, compared with 85 in January.
- **Over 200** new records were added to the database in February, comprising of a mix of crayfish, bat, herp, and plant records.
- **77 species reviews were completed automatically** using the new Species Reviewer Tool for Environmental Professionals in February, compared with 98 in January.
- Lemeris initiated and continued work on several open Esri Technical Support Cases to better improve/identify bugs associated with various ArcGIS workflows. Patches have been installed and are

- being monitored to identify whether they may resolve persistent bugs with certain tools.
- Lemeris assisted various staff in the development of maps for projects, informational documentation, advisory board materials, etc.
- Turner (hourly intern) has completed scouring public data repositories for additional records for undocumented species currently in the Natural Heritage Database during the month of February and has begun georeferencing historic soil maps (NRCS) for use by Cultural Heritage staff.

FRESHWATER FISHERIES

Highlights

Staff participated in the Chattooga Coalition Zoom meeting with the USFS, GADNR, TU, and American Whitewater.

Staff provided site locations, depths, and amount of concrete rubble for eight future fish attractors at Lake Wateree to Duke Energy personnel.

Fieldwork for a study evaluating the seasonal distribution and summer habitat use of adult striped bass in the Edisto River continued. Three days of electrofishing were conducted in the lower Edisto River, near Bear Island, to capture striped bass for transmitter implantation

The 2020-21 Santee Cooper gillnet survey concluded in February with all eight planned sites sampled. All 24 planned sets were completed during the annual gillnetting survey resulting in the collection of 349 Striped Bass.

Staff continued collaboration with researchers at Clemson University on Bartram's Redeye Bass conservation studies. Revisions were submitted on a peer-reviewed journal manuscript for publication in the North American Journal of Fisheries Management.

During the month of February, 20,232 trout were stocked. Regular stream stocking resumed as well as continued stocking of delayed harvest waters and the Lower Saluda River.

State Lakes staff limed the following lakes: 50 tons Lake Oliphant, Mt. Lakes 1-40 tons, Mt. Lakes 2-10 tons.

Fish passage operations were initiated at the Saint Stephen fish lift.

Staff participated in 2 Carolina Heelsplitter broodstock collection trips.

Held internal planning meetings to discuss COVID precautions and develop a limited contact event for the annual Youth Bass Fishing State Championship Tournament.

Coordination (Chief's Office)

Staff attended Senate subcommittee and committee meetings to provide testimony relating to a bill reinstating blue catfish harvest restrictions in the Santee Cooper system.

Staff participated in the winter meeting of the ASMFC Shad and River Herring Board

Staff participated in a series of screening interviews as part of a search committee for a Fisheries Scientist position with the Clemson University Fish and Wildlife Coop Unit.

Staff participate in the annual meeting of Hatchery and State Lakes Staff

Staff participated in a SCDNR internal meeting to discuss opportunities under the USFWS new cormorant depredation order.

Staff participated in the monthly meeting of the Lake Paul Wallace Authority

Staff attended the launch press conference of the South Carolina Boating and Fishing Alliance.

Staff participated in a video conference with AFWA to discuss the issues currently surrounding the Lacey Act.

Staff met with representatives of Anderson County Visitors Bureau to discuss upcoming events at Lake Hartwell

Staff met with representatives from FL Fish and Wildlife Conservation Commission to discussion of collaboration opportunities with the fishing tackle industry during ICAST 2021

Staff participated in a series of meetings dealing with the administrative structure of the Southeast Aquatic Resources Partnership under SEAFWA

Staff participated in interview of intern applicants with Francis Marion University

Staff participated in an internal meeting to discuss freshwater mussel management.

Region 1

Staff continued work on the new Hartwell Fish Habitat Project permit. Staff moved equipment, prepared staging area, and began marking trees to be cut and cabled along the shoreline.

Staff participated in the Chattooga Coalition Zoom meeting with the USFS, GADNR, TU, and American Whitewater.

Staff assisted USACE with fish attractors on Lake Russell.

Staff constructed and deployed 85 bamboo buckets as part of an ongoing Habitat Enhancement Project (HEP) in the Stamp Creek and Little River arm of Lake Keowee. This project is funded by the Duke Energy habitat fund.

Equipment was evaluated and relocated in preparation of an on-site surplus equipment sale being organized by Clemson office fisheries and wildlife staff.

Staff completed construction of a kiosk for trout anglers at Jones Gap State Park.

Staff conducted repairs on work boats and had creel boats taken to a shop for warranty work.

Staff had a jack plate installed on new electrofishing boat. The jack plate was tested and improved boat performance significantly.

Creel continued as scheduled on the Saluda River below Lake Greenwood. Hired Hailey Goyette into the vacant creel biologist position. Staff prepared and submitted a summary of the Saluda River creel for the 2020 Buzzards Roost Annual Report.

Trout stocking was conducted on schedule. Trout were stocked in mountain lakes and all Delayed Harvest areas, as well as multiple stockings in the Lower Saluda Tailrace in Columbia. Bucket Stocking on Big Eastatoe Delayed Harvest section.

Reviewed and commented on the Buzzards Roost 10-year work plan.

Coordinated with OEP on the Lower Pelzer project recreation plan.

Coordinated with OEP and Jennings Environmental on the Granny Gear stormwater and FEMA flood permits on Eastatoe Creek.

Coordinated with Greenville Water System, Naturaland Trust and TU on the North Saluda restoration project.

Attended the Mountain Bridge TU board meeting.

Coord with hatchery staff on SMB brood stock collection.

Attended 8 Fisheries Coordinator conference calls.

Region 2

Daily work reports, the January monthly activity report, mileage logs, and purchasing card documents were submitted as required.

Staff partook in 7 conference calls, distributing minutes to regional personnel.

Staff participated in the Lunch & Learn OEP Event held by Lorianne Riggin, Director of the Office of Environmental Programs.

Florence staff met with Darlington City staff regarding a future planned recreation complex and pond site.

Staff provided site locations, depths, and amount of concrete rubble for eight future fish attractors at Lake Wateree to Duke Energy personnel.

Florence staff attempted Striped Bass Index sampling on the GPD River but were thwarted by equipment failure and high-water flows.

Staff conducted 3 nights of gill netting on Lake Wateree, pulling otoliths from STB, WTB, BLC, BCF & FTC for age/growth studies.

Staff electrofished Lake Monticello for 3 days to collect smallmouth bass broodstock (SMB) for the Cheraw Hatchery, discovering greater numbers of pure Alabama/spotted bass (ALA), and that hybridization between ALA & SMB, ALA & LMB, ALA & BTB (Bartram's Bass) is worse than last year's sampling. Fin clips of suspect species were taken for near-future genetic analysis.

Florence staff met with Jason Doll of Francis Marion University (FMU) to discuss a possible STB tracking/movement study on the Great Pee Dee River.

Florence staff participated in FMU student intern interviews.

Florence staff entered all winter 2020 – 2021 gill net data from Lake Wateree.

Florence staff conducted maintenance on two electrofishing boats.

Staff staged fish attractor materials for future deployment at Lake Paul Wallace and Mountain Lakes 1.

Staff informed Region 2 law enforcement personnel that the use of frozen/dead skipjack herring as bait for catfish in S.C. is legal but that the transport, holding, and sale of live skipjack herring is illegal in S.C.

Staff participated in the first of a 2-day virtual SC AFS Meeting.

Staff participated in an AFWA Lacey Act Webinar.

Staff reviewed 6 Scientific Collection Permits during the month.

Staff provided for 1 mile of litter removal at Lake Oliphant.

No weed identifications nor water quality tests were performed in Rock Hill. One weed identification & two water quality tests were conducted in Florence. Additionally, 6 pond owners were served in Rock Hill regarding: pond construction (3); weed management (1); stocking (1); otter management (1).

Six requests for fisheries information were received from the public at the Rock Hill Office. Seventeen calls regarding fisheries information were received at the Florence Office with 9 of those calls being pond specific.

Constituents seeking fisheries information were served by Ginger Ridgill, Jason Marsik, or Gatlin Edge in Florence and by Robert Stroud or Preston Chrisman 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

Conner Owens was hired to fill the vacant Fisheries Biologist position at the Eastover Office and started work on February 2nd.

Fieldwork for a study evaluating the seasonal distribution and summer habitat use of adult striped bass in the Edisto River continued. Three days of electrofishing were conducted in the lower Edisto River, near Bear Island, to capture striped bass for transmitter implantation. Six striped bass were collected one of which was large enough for transmitter implantation. Tissue was collected from all captured striped bass to genetically characterize the population.

Along with Region 2 Fisheries assisted Cheraw Hatchery with collecting smallmouth bass from Lake Monticello to replenish smallmouth bass brood stock lost to predation.

Staff worked on refurbishing fish attractors in Lake Murray and Lake Brown deploying 30 – 35 Christmas trees at four Lake Murray sites and three Lake Brown sites.

Staff attended the Joint Resource Conservation Group Meeting as part of the relicensing process for Dominion Energy's Stevens Creek Hydroelectric Project. Staff participated in the Comprehensive Relicensing Settlement Agreement Review Committee for the Parr Shoals Hydroelectric project.

On two dates staff assisted with the stocking of approximately 8,500 catchable rainbow trout at four locations into the Lower Saluda River. The February stockings conclude this year's rainbow and brown trout stockings for the Lower Saluda River.

Staff provided pond management assistance to 4 pond owners involving queries on stocking and general pond management. Staff responded to several calls or emails seeking information on boat titling, turkey tags, hiring, trout stocking and management, fishing licenses and wounded animals.

In preparation for spring standardized largemouth bass sampling a GIS application was constructed to randomly select sampling sites following the protocols in the standardized sampling plan. An initial investigation was made into the utility of ARC Collector for navigating to randomly selected sites and recording site information.

The protocols for participating in the Investigational New Animal Drug program for the use of the fish anesthetic AQUI-S were investigated to determine the practicality of participating in that program and the administration of the AQUI-S anesthetic for field-based fisheries sampling.

Second reads on 141 otoliths collected from crappie and striped bass during the 2020 sampling season were completed. The current crappie sampling design for lake Murray was evaluated to determine the amount of effort required to detect a 50% change in catch rates. Results of that power analysis indicate a new sampling design may be required to sufficiently characterize the abundance of crappie in the Lake Murray population.

Region 4

Technical/Meetings

Santee Cooper FERC relicensing RMT meeting

Staff participated in a meeting with the resource management team formed to address the biological studies required through the FERC relicensing process. Topics of discussion for the meeting included: finalizing the communications protocol, finalizing the charter, finalizing the work plans updated from the November 2020 meeting, and a presentation on the proposed dredging to accommodate higher minimum flows. As of the February 2021 meeting, Santee Cooper expects to receive the FERC license in the second quarter of 2021.

Robust Redhorse Savannah TWG call

The Robust Redhorse Conservation Committee (RRCC) did not formerly operate with a separate technical working group for the Savannah ESU. Due to the biological overlap between the Savannah and Santee Basin genetics, and the field work overlap between GADNR and SCDNR, it has been determined that creating a TWG for the Savannah/Santee ESU (formerly referred to as the Savannah ESU) would be beneficial. Levi Kaczka has agreed to serve as chair for the Savannah TWG and met virtually with Paula Marcinek of GADNR to discuss chair duties and the upcoming joint meeting between the Savannah Altamaha TWGs. That meeting will be held in March 2021.

Annual Hatchery Meeting

Staff participated in the annual SCDNR hatchery meeting. Updates were given from all state hatchery managers and those of cooperating federal counterparts. Of particular relevance to Region IV and the Dennis Center Hatchery staff was an update on the new guidelines for cormorant control as it relates to aquaculture facilities. Although

Region IV staff represent SCDNR in AFWA's bird-fish related conflict working group, the update was given by Amy Tegeler of SCDNR who has more familiarity with the biology and past control efforts of this species

Field Work

Gillnetting

The 2020-21 gillnet survey concluded in February with all eight planned sites sampled. All 24 planned sets were completed during the annual gillnetting survey resulting in the collection of 349 Striped Bass. This number is very similar to the total collected in 2019-20 (352) and 2018-19 (335). Observations from the field suggested the numbers of young (≤ 2 year old) STB were depressed in this year's collection, although this will need to be verified through ageing.

Lab work

Otolith sectioning

Staff have continued sectioning and ageing Striped Bass and Crappie otoliths as they have been collected. Ageing will conclude in March with analyses to follow to determine any significant changes in the age and length structure of the Santee Cooper STB population.

Work from home status

During the month of February while the agency remained in Phase 2 of the Covid-19 re-entry plan staff continued to work from home as practicable. Because of the increased lab/field work/shed construction schedule, staff were on-site most of the month. The region's administrative assistant has maintained a rotational work schedule which provides 2-3 office days per week to achieve tasks unable to be completed at home, while other duties able to be performed at home are done so remotely. This rotational work schedule is planned to continue until entering Phase 3 of the re-entry plan.

Statewide Research

Staff continued statewide site selection and commenced 2021 data collection for the Stream Quantification Tool development for South Carolina. Fish sampling was completed at three sites in February 2021. 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 teleconferenced with partners in LWC Hydrology, Clemson University, and TNC to identify flow-ecology relationships using fish and invertebrate data to inform the South Carolina Water Planning process.

Staff continued coordination with colleagues in the Crustacean Research and Monitoring Section on pairing of sample sites in the Savannah basin to allow incorporation of crayfishes into ongoing stream research studies.

We continued collaboration with researchers at Clemson University on Bartram's Redeye Bass conservation studies. Revisions were submitted on a peer-reviewed journal manuscript for publication in the North American Journal of Fisheries Management.

We provided input to SCDHEC staff on expected reference fish species composition in streams of the Congaree basin / Sand Hills ecoregion to help inform a watershed assessment for Tom's Branch.

Staff attended the annual (virtual) meeting of the SC chapter of the American Fisheries Society.

Staff met with a Clemson graduate student as an academic committee member.

Staff participated in the Stevens Creek RCG meeting as part of negotiations for Dominion Energy's relicense application to FERC.

Hatcheries and State Lakes Activities

Coordination

This month 4,140 grass carp were processed for sterility testing at Cohen Campbell Fisheries Center and 2 vendor permits were issued for their distribution statewide.

Staff attended several virtual meetings regarding the new USFWS rule for cormorant depredation permits.

Dennis Wildlife Center (DWC) and Bayless Hatchery

Inventory items were photographed and sent to Columbia as part of the ongoing Wildlife and Sportfish Restoration audit.

Staff attended a virtual Hatchery Managers meeting to discuss this year's fish production and stocking requests. We also spent time learning to use the new digital recording app that will be used for requesting, harvesting, and stocking fish.

Supplies were procured for the upcoming striped bass hatchery season.

Our Seasonal hourly and Intern positions were approved, and effective start dates were submitted.

Pond screens were cleaned and repaired.

Staff completed the DLEO Legal Update training.

The Fiscal Year 2022 Annual Work Plan was submitted.

Staff submitted updates/edits for the Annual Robust Redhorse SWG Report.

Staff attended a Robust Redhorse Status Document Workshop via Microsoft Teams.

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, and grounds and equipment maintenance.

Walhalla State Fish Hatchery

During the month of February, 20,232 trout were stocked. Regular stream stocking resumed as well as continued stocking of delayed harvest waters and the Lower Saluda River.

Staff continued to monitor egg, fry, and fingerling production as trout were on station in all life stages during the month. Production continued in outside raceways as expected.

Maintenance projects began on the vacant bunkhouse where interns will be staying during the summer.

Additionally, efforts were continued to be made to have the East Fork of the Chattooga River sediment removed before warmer water temperatures inhibited such work. However, various obstacles continue to cause issues.

Staff participated in the annual hatchery meeting during the reporting period.

Cohen Campbell Fisheries Center/Barnwell Substation

Performed general maintenance and upkeep at both Cohen Campbell and Barnwell substation.

Continued redesigning the shad brood and hatching system.

Performed emergency repairs to the back berm on pond 6.

Tested 2 grass carp loads.

Attended ARCGIS Survey123 Training.

Performed Preventive maintenance on the Amiad Filter System/Building.

Continued repairs on ponds 1&2.

Began striped bass preproduction protocols.

Cheraw State Fish Hatchery

A portion of the month was spent getting an electrical grid up and running to supply electricity to fish production ponds.

Additional efforts to further secure ponds and raceways from otter predation include physical barriers, and a video alarm system has been installed.

Three trips have been made to Lake Monticello to procure both smallmouth and largemouth bass brood stock.

Fish held overwinter require daily maintenance. Water quality, feeding and disease control are but some of the activities with maintaining fish stock.

Spring Stevens State Fish Hatchery

Finished plumbing main water line to new round tanks for fish house.

Finished tying in the effluent line from new round tanks to the floor drain in the fish house.

Electrical contractors finished the electrical work to tie in the pump house to the electrical in the fish house.

State Lakes

Continue to monitor and adjust water levels at Lakes Johnson, Sunrise and Wallace.

Limed the following lakes: 50 tons Lake Oliphant, Mt. Lakes 1-40 tons, Mt. Lakes 2-10 tons.

Attended Fisheries Technicians Meeting.

Monitor flooding issues from heavy rainfall at Lake Warren.

Met with engineers at Sunrise Lake about leaking pipe issues on the back of the dam.

Put out 20 tons of gravel on the road at Lake Cherokee.

Routine maintenance at all 18 State Lakes.

“Fresh Eyes” Program

Made multiple site visits this month.

Completed all monthly paperwork.

Had a medical procedure which caused a delay of several days.

Had several on-line meetings with pump engineers with North Ridge pumps regarding the feasibility of pumping sand for Walhalla project.

Outreach and Training

Staff attended multiple coordinator meetings via phone.

All staff attended the annual SCDNR Hatchery and State Lakes Meeting, which was held virtually via Microsoft Teams due to the ongoing pandemic.

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, Santee, 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 grant obligations.

Due to Covid-19 office closures all staff continued working primarily from home, with limited field work occurring. Activities during this time include participating in R-programing trainings, reading current literature, utilizing MAT online learning, watching world fisheries virtual videos, and listening to fisheries podcasts. Staff completed extensive LinkedIn Learning online classes. Additionally, staff worked on boat renovations, trailer maintenance, mending and building nets, breaking down old nets, proofing data, and project planning.

Breakdown of Project Activities

Great Pee River Sturgeon Project

February's efforts were focused on servicing the array, gear preparation, and range testing acoustic transmitters. Three trips were made to download receivers on the Great Pee Dee and Black Rivers. Three trips were made to range test acoustic transmitters on the Great Pee Dee River. Range testing this month focused on V9 transmitters in a riverine environment given high flows.

Winyah Bay Juvenile Sturgeon Project

Six sampling trips were conducted this month for a total of 22.72 100-yard net hours, using both set and drift nets. Five sturgeon were captured in the Sampit River. All fish were first captures and received a PIT tag and the standard work up. All fish were of target size, and three transmitters were implanted. Large storms and high discharge hindered sampling efforts the second half of the month. A 3-inch mesh net was built. New truck tires were installed, as well as rear brake pads and rotors. The boat received a thorough wash and wax. A console platform was created to re-secure the boat console to solid flooring. Trailer hubs and bearings were replaced for the year, and trailer work was done to replace the bunk and winch system for proper trailer loading and boat drainage.

Savannah River Sturgeon Egg Project

The Savannah Egg Project made six trips to the Allendale area of the Savannah River (rkms 168–200). Two receivers were serviced and downloaded and staff manually tracked 40 rkms. The Cooper River receiver array was downloaded and the receiver in the Pinopolis Lock was replaced. Final preparation were made on the new project boat and trailer which are now in service.

Savannah Harbor Enhancement Project (SHEP)

Savannah Harbor Expansion Project focused on major trailer repairs, net mending, scanning literature, and assisting with the Goose Creek eel project.

Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA)

This month 11 American Shad sampling trips occurred (five in the Waccamaw River and six in the Santee River). Shad scale samples were collected weekly from fish distribution houses. Samples have been obtained primarily from the Santee River system; PeeDee/Waccamaw River samples have not yet been collected due to lack of fishermen selling their catch to these businesses. Regular field equipment maintenance was performed including sending in the YSI instrument for repair and front brake repairs on the project truck. The Eel Ramp at Goose Creek Reservoir was monitored twice a week, every week this month. Pigmented eels were caught throughout the month, measured, and released.

Santee Accord Juvenile American Shad Study

Gillnetting for blueback herring continued the Santee River and consisted of three sampling trips. Four herring were caught over 2 days. Delays with shipping materials for replacement nets prevented further AMS netting this month.

Rediversion Project

American eel passage at the St. Stephen dam continued without pause this month, totaling 13 eels measured and passed into Lake Moultrie. Fish lift operations officially began on February 1, with 525 American shad, 25 striped

bass, 11 catfish, and 1 blueback herring passed during the month. Discharge followed periods of peak and no power generation (ex. 6 to 18 hour on, 6 hours off), and has remained near peak capacity (without break) for the final two weeks of the month. Downstream water levels continue to rise, and inflows from upstate sources necessitated flood releases at Santee/Wilson Dam last week. High water has washed over low-lying roads, closing Wilson's Landing and making for a near impossible drive past the hatchery to the rediversion bank on Platt Road.

Prior to flooding, rediversion bank anglers made a significant contribution to landings. During the first two weeks of the month, these were practically the only successful fishermen as water temperatures appeared to drive migrating American shad to shallow water (a few degrees warmer than bottom). Recently, boat landings have become the primary contributor to total shad landings, and early runs of blueback herring have been caught on the rediversion canal. Landings on the Cooper River Tailrace have markedly increased towards the end of February, but still appear lower than those on the rediversion canal.

Concerning fish lift operations, staff continue to discuss ongoing mechanical and timing issues with USACE personnel. All issues are relatively minor currently, and USACE staff have been cooperative in all aspects (such as clean outs, mechanical/electrical work orders, computer programming). Such has led to a fully functional fish lift, with only a temporary barrel camera malfunction disrupting normal operations. Staff remain focused on collecting landings data, determining passage, and collecting adequate numbers of biological data for paired comparison of scale and otolith ages for American shad and blueback herring.

Administrative

Interviews were conducted for a summer intern from Francis Marion University.

Meetings and Outreach

Staff filmed the St. Stephen Fish Lift and began creating a virtual fish lift tour to post online.

Staff participated multiple virtual meetings and conference calls regarding:

- Parr Dam relicensing tasks,
- Administrative staff attended the annual hatchery meeting,
- Edisto River Basin Council meeting,
- Project discussions with fish passage engineers,
- Quarterly sturgeon catch-up call with NMFS,
- Santee-Cooper Resource Management Team meeting,
- Hudson River Symposium webinar,
- The annual SC American Fisheries Society Virtual Meeting.

Mussels

- Attended and presented at Hatchery and State Lakes Meeting.
- Participated in coordinator biologist conference call.
- Attended AFWA Lacey Act webinar.
- Attended Mussel Seminar series.
- Continued culture of *V. delumbis* and *U. imbecillis* cohort 2019VdA and 2019UiA.
- Participated in 2 Carolina Heelsplitter broodstock collection trips.
- Met with Katawba Valley Land Trust to discuss silo studies.
- Met with USFS about adding a second stocking site for Carolina Heelsplitter.
- Printed Mussel Program Brochure.

Aquatic Education

Family Fishing Clinics & Certified DNR Fishing Instructors

- Continued communicating schedule changes to volunteers and the public
- Planning for upcoming clinics

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

Trout in the Classroom (TIC)

- Posting materials and lesson plans on google classroom for in-classroom teaching
- Hosted two Trout Tuesdays partnering with Riverbanks Zoo and Trout Unlimited
- Provided presentation on new format of Trout in the Zoo to Mountain Bridge Chapter of TU
- Scheduled sessions and lessons for remainder of school year

Youth Bass Fishing Club

Continued to field questions and provide assistance to schools creating clubs for the first time
Preparing materials for event
Working with vendors for equipment rental
Held internal planning meetings to discuss COVID precautions and develop a limited contact event
Sent updates of plan to coaches and posted via facebook
Collecting student rosters

Black Bass Slam

Newest Aquatic Education program
Finalized outline of program and presented to fisheries team
Developed material for website
Designed and procured participation incentives

Other

Attended AREA conference planning committee meeting as treasurer
Team building trip to Sassafras Mountain
Filming 360 tour of St. Stephens Fish lift
Met with SC High School League to plan for sponsorship of Basketball championships
Development of Public Fishing Access GIS tool
Attended Fish Passage webinar
Planning for Summer 2021 intern
Helping Roper Mountain Science Center with fish exhibit
Progress on the History of Fishing Exhibit with archaeology team
Outreach materials provided to: 7 members of the public and 15 phone interactions

WILDLIFE SECTION STATEWIDE PROGRAMS

Coordination and Administration

Participated in numerous teleconference/video conferences/meetings with Deputy Director Cope, Chief Dukes and Assistant Chiefs Swaynham and Chappellear on various topics including, coordinating staff work schedules, activities, telecommuting and field operations. Supervision of Statewide Programs staff continued. Participated in preparation of the public hearing on Nonnative Wildlife Regulations and provide testimony. Conducted interviews for a herpetology technician and a bat technician. Participated in a virtual meeting to discuss a presentation about box turtle confiscation to be presented at the Southeast Partners in Amphibian and Reptile Conservation (SEPARC). Attended the Heritage Trust Advisory Board meeting and amy Tegler's presentation on Cormorants for fisheries staff. Provided testimony at senate Fish Gae and Forestry Committee hearing on Reptile and Amphibian regulations. Attended SCDNR Board meeting. Spent considerable time preparing information and supporting documentation for nonnative wildlife regulations. Filed Regulations for Nonnative Wildlife with the General Assembly for review. Attended Collaborative to Combat the illegal Trade in Turtles monthly teleconference. Attended multiple meetings including the Southeast Deer Study group, SEPARC Turtle Trade Workshop, SEPARC annual Meeting, and 2021 CWD Stakeholder Meeting.

Big Game Program

General Activities

Responded to 39 phone calls and 79 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 (8 calls and 15 e-mails approximately 1.8 hours). Consulted directly with local officers (3) related to deer depredation, habitat management, and Deer Quota Program. Attended (virtually) in-service legal update through the SC Criminal Justice Academy (1 hour).

Complied with a Freedom of Information Act request related to black bear permits.

Attended legislative committee/subcommittee meetings (3) as needed and provided testimony on proposed legislation.

Submitted SCDHEC Controlled Substance Registration Renewal for 8 agency offices that procure and store capture drugs.

Mileage logs/receipts were scanned and forwarded to appropriate staff. PCard statements/receipts were scanned and forwarded to the PCard email address.

Participated in 6 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 entering harvest reports from cooperators. For the 2020 season 1,440 cooperators received 68,676 tags on approximately 3,062,730 acres of land. Receipt of harvest reports is ongoing with approximately 1,294 reports having been received and entered.

Attended the 44th Annual Meeting of the Southeast Deer Study Group which was hosted virtually this year by the National Deer Association due to Covid-19.

Attended (virtually) a 3-day Chronic Wasting Disease Stakeholder Update that was hosted by USDA-Veterinary Services.

Participated in a virtual Chronic Wasting Disease Workshop hosted by DJ Case on behalf of the Association of Fish and Wildlife Agencies (AFWA).

The 2020 Deer Hunter Survey required ongoing effort during the month primarily related to daily receipt and sorting of completed survey forms. A purchase order for data entry was procured. Forms will be shipped to the data entry company the first week in March.

Attended (virtually) the Southeast Deer Committee Meeting and gave an update on the SEAFWA Cervid Working Group Report to the SEAFWA Wildlife Resources Committee.

At the request of the University of Wisconsin-Milwaukee, an effort was made to collect DNA samples from 2 deer in each SC county during the 2020 season. During the month these samples were compiled, proofed, and data was entered. The samples were then packaged and shipped to the university.

Continued working with Cornell University on a project to develop a Chronic Wasting Disease Risk Assessment and Surveillance Plan. As part of this project Cornell recommends that deer processors and taxidermist in the state be interviewed to determine numbers per county, number of deer processed/mounted, how carcass/parts are disposed of, etc. Staff has been working the last few months to develop a database of processors and taxidermist. During the month remaining surveys were conducted. Overall, approximately 146 processors and 95 taxidermists were interviewed across the state. Data is being compiled and will be forwarded to Cornell.

Work on the cooperative deer and coyote study with Clemson University Department of Forestry and Environmental Conservation was ongoing during the month. Year 3 trapping efforts for deer and coyotes began during the month requiring considerable logistical assistance. Coyote trapping was completed with 24 coyotes receiving GPS units. By months end 22 deer had been captured with 18 females receiving GPS units. Additionally, highlights from this study were drafted for upcoming social media posts to inform the public of this important study.

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"

The annual cycle for Urban Deer Management Permits to remove deer from resort/residential communities concluded at months end. For the cycle, approximately 12 communities received permits to remove a total of approximately 505 deer.

Deer Depredation Permits were entered as they were received.

Measured 13 sets of antlers in the office by appointment.

Wild Turkey Research and Management Project

Significant time was devoted to ongoing work related to development of the SC Game Check system which is the name of the electronic harvest reporting system for turkeys which will be in place for the 2021 season. This included planning and information sharing between IT and The Sourcing Group related to development of the Smartphone App. Ongoing edits continued with the App developer. Ongoing testing of both the Smartphone App and Call Center took place during the month. Ongoing discussions and planning were held with the Office of Media and Outreach related to informing and educating the public on SC Game Check and the harvest reporting requirement for turkeys this season. By months end the iOS version of the app had been place in the App Store and the Android version was still under review by Google Play.

Coordinated with Graphics and The Sourcing Group to develop an insert that will accompany each set of 2021 turkey tags that provides information on SC Game Check and the turkey harvest reporting requirement that begins this year. The initial fulfillment of tags for the 2021 turkey season began near the end of the month.

The 2020 Turkey Hunter Survey required effort during the month with ongoing statistical analysis and generation of the final report.

The annual Summer Turkey Survey required effort during the month primarily related to data editing, entry, and analysis.

The wild turkey gobbling chronology study with Clemson University Department of Forestry and Environmental Conservation continued during the month. Current efforts are directed at data analysis from both 2019 and 2020 field seasons.

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. During the month supplies including rocket net charges and batteries were acquired and shipped to the study. Tapping continued during the month with approximately 75 birds having been caught to date. Approximately 45 GPS units have been deployed on turkey of certain ages/sexes.

Black Bear Research and Management Project

Ongoing time was devoted to the annual Bear Hunter Survey primarily related to data entry associated with completed surveys.

Upstate - Staff handled 3 bear complaint calls/sightings. Bears are not moving much this time of year. Talked to a Clemson graduate student about bear research needs in South Carolina.

Furbearer and Alligator Program

Furbearer Project

Responded to twelve nuisance wildlife complaints. Seventy-seven other technical assistance contacts were also made during this time via phone and email.

Participated in a multiple-day virtual meeting of the AFWA Fur Resources Technical Working Group meeting in early February to discuss and select recommendations on trap testing priorities for this upcoming testing season and to discuss other national furbearer issues.

Coyote trapping for the coyote and deer interaction study was completed this month with 24 additional coyotes being collared.

Assisted the Cheraw fish hatchery with trapping advice and assistance with an ongoing otter problem where otters were killing brood stock.

A request for the use of the Oral Rabies Vaccine was received by Beaufort County. That request is currently under consideration.

A least weasel sighting has been reported from Cherokee County. Photographic evidence appears to confirm the sighting. A least weasel differs from the long-tailed weasel in it has a shorter tail and also does not have a black tip on its tail.

A virtual news interview on coyotes and the coyote breeding season was given to Connor Ingalls of WPDE.

Two FOIA requests were received this month, one dealing with coyote permits and the other with captive wildlife.

A new trapping bill (S.556) was introduced this month that would drastically change the current trapping laws. A synopsis of the language was provided to DNR Wildlife Section staff.

Other

Participated in the review process for questions regarding the RFP for the new DNR licensing system that is currently being solicited.

Assisted with deer capture efforts for the coyote and deer interaction research project in McCormick County.

Permitting and Lottery Hunt Program

Biologist Kearsse continued to review, and process permits. These permits consisted of 53 field trial permits, 2 falconry permits, 5 bird banding permits, 1 migratory bird, 8 furbearer depredation permits, 11 scientific collection permits, 37 Predator Management Permits, 1 special use WMA permit, and 1 airport and airfield depredation permit. Continued working on new native turtle permits following the new law that provides protection of South Carolina's native reptiles and amphibians (Act 177).

Attended one meeting for the new agency wide customer service portal to answer solicitation questions submitted by vendors. Had a WHEP meeting on March 12th to discuss upcoming virtual WHEP State Contest in May. Attended migratory game bird meeting to discuss 2021-2022 season dates and limits and attended a double-crested cormorant webinar hosted by the U.S. Fish and Wildlife Service. Attended a virtual 2-day SEPARC (Southeast Partners in Amphibian and Reptile Conservation) workshop on illicit turtle trade.

Inspected the facilities of a master falconer that moved to Aiken from New York.

Assistance was provided by email or phone concerning lottery hunts, permits, and other general wildlife questions.

Alligator Project

Information regarding South Carolina's approach to contracted alligator agents and how we deal with large communities was provided to the alligator biologist in Mississippi.

Biologist Hart Activity:

General Activities and Accomplishments

- Monitored movement of GPS tagged alligators.
- Entering and organized Nuisance Harvest Reports
- Finalized improved captive alligator applications
- Visited five captive alligator permit holders up for renewal
- Issued 1 transport permit
- 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
- Updating nuisance alligator agent protocols and region maps.
- Hosted yearly Nuisance alligator meeting for coordinators
- Sent out tags and permits for all emergency response alligator agents
- Scheduling and organizing new purchasing and contracting protocols for nuisance alligator agents
- Working on harvest summaries and reports for all types of harvest.
- Attended SEPARC virtual conference and judged poster competition

Alligator Program Biologist Accomplishments

- Display/Transport Permits - 4
- Private Lands Permit Packages approved - 0
- Nuisance Calls - 20
- Nuisance Permits- 15
- Media Inquiries- 0
- Presentations- 1

Herpetology Conservation Program – Biologist Grosse

General Activities and Accomplishments

- (Four) Turtle Tuesday Social Media Posts – Facts each week about turtle species in SC
- Senate Fish, Game and Forestry Subcommittee Meeting: Reptile and Amphibian Regulations Testimony
- Processing Froglogger Data – Cainhoy, Santee Coastal, Bonneau Ferry, Groton
- Committee to Combat the Illegal Trade in Turtles virtual meeting regarding state turtle laws
- ARU virtual Training for USFWS and SREL
- SEPARC-PARC TNT virtual meeting
- SEPARC virtual meeting
- National Exotic/Invasive Species Horizon Scan Virtual Meeting: Was invited to assist and rank exotic species (reptiles) to determine the next most likely invaders throughout the US. The entire project covers all taxa throughout the US

Collected Gopher frog eggs from a private property in Berkeley County and transported to Riverbanks Zoo. Riverbanks will grow tadpoles to metamorphs (Headstart) in order to increase survival and individuals will be released at the Webb Wildlife Center after restoration work (CSWG below) is complete. Additionally, a small number of frogs from each clutch will be kept by Riverbank to help build an assurance colony/brood stock to aid in the headstart process in the future, if needed.

Transferred 3 yellow-bellied sliders from a pond in Lancaster to the SC Aquarium. These individuals have the worst shell rot I've ever seen, which is only comparable to a single lake in GA and LA (according to the pathologists). Over a dozen sliders in the lake have been found with this severe shell rot in addition to multiple that were found dead. It's thought to be caused by a newly described bacteria, though vets at the SC aquarium took biopsies and sent to SCWDS for confirmation. Coordinating one more transfer of painted turtles and stinkpots to SC aquarium as well. Although they do not show outward signs of the shell rot, its possible this bacteria impacts them in other ways.

McCrary/Clarke's Hill Herpetological Surveys - Hiring paperwork/interviews Herpetology technician
Catawba-Wateree Herp Surveys – No activity during the month

Multi-State Sandhills Restoration Project – Tillman - Forest Service has been out and plans to burn the restoration areas during the growing season

Multi-State Wetland Restoration Project – Webb - Working with Gary and April to line up contractors to do the restoration work on 3 wetlands at the Webb Center

Green Salamander Population Assessment across Forest Disturbance Gradient – No activity during the month

Patchnose Salamander Environmental DNA - Field surveys beginning

Statewide Bat Program

Conducted bat surveys at Table Rock State Park: total of approx. 350 Tri-colored Bats, 2 Little Brown Bats, and 3 unknown Myotis were counted at the cave, making the largest known hibernating Tri-colored bat population in the state. Attended all day virtual SBDN meeting. Interviews for 6 month Bat Technician position. Analyzed Lake Wateree SP bat calls: no convincing N. long-eared bat calls, but Southeastern bat locations will be hot spots to net. Submitted abstract for talk 2021 Ecological Society Meeting.

Statewide Bat Monitoring (Bat Biologist, Jennifer Kindel, WNS and SWG grants)

- Feb 2: Hampton camera ideas/survey plan. Wrote up notes and emailed.
- Feb 3: Long cane FS culverts survey, WNS environmental testing for NWHC. No bats.
- Feb 4: Bimonthly WNS call
- Feb 5: Bats in culverts survey [FB post](#), 97 likes, 26 shares
- Feb 8: Hampton full meeting. Wrote up notes and sent; scheduled next meeting (on site).
- Feb 9: Rope practice for TR cave survey
- Feb 12: Silver Bluff Audubon Sanctuary: set up temporary and humidity sensors in and near bat tower for year-long survey.
- Feb 10: Conducted TR cave survey. Total of approx. 350 Tri-colored Bats, 2 Little Brown Bats, and 3 unknown Myotis were counted. Currently, Table Rock cave harbors the largest known hibernating Tri-colored bat population in the state.
- Feb 18: Bimonthly WNS call
- Feb 22: Five virtual Teams interviews for Bat Tech 6 month position, assisted by Will Dillman and Morgan Hart.
- Feb 23: Conducted TR rock face survey with Carolina Climbers Coalition, rappelling 400 ft of Stonewall Action route checking crevices for E. small-footed bats. None found.
- Feb 24: SBDN Executive meeting; first as board member at large
- Feb 25: 2021 SBDN virtual meeting
- Processed Bat Tech 6-month position applications; emailed applicants, set up interviews, ran interviews, called references, filled out all paperwork, chose top applicant.
- Submitted AFWA request
- Table Rock survey field pre and post prep, including WNS decon on all Table Rock gear. Reported on results of TR cave survey to SCPRT.
- Approved bat multiple scientific collection permits
- Analyzed Lake Wateree SP MYSE calls: no convincing MYSE calls, but MYAU locations will be hot spots to net.
- Meeting w/Lydia Moore at PBC on Teams, re: coastal culvert surveys, virtual training, tablet, access to the app, shortened version of protocol, alligator issues, volunteers
- Rescheduled Santee cave survey due to rain
- NABat no cost extension subrecip paperwork completed.
- Approval from Lake Wateree SP manager about Jul 12 - Aug 6 netting
- Completed PO paperwork/ordered Anabat swifts
- Requested housing at Santee Coastal for next day meeting at Hampton Plantation
- Submitted abstract for 2021 Ecological Society Meeting
- SCDOT Gray Bats in 2021 perspective – completed and sent to Anna
- SCDOT Gray Bats in 2022 proposal - rough draft sent to Joe
- Answered 4 calls/emails about bats and volunteering after SCETV show
- Responded to multiple bat information calls

Hourly technician, Maria Monarchino

- Deployed 16 Anabat acoustic detectors for two weeks each at Bonneau Ferry WMA
- Conducted Table Rock State Park cave survey
- Conducted Table Rock repelling survey
- Attended Southeastern Bat Diversity Network annual virtual meeting
- Conducted equipment inventory and began preparing equipment for summer surveys
- Met with Hampton Plantation and solidified camera type needed to monitor Rafinesque big-eared bats.
- Equipment was ordered as a result
- Began compiling winter culvert and acoustic survey data
- Began reevaluating winter survey datasheets and how to combine them with NABat forms in Survey123
- Attended monthly white nose syndrome conference calls

SWG: NABat Project (Clemson MS student/Dr. Susan Loeb)

- Anna Siegfried uploaded all NABat documents from past two years to dropbox. Looking at those now.

Small Game Program

General Small Game Program Activities and Accomplishments

All Small Game Program staff practiced social distancing and worked remotely.

Responded to a minimum of 24 phone calls and numerous emails requesting technical assistance

Mileage logs and Pcard statements received to date were filed in current personnel files.

Program Leader Hook and Assistant Leader Small participated in a Multistate Ruffed Grouse virtual meeting to discuss abundance and life history, current research and research priorities for the Eastern Ruffed Grouse Working Group.

Assistant Leader Small reviewed documents to be presented at the Multistate Ruffed Grouse virtual meeting as a part of the Eastern Ruffed Grouse Working Group.

Program Leader Hook and Assistant Leader Small participated in the annual Eastern Woodcock Migration Project banding operations along with Region 1 and Region 4 Wildlife Staff.

Mileage logs/receipts were scanned and forwarded to Lindsay Wood. PCard Statements were scanned and forwarded to the PCard email address.

Answered several shooting preserve calls/questions for potential new applicants. Assisted Representative Bill Hixon with questions he had regarding the approval of a new shooting preserve in Edgefield County. Officer Baker delivered a safety inspection approval to my office for an inspection that was conducted for a new shooting preserve application in Edgefield County.

Assisted several customers with quail breeder license questions and applications were forwarded.

Created a requisition for Biologist Krieg for Roundstone Native Seed.

Assistant Leader Small organized and compiled online fox squirrel sighting entries for the annual biennial fox squirrel sighting survey.

Posted 1 social media post on SCDNR Facebook page: Rabbit Hunter Survey Request (2/5).

Mourning Dove Project

Assistant Small Game Biologist Small updated mourning dove band recovery information from bi-weekly reports and completed quality control for accuracy on reward bands entered.

Program Leader Hook and Assistant Leader Small participated virtually on the SCDNR Migratory Game Bird Committee meeting to discuss 2021-22 migratory bird seasons.

Assistant Small Game Biologist Michael Small compiled GIS data for public dove fields and trapping locations for analysis.

Program Leader Hook and Assistant Leader Small participated virtually in the Eastern Management Unit Dove Technical Committee meeting.

Bobwhite Quail Project

Program Leader Hook participated in a virtual National Bobwhite Conservation Initiative Steering Committee meeting where he serves as the Chair Elect.

Program Leader Hook participated in a virtual National Bobwhite Conservation Initiative Executive Steering Committee meeting where he serves as the Chair Elect.

Program Leader Hook participated in a landowner site visit in Kershaw county and prepared a management plan for the individual.

SCBI Biologist Carmichael picked up ragweed and partridge pea seed at Wannamaker Seed Co. and delivered it to Indian Creek and to Unit Biologist Carroll.

SCBI Biologist Carmichael and Program Leader Hook met with USFS Staff and SCDNR Regional Biologist Drennan on the Sumter National Forest Long Cane District to discuss a potential bobwhite quail focal area on the forest.

SCBI Biologist Carmichael inspected the Delta WMA with Indian Creek Biologist McClain to view habitat conditions.

SCBI Biologist Carmichael and Program Leader Hook

Program Leader Hook and SCBI Biologist Carmichael attended the virtual Indian Creek Habitat Enhancement Committee meeting.

Program Leader Hook and SCBI Biologist Carmichael participated in a virtual meeting with the US Forest Service SC State Office staff and Quail Forever personnel to discuss future funding needs for the Indian Creek Coordinating Biologist position.

Program Leader Hook and SCBI Biologist Carmichael participated in a virtual meeting of the National Bobwhite Technical Committee, Forestry subcommittee.

SCBI Biologist Carmichael viewed a webinar organized by the Association of Fish and Wildlife Agencies and the USFDA, Farm Service Agency on the Conservation Reserve Program (CRP) Forest Management Incentive.

SCBI Biologist Carmichael and Program Leader Hook participated in a virtual meeting with the Francis Marion Nation Forest District Ranger and wildlife biologist Clark to discuss the Price Landing Focal Area project.

SCBI Biologist Carmichael reviewed a flyer on the CRP Forest Management Incentive produced by the National Bobwhite Conservation Initiative and distributed to the SC Farm Service Agency State Office and the SC Forestry Commission.

SCBI Biologist Carmichael participated in a virtual meeting with several Indian Creek Committee members organized by the US Forest Service Enoree District Ranger, to begin planning for a new Joint Chiefs proposal submission.

SCBI Biologist Carmichael reviewed a proposal developed by the Clemson University Department of Forestry and Environmental Conservation to host the National Bobwhite Conservation Initiative and provided comments to Dr. Greg Yarrow.

SCBI Biologist Carmichael viewed a webinar organized by the Natural Resource Conservation Service on the Working Lands for Wildlife, Bobwhite Quail Initiative.

SCBI Biologist Carmichael viewed a webinar by Quail Forever to announce the new "Call of the Uplands" initiative.

Farm Bill/Ag Liaison Activities

Farm Bill Biologist Krieg completed 3 site visits in Florence, Lee, and York Counties and wrote 2 management plans for potential EQIP and CSP applicants.

Farm Bill Biologist Krieg met with farm bill participants in Lee County to discuss future EQIP possibilities.

Farm Bill Biologist Krieg participated in a video documenting a Youth Hunt and explaining the current state of wild quail at Halidon Hill Plantation in Charleston County.

Farm Bill Biologist Peeples assisted Calhoun, Clarendon, Richland and Orangeburg county Natural Resources Conservation Service offices with program applications and planning.

Biologist Peeples visited with landowners across the 4 counties to assess the goals and conditions of the properties and make recommendations on improvements to reach landowner objectives, matched with the lands ability to produce those objectives.

Biologist Peeples also met with landowners to certify practices completed within NRCS programs and submitted those certifications for payment.

Biologist Peeples spent a 3 days on the Oak Lea Wildlife Management Area to determine what management activities can take place. Due to wet conditions field border delineation was the only activity practical. Plans include addressing woody growth in field borders.

Biologist Peeples also assisted the Clarendon County Soil and Water District in identifying wetland tree species on their Pocotaligo River Nature Trail. Peeples also went over different self-lead activities for both adults and children to make the trail interactive with its visitors.

Nongame Bird Conservation Program

Migratory Landbird Project

Worked with bird conservation program staff to develop ways to complete work during the Covid-19

restrictions and communicated the need for high priority projects to the WFF Assistant Chief.

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.

Worked with SCDNR web and media staff to develop falconry webpages.

Continued organizing a virtual Atlantic Flyway meeting hosted by SCDNR.

Worked closely with FWS and SCDNR law enforcement regarding 2 bald eagle protection issues.

Presented an overview of double-crested cormorant and fish related conflicts and information on the FWS Special Permit to SCDNR and FWS staff at their annual Hatchery and State Lakes meeting.

Worked with SCDNR fisheries staff and wildlife services to figure out the logistics of the double crested cormorant depredation permit.

Organized 3 virtual meetings with the national and eastern region Partners in Flight coordinators to discuss ways the Atlantic Flyway can help support the development of an Eastern Region Conservation Delivery Specialist position.

Participated in FWS webinar that provided an overview of the new special permit for double crested cormorant conflict management.

Provided information for 2 social media posts highlighting nongame bird projects.

Reviewed and provided comments on the NRCS Threatened and Endangered Species Consultation Process.

Assisted with hiring a RCW seasonal technician and RCW biologist II.

Compiled information on nongame bird and waterfowl wildlife diseases for the SEAFWA Wildlife

Diversity Working Group.

Hosted Atlantic Flyway virtual Executive Committee meeting.

Wrote support letter for project titled "PFAS bioaccumulation in coastal seabirds from Charleston, SC" for Clemson University.

Participated in 2 day Golden Eagle Working Group meeting that included state and federal government, NGO's and wind facility developers.

Helped develop comment letter to USFWS regarding a delay in finalizing changes to the interpretation of the Migratory Bird Treaty Act.

Lead effort to gather information regarding solar energy concerns to help direct future efforts by the Atlantic Flyway to address those concerns.

Worked with SCDNR media staff on 3 social media posts.

Approved 4 permits to further bird research in South Carolina.

Provided technical assistance on 5 bald eagle nests.

Worked with ACJV to develop ideas for a Black Rail Competitive State Wildlife Grant proposal.

Monitored loggerhead shrike on 3 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 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 300 calls and emails related to technical assistance and other bird conservation efforts.

Red-cockaded Woodpecker Project

Conducted site visit to Webb Center WMA and began training one member of SCDNR staff in artificial cavity insert replacement/installation.

Conducted survey of two potential Safe Harbor properties in Hampton and Chesterfield Counties.

Visited Lee State Park to survey relic RCW trees and discuss past, current and future management.

Reviewed and provided comment on two state banding permits.

Revised and finalized 2 draft Safe Harbor Agreements.

Mailed 2 original Safe Harbor Agreements to landowners for signing.

Reviewed and brought 6 original Safe Harbor Agreements downtown for DNR signing.
Emailed second request for 2020 Safe Harbor Reports to landowners/consultants.
Conducted Safe Harbor Site Visits to 12 enrolled properties in Williamsburg, Chesterfield and Berkeley Counties.

Discussed with landowners/managers the transfer needs of several Safe Harbor properties that have changed ownership.

Conducted 3 interviews for RCW Technician position.

44 phone calls and 132 emails were received and responded to regarding Safe Harbor and wildlife assistance and information.

Waterbird Project

Reviewed and provided comments on the USFWS Wood Stork Species Status Assessment. This document will provide foundational science for informing listing determinations, consultations, grant allocations, permitting, and recovery planning.

Organized virtual meeting with biologists throughout the Atlantic and Gulf coasts to share information and ideas about the use of irrigation to create habitat for Eastern Black Rails. Learned about initiated and future projects throughout the subspecies range.

Researched irrigation equipment and techniques. Prepared multistate competitive State Wildlife Grant proposal to request funding to experimentally implement irrigation on a SCDNR property. Completed site visit to plan future irrigation project.

Participated in site visit with Ducks Unlimited and USFWS biologists to plan infrastructure improvements on a private property. Assessed suitability of vegetation structure and microtopography. These improvements would allow the landowner to manage habitat for Black Rails in one of their impoundments.

Participated in monthly virtual meeting for the Firebird Project (Gulf Coast rails), which included the discussion of survey protocols and acoustic sampling. Prepared and shared example Black Rail call type audio files and spectrograms to aid in the standardization in terminology throughout subspecies range.

Compiled ARU (autonomous recording unit) files from SCDNR and Black Rail researchers from several states for analysis by Cornell/BirdNET scientists. SCDNR's extensive dataset from wetlands occupied by Black Rails will be used for testing the capabilities of BirdNET, a research platform using computer learning to identify bird calls within large acoustic datasets. If the platform produces accurate results, it may be used to analyze past and future recordings to determine site occupancy.

Installed and maintained arrays of research equipment for Black Rail monitoring. Reviewed and updated IDs for camera trap photos collected during current and previous field seasons. 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. Summarized data.

Assisted colleagues in other states who have initiated or are planning projects to monitor Black Rails.

Responded to data requests. Provided rookery and stork banding data to other natural resource professionals.

Made a site visit to Dewees Island to review shorebird use of borrow areas that are associated with the front beach breach repair permit.

Met with Dr. Erica Nol and graduate student Ellen Jamieson of Trent University to discuss direction of manuscript about research on shorebird use of Bulls Island in Cape Romain NWR.

Met with Dr. Pat Jodice and Ph.D. candidate Bradley Wilkinson about future projects investigating toxins and pollutants in pelican eggs.

Met with other SCDNR staff to discuss horseshoe crab monitoring and research.

Gave presentation about Arctic nesting shorebirds. The presentation had 80 viewers and was part of the Port Royal Sound Education Series.

Met with Erin Weeks and social media coordinator at Cornell Lab of Ornithology to discuss social media strategies for promoting the Whimbrel film that Cornell is developing for SCDNR.

Visited Lighthouse Inlet Heritage Preserve with partners from Audubon SC.

Continued meeting weekly one-on-one with Nolan Schillerstrom from Audubon SC to build stewardship program. Co-hosted a site leader meeting with 10 people representing existing stewardship programs. We recapped 2020, gave updates about plans for 2021, and talked about Covid-19 protocols and other safety measures for the upcoming season.

Continued conversations with local site leaders about shorebird stewardship programs and co-hosted a steward training with leaders on Seabrook Island. Purchased a storage box for Seabrook stewards to store supplies on site this season. Visited Kiawah Island to learn the beach and shorebird locations.

Continued edits on the shorebird steward manual, presentation, and newsletter.

Gave Seabird Identification Presentation through SCDNR's "Bringing the Outside In" Program.

Continued to conduct and enter data from International Shorebird Surveys (ISS) at Capers Island and Bird Key. Surveys are part of a larger study to better estimate shorebird populations during migration throughout their range.

Conducted final month of winter Piping Plover surveys at 4 sites for Captain Sam's Inlet relocation project and Hunting Island State Park renourishment project. These surveys provide information about location of banded birds, abundance, and migratory patterns.

Continued meeting virtually with staff from SCDNR Public Information Office/Social Media to discuss ideas for a Public Service Announcement about dogs on beaches and the harm caused to birds. Finalized the schedule for media posts and the Dog PSA campaign will begin on March 1st.

Completed paperwork for mammal trapping to be conducted in April at Deveaux Bank Seabird Sanctuary. Trapping is a management method to decrease predators on seabird and shorebird eggs and chicks.

Began "chick tent" project with Huntington Beach State Park. State Park staff will have school age children paint and build the tents and thus educate about the needs of SC seabirds and shorebirds. The tents will be used to provide shade and protection in Least Tern colonies at ground and roof sites.

Began preparations at alternative nesting sites for Least Terns. Preparations include set up of shade structures, checking fencing and drainage openings, and first of season contacts with site owners and managers. Alternative nesting sites require adaptations to facilitate nesting success by Least Terns.

Met virtually with Whimbrel Project team to discuss and set plans for upcoming spring project.

Met with students from University of South Carolina conducting Red Knot surveys on Seabrook and Kiawah Islands. Students will re-sight banded birds, count flocks, and complete a super population estimate of these migratory shorebirds that stage in South Carolina in the spring.

Gave a virtual presentation at the monthly Seabrook Island Birders Club meeting. The presentation focused on the unique habitats of Seabrook and the island's importance to several species of shorebirds. The talk was a kickoff for recruiting residents to join the Seabrook Island shorebird stewardship campaign and 55 participants attended.

Met with staff from the SCDNR Marine Resource Division to help choose sampling locations for their project identifying and categorizing shorebird foraging habitats. This study is designed to help inform future permitting and beach management plans.

Continued with maintenance to Coastal Bird Project boats, storage, and supplies.

WILDLIFE SECTION

Regional Operations Activity Summary

Wildlife technical guidance was provided to 357 contacts along with 18 technical guidance site visits. Six (6) management plans were written. Three (3) program/presentations were given with 103 people in attendance. Other agencies were assisted on 43 occasions requiring 58 person-days. Four (4) environmental reviews were conducted. Ninety-eight (98) nuisance wildlife complaints (including 15 bear and 25 alligator calls) were handled. Fourteen (14) nuisance site visits and 5 alligator site visits were made. Four (4) news releases were submitted and 1 interview was granted. Field studies required 78 person-days and data analysis required 71 person-days. Twenty-one (21) quail surveys, 60 bat surveys, and 3 other surveys were conducted. One hundred (100) RCW cavity acres were checked. Eleven (11) other birds were banded. Forty-one (41) antlers were scored. One (1) hunt club analysis was conducted. Eighty-seven (87) woodduck boxes were checked and 13 woodduck boxes were installed. There were a total of 105 water level management days. There were 3 social media posts reaching 100 people via like/shares.

Heritage Preserve (HP) Habitat Management Summary

Heritage Preserve staff conducted 299 site visits. Exotic control occurred on one (1) heritage preserve. Forest herbicide occurred on 12 acres. Six (6) acres were mowed/bushhogged, 34 miles of trails were maintained, 1 mile of road was mowed and 8 miles of roads were scraped. Eight (8) miles of firelanes were disced and three (3) miles of boundaries were cleared and/or painted.

Wildlife Management Area Habitat Management Summary

Field agricultural activities on WMAs included 76.5 acres mowed/bushhogged, and 246 fields/agricultural acres were disced. Eight-one and one-half (81.5) miles of roads were scraped and 0.5 mile of road was graveled.

Six (6) miles of trails were mowed. Three (3) miles of dikes were moved and 2 miles of dikes were retopped. Prescribed burning occurred on 757 forest acres and 800 marsh acres. Forest herbicide occurred on 1 acre and agriculture herbicide occurred on 39 acres. Eighty-one and one half (81.5) miles of firelanes were disced. Ten (10) acres of annuals were planted. One hundred eighty-two (182) WMA signs were posted and 96 other signs were posted. Sixteen (16) gates were refurbished or installed. Two hundred thirty (230) WMA phone calls were answered.

WMA Hunts and Visitation

Marsh WMA – 6 visitors, of which all were hunting or scouting. No animals were harvested.

Woodbury WMA – 10 visitors, of which 9 were hunting, and 1 was using Ham radio. Hunters harvested 2 squirrels.

Pee Dee Station Site – No activity during the month.

Great Pee Dee HP – 51 visitors, of which 43 were hunting, 3 fishing, and 5 sightseeing. Hunters harvested 6 raccoons, 1 squirrel, and 3 hogs.

McBee WMA - 22 visitors, including 18 hunting, 1 hiking, 1 scouting, 1 fishing and 1 birding. Four rabbits were harvested.

Draper WMA- 12 total hunters – 7 squirrel hunters (5 harvested), 5 rabbit hunters (7 harvested)

Worth Mtn. WMA - 48 total users –15 squirrel hunters (24 harvested), 5 raccoon hunters (1 harvested), 2 hog hunting, 2 crow hunting, 3 fishing, 10 hiking/walking, 11 sight-seeing

Broad River WMA - 3 youth waterfowl hunters (4 harvested)

Liberty Hill WMA - 84 visitors, including 31 hunting, 28 scouting, 10 sightseeing, 1 fishing and 14 hiking. 12 squirrels and 1 raccoon were harvested.

Angelus Bird Dog Training Area - Three bird dog trainers released 14 quail and harvested 13 birds. One hunter harvested 4 crows.

Landsford Canal FLA Bird Dog Training Area - 1 user (8 pigeons released; 8 pigeons harvested)

Belfast Wildlife Management Area: Small Game: 34 hunters

Enoree Waterfowl Area - No activity during the month

Waterfowl Youth hunts - 4 hunters harvested 1 duck

Wateree River Heritage Preserve Wildlife Management Area - Small Game: 97 hunters

Crackerneck Wildlife Management Area - Harvest: 24 feral hogs, 2 Eastern cottontail rabbits, 8 Eastern gray squirrels, 2 bluegill, and 1 largemouth bass

Santee Cooper Wildlife Management Area - Duck: 4 Hunters harvested 3 wood ducks, crippled 1, and shot 26 times.

Bonneau Ferry WMA - On 24 days of small game hunting, 19 hunters harvested 0 reported game. On 1 youth duck hunt (TOMO), 4 hunters harvested 9 ducks.

Sandy Beach Waterfowl Area - On 1 Youth Day duck hunt, 2 hunters harvested 5 ducks.

Bear Island WMA - Small Game Hunts: 173 Hunters harvesting 53 rabbits, 55 snipe and 3 raccoons.

Youth Waterfowl Hunt - 10 Hunters harvesting 16 ducks.

Botany Bay WMA - Small Game Hunts: 51 Hunters harvesting 4 squirrels and 18 raccoons.

Donnelley WMA - Small Game Hunts: 72 Hunters: 20 squirrels, 6 raccoons and 4 hogs. Youth Waterfowl Hunt: 4 Hunters harvesting 7 ducks.

Hamilton Ridge/Palachucola/Webb WMAs - Small Game Season- 24 Days, 95 Total Hunter Days and 10 squirrels harvested. Quail Hunts- 4 days, 14 parties (17 Hunters), 25.1 hours of total hunting effort, 3 coveys found, and 0 birds harvested.

Wildlife Section Activities and Accomplishments (Chief)

Meetings attended during the month (in-person or virtual) included the monthly DNR Board meeting, the quarterly Heritage Trust Advisory Board meeting, a Senate Fish, Game and Forestry Subcommittee meeting, a Wildlife Section Migratory Game Bird Committee meeting, an Atlantic Coast Joint Venture Executive Committee meeting, a meeting with Deputy Director Cope and Assistant Chiefs to discuss various administrative and logistic issues, a meeting between Chief and Assistant Chiefs to plan FY22 budgets, a meeting of the Executive Board of the South Carolina Chapter of the Wildlife Society, .

Conducted site visits and infrastructure assessments of Beaverdam Creek Waterfowl Area and Clemson Waterfowl Area for purpose of planning repairs and enhancements.

Visited Bald Rock HP to assess visitor use and vandalism problems.

Filed Emergency Regulations for opening turkey season at Santee Coastal Reserve WMA.

Reviewed and edited two draft WMA management plans.

Provided requested documents for one FOIA request.

Responded to a minimum of 16 miscellaneous technical guidance calls during the month.

Administrative duties related to the migratory bird program and maintaining agency bird banding permit included: Ordering bands for banding operations, 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, expenditures, questions, tele-commuting, and field operations. Made 3 trips to Columbia to meet with senior staff and perform administrative duties. Participated in a Wildlife Senior Staff meeting. Completed on-line DLEO Legal Update training. Attended SCDNR Migratory Bird Committee meeting on-line. Met with Region 3 staff at Wateree Range, Union staff in Union, Greenwood staff in Greenwood, Jocassee staff at Jocassee and Clemson staff in Clemson on vehicle policies. Checked dove field clearing at Cliff Pitts. Checked trail work at Peters Creek HP. Checked road work needs on the Musterground portion of Jocassee. Toured Chief Dukes on issues at Beaverdam WA, Clemson WA and Bald Rock HP. Checked burning on Jocassee.

Completed intern hiring paperwork and forwarded to HR. Continued budget work for FY22. Reviewed budget documents, personnel actions, purchasing requisitions, purchasing card submissions, media releases, HP property land trade proposal, facility transfer, environmental permits, travel requests, vehicle assignments, and proposed acquisitions. Checked WMAs including Beaverdam, Love, USFS Andrew Pickens, Nine Times, Fant's Grove, Keowee, and Jocassee. Checked HPs including Peters Creek, Wateree River and Bald Rock.

Regions 2 & 4 Assistant Chief Activities

Continued to spend significant time dealing with the Covid-19 pandemic outfall.

Met and/or spoke with Regional Coordinators Stokes and Farrell multiple times to discuss various management issues and other topics. Conducted multiple conference calls with Chief Dukes, Deputy Director Cope and assistant Chiefs Swaynham and Dillman on various topics. Traveled to Columbia twice to meet with Chief Dukes, and Deputy Director Cope on various topics. Continued to provide comments and information regarding the rezoning of a parcel for hospital use near Lewis Ocean Bay. Continued to provide comments on the Grand Strand Water and Sewer waterline that proposes to traverse through Lewis Ocean Bay HP. Conducted staff meetings with all staff at the following locations: Samworth, Yawkey, Bonneau Ferry, Webb, Donnelley, Santee Coastal and Camden. Participated in the Heritage Trust Advisory Board meeting. Participated the DNR Board meeting. Participated in Wildlife Section virtual senior staff meeting. Met with contactor conducting the work on the Lower Middleton renovation. Participated in a conference call with Director Boyles, Deputy Director Cope and Van Whitehead concerning projects ongoing in Horry County. Participated in Migratory Bird committee meeting virtually.

Continued to assist the DNR video crew with filming footage for CAT 1 waterfowl areas. Continued working with Columbia outreach staff and proofing material for the CAT I waterfowl social media campaign. Inspected Horry Mitigation bank parcel with Biologist Fowler & Regional Coordinator Farrell. Inspected Lynchburg Savanna and Longleaf pine Heritage Preserves with Biologist Stowe. Inspected Santee Delta East and West, flood damage on Webb and Hamilton Ridge with Biologist Atkinson and a property line encroachment with Biologist Fowler on Lewis Ocean Bay. Updated Wildlife Section on-line directory. Continued to provide requested information as it relates to Lower and Upper Middleton capital improvement projects. Submitted extension requests and tracking sheets for various FEMA projects that are ongoing. Assisted with the youth lottery waterfowl hunt on Murphy Island. Viewed DLEO legal updates. Updated Wildlife Section new staff orientation manuals and conducted orientation with new employee at Webb.

Wildlife Region 1

Summary

Staff handled 53 nuisance wildlife investigations, made 12 site visits, and issued three depredation permits. Received six bear calls. Assisted SCDNR Small Game Project capture and collar woodcocks on Fant's Grove WMA for the Eastern Woodcock Migration Cooperative project. Participated in a conference call with Naturaland Trust and DNR representatives to discuss on-going and potential land acquisition projects. Prepared to hold on-site equipment disposal sale at Ravenel. Met with SCDNR Small Game Project staff and USFS to discuss potential locations for western piedmont quail focal area. Met with Wildlife Chief and OEP Deputy Director, along with local staff, at Beaverdam and Clemson Waterfowl Areas. Attended the virtual 2021 Southeast Deer Study Group conference held February 22-24th. Prepared budget request and submitted to regional coordinator for FY 21-22. Met with each unit in Region 1 to discuss new directives for vehicle mileage logs.

Region 1 Coordinator

Completed administrative activities including budgeting, purchasing, road closures, out of state travel requests, correspondence, and daily staff status reports. Met with Greg Yarrow and Unit 1A biologist to discuss Clemson University wildlife programs. Completed facility condition inspections at Ravenel and Union shops. Compiled 2020 Youth Hunt Results for Region 1. Assisted SCDNR Small Game Project capture and collar woodcocks on Fant's Grove WMA for the Eastern Woodcock Migration Cooperative project. Met with each unit in Region 1 to discuss new directives for vehicle mileage logs. Visited Chestnut Ridge HP and reviewed the updated management plan. Assisted Jocassee Gorges staff with a prescribed burn. Participated in a virtual Migratory Game Bird Committee meeting to discuss 2021-22 season dates. Met with Wildlife Chief and OEP Deputy Director, along with local staff, at Beaverdam and Clemson Waterfowl Areas. Attended the Southeast Deer Study Group virtual two-day meeting, a wild hog management webinar through Clemson University, and the SCCJA legal updates. Participated in the Clemson University Animal Care and Use Committee meeting and reviewed 3 research protocols. Checked WMAs including Beaverdam, Fant's Grove, Keowee, Jocassee Gorges, and Sumter NF. Checked Bald Rock and Chestnut Ridge HPs

Nuisance Wildlife Activities

Conducted 53 nuisance wildlife investigations, and made 12 site visits. Issued three depredation permits and handled one call pertaining to alligators. Checked and maintained hog trapping sites on WMAs. Investigated a report of sick/poisoned hogs on Keowee WMA. Assisted landowners with complaints on hog damage and trapping info, Canada geese on retention pond, and coyote problems.

Upstate Bear Report

Handled six bear complaint calls/sightings. Spoke with a Clemson graduate student about bear research needs in South Carolina.

Unit 1A (Anderson, Greenville, Oconee & Pickens)

Worked on maintaining proper water levels in the waterfowl areas. Monitored hog damage signs and baited trap sites. Checked boundary marking on WMAs and reposted as needed (110 signs). Equipment maintenance was completed on equipment at Ravenel. Prepared to hold on-site sale at Ravenel.

Property Management Activities:

Beaverdam Waterfowl Area – Worked on maintaining proper water levels. Conducted one waterfowl draw hunt for youth this month. Repaired washed area on dike with two truckloads of rock. Met with SCDNR Environmental staff to look at sediment blockage in Little Beaverdam Creek.

Tall Pines WMA – Monitored the spillway of Tall Pines Lake and cleared beaver dams several times this month. Picked up litter in the parking area. Reposted boundary signs where they were missing along road.

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 that runs along edge of field. Worked with Clemson Agriculture staff on monitoring hog traps. Assessed the waterfowl structure to determine what repairs are needed to potentially restore it as a waterfowl area. List of needed repairs were sent to Columbia.

Fant's Grove WMA – Monitored wildlife food plot conditions and checked road conditions. Two hog trap sites were monitored. WMA signs were reposted in areas where the signs had been stolen or damaged. Assisted with woodcock tapping on 12 mist net sites. Successfully captured and attached GPS harnesses on four woodcock.

Gravelly WMA – Wildlife openings were monitored for condition and hog damage signs. SCFC staff worked with us to open two wildlife food plots that were overgrown. Installed three cable gates on Causey Farm to restrict vehicles from accessing and damaging fields.

Keowee WMA – Boundary signs were reposted as needed. Monitored hog damage on area and will trap when necessary.

Long Creek Tracts WMA – Monitored field conditions.

Pickens Rifle Range Dove Field – Monitored field conditions.

Piedmont Forestry Center Dove Field – Monitored field conditions. Assisted SCFC with hog trapping.

Ross Mountain Dove Field – Monitored fields for condition and hog damage signs.

Sumter NF - Andrew Pickens WMA – Worked with USFS staff on wildlife openings as needed. WMA signs are being reposted as needed.

Unit 1B (Abbeville, Edgefield, Greenwood & McCormick)

Considerable time was spent on prescribed fire planning and reconnaissance and 400 acres were prescribed burned. Met with SCDNR Small Game Project staff and USFS to discuss potential locations for western piedmont quail focal area. Met with Assistant Chief of Wildlife and Region 1 Wildlife Coordinator to discuss updated

commuting directive. Reviewed and made recommendations for USACE's Lake Russell area new hunting app. Reviewed and made edits to SCDNR managed lands website. Attended SE Deer Study Group virtual meeting. Completed SC Criminal Justice Academy online legal updates for DLEO. Provided information for natural resources technician newsletter. Assisted with science fair judging for local homeschool cooperative. Assisted with several nights of deer trapping efforts with McCormick County deer-coyote project.

Property Management Activities:

Bordeaux Dove Field – Sprayed herbicide on 32 acres, disked 10 acres, and removed 14 hogs.

Plum Branch Dove Field – Trimmed limbs around field edge and monitored hog trap.

Parksville Dove Field – Trimmed limbs around field edge.

McCalla WMA – Pushed berm at gate to deter general public from driving around it.

Russell Creek Waterfowl Area – Monitored water levels.

USACE-owned "unnamed" WMA – Prescribed burned 115 acres at Hester's Point. Prescribed burned 95 acres, hack-n-squirted undesirable hardwoods, and monitored hog trap at Greenoaks. Prescribed burned 165 acres, hack-n-squirted undesirable hardwoods, sprayed herbicide on seven acres of openings, and monitored hog traps at Old Augusta. Pushed 0.5 miles of fireline at Calhoun Falls Bank Fishing Area. Picked up wood duck boxes from Clemson and installed at various locations in Lake Thurmond.

Unit 1C (Cherokee, Laurens, Spartanburg, Union)

Conducted facilities inspection for Union shop and equipment sheds with Region 1 coordinator. Attended the monthly Indian Creek conference call with USFS, Quail Forever, Clemson Ext., and NRCS. Attended the annual Southeastern Deer Study Group virtual conference. Assisted Unit 1-B with two prescribed fires in McCormick. Completed laying out new fire line to be installed at Cliff Pitts WMA. Worked with geodata technician to lay out and calculate cost estimate for an electric deer/hog exclusion fence at the new Cliff Pitts WMA dove field. Prepared FY 21-22 budget request and submitted to regional coordinator for consideration. Assisted with the Clemson University deer research project in McCormick.

Property Management Activities:

Cliff Pitts Bird Dog Training Area – Collected WMA user data.

Cliff Pitts WMA – Installed ~2 miles of new fire lines. Road maintenance on new dove field road continued as weather allowed. Four gates were repainted.

Sedalia Dove Field – Repaired electric fence.

Sumter NF – Dunaway WMA – Collected waterfowl hunt data.

Sumter NF – Duncan Creek WMA – Collected waterfowl hunt data.

Sumter NF – Tyger WMA – Collected waterfowl hunt data.

Thurmond Tract Dove Field – Repaired fence and installed a new gate system on the existing electric fence.

Thurmond Tract WMA – Road maintenance was conducted to install new water bars on problem area adjacent to dove field. Main gate was painted. Timber thinning began and ended quickly due to wet conditions. Loggers are expected to return when drier conditions allow access to the property.

Jocassee Gorges

Over 35 phone calls or email inquiries were handled with questions about camping, road openings, Sassafras, virus issues, hunting seasons and general use of Jocassee. Coordinated with Columbia staff and a landowner to complete a land acquisition in the Wadakoee Area. Continued communication with TNC on use of fire within Jocassee. Visited critical road management sites to Crossroads Mountain with Duke Energy. Continued communications with the Ruffed Grouse Society to review potential timber harvests with Evergreen Corp. Work toward a 2021 timber sale was initiated and several stands of timber were reviewed to include in the sale.

Property Management Activities:

Jocassee WMA – Graded about three miles of roads/firebreaks. Control burned three sections of forest that totaled about 55 acres. Mowed vegetation along roadsides for about four miles. Worked on the Standing Rock Road by re-grading and clearing that route.

Heritage Preserve Activities

Coordinated access for Naturaland Trust to fix erosion issues on Green Mountain near Ashmore HP. Participated in a conference call with Naturaland Trust and DNR representatives to discuss on-going and potential land acquisition projects. Assisted the Small Game Program with a woodcock study on Fant's Grove WMA. Attended the quarterly virtual HTAB meeting and other virtual conferences including a Clemson Extension hog trapping seminar and the Southeastern Deer Study Group. Completed SCCJA legal update for DLEO commission. Conducted maintenance on trailers, gators, skid steer, and vehicles.

Property Management Activities:

Ashmore HP – Inspected boundary, picked up trash, checked gate, checked 1.5 miles of trail, and removed deer stands and informed LE.

Bald Rock HP – Met the Chief of Wildlife to discuss remedies to continued property destruction. Picked up trash. Upstate Cruisers held a volunteer trash pickup event.

Belvue Springs HP – Checked property.

Blackwell HP – Checked property. SCNPS held a volunteer privet pull event at wetland site.

Brasstown Creek HP – Checked gate and inspected property.

Buzzard Roost HP – Inspected trail.

Bunched Arrowhead HP – Checked property, inspected trail, picked up litter, and repaired footbridge.

Chandler HP – Checked gate.

Chestnut Ridge HP – Mapped trails and management roads, updated management plan, checked gates, inspected trail/road, and cleared trees from trail. Met adjacent landowner to inspect blow downs and leaning trees from CRHP to her property.

Glassy Mountain HP – Picked up litter.

Peters Creek HP – Added steps to trail re-route.

Stevens Creek HP – Checked trail and picked up litter.

Stumphouse HP – Checked gates and picked up litter.

Watson-Cooper HP – Wrote burn plan for upcoming 200 acre burn.

Wildlife Region 2

Unit A staff spent significant time preparing to implement prescribed fire by disking fire breaks and servicing burn equipment. Unit A staff continued work on a new deer proof fence at Pee Dee Station dove field. 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 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

All Unit A staff attended the region meeting in Camden. Biologist Oates located a previously unknown bald eagle's nest on Woodbury WMA. Biologist Oates and Technician Parsons created 2.5 acres of new food plots on Marsh WMA. Technician Parsons mowed 6 acres of undesirable hardwoods at Marsh WMA. Technician Alston graded 10 miles of roads at Marsh WMA. Technician Parsons and Alston installed ½ mile of new fire break. Technician Alston disked 13 miles of fire breaks. Unit A staff continued the deconstruction of the electric fence at Pee Dee Station and the reconstruction of a more deer proof fence. Staff removed 300 t-post and continued to procure materials to complete fence. Technician Fitts repaired fire truck and serviced pumper unit. Biologist Oates and technicians Parsons and Parsons renovated office storage shed, replacing the roof, and repairing rotten boards. Technician Parsons mowed remaining 7 acres of corn at Lake Wallace dove field. Technician Parsons installed 1 gate at Pee Dee Station. Region staff had 171 technical assistance contacts (mostly phone calls) pertaining to wildlife, regulations, and WMA lands and 15 nuisance calls (1 bear). Stokes virtually attended the 2 day SEDSG meeting

Unit 2B

Unit 2B staff continued maintenance of public dove fields in York and Chester Counties. Unit 2B staff spent considerable time on scheduled equipment maintenance. Technician Moses maintained roads, firebreaks, and wildlife openings at Draper WMA. Technician Wyatt maintained roads and wildlife openings at Worth Mountain WMA. Technician Wyatt began constructing a storage area in the barn at Worth Mountain WMA. Technician Wyatt posted a portion of the boundary at Worth Mountain WMA.

Unit 2B staff conducted 1 lottery youth waterfowl hunt at Broad River Waterfowl Management Area.

Technician Scales and Technician Smith continued posting boundaries at Broad River Waterfowl Management Area with updated signs. Technician Smith, Biologist Kesler and Technician Scales monitored water levels, beaver activity in ditches, and water control structures at BRWMA. Biologist Kesler visited a potential WMA property near Landsford Canal. Unit 2B staff attended region meeting in Camden.

Unit 2C

Staff conducted one prescribed burn of 38 acres at Campbell's Crossroads WMA on February 25.

Timber thinning on McBee WMA continued thru the month with approximately 20% left for completion.

The construction contract for the McBee WMA Storage Building was awarded on February 19 to Benton Construction for \$50,000.00. Work is expected to begin in early March. Staff attended a Region 2 meeting in Camden to discuss the revised SCDNR commuting policy. Deputy LEO Cockman completed online legal update training on February 12. Biologist Cockman submitted training documentation for Technician Lowder's 2 year pay plan increase. Biologist Cockman submitted Technician accomplishments for the annual Technician newsletter. Biologist Cockman scored three sets of deer antlers during the month. Biologist Cockman compiled and analyzed bobwhite quail biological and crop data from the McBee WMA hunts and submitted to the small game section for a report. Biologist Cockman attended the Southeast Deer Study Group meeting virtually February 23-24. Biologist Cockman delivered 3 duck boxes and conducted a technical assistance visit to a landowner in Lancaster County.

Biologist Cockman and Coordinator Stokes conducted a site visit for a potential land purchase of 226 acres in Chesterfield County adjacent to the Campbell's Crossroads WMA. Cockman submitted a property form to the Habitat Protection Committee for consideration of purchase. Staff met with Forestry Technician Bess to plan upcoming timber thinnings at Liberty Hill and Heritage Tract (east) WMAs.

Volunteer Mason removed stumps from 1 two acre brood patch at McBee WMA. Technician Lowder distributed 20 bushels of supplemental quail feed (Feb 3 & 17) and cool season disked 4 acres at McBee WMA. Technician Lowder disked 3 miles of firebreaks at Campbell's Crossroads WMA. Technician McManus replaced sign-in/out boxes, prepared (disk, grade, and leaf blow) 1 mile of firebreaks, mowed 1 acre of grass at the shop and removed 4 trees from roads at Liberty Hill WMA. Technician McManus removed 2 trees from the roads and cleaned out 2 drainage pipes at the Heritage tract (west) WMA.

Technician staff finished hauling clay and preparing the clay pad for shop construction at McBee WMA.

Wildlife Management Area Management Summary

Throughout Region 2, staff mowed 8 acres of dove fields, mowed 8 acres of hardwoods, burned 38 acres, disked 20 miles of fire breaks, scraped 22 miles of roads, installed ½ mile of fire breaks, created 2.5 acres of food plots, continued construction on dove field fence and installed 3 gates.

Property Management Activities

Marsh WMA: Mowed 6 acres of undesirable hardwoods. Installed ½ mile of fire breaks. Disked 13 miles of fire breaks. Created 2 new food plots totaling 2.5 acres. Daylighted ½ mile of roads. Scraped 10 miles of roads.

Woodbury WMA: Located bald eagle nest. Monitored flooding.

Pee Dee Station WMA: Installed gate. Continued work on dove field fence (removed 300 t-post, installed 50 insulators, purchased corner posts). Leveled field corners in preparation for new fence. Filled holes in parking area of dove field.

McBee WMA: Monitored visitor use. Continued timber harvesting. Supplemental fed 20 bushels of sorghum. Cool season disked 4 acres. Removed stumps from 1 brood patch. Finished clay pad for shop construction.

Lake Wallace DF: Mowed 7 acres of corn and sunflowers.

Liberty Hill WMA: Monitored visitor use. Replaced sign-in/out boxes. Prepped 1 mile of firebreaks. Mowed 1 acre of grass at shop. Removed 4 trees from roads.

Angelus BDTR: Monitored visitor use.

Campbell's Crossroads: Disked 3 miles of firebreaks. Prescribed burned 38 acres.

Heritage Tract (East): Conducted a site visit for planned timber thinning. Changed out one lock on a gate.

Heritage Tract (West): Removed 2 trees from roads. Cleaned out 2 drainage pipes

Draper WMA: Perform general depot and equipment maintenance. Scraped 10 miles of roads. Maintained 2.5 miles of firebreaks.

Heritage Tract West: No activity during the month.

Worth Mtn. WMA: Performed general equipment maintenance and repair. Scraped 1.5 miles of roads. Posted 1 mile of boundary.

Broad River Waterfowl Management Area: Performed general equipment maintenance and repair. Performed 12 days of water level management. Conducted 1 youth lottery waterfowl hunt.

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 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. Staff worked on an MOU for interagency prescribed burning, including conferring with other states, the Longleaf Alliance, Clemson University, NCSU, the USFS and others on training, certification and qualifications. Staff worked on business of the SC Prescribed Fire Council and International Association for Wildland Fire, and attended the *Covid-19 and Prescribed Burning* webinar held by Tall Timbers Research Station, NASA and the Southern Fire Exchange. Staff sent Region 4 HP management staff “This Preserve is Managed with Prescribed Fire” signs to post around Lewis Ocean Bay HP/WMA near proposed hospital site and other areas being developed.

Staff wrote a letter of support for the Sandhills Longleaf Pine Conservation Partnership, supporting its National Fish and Wildlife Foundation grant request. Region 2 staff have been a key member of the Partnership since its inception. Staff learned from Katawba Valley Land Trust that its Founder, long-time supporter of the preserve, left a significant bequest to benefit Forty Acre Rock HP/WMA. These funds will likely be used to acquire more land. Staff monitored flood waters and access to Great Pee Dee River HP/WMA and answered requests about access from hog hunters. Staff met with SC Forestry Commission’s Mike Shealy to look at this preserve’s Hurricane Creek Bridge and advised him on strategies to replace a bridge on Wee Tee State Forest WMA. Staff connected Mike with SCDNR Engineer Andy Wicker, who is providing further advice. Staff attended a Region 2 meeting on commuting policy. Staff applied herbicide (via hack-n-squirt application) to invasive sweetgum, treating 12 acres on two preserves. Staff assessed firebreaks, soil conditions and fuels; cleared around cavity trees of the federally-endangered red-cockaded woodpecker (RCW; *Picoides borealis*) as well as snags, cat-faced trees, gates, signs, utility poles and other hazards or sensitive elements; and worked on equipment (including conducting annual inspection of all fire extinguishers) and gathered supplies in preparation for prescribed fire. Staff monitored soil and fuel conditions in hopes of burning, but high rainfall has prevented firelighting. 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 learned from Katawba Valley Land Trust that its Founder, long-time supporter of the preserve, left a significant bequest to benefit FAR HP/WMA. These funds will likely be used to acquire more land. Staff continued clearing firebreaks and raking around or cut snags on all burn units. Staff walked firebreaks and all burn units to assess fuel and soil conditions in preparation for prescribed fire. Staff maintained the preserve by assisting game wardens with surveillance (5 citations and 5 warnings were issued), by monitoring for abuse, by removing trash and hazardous trees, by managing vegetation, and by maintaining gates, trails, parking areas and boundaries.

Great Pee Dee HP/WMA: Staff monitored flood waters and access to the preserve, and answered requests about access from hog hunters. Staff met with SC Forestry Commission’s Mike Shealy to look at Hurricane Creek Bridge and advised him on strategies to replace a bridge on Wee Tee State Forest WMA. Staff connected Mike with SCDNR Engineer Andy Wicker, who is providing further advice. Staff cut vegetation and removed downed limbs from blacktop toward river (about two miles).

Little Pee Dee River State Parks HP: Staff patrolled river access road

Longleaf Pine HP/WMA: Staff worked with contractor Bobby Lawson to apply herbicide (via hack-n-squirt application) to invasive sweetgum, spot-treating 2 acres, and continued clearing around UT poles, snags, signs, RCW cavity trees and other hazards or sensitive elements in preparation for prescribed fire. Staff walked firebreaks and all burn units to assess fuel and soil conditions in preparation for prescribed fire. Staff worked with the SC Forestry Commission to clear 1.5 miles of firebreaks. Staff searched for new RCW cavity trees.

Lynchburg Savanna HP/WMA: Staff continued clearing around UT poles, snags, signs, RCW cavity trees and other hazards or sensitive elements in preparation for prescribed fire. Staff walked firebreaks and all burn units to assess fuel and soil conditions in preparation for prescribed fire. Staff worked with the SC Forestry Commission to clear 4 miles of firebreaks. Staff searched for new RCW cavity trees.

Woods Bay HP- Staff worked with contractor Bobby Lawson to apply herbicide (via hack-n-squirt application) to invasive sweetgum, spot-treating 12 acres. Staff continued clearing around UT poles, snags, signs, and other hazards or sensitive elements in preparation for prescribed fire. Staff walked firebreaks and all burn units to assess fuel and soil conditions in preparation for prescribed fire. Staff assisted neighbor in applying for 911 address.

Rock Hill Blackjacks HP/WMA: Staff painted 2 gates, removed trash, cut a hazardous roadside tree and patrolled 0.5 miles of boundary.

Savage Bay HP: Staff cleared 0.75 miles of boundary and checked on junk pile encroachment from neighboring residence (much of it has been removed).

Segars-McKinnon HP: Staff cleared 1 mile of trail and 0.5 mile of boundary and patrolled all roadside boundaries (2.5 miles). Staff found and uprooted large, invasive exotic Chinese holly tree (*Ilex cornuta*).

Wildlife Region 3

Summary

Continued high river levels resulted in many days spent regulating water control structures on Wateree River Heritage Preserve Wildlife Management Area and Love Wildlife Management Area. Staff from Region 3A assisted with several burns at Belfast Wildlife Management Area and Wateree River Heritage Preserve Wildlife Management Area. Staff attended a region meeting in Eastover to discuss mileage sheets. Biologist Bennett and Technician Stephens completed the required training on-line for the South Carolina Criminal Justice Academy Department Law Enforcement Officer. Bennett attended the annual alligator coordinator meeting. Contractors were met in efforts to obtain pricing to be used for upcoming fiscal year budget request.

Biologist Young and Technician Kiker plowed the firebreaks at Ditch Pond Heritage Preserve. Young and Kiker conducted trail maintenance at Savannah River Bluffs Heritage Preserve and Congaree Bluffs Heritage Preserve. Young and Kiker have been actively trapping wild hogs at Congaree Bluffs Heritage Preserve. Eight (8) hogs have been removed thus far. Young installed two new gates to the parking lot at Savannah River Bluffs Heritage Preserve. This was done to discourage any nighttime parking or activity in the preserve parking lot.

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 February 16 and 19. Ordered two new cell phones for field staff. Assisted with updating the computers at Eutaw Springs Office in Orangeburg. Participated in an online meeting for the Migratory Game Bird Seasons for 2021-22 on February 22. Updated the department website on several wildlife management area properties and contact information associated with each area. Reviewed the Aquatic Plant Management Plan. Answered 15 calls about hunting on wildlife management areas in Region 3. Answered 11 calls about issues on wildlife management area lands and heritage preserves. Visited the following heritage preserves and wildlife management areas in Region 3; Belfast, Congaree Bluffs, Crackerneck, Henderson, Janet Harrison High Pond, Love Farm, Peachtree Rock, Shealy's Pond, Santee Cooper, Savannah River Bluffs and Wateree River.

Unit 3A

Belfast Wildlife Management Area: Small Game: 34 hunters

Enoree Waterfowl Area: No activity during the month

Waterfowl Youth hunts: 4 hunters harvested 1 duck

Wateree River Heritage Preserve Wildlife Management Area: Small Game: 97 hunters

An extreme flood event within the Cowasee Basin resulted in high river levels resulting in the shutting access and hunting down for 1 week on Wateree River Heritage Preserve Wildlife Management Area. Staff spent much of their time working on repair roads damaged by the flood. Technician Flemming and Technician Kiker filled in potholes and created water bars in areas with significant erosion. Staff conducted prescribed fire on 11 acres of mixed pine hardwoods. Technician Kiker analyzed and consolidated turkey survey data. Technicians Baldwin and Flemming fabricated and repaired burn trailer. Continued efforts are ongoing with clearing debris clogging ditches and water control structures to waterfowl impoundments. The dike repair is still underway as wet weather conditions and high river levels have remained and issue in completing repairs on the Cook's Mountain waterfowl impoundment. The purchase order was awarded for the Greentree reservoir restoration including understory mulching. Staff wired pole barn at the Goodwill shop.

Technician Baldwin spent every other day managing water levels on the Love Farm Wildlife Management Area. Efforts to keep ditches and water control structures cleared of debris to waterfowl impoundments is ongoing. Staff spent 2 days disassembling pole barn so it can be reassembled in desired location. Baldwin installed security cameras around the shop and equipment. The stumping and clearing contract was reviewed and a pre-bid meeting is scheduled for the mid part of March. With the planning stages of the gun range being constructed, management of the impoundments over the next couple years will be limited. The planning process of the waterfowl impoundment improvements is underway.

Regular service and repairs were made to tractors and implements on Belfast Wildlife Management Area. Staff completed and analyzed results from the annual winter turkey survey. Firelines were flagged and disked on tracts to be burned. Staff completed 140 acres of prescribed fire on Belfast. Technicians Stephens and Rex attended a region meeting in Eastover concerning mileage sheets. A pre-bid meeting was scheduled this month, then a purchase order was awarded for the repair and replacing of windows on the Belfast House and Bath House. Stephens collected bids and a purchase order was issued for roof repairs on the Belfast shop. One gate was repaired

on the Belfast rifle range. Stephens and Rex cleaned and performed regular maintenance on 21 duck boxes in Newberry county.

Unit 3B

Crackerneck Wildlife Management Area: Harvest: 24 feral hogs, 2 Eastern cottontail rabbits, 8 Eastern gray squirrels, 2 bluegill, and 1 largemouth bass

Crackerneck Wildlife Management Area was open to the public for 8 days in February and had 322 visitors. Biologist Forehand and Technicians Chapman and Rinder manned and worked the gate for all opens days. Technician Chapman planted 10 acres of food plots at Crackerneck, winter disced 10 acres, and repaired multiple road washouts. Wildlife Technician Rinder disced 2 miles of firebreaks, mulched 1 acre, disked 25 acres at Hallman and scraped and repaired 10 miles of road. Chapman and Rinder repaired the Crackerneck dove field fence, cleared several trees from the roads, checked Region 3B heritage preserve parking lots and worked on equipment for 5 days. Biologist Forehand roller chopped 30 acres at Crackerneck, assisted Biologist Young with instillation of a gate at Savannah River Bluffs Heritage Preserve and assisted Technicians Chapman and Rinder with various projects around Crackerneck.

Unit 3C

Santee Cooper Wildlife Management Area- Duck: 4 Hunters harvested 3 wood ducks, crippled 1, and shot 26 times.

Staff monitored and adjusted water levels at Hickory Top Wildlife Management Area as needed. Hourly Smith and Technician Mackey continued discing firelines at Santee Cooper Wildlife Management Area. Technician Greenthaler baited and trapped feral hogs at Santee Dam and Santee Cooper Wildlife Management Areas. Staff conducted winter discing and maintained field borders at Oak Lea and Santee Cooper Wildlife Management Areas. Staff used the Bobcat to masticate vegetation on Oak Lea and Santee Cooper Wildlife Management Area in wooded areas and along field borders. Greenthaler and Mackey maintained signs and gates on Santee Cooper Wildlife Management Area. Staff cleared roads on Santee Cooper Wildlife Management Area after flooding on the property. Staff also continued to apply lime to dove fields within the unit and began to prepare the fields when weather would allow activity in the fields. Biologist Shuler attended several classes and meetings furthering his Agricultural herbicide and seed knowledge. Waterfowl season ended with a successful youth day on Santee Cooper Wildlife Management Area. Santee Dam Wildlife Management area was flooded due to spilling and high-water levels on the Santee Cooper lakes.

Heritage Preserves

Heritage Preserve Biologist Young and Technician Kiker worked from home, as well as approved field work within Region 3. Young and Kiker conducted numerous site visits to the Heritage Preserves and Wildlife Management Areas in Region 3. Young and Kiker plowed the firebreaks at Ditch Pond Heritage Preserve. Young and Kiker conducted trail maintenance at Savannah River Bluffs Heritage Preserve and Congaree Bluffs Heritage Preserve. Young and Kiker removed old deer stands from the field at Congaree Bluffs Heritage Preserve. Young and Kiker have been actively trapping wild hogs at Congaree Bluffs Heritage Preserve. Eight (8) hogs have been removed from the property at this time. Young and Kiker assisted in further distribution of wood duck boxes to the public. Young attended a potential property acquisition check on a piece of property bordering Henderson Heritage Preserve in Aiken County. Young and Kiker attended the Region 3 meeting held at Wateree Range. Young visited Crackerneck Wildlife Management Area and attended a walkthrough on a future Carolina bay restoration project. Young installed two new gates to the parking lot at Savannah River Bluffs Heritage Preserve. This was done to discourage any nighttime parking or activity in the preserve parking lot. Kiker has regularly cleaned up litter from parking lots at Aiken Gopher Tortoise Heritage Preserve, Enoree Waterfowl Area, and Shealy's Pond Heritage Preserve. Kiker has been completing some maintenance on the Education Center at Congaree Bluffs Heritage Preserve. Shealy's Pond Heritage Preserve's on Boiling Springs Road has severe erosion and washout issues. South Carolina Department of Transportation was informed about the condition of the road adjacent to Shealy's Pond Heritage Preserve. They were notified of this issue previously last year; however, heavy rain and continual disregard has now led them to attempt to fix the problem this year. A meeting was conducted onsite on March 2nd to discuss plans to fix this issue without raising the water level on the heritage preserve. Young was contacted by six (6) nearby landowners of Savannah River Bluffs Heritage Preserve regarding the parking issue at the preserve. The nearby landowners are concerned with the number of visitors the property has and how little area there is in the parking lot for them to park. This leads to continuing visitors to park along Old Plantation Road, which is a one-way street, in these peoples' yards and driveways. Young called Aiken County Sheriff's Office to inform them about the issue of cars parking on private property once the department parking lot is full.

Wildlife Region 4

Highlights

Lottery waterfowl hunts concluded with Youth Day hunts on February 6th. Staff continued to manage water levels on all waterfowl impoundments, beginning drawdowns for optimum waterfowl and shorebird feeding. Region 4 staff began the planning and procurement process for management of Public Dove Fields. Budgets were compiled for all units and projects. Significant rain across the Region caused temporary closures of some roads and properties. Staff monitored this situation and responded quickly to repair and reopen roads and properties to the public. Prescribed burns were conducted when conditions allowed, and properties were prepped for upcoming burns. The main dock at Santee Coastal Reserve was installed.

Regional Coordination

Annual DNR infrastructure inspections were completed. Inspection of roads and parking areas of a future expected land acquisition was conducted with Assistant Chief Chappelle and Biologist Fowler. Hunt preparations for waterfowl youth hunt were conducted. Staff were informed of new commuting mileage policy across the Region. The pre-bid for a shed at Botany Bay and new roof at Bear Island were attended. Interviews were conducted for the Natural Resources Tech 3 vacancy at Yawkey Wildlife Center. Winter disking and wildlife opening renovations and preparations were inspected at Donnelley WMA.

Assistant Regional Coordination

Assistant Regional Coordinator Hook spent significant time on permitting needs for projects on Santee Coastal WMA. A pre bid meeting for a shop at Botany Bay WMA was attended. Hook participated in the Southeast Deer Study Group, HTAB meeting, and Migratory Bird Committee meeting. Hook assisted with the youth waterfowl hunt at Santee Coastal Reserve. Hook attended a meeting at Donnelley WMA for Unit 4C staff. A visit was made to Fenwick Island with SCDNR MRD staff to discuss prescribed burning opportunities. Hook spent one day conducting a prescribed burn on Santee Delta East WMA. Hook coordinated with Nemours staff for upcoming wood duck box research and a boat was returned to the Dennis Wildlife Center for use on the project. Road conditions were monitored across the Region due to heavy rainfall and river flooding, and the SCDNR web staff was regularly updated. Hook picked up ALB brochures from Clemson staff, reviewed new water control structure safety catwalks and mechanical vegetation treatment at Dungannon HP. Hook participated in two Natural Resource Technician interviews for the UCWP. Hook coordinated with waterfowl management area Biologists across the state for a chiwapa millet seed order.

Unit 4A: Horry & Georgetown

Coastal bear activity was quiet the majority of February. There were 2 sightings reported. Biologist Brantley worked to obtain multiple HOA's contact information for different communities/subdivisions within Caroliana Forest. Xylazine was ordered and picked up. Heritage Preserves in Horry County were visited 9 times. Technician Matthews assisted the HP crew with various tasks that included road maintenance, hanging prescribed fire signage along the boundary near new housing developments and repairing lights on 4 utility trailers. Unit staff also attended a skid steer demo and generator discussion for the shop at Lewis Ocean Bay Heritage Preserve. Heavy rains in February reduced the possibility of conducted field activities, with 7.23 inches of rainfall reported at Samworth. Staff meet with Assistant Chief Chappelle to discuss the newly implemented commuting directive. Fertilizer quotes were obtained, and purchase order was submitted. Seed quotes have been requested. FY 21-22 budget requests were submitted. Biologist Brantley hosted an HGTC lab at Samworth to discuss bear immobilization and trapping. Tractors were cleaned and serviced for the 2021 planting season and a disk was repaired. After a 3 day drying period staff were able to conduct 2 prescribed burns. Technician Bell was able to use 1 burn towards his Prescribed Fire Manager Certification.

Unit 4B: Berkeley & Charleston

February activities were dominated by wrapping up duck season, baiting and trapping hogs aggressively, and disking fields during weather windows. Staff continued to plan for upcoming planting activities. Cleaning and servicing equipment was achieved during wet days.

Bonneau Ferry: 23 hunters and 96 general visitors utilized Bonneau Ferry. Roads were graded. Equipment was washed and serviced. Roads were limbed. Boards were pulled from water control structures. After the TOMO duck hunt, duck hunting supplies were put in storage for the year. Property lines were posted and painted. Duck boxes were checked and/or replaced. Staff assisted archaeological staff with survey work.

Canal: Staff continue to work with USACE personnel via weekly conference calls. Beaver trapping yielded 4 beavers. Dove fields were disked where conditions allowed. Fencing was removed where it is to be replaced. Sheds and equipment were cleaned.

Sandy Beach, Cross and North Dike: Staff prepared for and conducted one lottery duck hunt at Sandy Beach on Youth Day. Staff took down parts of the old shed in preparation for new shed repairs and construction.

Francis Marion National Forest: Staff baited and trapped hogs; 8 on Hellhole, 18 on Waterhorn, and 8 on Wambaw. Signs were posted in Wambaw and Waterhorn hunt units. Openings were fertilized on Waterhorn. *Other Unit activities:* Staff attended a meeting to discuss commuting directive. Staff met with Pig Brig CEO to discuss hog trapping techniques with the Pig Brig system. Staff submitted budget requests. Staff attended the virtual conference of the Southeast Deer Study Group Meeting. Staff conducted a program for a Cub Scout den. Staff attended a webinar on prescribed burning. Staff responded to a nuisance deer call at Bonner Elementary School. Staff advised a landowner regarding coyote concerns and a homeowner regarding opossum concerns.

Wildlife: A total of 87 wildlife calls were handled at the Charleston office (10 alligator and 77 other nuisance animals). There were 4 licensing/boat titling and deer tags calls transferred or emailed to the licensing/permitting office. Hunting regulation and property calls were handled for 9 callers. 52 Nuisance Alligator Permits have been mailed to community properties and our 3 Emergency Agents. Administrative Assistant attended 2021 Alligator Meeting at Bonneau Ferry to receive current procedures and new tags.

Wildlife Management Area Hunts

Bonneau Ferry WMA: On 24 days of small game hunting, 19 hunters harvested 0 reported game. On 1 youth duck hunt (TOMO), 4 hunters harvested 9 ducks.

Sandy Beach Waterfowl Area: On 1 Youth Day duck hunt, 2 hunters harvested 5 ducks.

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. Two pre-bid site visits were held within the unit for a new pole barn/shop at Botany Bay and a roof replacement on a technician house at Bear Island. A virtual meeting was attended for the Migratory Game Bird Committee to set migratory bird seasons and bag limits for the 2021/2022 hunting season. Quotes were received to put together budget requests for FY22. There was a minimum of 5,863 visitors and 310 hunters for the month in Unit 4-C.

Bear Island WMA: We finished the 20-21 duck season lottery hunts on Feb. 6th with a youth hunt on Bear Island. Since the end of the season, all boats, paddles, life jackets, Covid-19 signage, and decoys have been gathered, stored, and secured for the off season. The trailer we used to haul hunters had the benches removed so the trailer is available for other uses. February 8th started our small game season; a constant flow of snipe and rabbit hunters have taken advantage of the opportunity as well as general users. Recently we have dried out enough to grade roads and address trouble spots that developed during duck season. Also, with the drier weather we have started topping dikes again. The longreach excavator matted 670' then topped 410 linear feet. Miscellaneous jobs addressed during the month include cutting back vegetation around the computer room, repaired a trunk upright, replaced wear liners on double blade and straight blade implements, constructed foot bridge across canal to access Lower Pine Black Rail habitat, and repaired shower in staff member's house. Equipment quotes were obtained to aid for next year's budget, 2020 yearly summary was written and submitted for Technician Newsletter, prescribed burns were planned and mapped, work shop's 1st aid kit and emergency eyewash stations updated, and staff's individual trauma kits updated.

Botany Bay Plantation WMA: Due to heavy rains staff worked on equipment to get ready for spring agricultural plantings and worked on floors inside the big house that needed repairs. Construction/maintenance technician Joe Armstrong has moved to Botany Bay's big house where it is being refurbished. The kitchen has been demolished, new plumbing, new electrical, and new walls are framed as needed. The aluminum riser on Jason's Lake had some erosion issues on the exterior of the dike and filter cloth and rip rap were placed on slope of dike to prevent erosion. All roads were graded once they dried. Heavy rains and heavy traffic do not mix. Overgrown hedgerows in the dove field area continued to be mulched with the mini track hoe. Approximately 15 acres of hedgerows that were mulched last month were burned. Staff assisted with deer trapping efforts. Other work included finishing up some improvements, trimming weeds, trimmed dead brush and debris around Big House, cottage and slave cemetery. Volunteers cleaned trails to wood duck boxes and cleaned around the boxes as well. Purple Martin gourds were hung at the Big House and staff built an artifact display case. Duck boxes have been cleaned out and are being monitored for activity every 2-3 weeks. On February 26, 2021 Edisto Island Open Land Trust sponsored Young Naturalists. We had a shortened version of a fishing rodeo with 3 volunteers and 5 other adults. Bill Houston, a volunteer did a short instruction presentation and then the kids had a good hour to fish. Volunteer hours = 138. There were 5,863 visitors with 1,842 vehicles for the month of February. There were 5 horseback riding parties with a total of 15 riders.

Donnelley WMA: The last youth duck hunt for the 20-21 season was on Feb. 6th. Small game season on Donnelley concluded on March 1st. Agriculturally, winter disking was completed. The subsoiler we acquired from

Webb Center is being converted to work with our application. Sprayer was setup for applying nitrogen to winter wheat. February was wet and Donnelley was busy with small game hunters and general visitors which caused extensive road damage. Thorough road work was conducted on all main roads and as needed on secondary roads. Prescribed burns for this spring have been mapped out and we are freshening fire breaks when dry enough. As the dozer travels around the property cleaning fire breaks, we are clearing approximately 25 old logging decks to create wildlife openings that may be maintained through winter disking. Additionally, as the dozer nears any old wildlife openings that have become bowl shaped after many years of disking, we are clearing the edges and leveling the plots with the soil that has escaped beyond an implement's reach. The Donnelley Tour route and the Boynton walking trail have been updated with new trail guides and maps, additional sights, and new signage throughout routes. Some miscellaneous jobs during the month include hauling backhoe to and from Botany Bay, wiring and installing air compressor under new shed, PM service on backhoe and bulldozer, installed refurbished blades on airboat. The 2020 yearly summary was written and submitted for the Technician Newsletter, work shop's 1st aid kit and emergency eyewash stations updated, and staff's individual trauma kits updated.

Edisto River WMA: Four staff members spent a day at ERWMA updating property placards and installing a new information board. The property flooded from heavy rains and the South Edisto River reaching nearly 15.5 feet.

GIS/GPS/Miscellaneous: The Santee Coastal Reserve trail map for the kiosk was edited and the black and white handout trail map was edited. Worked with staff to remove signs from old boundary at Edisto River WMA. Assisted the Region 4 Heritage Preserve Coordinator with water level monitoring at Dungannon HP/WMA. Equipment was picked up from Santee Coastal Reserve. Assisted the Region 4 Unit C Biologist with surveying impoundments at Donnelley WMA for Cuban bulrush by using the UAS. Trimble software maintenance was renewed and required paperwork was submitted for payment. A yearly summary of 2020 mapping projects was submitted for the Wildlife Technicians newsletter. A staff meeting with the Assistant Chief was attended at Donnelley WMA. The kiosk supplies were monitored at Edisto River WMA. The 2020 burn data was provided for the area technician to assist with planning for the upcoming 2021 burning season on Donnelley WMA and Bear Island WMA. Miscellaneous supplies were picked up.

Wildlife Management Area Hunts

Bear Island WMA: Small Game Hunts: 173 Hunters harvesting 53 rabbits, 55 snipe and 3 racoons.

Youth Waterfowl Hunt: 10 Hunters harvesting 16 ducks.

Botany Bay WMA: Small Game Hunts: 51 Hunters harvesting 4 squirrels and 18 racoons.

Donnelley WMA: Small Game Hunts: 72 Hunters: 20 squirrels, 6 racoons and 4 hogs

Youth Waterfowl Hunt: 4 Hunters harvesting 7 ducks.

Unit 4D: Beaufort, Hampton, & Jasper

Staff spent time assisting with woodcock trapping efforts on Webb WMA in conjunction with University of Maine. Five woodcock were successfully captured, banded and 4 of them were fitted with GPS transmitters. Staff conducted prescribed burns on 60 acres for wildlife management on Webb. 183 users signed in at the Palachuola Shooting Range. 77 non-hunting users signed in to the 3 WMAs during the month with activities including: scouting for hunting, birding, wildlife viewing, fishing, paddling and photography. Webb staff spent significant time cleaning and organizing barns and sheds around the Webb WMA complex. Biologist Atkinson continued working on procuring items and meeting with contractor for large projects needed for the unit. Atkinson scored (5) white-tailed deer and attended SOLOACE longleaf meeting (virtually). Atkinson, Moss and other Webb staff attended the Southeastern Deer Study Group meeting (virtually). Atkinson, Biologist Moss, and Admin Ginn attended the Alligator Meeting at Bonneau Ferry. Moss gave a presentation for the Sun City Bird Club. Moss attended the February Coffee and Conversation with Director Boyles. Moss began RCW Artificial Insect Training. Moss, Technicians Tant, Klecan, and Klinedinst assisted with deer trapping efforts in McCormick County. Webb staff & facilities did not host any meetings in February. Lower Coastal Alligator activity for the month: issued 3 commercial permits with 30 tags, issued 0 individual permits with 0 tags, received 0 nuisance calls and sent out 5 alligator signs.

Habitat Management: 14 inches of rain put a slow down to most management activities, but staff were able to prescribe burn 60 acres for wildlife management. 2 RCW trees were burned around during the prescribed burns. Staff spent time reclaiming approximately 5 acres of wildlife openings.

Facilities & Infrastructure Maintenance: Staff graded 15 miles of roads. Approximately 6 miles of firebreaks were disked. Staff spent a significant amount of time cleaning and organizing the barns on site. Six dump truck loads were hauled to the landfill. Staff hauled 40 loads of rock for areas where the rain washed out roads. Approximately 12 culverts were cleaned out. Staff spent significant time riding and monitoring roads for water levels and downed

trees on account of the mass rainfall and high river levels. Staff spent significant time painting and replacing road signs.

Equipment Maintenance: Staff spent time replacing fluids and filters in the John Deere 5100E, 6415, and Kubota. Staff spent some time repairing the sidearm mower. Time was also spent on general equipment maintenance & repairs.

Wildlife Management Area Hunts

Small Game Season- 24 Days, 95 Total Hunter Days and 10 squirrels harvested.

Quail Hunts- 4 days, 14 parties (17 Hunters), 25.1 hours of total hunting effort, 3 coveys found, and 0 birds harvested.

Upper Coastal Waterfowl Project

A youth waterfowl hunt was conducted on Santee Coastal Reserve WMA The Cape and Murphy Island to complete the 2020-2021 waterfowl season. Boats and reflectors were picked up and stored for next waterfowl season. Water levels in all impoundments were checked and monitored to continue to offer optimal feeding conditions for waterfowl.

Santee Coastal Reserve WMA

Upland: The new boat dock was built by a contractor. Several burn blocks were prepped for future burns. The campground was cleaned of tree and brush debris. Feral hog trapping efforts began. Several wildlife openings were disced and prepped. Fruit trees were planted in several openings.

The Cape: Vegetation was cleared around all water control structures. Dikes, berms and select impoundments were burned to clear woody vegetation. Several dikes were disced and cultipacked. 4,230 linear feet of berm on the Big Well impoundments were cleared using the mini excavator. A youth waterfowl lottery hunt was prepped, scouted, and conducted. Boats and reflectors were picked up and stored for next waterfowl season. Water levels were repeatedly checked and monitored.

Murphy Island: Four wing walls were built around a water control structure along the ICWW to stop erosion. A youth waterfowl lottery hunt was prepped, scouted, and conducted. The amphibious longreach excavator re-topped 300 linear feet of dike. The amphibious longreach excavator was moved to a section of Murphy Island where the dike needs re-topping. Water levels were repeatedly checked and monitored. The longreach excavator re-topped 625 linear feet of dike along the South Santee River.

Cedar Island: Water levels were repeatedly checked and monitored.

Repairs: The ice machine was cleaned twice. The Marsh Master fuel tank was replaced. Both CAT 308e mini excavators were repaired. The CAT 325 excavator was serviced. The Kubota ATV on Cedar island had several coolant leaks repaired. The Pyroshot prescribed fire gun was repaired. A boat trailer was rebuilt and repaired.

Other Activities: Interviews were held for two Tech II openings. Technicians Kloth and Nelson began taking classes to procure their US Coast Guard Captain's Licenses. Fire extinguishers were serviced and replaced where needed. HGTC students came out and helped repair and clean out wood duck boxes. The Marshland trail bridge was repaired with nonskid material. Treptow and Caradinta participated in a hog control workshop. Treptow had a meeting with Biologist Hand to talk about wetland management for black rails. Treptow attended a time management webinar.

Santee Delta WMA

500 Acres of Delta East marsh were burned to create wildlife openings and help control undesirable vegetation. Water levels were checked and monitored.

Samworth WMA

The amphibious excavator re-topped approximately 1,600 LF of perimeter dike on the Backfield Impoundment. Extensive clearing of woody vegetation also occurred on the berm and berm enhancement was addressed where necessary. A 25' lay log bulkhead was constructed at an old Backfield barge slip to stabilize dike erosion resulting from wave attenuation and lack of fringe vegetation. Boards were added to increase bulkhead height at Backfield trunk #106. Grass seed was spread on recently re-topped portions of the Backfield perimeter dike in attempt prevent erosion. Pilings were cut to appropriate height at the Big Carr Impoundment bulkhead on Little Carr Creek. Minor bulkhead and ladder repairs were made at Little Carr trunk #117. An ATV and UTV were barged from Backfield to Pullfare for use with an upcoming project. Routine fluid service was conducted on the Marsh Runner and Marsh Master. The Marsh Runner also received extensive repair work on the tracks, cleats, hydraulic cooler, right rear drive motor, and muffler. Pontoons were pressure tested, herbicide rig removed for repair, camera system rewired, and the entire machine cleaned and degreased. Blades were sharpened for the Marsh Master and Marsh Runner mower decks. A leak on a rear backhoe tire was repaired. An angle grinder was dropped

off for repair. A service kit was picked up for the first 500hr service on the amphibious excavator. The shop was cleaned. A staff meeting was held to plan large projects for the year. Habitat conditions were monitored on all impoundments. The Rabbit Island impoundment was set to drain. River flooding was monitored in the area. A pre-construction meeting was held with Ducks Unlimited and Land Mechanics on the Lower Middleton Renovation Project. Kneece attended virtual webinars on Highly Parthenogenic Avian Influenza and Updates on Double Crested Cormorant Management and Rulemaking. Staff recommendations for 2021-22 migratory gamebird seasons were outlined, documents assembled and finalized. Multiple planning meetings were attended as SCDNR prepared to virtually host the Atlantic Flyway Technical Section Winter 2021 meeting.

Heritage Preserves

Local rivers caused preserves to be closed to vehicles and minor repairs have been completed to roads that are not still inundated. A mechanical aquatic vegetation treatment was carried out at Dungannon HP in the wood stork rookery and staff spread 5 loads of large ballast gravel on dike for stabilization. Staff helped burn a 20ac unit at Samworth WMA despite a very wet month.

Cartwheel Bay HP: Venus flytrap colony was monitored this month and recruitment continues with new plants being documented. Adjacent land parcels for sale were reviewed. The back road section of preserve was closed to vehicles given wet conditions. Routine property checks were conducted.

Dungannon HP: A contractor mechanically treated several areas within wood stork rookery with specialized equipment, and in addition an airboat was used to flag a path from footbridge to rookery. Staff contracted a dock builder to replace boards and handrails on observation deck as well as build catwalks around the two water control structures. Safety signage and closures were installed to keep public off catwalks. Water levels were monitored, and boards were pulled ahead of heavy rains. Staff fabricated and installed permanent gate on the boardwalk for upcoming stork season closure. Technicians moved 5 loads of large ballast stone to dike from main parking area and spread with new project skid steer.

Lewis Ocean Bay HP: Staff installed a weather station at shop and a car counter at front gate of preserve this month. One burn was attempted but given fuel moisture was not concluded. Caterpillar representative came out to demo new HT project skid steer and rotary mower. A generator representative also met staff to talk specs and needs for shop power. Bobcat welder generator, current shop power source, was taken to Lake City for repairs and then mobilized back to preserve. Biologist Fowler showcased preserve attributes and its management challenges to HTAB. Staff worked with botanist and office of environmental programs staff to create info docs to give to Horry county council along with Conway Medical representatives. A pre-bid meeting was held onsite for a new 40'x60' tractor shed. Several roads had to be closed given heavy precipitation events and local river flooding. To reopen these roads several loads of large surge stone had to be spread on site. Main roads were also graded to repair minor washouts. Staff met with upper-level staff to review emergency firebreak along preserve SE border and discuss upcoming local utility water line installation route possibilities. Beaver activity was monitored, and USDA trapper was contacted. Staff continued to monitor and work with surveyors/legal on encroachment by adjacent new phase of neighboring housing development. Staff posted "this property is managed with prescribed fire" signs along Centex, Ben Long, and International Drive to educate the ever-growing urban interface. Technicians found over 200 fluorescent light bulbs placed mostly intact in a burn block just off preserve road shoulder, staff carefully removed bulbs and ordered specialized boxes to dispose of the hazardous material properly.

Little Pee Dee River HP: Moderate to near major flood stage river levels occurred this month. Staff spent time monitoring closures of roads and water levels. Staff met herpetologist on site at the Twin Bays tract to search for river frog habitat. Staff worked with survey crew to find a property corner near Cox Lake.

Tillman Sand Ridge HP: Technician Kalinowsky was able to quickly notify HT and herpetology staff of an adjacent parcel up for sale. The land would certainly be an asset to the preserve proper and has been sent up the chain of command. Routine property checks were performed this month.

Victoria Bluff HP: A requisition was issued to mechanically treat vegetation near urban interface and reclaim fire lines within preserve, work is to begin in the coming months. Technician Kalinowsky assisted in getting new locks on 4 gates and made routine property check.

Waccamaw River HP: The river reached 15.6', major flood stage at Conway, allowing the event to tie for 7th highest on record. Property checks were made on numerous occasions to assess water levels given heavy rainfall. Heightened river levels did not allow staff to access much of the preserve this month. Staff assisted survey crew in relocating property line on Ellis tract that includes a possible encroachment issue from adjoining landowner.

Samworth/Dirleton House: Technician Bell called in a 20ac burn that included RCW trees and pitcher plant occurrences on the WMA, leaving only one more burn to reach his fire manager certification. Unit 4A biologist

assisted HP staff with scoring one deer from local hunter that made state record. Technicians mobilized 850 JD dozer to Yawkey for their staff to make needed road repairs.

Miscellaneous: Biologist Fowler toured Horry county mitigation bank with upper-level staff to discuss roads and parking areas given wet conditions. Biologist Fowler assumed on call bear phone this month but only one sighting was reported in the Carolina Forest area. Technicians serviced various heavy equipment and replaced all trailer lights with LED bulbs during wet weather. Staff collectively made 46 site visits to 7 preserves this month including Tillman Sand Ridge, Dungannon, Victoria Bluff, Lewis Ocean Bay, Waccamaw River, Cartwheel Bay and Little Pee Dee River HPs.

Tom Yawkey Wildlife Preserve

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 continues on the Lower Reserve managed wetland project. A rice trunk water control structure was constructed. The monthly waterfowl and wading bird point counts observed 7,321 waterfowl and 647 wading birds. Several infrastructure repair projects were accomplished during the month. Sixty acres were prescribe burned. Heavy rains and tidal flooding continued to hamper dike and road repairs. Pumps continue to be utilized to remove water from the Lower Reserve Managed Wetland. Sixty feet of new dike were constructed in the southernmost compartment. Interviews were conducted for the vacant Equipment Operator and Natural Resource Tech III positions. Two internal candidates were selected to fill the positions. Staff also conducted interviews and selected two candidates for the seasonal loggerhead sea turtle technicians and a seasonal Bachman's sparrow research technician. These positions will be responsible for the daily monitoring and protection of sea turtle nests on South Island and assisting graduate students on a research project. SCDNR Biologist Christy Hand spent several days working on the black rail project on Cat Island. She placed remote cameras at key locations in the Goose Pasture to search for black rails.

Infrastructure: Staff continued to work closely with Engineering and Legal Office staff to develop an agreement to transfer an easement on a portion of the South Island boat landing parking area to SCDNR. This easement area will be utilized for parking and swing bridge access to the Tom Yawkey Wildlife Center. The Yawkey Foundation approved utilizing funds in this years budget to make repairs to the parking areas once the easement is completed. Staff attended a virtual Yawkey Foundation Board of Trustees meeting. An update was given on management activities, infrastructure repairs and the current budget. Contractors with Frontier Communications replaced 12 phone pedestals on YWC with upgraded versions in anticipation of converting some phone lines to internet lines. Staff developed the bid specifications for the asbestos abatement of three buildings at YWC. The project was advertised and an onsite pre-bid meeting was held with eleven contractors. In addition to the abatement, specifications were developed, and a contractor selected to conduct the required air quality monitoring for abatement project.

Education and Outreach: Horry-Georgetown Technical College (HGTC) conducted four timber cruising labs on Cat Island with 46 students. In addition, three HGTC interns continue to work with staff several days each week. Yawkey Center staff conducted interviews on campus at HGTC and selected two additional students for internships during the summer.

Statewide Forester

Continued working with the three local Longleaf Implementation Teams (LIT's) in SC, including virtual SOLO-ACE Partnership meeting, 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, including initial timber sale preparation. Continued timber marking and cruising on this GNA project. Conducted monitoring on Edisto River Easement tracts with Coordinator Huckabee and Weyerhaeuser staff. Put out bid solicitation for forestry mulching on Mason WMA, Webb WC, and Hamilton Ridge WMA. Put out bid solicitation for land clearing at Love Farms for dove field and shooting complex. Preparing bid specs and packages for wetland restoration work on Webb WC. Working with Biologist Cockman on brood field clearing bid specs and package. 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 have been completed on timber re-sale at Palachucola WMA (266 acres of planted loblolly second thinning), close-out in progress. 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), and Edisto River WMA (bird dog training area, 73 acres of planted loblolly second thins), but all are very close to completion. 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) also remain suspended. Harvesting operations on two timber sales at Hamilton Ridge WMA (521 and 504 acres of plantation loblolly first thinning) remain suspended once again due to wet weather. 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) continued and made substantial progress towards completion throughout the month. Harvesting operations at Palachucola WMA (270 acres planted loblolly and slash marked thinnings and 138 acres clearcut for longleaf restoration) remain suspended due to rain/wet ground conditions. Harvesting operations at the Thurmond Tract WMA (116 acres of planted loblolly first thinning) commenced briefly before being suspended due to wet ground conditions. 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) due to wet conditions. Harvesting operations on awarded timber sales at the South Heritage Tract (276 acres planted loblolly second thins) and 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. Re-scheduled bid opening for sale next scheduled thinnings at Woodbury WMA (1,132 acres planted longleaf and loblolly) due to flooding, new bid due date March 10, 2021. Held bid opening for Santee Coastal Reserve timber sale (338 acres of marked natural mixed pine thinning, 81 acres of natural mixed).

Law Enforcement

DIVISION SUMMARY – COL CHISOLM FRAMPTON

Officers issued 214 summonses and 1251 warnings with 203 cases clearing court with fines totaling \$23,707.00 being assessed. A total of 1609 hours were spent on boating patrols resulting in 1727 boats being checked. Officers spent 127 hours on Homeland Security, 687 hours on litter patrols and a total of 182 hours were spent patrolling Heritage Trust Preserve properties. Officers also spent 1249 hours on night patrols. A total of 198 JEA hours were worked.

SEAHAWK – FSGT Gregg Brown/ PFC Neal Sutler

SeaHawk IOC analysts assisted with 227 requests from 34 different agencies during the month of February. IOC analysts also assisted with an additional 18 SCIIC requests.

The larger multiagency cases/operations worked in February 2021 are as follows:

- **MASFO (N. Charleston Terminal)** – 34 total personnel representing 13 difference agencies. 119 vehicles were stopped, scanned/inspected, and 120 people run for warrants and DMV status.
 - One Glock 43X was located, verified not stolen, and owner made exit the port terminal.
 - One Person had two TWIC cards in his possession. USCG confiscated improper TWIC.
 - 2 Containers had holds put on them for improper placarding.
- **Unlawful Possession of a Hawksbill Turtle Shell – (SCDNR/Dorchester)** – Informant advised that a local business posted a picture on Instagram with what appeared to be an endangered Hawksbill Sea Turtle shell on the wall. SCDNR Officers requested assistance from the SeaHawk IOC analysts identifying the business owner and locating the turtle shell. The suspect was identified and SCDNR Officers made contact with the suspect who advised he unlawfully traded fossilized sharks’ teeth for the sea turtle shell with an individual in Florida. The shell was seized, and the case was referred to the USFWS.
- **Trespassing to Hunt Waterfowl – (SCDNR/Upper Charleston)** - SCDNR Officers requested the assistance of the SeaHawk IOC analysts in identifying and locating a subject trespassing to hunt waterfowl on Murphy Island / Santee Coastal WMA. The suspect was identified, and warnings were issued after the suspect confessed to Simple Trespassing with his father.
- **Unlawful Possession of an Alligator (SCDNR/Jasper County)** - SCDNR Officers requested the assistance of SeaHawk in identifying and locating an individual possessing and posing with a believed to be deceased juvenile alligator on Facebook. Photographs were taken from the suspect’s Facebook page, which provided a match and identity through facial recognition due to the common name of the suspect and sheer number of similar names in the vicinity. Officers determined through investigation that the photograph was taken approximately 5 years ago and time stamped. The individual at the time found the dead alligator in a crab pot, cut it open to show his kids what had been eating, posed with it, and notified the SCDNR radio room. No charges filed.

Continue to conduct background investigations for new hires.

K9 TEAM – LTC JAMIE LANDRUM

K9 Team – LT Brady Branham

- K9 Teams were called out 14 times and were deployed 6 times during the month of February.
 - 5 were DNR related deployments resulting in 4 cases; 9 were other agency assists.
- K9 Teams continued to assist with K9 school for the new team (LCPL Burton and K9 Harlie.
- K9 Team LCPL Urquhart and K9 Lola assisted officers with trespassing cases and failure to stop for blue light cases.
- K9 Team LCPL Nettles and K9 Cash recovered money and a handgun used in an armed robbery in Denmark.
- K9 Team along with 30 field officers attended a four day long tactical tracking class at Camp Woodie.

Community Relations, Officer Wellness, & Diversity Recruitment – CPT Henry Stackhouse

- Attended the debriefing at 2500 Decker Blvd. involving a Fatal Chase with Richland County Sheriff Department.
- Met with LTC Landrum, MAJ Isaacs, CPT Ellis with the Georgetown unit at the Georgetown office to survey improvements made.

INVESTIGATIONS / REGION 4 – MAJ GARY SULLIVAN

Investigations – MAJ Sullivan/ LT Tony Spires

Welcome Daniel Lynch to our Aids To Navigation team.

Investigators issued 6 warnings, inspected 4 boats, 1 motor, and accrued 14 boating hours. Investigators conducted 4 night patrol hours, 14 search and rescue hours, and 28 boating accident investigations hours.

Aids to Navigation/Dive Team

- Aids to Navigation received 3 maintenance requests from the Charleston Office.
- The investigations office received 3 zoning requests this month.
- There were 198 hours of Aids to Navigation work.
- There were 2 dive assignments totaling 11.5 diving hours.
- There were 69 Marine Event Permits approved and the year to date total is 151.

Investigations/Marine Theft

- The investigations office received and processed 5 boating accident reports bringing the year to date total to 8.
- We have 2 boating fatalities year to date.
- Investigators conducted 204 Marine Theft Investigations hours.

Region 4 – CPT Michael Paul Thomas

Officers issued 74 summonses and 784 warnings. 60 cases cleared court, with fines of \$5,215.00 being assessed. Officers checked 333 hunters and 1,695 fishermen, with a total of 1,117 hours spent on boating patrols resulting in 960 boats inspected. Officers spent 46 hours on Homeland Security, and 142 hours on litter patrols. A total of 75 hours were spent on patrol of the Heritage Trust Preserve properties and a total of 416 hours were spent on night patrols. Officers gave a total of 20 public presentations and 198 hours on JEA patrols. There were 29 boating accident investigation hours conducted and 1 BUI screening was conducted.

Captain's Spotlight

Officers from Horry, Georgetown, Upper Charleston, and Berkeley counties as well as officers from Region 2 were dispatched for flood detail in the Waccamaw River, PeeDee River, and the ICW north of Socastee. They partnered with USCG and Horry County Sheriff's Office to perform safety and security patrols and help evacuate residents in danger.

Unit 4A (Horry) FSGT Kevin Pardue

- LCPL Chanaca and CO Hemingway with DLEO Hyman worked a tip through social media of illegal selling of oysters. The oysters were harvested from a prohibited area in the county and the subject had no commercial licenses. The subject was charged for numerous violations from both SCDNR and SCDHEC shellfish officers. Oysters were forfeited and disposed of.

Unit 4B (Georgetown) FSGT Ryan Williams

- PFC Dozier caught a shrimp trawler in federal waters with no federal permits to trawl and the Captain was charged with narcotics violations.
- LCPL Graham charged 2 subjects with overlimit of clams and oysters in Murrells Inlet.

Unit 4C (Charleston North) FSGT Huger McClellan

- Unit 4C had 62 JEA hours.

Unit 4D (Berkeley) FSGT Brian Crawford

- FSGT Crawford, PFC Angotti-Smith and CO Taylor worked JEA dockside at the flea market. A subject was caught selling oysters with numerous DHEC violations and no receipts or documentation of where the seafood was obtained. Subsequently, a citation was issued with a seizure of the product.
- CO Ellis responded to a call from USFW in reference to a subject already under investigation. With the assistance of USFW and the DNR covert team, CO Ellis was able to build a case killing geese. This was achieved through interviews and social media.

Unit 4E (Charleston South) FSGT Greg Garner

- LCPL Ladue and CO James worked with USFW on an eagle nest and construction site on Kiawah Island.
- Officers worked commercial crabbing, attended in-service training, conducted several JEA patrols, and assisted other officers in the training of operation of the 39' Contender.

Unit 4F (Dorchester/ Colleton) LT Andrew Godowns

- PFC Riley assisted USFW agents with a subject who was in possession of illegal Hawksbill Sea Turtle Shell. PFC Riley investigated the report, took statements, confiscated the shell, and completed a report for USFW. Charges are pending.
- SGT Gantt responded to a report of a dog caught in a coyote trap. After investigating the incident SGT Gantt found 4 illegal furbearer traps. Charges were made for trapping without license and untagged furbearer traps.

Unit 4G (Beaufort) FSGT Adam Henderson

- CO Cooler responded to a gunshot victim in Victoria Bluff Heritage Preserve. It was determined that it was not hunting related but self-inflicted. CO Cooler stayed on-scene assisting BCSO with entry into the WMA. The victim has been reported to NCIC as endangered/missing.
- PFC Pritcher, CO Gantt, and CO Willis responded along with Beaufort MRO to a call out of a 31 ft cabin cruiser on fire in the vicinity of Parris Island. The occupants got out with no injuries. Officers stayed on scene for the 6 hours that the vessel burned to prevent further property damages.

Unit 4H (Jasper/ Hampton) FSGT Earl Pope

- LCPL Mills apprehended a subject that was trespassing in Hampton county riding on private property.
- PFC Dupree apprehended 2 subjects that were trespassing to fish.

FIELD OPERATIONS REGIONS 1-3 – MAJ Mike Isaacs

Region 1 – CPT DJ Riley

Officers issued 62 summons and 258 warnings with 102 cases clearing court with fines totaling \$14252.00 being assessed. Officers checked 1247 fishermen, 323 hunters, and a total of 214 hours were spent on boating patrols resulting in 343 boaters checked. Officers gave a total of 17 public presentations. Officers spent 42 hours on Homeland Security, 249 hours on litter patrols. A total of 45 hours was spent patrolling Heritage Trust Preserve properties and a total of 43 hours was spent patrolling Jocassee Gorges resulting in 9 summons and 11 warnings being issued. Officers also spent 370 hours on night patrols. During the month, there was 1 drowning.

Captain's Spotlight:

LCPL's Jordan and Tatum utilized a trapping forum to monitor activity. LCPL Tatum obtained a picture of an illegally taken red fox. LCPL Jordan was familiar with the trapper and the land that he utilizes. LCPL Jordan walked the property and found 4 traps with no tags. LCPL Jordan hid out in the bushes until the trapper showed up to check his traps. The trapper was charged with untagged traps and trapping without a license.

Unit 1A (Oconee / Pickens) FSGT Ron Hedden

- LCPL Norris and SGT Busha both issued summons for trout violations in the delayed harvest for illegal bait (4 total), possession of trout (2 total), and fishing without a license (5 total).

Unit 1 B (Greenville / Spartanburg) FSGT Joe Cartee

- LCPL Tatum made 2 cases for unlawful shining in Game Zone 1 and 3 cases for illegal use of a non-game fishing device (cast net) in Game Zone 1.

Unit 1C (Cherokee / Union) FSGT John McCraw

- Officer Gardner and LCPL Burnett raised \$2,579.00 while working the SCWLEOA booth at the 2-day Walker Days Event held each year at the Union County Fairgrounds.
- FSGT McCraw completed the Associate Public Manager Cohort Class (APM).

Unit 1D (Greenwood / Laurens) FSGT Travis Dudley

- LCPL Stewart and LCPL Keller issued several warnings and a citation for trapping violations in Laurens County after receiving a tip concerning a live Coyote caught in a trap on private property.
- LCPL Stewart assisted the Dive team in locating a drowning victim on Lake Hartwell by utilizing side scanning radar.

Unit 1E (Abbeville / Anderson) FSGT Rhett Barwick.

- LCPL Moon and LCPL Ginn attended the four-day Tactical Tracking Training for K9 at Camp Woodie.

Unit 1F (Edgefield / McCormick) FSGT Michael Davis

- LCPL Henry and PFC Rowland apprehended two individuals trespassing to dig artifacts in Edgefield County. Both were issued citations for trespassing. Items found were turned over to the owner of the property.
- LCPL Harvey and PFCs Jones and Rowland attended K9 tactical training.

Region 2 – CPT Matt McCaskill

Officers issued 37 summons and 62 warnings with 21 cases clearing court with fines of \$1,175.00 being assessed. Officers checked 216 hunters and 284 fishermen, and a total of 87 hours were spent on boating patrols resulting in 102 boats inspected. Officers spent 12 hours on Homeland Security, 128 hours on litter patrols, and a total of 37 hours were spent patrolling Heritage Trust Preserve properties. Officers gave a total of 16 public presentations. Officers also spent 254 hours on night patrols. There was one boating accident.

Captain's Spotlight

While patrolling 40 Acre Rock Heritage Preserve at night, Officer Timmons apprehended 4 subjects. One subject admitted to spray painting the rock and was subsequently charged with WMA abuse. The other subjects were charged with Heritage Preserve after hours.

Unit 2A (Chester, York) FSGT Jason Plemmons

- Officers Ruff and Vissage observed vehicles parked on a property that had ongoing trespassing problems in York County. They were able to locate 2 different parties of rabbit hunters on the same property. Officers issued 6 summonses for trespassing to hunt small game and issued warnings for license violations.
- Officer Owen went above and beyond as a dive team leader to respond to 3 dive assignments as well as conducting 3 background investigations of 3 potential officers in the next new hire class.

Unit 2B (Fairfield, Lancaster) FSGT Will Coleman

- All officers worked extended hours in Cedar Creek Sanctuary for fishing violations and several cases were written.

Unit 2C (Kershaw, Lee) FSGT JC Hough

- Officer Poeta encountered a hunter who had taken a Cormorant on the Wateree River. The hunter was cited for taking a protected species.

Unit 2D (Marlboro, Chesterfield, Dillon) FSGT John Hillian

- Officer McGiboney made 1 case for possession of lead shot in Dillon County.
- Officer Gallien made 1 case for trespassing to hunt in Chesterfield County.

Unit 2E (Florence, Darlington) FSGT John A Perry

- Officers of Unit E completed all Legal Updates mandated by SCCJA.

Unit 2F (Williamsburg, Marion) FSGT William Huggins

- Officer Dale Tanner made 1 case for littering and Officer David Tanner made 1 case for providing false information to a Law Enforcement Officer.
- Officer Branham made 1 case for traveling behind a closed gate on a WMA.

Region 3 – LT Brian Corbett/ LT John Bedingfield

Officers issued 41 summons and 141 warnings with 20 cases clearing court with fines of \$3155.00 being assessed. A total of 177 hours was spent on boating patrols resulting in 318 boaters checked. Officers spent 27 hours on Homeland Security, 168 hours on litter patrols and a total of 25 hours were spent patrolling Heritage Trust Preserve properties. Officers gave a total of 7 public presentations. Officers also spent 205 hours on night patrols. During the month there were 18 hours spent on hunting accident investigations and 8 hours spent on boating accident investigations.

Captain's Spotlight

LCPL Baxley received a call from the Covert team about a subject on Facebook trapping coyotes and foxes without a permit. After interviewing the subject, it was determined that he was legally trapping them, but illegally selling them. The subject advised LCPL Baxley that a buyer was enroute to purchase the coyote. LCPL Baxley informed the Covert team of this new information. Once the buyer left the original subject's house, a traffic stop was made. The buyer had already illegally purchased six foxes and two coyotes and had them in his possession. Nine cases were made this date. Six of these cases were for Buy/Possess Live Fox, two cases for Buy/Possess Live Coyote, one case for Sell/Possess Live Coyote without a Valid Permit, and multiple warnings were also issued.

Unit 3A (Lexington) FSGT Hunter Robinson

- Officers worked goose season, trapping out of season and fishing around the county.
- Good luck to Gilmore Stevens with his new position in hunter education and thanks for his years of hard work.

Unit 3B (Richland) FSGT Hogan Tyler

- CO Thornton made a BUI and LCPL Bryant made 2 BUIs (all were on the Congaree river) and one subject was charged BUI 2nd offense.
- LCPL Baker assisted with multiple in-services and also a security assignment at the State House.

Unit 3C (Newberry/ Saluda) FSGT Marcus Smith

- LCPL Arnold issued a subject a fishing without a license ticket several weeks prior. He was contacted by the subject whose ID was provided by the suspect at the time of the incident saying that his wallet had been stolen and that the suspect LCPL Arnold had written was using his stolen ID. Fast forward, while LCPL Arnold was patrolling Buzzards Roost, LCPL Arnold encountered the subject again. This time, aware of the situation, LCPL Arnold was able to arrest the individual. He was charged for obtaining a license by fraud, giving false information to a police officer, and fishing without a license. The local police department is also investigating this subject for other thefts as a result of this case.
- LCPL Arnold and PFC Scogin assisted with a youth quail hunt in Newberry County.

Unit 3D (Aiken/ Barnwell) FSGT Steve Terry

- LCPL Lynch charged one individual for Littering.
- Officers spent several hours working issues at the Savannah River Bluffs Heritage Preserve.

Unit 3E (Allendale/ Bamberg) FSGT Adrian Priester, LT Corbett

- LCPL Nettles, PFC Gray, Officer C. Baker, and DLEO Breland assisted Denmark PD and Bamberg County with an armed robbery. LCPL Nettles and K9 Cash recovered a loaded handgun, facemask, and cash.
- LCPL Nettles and PFC Gray attended the tactical tracking training in Clarendon county.

Unit 3F (Calhoun/ Orangeburg) FSGT Eddie Lee

- LCPL Collins held a youth, veteran gun safety talk and duck hunt with 5 people attending. 12 ducks were killed. He also had a class with a group of youth on duck box building and how to install them.
- PFC Thomas received information in reference to an alligator inside a residence as a pet. The informant stated that drugs were in the house also. After talking with the informant further and gathering more information a search warrant was obtained to enter the residence and get the alligator. The alligator was located along with 4 marijuana plants and drug paraphernalia. The subject was charged with possessing an American alligator and possession of marijuana. They were assisted by the Orangeburg County Sheriff's office, DNR K9 Team, DNR Covert officer.

Unit 3G (Clarendon/ Sumter) FSGT Cary Robinson

- LCPL Laney, CO Grooms, and DLEO's Watson and Lowder worked with Santee Cooper documenting and posting ten illegal floating structures in Sparkleberry Swamp for removal.
- LCPL Laney and PFC Price worked a hunting incident where one hog hunter was shot by another hog hunter with .410-gauge buckshot. Nobody was seriously hurt, and the victim was released from the hospital that same day.

STAFF OPERATIONS – MAJ BILLY DOWNER

Education – CPT Steve Simpson

A total of 41 presentations were given to the public.

- 82 students certified in 8 Hunter Education classes; 219 students certified in Hunter Education Internet classes,
- 12 students certified in 3 Boater Education classes; 124 students certified in Boater Education Internet classes.

Outreach Activity

- TOMO – 7 deer hunts 23 participants 12 deer harvested
- TOMO – 3 duck hunts 10 participants 24 ducks harvested
- SC Archery in Schools Virtual Tournament 1217 participants

Range Activity

- Pickens Range (Andy Emerson) 800 Shooters
- Spartanburg Range (Brian Bailey) 493 Shooters
- Wateree Range (Richie Boykin) 891 Shooters
- Twin Ponds Range (Ken Mikkelson)..... 974 Shooters
- Total for manned ranges 3158 Shooters

Staff Operations, Administration/Grants – CPT Lee Ellis

- Continue working on AFWA Accreditation development.
- Worked on grant applications for JAG and RBS.
- Completed multiple reviews and updates on LE Directives.
- Attended virtual Law Enforcement Training Council Meeting.
- Summons entered – 232 Warnings entered – 1,120
- New Suspensions – 13 Suspensions closed – 19
- SCDNR Suspensions – 796 IWVC Current Suspensions – 75
- Pending Suspensions – 119 IWVC Suspensions Reviewed - 0

Training – LT Russell Monnet

- Conducted Spring In-Service on 4 dates.
- Conducted final PT and Swim Test for LE applicants.
- SSgt. Cooper assisted with Tactical Tracking Training with seminators in Summerton.
- Continue to finish training building and range renovations.

Operation Game Thief/Property Watch/ Special Projects/DLEO Program – FSGT Sidney Rainwater

- Property Watch New Members – 17 Funds Collected - \$1,904.00

Homeland Security/EMD – LT Benjamin Thomas, IV

- Would like to welcome LT Charlotte McKee to our team
- Planning for Vaccine Pods for LE throughout the state
- Winter Storm Plan updated
- Statehouse Detail for Heart Bill signing

Aviation – Chief Pilot Owen Barker

- 9 sorties for 33.7 flight hours; SCDNR/Santee Cooper Law Enforcement Flight - 2.8 flight hours
- SCDNR Biology Flights - 15.9 flight hours; SCDNR JEA Flights - 12.0 flight hours

Equipment – Max McCommon

- Hired new employee, Daniel Lucas from dispatch
- Created new order of Operation at Receiving
- Re-organized tool room
- Received 2 new outboards

Supply – Laken Riddle Williams

- Created Ordering Catalog for regions
- Re-organized filing system for POs, Reqs, & Requests
- Preparing for Summer Order & Template sent out.
- Requisitions Organized for Regions' Order

Communications – Toby Freeman

- Motorola programing laptop sent out for repair
- Working on new Blue Light package
- Worked on setting up new PPT Satellite phones

Radio Communications Center – SSGT Jason Smith

- Tested Dragon Force and Alastar tracking apps.
- Completed volunteer background checks for Hunter Education.
- Top 3 Calls: 10-45 Injured Animal, General Information Call, Trespass to Hunt/Fish (62)
- Info Provided by Dispatch: 318; Total Calls: 1300
- Warrants: Arrest: 0 Entered / 3 Cleared. Bench: 0 Entered / 1 Cleared
- Transmissions: 800: 9076, Phones: 4861, and VHF: 1849

Technology- February 2021 Report

Administrative

- Attended SmartCop E-ticketing kick off meeting - planned initial staff assignments
- Worked with State data center staff to consolidate plans on migrating Oracle technology when SCDNR data center migrates to the State data center.
- Assisted in answering question regarding new Customer Sales Portal RFP
- Attend quarterly Technology Oversight Committee meeting at Department of Administration
- Provided application information to Data Classification project team - SCDNR Legal team
- Met with PCI Compliance Consultants to plan the first annual review of PCI Compliance controls.

Application Development

- Investigated and resolved the issue with Daily Boat Motor transaction report.
- Modified and ran the Info-Link reports for Legal department.
- In the process of making changes to the violation system, so department can start capturing race and gender information for non-guilty and warning tickets.
- Completion and implementation of changes to the customer portal to support turkey harvest reporting.
- In the process of implementing changes to turkey harvest pages.
- Involved in turkey tag bulk generation process and mass test runs, generated test data for the print vendor, and ran and validated the results against the production database.
- Developed a new turkey harvest report.
- Worked on casual excise tax report for outboard motors tax.
- Working on modifying the violation system to fix the issue with expiring current address row while creating new address row when adding a summons ticket.
- Support and maintain all the DNR internal applications, including routine maintenance.
- Ran the monthly report for National Saltwater Angler Registry (NSAR).
- Met with various business units to discuss programming requirements.

Database Management

- Boat-motor registration/title data-exchange with SC County governments:
 - Provided county developers and contractors with questions concerning the data-exchange file-format, upload interface, and assistance for rejected files.
 - Developed an enhancement to the county inbound daily file processing program that logs file loading failures and makes info concerning these failures available to the county in a self-service fashion.
 - 16th "live" **data** file for the counties was auto-generated and made available to the counties on 2/15
 - Provided county representatives with SFTP access/account management/password assistance.
 - Monitored the creation and publishing of weekly invoices to the County Reg Fee portal
- Game Harvest mobile and web harvest reporting
 - Refreshed the MSSQL county portal database with data from the Oracle production database including the FY2021 turkey tags
 - Created test accounts and tag sets for staff and developers to use for testing.
- Turkey Tags 2021
 - Created the turkey tag FY2021 mass-fulfillment file and uploaded to the print vendor.
- Data extract requests

- o Updated the monthly Sales Comparison & Analysis spreadsheet
- Boat/Motor Reg Fee/Card/Decal document fulfillment
 - o Monitored the movement of **data** between SCDNR and the print vendor.
 - o Researched and responded to questions from DNR and print vendor staff.
- VIS interface:
 - o Generated and uploaded the monthly data extract for VIS.
- Disaster Recovery Project:
 - o Monitored the real-time synchronization activity between the SCDNR PROD Oracle database and the standby server at the remote data center in Charlotte
- SCDSS interface: Generated and uploaded the monthly data extract for SCDSS
- Supported DNR counter sales staff by responding to requests for assistance.
- Monitored and validated the daily Oracle and SQL Server database backup jobs.

Electronic Document Management System (EDMS)

- Provided EOM System Administration, monitoring, configuration, routine scanner maintenance, EDMS software license management and performed correction actions as needed for the Electronic Document Management System
- Provided document management services for Boat Titling and Registration, Law Enforcement Licensing, Engineering, Executive and Marine Theft Investigations, which included imaging that contributed to 46,317 images and 12,133 records to the Agency's electronic document management repository. The total Agency's electronic document management repository consists of 3,625,423 records and 12,430,589 images
- Processed Boat Titling and Licensing records for archival backup
- Performed document preparation for disposal and disposed of approved records
- Providing Document Management end user support and quality control and accuracy assessment of electronic document **images** and index values
- Performing electronic back file conversion for Executive Office
- Assisted Boating Titling and Registration Staff with boating record searches, record retrieval
- Completed Online Technology Training
- Researching missing supporting documents transactions
- Researching duplicate customers numbers
- Performed OA/QC on Licensing data in Perceptive Content
- in Microsoft Teams meeting with Hydrology to discuss data extraction of Hydrology records
- Performed data extraction of Hydrology data for analysis
- Held Microsoft Teams meeting with Law Enforcement to discuss document management solution for suspension records
- Participated in Zoom meeting with Hyland to discuss update/upgrade of the Perceptive Content /Brainware **software.**

Geographic Information Systems (GIS)

SCDNR Data

- The GIS Team continues to improve SCDNR property and assets data.
- Regions 1, 2, and 3 have been migrated to new database schema. Work continues on Region 4.
- An intern continues to work on updating GIS datasets for boat ramps and pier and bank fishing access.
- Work has continued with Esri consultants to help with the development of a public facing application for public lands and fishing access.

GIS and Mapping Support

- Assistance was given GIS users in all divisions for cartography and data requests.
- Field data collection efforts continue to be supported for WFF, LWC, and Environmental Office staff.

GIS Expertise and Advising

- SCDNR staff continue to review statewide aerial imagery acquired by the state Geographic Information Committee.
- GIS staff have begun reviewing new LiDAR data collected for Lancaster County.
- The quarterly South Carolina Geographic Information Committee meeting was attended.

SC Regulatory Floodplains

- Data for South Carolina's FEMA regulatory floodplains were prepared and published to the GIS server. These data will be used in the web site being developed by the Flood Mitigation Program.

Help Desk

- Imaged and setup 8 new computers for DNR employees.
- Continued customer support for reported problems.
- Continued adding I-phones to Verizon MOM.
- Ordered and installed 1 new VOiP phone in Dennis building.
- Setup new laptops for COVID-19 social distancing to work from home.
- Setup/ reconfigured 1 Xerox MFC's.

Systems / Networking Section

Systems Manager

- SolarWinds - Continue to work with OTO/DIS and SolarWinds support to configure log collection for the state SOC
- Duo - Continue to administer Duo Security for VPN; add users, send enrollment emails, configure mobile devices
- Server Patching - Install monthly security patches and updates for Windows Servers
- ArcGIS- Continue to administer and update configurations as needed for Heritage Trust and DNR ArcGIS Enterprise environments
- SmartCop-Work with LE on the planning stages of SmartCop rollout
- User Terminations - Continue to monitor reports of terminated accounts 30+ days old and remove them from AD
- Web Applications - promote to production updates and changes made by the Dev team
- FTP - Continue to administer FTP server. Setup/configure user accounts for SFTP access to DNR FTP server.

Network, Active Directory and Federated Services Administration

- Continuously monitored the MPLS network to transparently overcome net-down emergencies and coordinate repairs with vendors and providers as needed to maintain all our offices interconnected
- Continued daily administration, patching, updating and configuration of the PaloAlto firewall system
- Continued daily administration, monitoring, verification of correct operation and application of corrective actions as required/needed for all: Domain Controllers, Active Directory Federation Servers, Exchange Mail Servers, Exchange 365 Cloud environment

- Continued to maintain Microsoft urgent and important server patches and updates as needed on AD and Exchange relevant systems as well as update all auxiliary software installed on said systems
- Continued daily administration of the in-house implemented SMS/MMS "Texting" resource
- Continued daily administration of Active Directory accounts & group memberships
- Provided general network connectivity support and procedures to users as needed/required
- Coordinated needs, orders, and installation of network cabling and services at remote offices as needed/requested
- Continued providing alert and guidance for specific e-mail threats that were seen in high circulation and appeared to be targeting DNR employees
- Completed upgrade of circuit for the Charleston/MRD office, it is not running at 100Mbps.
- Continued ongoing efforts with providers to find viable options to upgrade Internet access at Yawkee and Webb locations
- Started bandwidth upgrade project for the Eastover office
- Started bandwidth upgrade project for the Cheraw office
- Added DNS TXT record to allow apple domain verification needed for Ashley's "Apple Business Manager" project, verified operation and notified readiness to Mark and Ashley
- Followed up with law enforcement regarding needed date of internet circuit installation for the LE training center. They are still having power issues and will notify us when ready
- Contacted Segra to request rush order on the Aynor circuit. Since construction is needed for the requested site, it is unlikely the date can be moved but they did offer to do their best effort on getting it done as fast as possible.
- Obtained quotes and ordered network equipment needed for the Aynor office project
- Researched and ordered new cellular router for the new office at Botany Bay
- Contacted **Segra** and requested investigation of circuit issues that were reported by some users in Bonneau, initial findings are not indicating any anomalies on the circuit, further observation is ongoing.
- Enabled litigation hold settings on thirteen mailboxes as requested by Shannon Bobertz.

Backup, Data and Printer Administration

- Installed Rapid Recovery backup systems as needed for new computers.
- Recovered 0 folders from backup for Network Storage Server.
- Restored 1 workstations data from backup.
- Maintained and Updated Windows Servers as needed.
- Maintained Microsoft and 3rd party updates for all Windows Workstations.
- Upgrading Windows workstations to version 2004.
- Continued work on PCI Compliance Upgrades.

Storage, Blade and Virtual Environment Management

- No information submitted- position is vacant due to employee retirement.

Web Development

Website statistics

- The February web statistics from Google Analytics.
 - o Total on requested tracked viewed pages for the agency website 186,938.

- o The most viewed file on the website was the home web page [http:// www.dnr.sc.gov/ index.html](http://www.dnr.sc.gov/index.html) with 44,294 page views. The second most viewed file on the website was the hunting web page <https://www.dnr.sc.gov/hunting.html> with 25,338 page views.
- o Top devices accessing the **website are:** 50.4% mobile device; 46.4% desktop and 3.2% tablet devices.

Website maintenance and support

- Interviewed internal applicant for Assistant Web Master position and hired Robert Brown for the position.
- Updated Drupal 8 with required security patch. Researching ways to develop Drupal to make it independent of the template so that more than one template maybe used in the future.

Graphics Monthly Report- February 2021

The Graphic's jobs for the month of February consisted of materials for each of the divisions and miscellaneous jobs. listed below are a few of the jobs that took place in detail:

- o WFF jobs included Botany Bay car tags and maps, Angler Recognition Certificates, items for the SCDNR **Bass** Slam, Quail Buffer Signage
- o DA (formerly OSS) jobs included infographics and the Jocassee Journal
- o LED jobs included life Jacket Rack Cards, LE Monthly Activity Books, maps, and NASP checks & posters
- o LWC jobs included a fillable Application for the SC Environmental Awareness Award
- o MRD jobs included Saltwater Recreational Fishing license Signage.
- o The agency continues to help foster the partnerships and promotions of the agency through ads, specialty items, and outreach.
- o There were 28 completed jobs in the month of February.
- o The agency spent approximately \$12,380.74 on printing, signs and publications. This cost is not all state funding but includes grants, nonprofit charitable donations and federal monies as well.

Completion Report For Graphics

Thursday, February 25, 2021

Job #	Qty	Title	Contractor	Staff	Completion Date	Amount
21-12801	DA	Leave the Snags Infographic	Henderson	Kristin Coulter	2/22/2021	
20.12747	DA	Jocassee Journal Newsletter Fall/Winter 2020	Slack	Greg Lucas	2/4/2021	\$2,925.00
20-12559	EXE	SCDNR New Employee T-Shirt	Henderson	Amanda Stroud	2/16/2021	
21-12785	LED	Life Jacket Rack Cards	Elmore	Dale Gibson	2/3/2021	\$254.24
20-12503	LED	TOMO Trailer Wrap	Conrardy	Ken Cope	2/10/2021	
20-12548	LED	OGT Trailer Wrap	Conrardy	Sidney Rainwater	2/10/2021	
21-12778	LED	LE Monthly Activity Book	Elmore	Laken Riddle	2/11/2021	\$2,530.00
21-12805	LED	LE Education Staff Regional Map	Conrardy	Mary Anna Mayson	2/12/2021	
21-12802	LED	2021 Nasp State Archery Tournament Presentation Checks & Poster	Conrardy	Charlotte Mayhugh	2/10/2021	
21-12B03	LWC	SC Environmental Awareness Award Nomination Form	Henderson	Bill Marshall	2/22/2021	
21-12789	MRD	Saltwater Recreational Fishing License Sign	Slack	Matt Perkinson	2/10/2021	\$90.00
19-12459	OSS	Watercraft Application Form Fillable FM-015	Henderson	PatlyEpley	2/22/2021	
20-12557	OSS	Team SCDNR Decal	Elmore	Amanda Stroud	2/16/2021	
20-12564	OSS	SCDNR Business Cards	Henderson	Elizabeth Bradley	2/25/2021	
20-12776	WFF	Botany Bay Car Data Tags	Elmore	Bess Kellett	2/3/2021	\$1,575.00
19-12309	WFF	Sassafras Interpretive Signs	Henderson	Greg Lucas	2/22/2021	
19-12476	WFF	Solar Pollinator Flyer	Slack	Tom Daniel	2/22/2021	
20.12777	WFF	Botany Bay Driving Tour	Elmore	Bess Kellett	2/1/2021	\$1,878.00
20-12775	WFF	SCDNR Bass Slam Sticker	Conrardy	Will Mundhenke	2/8/2021	\$187.00
21-12794	WFF	Youth Bass Fishing Championship Banner	Elmore	Sarah Chabaane	2/22/2021	
19-12110	WFF	Solar Habitat Guide	Elmore	Lorianne Riffin	2/22/2021	
21-12795	WFF	Youth Bass Fishing Sponsor Sanner	Elmore	Sarah Chabaane	2/22/2021	
21-12812	WFF	Angler Recognition Certificate- Big Fish of the Year	Conrardy	Dell Martin	2/25/2021	
21-12786	WFF	Do Not Disturb Quail Suffer Area Sign	Conrardy	Michael Hook	2/2/2021	\$1,140.00

Account #	Agency	Description	Location	Officer	Date	Amount
21-12788	WFF	Boat Ramp and Staff Only Signs	Conrardy	Achl Treptow	2/12/2021	\$ 143.00
21-12792	WFF	Dally Visitation & Use Car Tag	Elmore	Amanda Stroud	2/12/2021	\$344.00
21-12793	WFF	WMA Hunter Data Car Tag	Elmore	Amanda Stroud	2/12/2021	\$ J.185.00
21-12797	WFF	Quall Hunt Data Card (Car Hang Tag)	Elmore	Cathryn Bland	2/12/2021	\$ 129.50
28						\$ 12,380.7-4

SCDNR Video Team | February 2021 Report

- Edited "SC Game Check" video for social media
- Filmed & Edited "What is SCDNR?" (en Espanol)
- Uploaded several Edisto RBC meetings and trainings to YouTube channel
- Uploaded "Trout Tuesdays" to YouTube channel
- Interviewed candidates for vacant Videographer position
- Photographed Law Enforcement Officer Award
- Filmed & Edited 360 video at St. Stephens Dam
- Filmed/photographed Youth Duck Hunt
- Edited "Happy Hunter" video
- Edited Youth Duck Hunt video
- Worked in Merlin on organizing media files
- Filmed/Photographed/Edited K9 training
- Filmed & Edited 360 video of ducks at Santee Coastal

Monthly Report: February 2021
Kaley Lawrimore, Social Media Manager
Office of Media and Outreach

- Posted on SCDNR social media forums
- Sent public inquiries to the appropriate people within SCDNR
- Sent emails to the public via GovDelivery
- Attended virtual board and advisory committee meetings
- Created content for ongoing social media campaigns
- Worked on ongoing content calendar objectives
- Researched social trends and the state of government on social media
- Identified objectives to better improve relations between SCDNR and the public
- Attended virtual social media discussion involving government on social media

February 2021 Region One Outreach

- * Met WSPA-TV (Spartanburg) reporter at Nine Times Preserve in northern Pickens County to talk about Shealy's saxifrage, a new plant to science, found only at the preserve. (SCDNR manages the WMA at the preserve for public hunting and stocks trout into the creek.)
- * Working on text to go with photos of topographic features (surrounding mountains, lakes, etc.) that will be placed atop Sassafras Mountain Overlook.
- * Posted several road closure Tweets for Sassafras Mountain Overlook anticipating snow and ice storms.
- * Met Sarah Chabaane and Fisheries Education staff at Sassafras Mountain Overlook.
- * Wrote press release on temporary closing of Peters Creek Heritage Preserve in Spartanburg County, then wrote press release when preserve reopened.
- * Coordinated press release on Baltimore Oriole Winter Survey.
- * Working on stories for Spring/Summer 2021 Jocassee Journal. Distributed newest issue to S.C. State Parks along SC 11, Table Rock, Keowee-Toxaway and Devils Fork, which serve as a "gateway" to Jocassee Gorges.
- * Working with OMO team to promote SC Game app for turkey reporting, when turkey tags arrive in people's mailboxes.
- * Posting a daily news digest to select SCDNR staff and board members from Meltwater consisting of SCDNR press, broadcast and social postings.
- * Attended meeting of Pickens County Extension Advisory Council.
- * Answered calls, e-mails and text messages on a variety of topics, especially Sassafras Mountain overlook, from media and South Carolina residents.
- * Coordinated with Angler's Headquarters in Columbia to post monthly freshwater, saltwater fishing reports.
- * Assisted with several snake IDs on inquiries from SCDNR "Upstate Snakes of S.C." website.
- * Fielded inquiries on SCDNR properties such as Tall Pines WMA and recreation (roads open/closed, hunting, hiking, backpacking, paddling, etc.) in Jocassee Gorges/Horsepasture and mountain region, and added Jocassee newsletter subscribers received from SCDNR Jocassee Gorges site.
- * Fielded calls about hunter and boater education, nuisance wildlife, boat navigability on Lakes Keowee, Hartwell and Jocassee, and other general phone questions.

February 2021 Monthly Report Activities for David Lucas - Public Information Coordinator

General Media Relations & Public Information:

Proofed & edited news releases/messages for distribution on Gov Delivery as requested by Mitigation Section, Shooting Sports program, Wildlife & Freshwater Fisheries, LE, OMO staff or other internal requestors.

Wrote and/or distributed news releases on: PFC Godowns Recognition; Designated military/Youth waterfowl days; Peters Creek HP Trails reopened; Coastal Bird Program update; Baltimore Oriole Survey; Environmental Awards Nominations Open; Officer Riley Receives NWTF award; Emergency No-Wake Zone for Horry Co.

Answered non-LE Media or Constituent inquiries on a wide variety of topics - app. 30 calls/emails, texts, etc.

LE & W&FF - Statewide Media Relations:

On call for media/constituent inquiries every day-- 24-7 for LE-related incidents --with exception of any AL days (none taken in February). Responded to constituent or media inquiries on a variety of topics, including, Waterfowl baiting case; Officer Covid Vaccinations.

Other LE:

Edited EOY nomination letter for Lt. Col. Landrum; Created an approved template for media statements on Dive Team recoveries for Dwayne Rogers.

Other OMO Projects:

Continued uploading photo files to Merlin system.

Continued work on Blog articles and other assignments for the Turkey E-tag and promoting Category 1 Waterfowl Area management activities campaigns. (Both should post in March)

Social Media:

Continued downloading and cataloguing FB posts for Archives. Assisted Kaley/Kristen with regular posting as requested by Divisions or other requestors, or for promo campaigns. Created posts for Blog stories or news releases.

SC Natural Resources Blog:

Edited & posted story and photos on Crab Bank Restoration Work/SCCBP Update

SEW magazine:

Read/edited pages for M-A 2021 issue.

Travel:

ACE Basin Task Force Meeting- 2/24

Litter

February 2021

- Planning stage for joint campaign with Clean Vessel Program (MRD)
 - Exploring campaign ideas
- Presenter at the Dept. of Education's virtual conference on environmental stewardship
- Concluding plans for Litter Commission off-site meeting
 - categorizing data to measure effectiveness: graphs, maps, & trends for litter removal
 - Meeting with Litter Commission members for additional metrics to measure
 - Meeting with Sheriffs Association for podcast
 - Establishing presenters
- Collaboration with Law Enforcement with quarterly reporting metrics

Dan DuPre
Feb-Monthly Report 2021

Programs Update

- Camp Wildwood
 - Camp Wildwood is full (1st Year, 2nd Year, 3rd Year)
 - For the first time in 10 years, we are evaluating our Professional Staff to see if we (Executive Staff) are meeting their needs and expectations. Surveys went out Feb 20 with results pending. We plan to hold a Professional Staff meeting (in person and zoom) in late March. Date/location is TBD.
 - Our Counselor Staff will be having their annual Spring Meeting on April 30-May 2 up at Camp York (Depending PRT approval); our backup plan, Webb Center. Due to COVID, we are unsure if PRT will open group camps across the state. If they do, we plan to have a service day at Camp York on Saturday, followed by our planning meeting that evening.
 - We are working on a COVID safety plan. I have tasked our lead nurse to draft this action plan.
 - Traveled on Feb 17 for a site visit of Camp York. The facility has been not used in 18 months and after evaluation, there is a lot of work to be done but it is feasible to have the facility ready for the Summer of 2021.
 - Cooper McGee traveled to St Matthews on Feb 1st to speak on Camp's behalf for the St. Matthews Garden Club.
 - Cooper McGee continues to inventory and purge our "Overflowingu storage

facility. Finally making some progress out there.

- Cooper McGee continues to update all social media platforms with new content and work on the Camp's website.
 - Cooper McGee is working on a Fundraising campaign to help fund the Camp's 3rd Year program. He has contacted printers and drafted artwork to produce hats, shirts and sweatshirts. Plan to kickoff campaign May.
 - Delegated to BeBe Harrison coordination of the Camp Wildwood 2nd Year Program. She is working on lodging and various activities. Rafting trip is scheduled and paid for.
-
- Palmetto Sportsmen's Classic
 - Due to the ongoing coronavirus, we had to cancel the Classic held in March.
 - Most of the time this month has been spent issuing refunds (Full and 50%) and scheduling 2021 vendors for PSC 2022
 - We had 21 vendors request a full refund totaling \$14,350.00.
 - We had 24 vendors request a 50% refund totaling \$6,550.00.
 - Those who responded to our "what are you doing for PSC22 request", over 120 vendors have transferred their deposit/fee to next year's Classic and plans to attend next Spring.
 - Updated all websites and social media with the cancelation of the Classic

ALIX A. PEDRAZA - MONTHLY REPORT

Date: 03/08/2021

Accomplishments this Period:

- Continued creating and adding content to both Facebook Pages (Diversity Outreach and Spanish Facebook). We have been using Adobe products (Rush and Spark) to create video content
- Participated in several SCDNR and South Carolina High School League (SCHSL) meetings to finalize the 2021 Marketing Strategy and participation from DNR
- With SCDNR video producer Danielle Kent, worked on a new script and general information SCDNR video. We filmed on February 9th at Congaree Creek HP & WMA
- Met with SC Department of Parks, Recreation & Tourism Director of Recreation, Grants & Policy, Justin Hancock on February 9th to discuss potential partnerships and needed efforts for the next SC Statewide Comprehensive Outdoor Recreation Plan
- With SCDNR video producer Danielle Kent, worked on a script and filming plan for a series of educational videos related to wildlife rehabilitation. The first video was filmed on March 5th at Belfast WMA
- The Diversity staff has continued to participate in virtual meetings, trainings, and webinars, including the following: Keya Jackson: Adobe In-Design training on February 17; Conservation Voters of South Carolina (CVSC) Lunch and Learn on February 19; Webinar: Cross-Cultural Communication on February 22nd; ED Talk on White Supremacy on February 22nd; Taking Nature Black Conference from February 23 - 26; Conservation Education Conference on Virtual Learning from March 2 - 4; and SCDNR Lunch & Learn: Meet the Boats of MRD on March 3rd. Juan Aristizabal: Lab Safety Training on February 23rd; and Conservation Education Conference on Virtual Learning from March 2 - 4. Alix Pedraza: Adobe Acrobat Training and Adobe In-Design Training on February 17; RBFF State Marketing Conference from February 23rd-25th; and Conservation Education Conference on Virtual Learning from March 2 - 4.

Special Events attended by the Diversity Outreach staff:

- Attended (Alix Pedraza) one deer trapping session in McCormick, SC on February 23rd

Ongoing Activities:

- Adding content to the Spanish and Diversity Outreach Facebook pages
- Customer service via phone, mail, e-mail, and Facebook messenger

Next Period Planned Activities:

- Participate in multiple internal and external virtual meetings, trainings, and webinars

Issues for this Reporting Period:

- *Issues: N/A*

LAND, WATER & CONSERVATION

STATE CLIMATE OFFICE

The SCO answered 12 data requests. One request was certified.

To stay connected during COVID-19 work from home order the SC State Climate Office staff and Flood Mitigation Center staff are holding weekly conference calls to share work activities, training opportunities, and provide encouragement.

Melissa drafted and posted four weekly weather summaries online on the SC State Climate Office website. She worked with Elliot to coordinate drought impacts from across the state and helped facilitate and organize registration for the Weather and Water Growing Season Webinar. She continued to work with members of NWS Offices to quality control station data. She worked with NCEI and SERCC to address errors in the database based on exploring COOP forms. She coordinated with NWS Columbia for information on SC Severe Weather Awareness Week in March 2021. She reached out to the owner of the famed 'Meeting Tree' in Berkeley and obtained a slice of the 300-year-old Live Oak Tree. The goal is to preserve the wood and work with a local dendrochronologist to date the tree rings and relate them to long-term temperature and precipitation data. She continued posting 'On This Day' climate information. She worked with Maria Cox and her contractors to determine the best NOAA data to be integrated into the SC IMPACT decision support tool and continued to provide rainfall predictions and forecast interpretations for multiple rainfall/flooding events in February. She continued to send personal letters and welcome information to new COCORaHS observers and highlighted use of CoCoRaHS data on social media (Twitter). She continued to collaborate with the Carolina's Heat Health Coalition whose goal is to communicate, research, and develop items for heat-related illness issues across the Carolinas.

Mark issued 7-day and weekend weather outlooks for DNR Law Enforcement Command Staff and issued three Weatheralerts on the potential for Winter Weather.

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 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 coordinated the efforts for updating and archiving drought data on the SC Drought page, worked on updating the Winter Weather Database, and creating a local drought planning guide. He organized and developed presentation content for the first "Weather and Water Growing Season Status Update" Webinar for SC which was held on February 24 with 39 participants. He spent time building a team for weekly drought communication for USDM input. This effort is to increase the involvement of SC agencies / Entities and sectoral expertise to provide more robust input to the USDM for SC.

Finn produced weekly Crop Moisture and Palmer Drought Severity Maps. He documented and reviewed the accuracy of MetPortal Alerts across SC reviewing the accuracy of newer alert types. He continued to work on the Winter Weather Database. He began building a flood climatology database entering over 400 events into a database separated by flood type (Coastal, Flood or Flash Flood).

Hope worked with DTN, DNR Grants and DNR Procurement and the Directors Office to finalize the application and FEMA documents required for the Hurricane Dorian application. She continued to review product development and alerts issued from HydroMetPortal. She worked with staff on the development of the winter weather database project and the flood climatology database. She provided a list of SCO products and services for the SC Resilience Planning Call. She conducted an interview with Allstate Insurance on data from 2018 flooding. She conducted an interview with Jay Byrnes the author of a new book on hurricanes impacting the Carolinas (February 2). She provided feedback to Elliot on presentation content for the Weather and Water Webinar. She answered calls from DNR Law Enforcement on potential Upstate Winter Events. She has routine calls with staff on the different projects and office activities.

Meetings/Workshops/Webinar/Etc.

- Elliot participated in a Local Drought Management Planning Guide Call with Kirsten Lackstrom at CISA (February 4th)
- Melissa was an invited guest speaker to the NOAA Weather Ready Nation Safety Team Meeting (February 3). She presented ideas and information on ways to target safety messaging of certain severe weather situations for anglers, boaters, hunters, and naturalists.

- Hope participated in the 2021 Carolinas Climate Resilience Conference Steering Committee call (February 2).
- Melissa participated in the 2021 Carolinas Climate Resilience Conference Program Review Committee call (February 3).
- Hope participated in the DNR Lunch and Learn series (February 3)
- Hope, Melissa, and Elliot participated in the monthly CISA call (February 5)
- Elliot participated in the Southeast Regional Climate Center Monthly Webinar (February 9)
- Hope, Melissa, and Mark participated in the SCEMD Hurricane Task Force Meeting (February 9)
- Hope participated in the SCEMD Weekly Executive Call to discuss potential winter weather (February 10)
- Hope and Melissa participated in the HMGP Calls (February 9, February 23).
- Staff conducted a Winter Weather Database planning call (February 12th)
- Hope gave a presentation to the Land, Water and Conservation Advisory Committee (February 16) and other staff attended.
- Hope gave the Climate and Weather Update Presentation at the SCDNR Board Meeting (February 18)
- Melissa presented at the NWS Charleston Integrated Partners Workshop (February 25) and Hope attended the Workshop.
- Hope and Melissa attended the NWS Columbia Integrated Partners Workshop.
- Elliot and Hope participated in the Edisto River Basin Council Meeting (February 17)
- Elliot participated in the NIDIS Webinar: Information Gaps for Reducing Agricultural Drought Risk in the Southeast DEWS (February 17th) and the NIDIS Webinar: Ecological Drought and Planning for Resilience (February 17th)
- Elliot participated in the South Carolina Rural Water Association Meeting (February 18)
- Elliot planned and conducted the First-Ever “Weather and Water Growing Season Webinar (February 24)

Additional Information on Staff Activities

- Melissa serves on the agency's COVID Task Force.
- Melissa serves as a co-host with Valerie Shannon to help facilitate SCDNR and Harry Hampton virtual board meetings.
- Hope serves on the Agency's Employee Morale Task Force.
- Hope and Elliot conducted a call with DNR Hydrology to discuss the new monthly water summary product (February 10).
- Hope and Jenn held a call with Van Whitehead to discuss grant match requirements (February 12).
- Hope updated the EPMS and completed the paperwork required to fill the Severe Weather Liaison Position.
- Hope had multiple calls with the DNR Chairman, DNR Director, and LWC Deputy Director on the Severe Weather Liaison Vacancy.

GEOGRAPHIC INFORMATION SYSTEMS

General

Continued work on the Statewide Satellite Collection Quality Control Project (SSQCP), the SC Flood Mitigation Project, and the Winter Weather Database. For SSQCP, Edgefield, McCormick, and Abbeville Counties were reviewed in their entirety. The Flood Mitigation Project (FMP) was updated to include all current data and is in the process of being moved online to populate the SCDNR Impact website. Edits for the Winter Weather Database were received, corrected, and re-hosted on the SCDNR AGOL (ArcGIS Online) platform. Voxel Development continues to progress with meetings taking place between SCGS staff and software vendors.

New projects started this month with the Watershed Districts Program and the Office of Governmental Affairs. Discussion began with Chris Workman, Watershed Districts Program, on creating applications and maps that would provide information on watershed structures across the state. A request from Senator Michael Johnson was handled to create an application and maps that show buffer zones inside of Lake Wylie. This request comes from proposed legislation regarding boat-wake zones in the lake. Initiated a LiDAR review project with the Flood Management Program. LiDAR data was collected and processed by ESP Associates in Charlotte. The GIS group is reviewing data in the Lancaster County area. Any errors found will be documented and passed back to ESP for correction.

Continuing education this month consisted of several webinars and an online training course. The webinars attended included UNESCO Lecture Series (Materials Sustainability) and the American Geosciences Institute (Critical Mineral research). An online course in Python programming was started through the UDEMY platform.

Meetings attended included Heritage Preserve Advisory Board meeting and SCDNR Board meeting.

Flood Mitigation Program

Flood risk data products were delivered by AECOM and integrated into our system; other data was downloaded from FEMA's Flood Map Service Center and integrated into our system; and edits were made as necessary and moved online. This data is now on SCDNR Impact website, which was created under the direction of Maria Cox and AECOM. Project work will continue as data is updated at state and local levels.

State Climate Office

Significant work was done on the Winter Weather Database. Edits and corrections were received and then re-hosted into the online database. From there functionality was re-established with existing application dashboards. These dashboards display statewide winter weather events and their corresponding weather station information. This project is largely complete with only annual and semi-annual updates needed to bring the database up to date.

Earth Science Group (ESG)

Geological Survey (SCGS)

Several meetings occurred this month with the Geological Survey, and numerous projects continued to develop. Two meetings dealt with the USGS's GeMS (Geologic Map Schema) project. One meeting was at the national level with members of the GeMS Advisory Committee, and the other meeting was with regional members from southeastern Atlantic states. The national meeting discussed updates to the National Geologic Map Database Project (NGMDB), and current issues related to the ongoing pandemic. The regional meeting convened for a monthly discussion of the GeMS User Group.

Other project meetings dealt with geologic logs in the Image Now Database, 3-D Mapping of Carolina Bays, and the Hydrogeologic Framework project. A meeting with Deborah Green and SCGS made plans to migrate all geologic drill logs from the Image Now database to local GIS archives. An addition to SCGS website on Carolina bays around the state is in development. Three-dimensional images were created to include on the webpage. Minor changes and edits were made to the Hydrogeologic Framework.

The Voxel Development project continued. Golden Software presented their software in a meeting with SCGS staff. After meeting, discussing, and testing the software it was decided this product was not the best fit. New meetings have been scheduled with Seequent Software to demo their Target for ArcGIS program.

Hydrology Section

Several meetings this month with the Hydrology Group discussed the Soil Water Balance Model. Participants included Scott Harder, Andy Wachob, Joe Gellici, and Tanner Arrington. Discussions focused on updating the model and bringing its existing framework up to date with new information.

Scenic Rivers

No work this month.

Archaeology

No work this month.

South Carolina Conservation Bank

No work this month.

Cultural Heritage Preserves

No work this month.

Office of Environmental Programs

No work this month.

BOTANY AND PLANT CONSERVATION PROGRAM

Tracked Plant List Revision:

Major efforts to revise the Track Species List began again in November and have continued through February. This collaborative effort with multiple institutions is resulting in changes in ranks of about 25%-30% of currently tracked species, as well as additions to the list, and deletions from the list. These changes are based on analysis of data compiled

since the beginning for the HT program, from newly imaged collections from herbaria around the world, from literature, and communications with the South Carolina botanical community. The new rankings will also be featured in an upcoming book, *Wildflowers of South Carolina*, by Patrick McMillan, Richard Porcher, and Doug Rayner which will include SCDNRs conservation status for each species in the book.

- Continued re-ranking of species already on tracked species list
- Worked with Joe Lemeris to update existing Element Occurrence records
- Supervised technician (Celeste Gross) in digitizing herbarium specimens of tracked plant species, and species under evaluation for tracking, at the University of South Carolina. Celeste has also been mounting plant specimens collected during 2020 in Heritage Preserves, as well as a backlog of SCDNR specimens from before 2020.

Field Surveys and Monitoring:

- Processed data from 2020 field surveys and entered rare plant data into Heritage Trust database.

Conservation Actions:

- Cleared hardwoods from shell ring at South Bluff HP to prepare of rare species planting (Godfrey's privet)
- Collaborated with Atlanta Botanical Garden, GADNR, USFWS on recovery of 5 rare species and survey of Relict Trillium
- Revised EO data for *Amorpha georgiana*, *Sporobolus pinetorum* for partner status survey
- Reviewed documentation and Participated in call on Critical Habitat designations and economic impact assessment of ESA listing Ocmulgee skullcap

Habitat Protection Committee:

- Surveyed potential addition to Henderson Heritage Preserve
- Surveyed potential addition to Congaree Creek Heritage Preserve
- Advised on GSWSA route at Lewis Ocean Bay HP
- Wrote evaluations for Bobwhite Hills and for Congaree Creek additions
- Advised on road easement/construction at Brasstown Creek HP
- Advised on culvert replacement/erosion at Shealey's Pond HP
- Edited Lewis Ocean Bay/Prescribed fire outreach materials
- Participated on call for Tillman Sand Ridge addition

Other:

- Presented an update of the Botany & Plant Conservation Program to the Heritage Trust Advisory Board
- Evaluated applicants for Assistant Botanist job position
- Wrote article for South Carolina Wildlife Magazine
- Edited articles for South Carolina Wildlife Magazine
- Initiated an implementation of a South Carolina Plant Atlas in collaboration with Furman University and University of South Carolina
- Helped with planning cultural and natural planting project at Parker Annex with Archaeology Program
- Facilitated multi-agency permits for researcher to study a new species of Viola
- Participated in Sea Level Rise Predictive Modeling for Archaeology Meeting
- Participated in steering committee conference calls with University of South Carolina A.C. Moore Herbarium
- Processed herbarium specimens collected in 2020 for deposit at the University of South Carolina A.C. Moore Herbarium

CULTURAL PRESERVES PROGRAM

Listed below are a few things Meg Gaillard and her team have been up to in the month of February:

Jacob Hamill

- Assisted with fieldwork at Bonneau Ferry and the Taylor Tract, continued to process Pockoy artifacts, and digitized archival documents at Parker Annex.

Meg Gaillard

- 2/8 – Site visit to Fort Lamar Heritage Preserve, and mapping (Arrow Gold) of a tabby wall and geodetic marker at risk of erosion at Fort Johnson.
- 2/9 – S.C. Emergency Management Division (SCEMD) Natural and Cultural Resources Response Support Function (RSF) Annex Review Committee virtual meeting.
- 2/11 – HTAB meeting.
- 2/17 – Met with Keith Mearns, grounds keeper at Historic Columbia to discuss interpretive plant options for Parker Annex.
- 2/18 – Emergency Preparation and Recovery webinar (hosted by the Florida Museum of Natural History).
- 2/18 – LWC Employee of the Year review committee meeting.
- 2/19 – Sea level rise predictive modeling meeting with UGA and SCDNR.
- 2/22 - Southeastern Native American Graves Protection and Repatriation Act (NAGPRA) Community of Practice meeting.
- 2/25 – Parker Annex interpretive garden meeting.
- 2/26 – Met virtually with Karen and Dr. John Kupfer, UofSC Geography to discuss applying for the SE CASC grant (\$400,000) to assist with sea level rise research.
- 2/27 – Provided a virtual Archaeology for Teens program for the Myrtle Beach Museum of Art (make your own berry ink, make your own quill, quill writing, fold a historic letter, make your own clay wax seal, sealing wax).
- Continue to work on content for *A History of Fishing in South Carolina* virtual exhibit (SC Archaeology Month – October 2021).
- Communication/updates continuing with contractor Jamie Koelker about Combahee: The Last Rice River story map.
- Communicate with vendor Scott Jones about type collection for Parker Annex lab and replica work for outreach programs.
- Write contracts, coordinate with vendors, and assist with mobilization for projects on the Tom Yawkey Wildlife Center Heritage Preserve.
- Summer 2021 SCDNR Archaeology internship applications currently in – 20 applications.
 - Waiting to hear about the Southeastern Archaeological Conference Public Outreach grant (\$2,000) to assist with funding the internship program
 - Did not receive the Institute for Heritage Education Public Outreach grant (\$1,000) to assist with funding the internship program
 - Waiting to hear about the National Trust for Historic Preservation public outreach grant (unknown amount allocated to SC, requested just under \$6,000) to assist with funding the internship program
- Continue to have virtual check-in meetings with Jacob.
- Continue to meet virtually each Friday with the North American Heritage at Risk (NAHAR) project team to prepare for the 2021 National Science Foundation (NSF) Coastlines and People large scale hub grant application.
 - Began a series of talks within the NAHAR weekly meetings, inviting in guest speakers to speak with the NAHAR group and national visitors to the meetings.

AQUATIC NUISANCE SPECIES PROGRAM

Technical

- Staff received and compiled public comments for the 2021 Aquatic Plant Management Plan.
- Staff coordinated 2021 treatment options with SCPRT staff concerning treatment options for several state parks.
- Staff participated in online meetings concerning invasive species.

Outreach

- Fielded many calls about invasive plants and met with several homeowners at our office to positively ID plant species.

Training

- Julie Holling continued work on Drone Pilot license training.
- Chris Page completed required online Law Enforcement training from the SCCJA

Other

- Maintenance was performed on the program's vehicles, boats, and trailers.

CONSERVATION DISTRICTS

Statewide Projects

- Staff attended (virtual sessions) National Association of Conservation Districts Annual Meeting/Conference
- Swore in & continue swearing in new Soil and Water Conservation District Commissioners who were recently elected
- Prepared; hosted; and reported to (virtual/zoom) Land, Water and Conservation Advisory Committee Meeting
- Staff continues work on updating our Conservation District Directory
- Work continues on Envirothon 2021 with outreach, inquiries and scholarships

Technical

- Staff continues assisting the NRCS with CRP plans statewide, as well as highly erodible land determinations.
- DNR staff has also started planning the logistics of the upcoming ACEP workload.
- Assisted Florence, Marlboro, Williamsburg, and Lee districts with Farm Bill programs.
- Staff has also conducted Easement reviews in the Sumter, Marion and Horry districts. Staff has continued to train on Easement and CRP related programs.

Watershed Districts

- Assisted DHEC staff in gathering information
- Began work on mapping of Dam structures
- Submitted photos for upcoming article in SC Wildlife
- Attended Watershed board meeting in Oconee county and swore in new Watershed Directors
- Collaborated with partners regarding multiple watershed endeavors in their areas
- Assisted new Watershed Directors in finding information
- Continued working on easement issues with multiple stakeholders to resolve concerns
- Continued working with various agencies and staff regarding the development of Cow Castle Watershed

Conservation Districts

Abbeville District staff has been very busy helping NRCS. We have had some changes in our office. Our District Conservationist Frank Love retired at the end of December 2020, so Greenwood county's District Conservationist has been helping with Abbeville and McCormick counties until Frank Love's position is filled. That position has been filled with the acceptance of our former soil technician, Matthew Brown and his start date is March 15, 2021. Matthew Brown's former position here in our office as soil technician was filled by Gary Coleman from Anderson, SC. Gary is a graduate of Clemson University with a Bachelor of Science degree, concentration in Animal & Veterinary Science. He is excited to be working with landowners and producers of Abbeville, McCormick, and surrounding counties. We also finished our 2020 annual report to share with everyone. We are beginning to work on our annual affiliate membership drive for this year. District Coordinator, Melody Coursey has worked to get the word out in our community about our youth poster contest for this year with the theme "Healthy Forests = Healthy Communities".

Aiken District enjoyed planting trees at local schools the beginning of February. We have sent out information to all area high schools about the academic scholarship we offer to a senior who plans to major in an agriculture related field. Our *Greenstep* school plans to have a drive thru reading night and give out seeds to encourage families to grow a garden at home. We will help supply some seeds for the project. Staff also continues to help NRCS with EQIP program.

Anderson District staff has been busy preparing our Spring Seed Library. We are scheduled to kick-off on March 1st at our main county library, offering 40 types of seeds with 5000 packets available to the public. We are still taking applications for our 2021 Mini-Grant as well as our annual education contests. We are assisting Anderson and Oconee field offices with 2021 EQIP applications, to include planning designs in Conservation Desktop. Currently there are 84 applications being prepared for obligation.

Beaufort District had our quarterly Together for Beaufort County Water Quality Coalition Meeting with the Lowcountry Stormwater Partners via Zoom. We also attended the Clemson Advisory Board Zoom. We are looking forward to learning more about *Adopt a Stream* for saltwater and helping get more volunteers for recycling oyster shells from restaurants & helping with living shoreline projects. Our *Kid Fest* was canceled as well as the Softshell Crab Festival, and the Blue Angels Air Show in April, but we have been invited to two Earth Day Events and are trying to decide if it will be safe to attend.

Chester District's affiliate membership drive continues. Commissioner Mac Turner took his Oath of Office on February 16. Chester SWCD processed the paperwork to re-nominate Vice Chairman Jeff Wilson for Commissioner. FY2021-22

Budget and 2021 Annual Work Plan were approved on February 16. We completed and submitted the packet for requesting Chester County funding on February 22. Press releases for the Allen L. Beer Scholarship were sent to our local newspaper, school district, and guidance counselors for all 3 county high schools.

Clarendon District held our monthly board meeting. We have assisted NRCS with CSP/EQIP applications and field visits. District Manager, Samantha & District Conservationist, Litza met with DNR, Dan Peebles to identify some of the trees and wildlife throughout the Pocotaligo boardwalk. We also assisted the Army Corp of Engineers down the Pocotaligo Channel to be sure it is free of debris. The District has three participating schools that will receive several types of vegetables & flowers to grow in raised beds and in green houses on the property.

Colleton District's meeting for February was cancelled. We are continuing our Annual Affiliate Membership Drive. All winners of the poster and essay contest will be announced soon. The 46th Colleton County Rice Festival is still scheduled for April 23 and 24, 2021. All other District programs are pending.

Dorchester District's annual board meeting was held on February 16th. A memorial was sent to Bethany United Methodist Spell Chapel Endowment Fund in honor of Commissioner W. Tolman Salisbury. The 2021 Dorchester SWCD Annual Affiliate Drive is underway. Affiliate request letters have been sent out. Commissioners James E. Fender and Patricia M. Clark took the South Carolina State Oath of Office during the board meeting. The State Oath of Office was administered by South Carolina Notary, Michael O'Cain, followed by the signing and sealing of the certificates.

Fairfield District staff assisted a landowner with acquiring deprivation tags. Also contacted Catawba River Keepers re: extreme erosion flowing from an outdoor recreation business into Lake Wateree. Once again having to deal with the contractors who are creating a major erosion problem on their construction site. Youth Commissioners Program is up and running full speed ahead. Discussion was held on Watershed Maintenance. Staff continues to assist NRCS with the Farm Bill Program.

Georgetown District completed and distributed our 2020 Annual Report. The Affiliate Membership Drive for 2021 has begun. The Poster and Essay Contests information was sent to the local schools. Staff continues to assist NRCS.

Greenville District staff attended the NACD virtual conference in February. Staff also hosted four Seed Library Pop-Up events at different area libraries. We had over 200 attendees in all and gave away over 1000 packets of seeds. Our main Seed Library is still going strong with regular use in its permanent home in one of the library branches. We wrote an article for the Greenville Journal educating about watersheds and continued our work sharing technical advice on erosion, drainage and flooding issues to Greenville County residents. We completed nine PL566 dam inspections with SCDHEC and are now performing our regular gate cycling/toe drain maintenance duties. We continued our partnership with the Reedy River Water Quality Group and presented to 80 attendees including EPA and SCDHEC at the annual meeting that was held virtually this year. The commission submitted a check to help the SC Native Plant Society in the eradication of the Fig Buttercup, an invasive species that threatens the Reedy River. We are also continuing our work with the County Planners in ensuring that farmers' interests are represented in the new Unified Development Ordinance.

Hampton District staff completed the 2021 Conservation Poster Contest flyer and distributed copies to all schools. The poster contest deadline is March 25. District staff attended a zoom meeting concerning the feral swine eradication program. Currently funds have been requested from the state and once the funds are received staff will order 6 traps with camera systems. District staff has also been in contact with local corn suppliers to see who would be able to supply a large quantity of bagged corn for this project along with logistics for corn pick up and payment procedures. Staff attended several zoom meetings with *PalmettoPride/Keep SC Beautiful* for information in upcoming events and programs. District staff continues to work with the county litter officer on illegal dumping throughout the county and monitoring trail cameras set up in areas that are heavily littered.

Jasper District has been working with NRCS on the Farm Bill Feral Hog Pilot Program. We have been interviewing landowners to participate in the trapping program. We also had a presentation by Wildlife Dominion for their hog traps. We have presented several virtual readings from *Ag In the Classroom* book, Farmer Allen and the Growing Table, to our lower school grades. Due to COVID restrictions, the public schools do not allow us in the classrooms. We have presented the book to 2 private schools in person. Our Director attended 2 webinars with NACD of the updates for 2021 practices for Conservation. We have spent numerous hours this month battling litter. We have signed up 4 Adopt A Highway, 28 volunteers, reinstated community service through Probation & Parole and the Solicitors PTI program, held 2 major litter pick- ups, joined Waste Management & SCDOT on pick- ups. Over 500 bags of litter, tires, appliances, construction

debris and old automobiles have been collected. We are working with DNR & DHEC on a stream in southern Jasper that accumulates litter and debris that is affecting our wildlife.

Kershaw District hosted our meeting, and Tyler Brown administered the Oath of Office to new commissioner, Zechariah Willoughby. The District staff released guidelines for the Spring Poster Contest, “Healthy Forests=Healthy Communities”. Plans for recognizing *Stewardship Week* are in place, all centered around this theme. The District also made an announcement to local media about the Scholarships that are available to College students from Kershaw County majoring in Forestry or an Ag related field. A budget request was submitted to the County for the 2021/22 fiscal year.

Lancaster District recognized/awarded Donnie Little as our 2020 Conservationist of the Year. His article was on the front page of the in The Lancaster News. We are prompting our education program contests and scholarships. Staff is also assisting landowners with questions on their property and assisting with applications for NRCS Programs. The Cane Creek and Little Lynches Watershed Boards are working on rodent trapping on the sites. The weather has delayed several projects on a few sites.

Laurens District hosted a chicken stew fundraiser for the Adair Outdoor Education Center & completely sold out. We are also busy planning a virtual version of *Team Ecology*. The program this year will include not only the usual 3rd graders, but also the 4th graders who were unable to attend last year, due to the schools closing. Vermicomposting worm bins have been dropped off to 60 classrooms and we begin making our video series next week. This year's program will share the many reasons we should conserve our natural resources with almost 1400 students.

Marlboro District Board held our monthly board meeting. Staff continues to assist NRCS with EQIP and Stewardship applications and contracts. Staff is also preparing Affiliate membership letters for 2021.

McCormick District continues to retain social distancing by handling all request via email, voice mail and/or by appointment. The district held its monthly board meeting January 17, 2021.

Tyler Brown, DNR Program Manager for Conservation Districts, was in attendance. Mr. Brown gave the Oath of Office to Bob Edmonds, the Districts Chairman; and the new elected Commissioner Erniko Brown. Mr. Brown also updated the District on what DNR has been working on and when the next half of the Aide to Conservations Districts can be expected. NRCS partner updated the District on the progress of EQIP. NRCS staff indicated that McCormick/Abbeville should have the replacement in place soon for the position that was vacated in November by Frank Love.

Oconee District has made a February push toward more applications for CSP by promoting on social media and other outreach platforms prior to the March 31st deadline. Facebook posts from the OSWCD page have been shared by several pages with conservation leanings especially those concerning CSP. New easement coordination has taken a priority this month as we are in the last stages of surveys and appraisals before forwarding them to NRCS for review and moving forward to national headquarters. The ALE program has been a great way for conservation minded landowners to preserve their holdings. Talks continue with other landowners about preservation and we are working with the South Carolina Conservation Bank on a particularly special property in Oconee. Technical Assistance Grant work for the NACD grants continues. DHEC inspections for our final dam was completed for this cycle.

Orangeburg District staff continues to assist NRCS with phone calls, emails, meeting producers for signatures; and mailing out EQIP applications. For our February board meeting, we emailed important information to our Commissioners and held a brief teleconference. We look forward to an in-person meeting in March. Orangeburg SWCD has a new DC, Dextrin Dorsey, and we have enjoyed getting to know him, and introducing him to producers (by appointment, phone calls, or email, while the office is still closed to the public). We have a newly elected Commissioner, Harold Donnelly, and have had the pleasure of meeting him, and we know he will be an asset to our district. We have had more interest in our no-till drill, and it has been utilized several times. We have another rental scheduled for April, and hopefully more use to come. We have had several successful litter clean-ups throughout Orangeburg County, as well as calls from groups in need of supplies. We are planning our *Spring Clean Where You Work/Live* challenge for the month of March this year.

Pickens District has partnered with the County Library system to create a seed library to our Liberty branch library. We welcome our newly elected and re-elected Commissioners and Watershed Directors, and all have been sworn-in and have taken the Oath of Office.

Richland District funded environmental projects at three local schools through spring Conservation Education Mini-Grants totaling \$2,000. Mini-Grants will support school gardening; bog ecosystem studies; vermicomposting; and a

student-run conservation newsletter. The District also provided support for Camp Discovery's virtual environmental education opportunities for local students. In cooperation with the Environmental Education Association of SC (EEASC), the District supported SC's continued participation in a southeastern region "landscape analysis" of environmental education efforts; hosted one Midlands Meetup for 26 environmental educators; and planned and facilitated a three-part virtual statewide strategic planning session. The District also provided support for the 2021 EEASC conference planning process. The District facilitated the quarterly meeting of the Midlands Local Food Collaborative (23 attendees) and assisted with planning for the 2021 Grower/Buyer Mashup and Chef Showcase. Staff mentored Green Steps School projects at two schools and provided one vermicomposting kit and one pollinator conservation education kit to local teachers. The District distributed a monthly e-newsletter to >3,000 subscribers and published a new informational brochure. Staff coordinated a volunteer program to pack seeds for the Seed Sanctuary and plans to begin delivering seeds to residents in March. Staff and Commissioners supported the SC Forage and Grazing Lands Coalition board and programs.

Spartanburg District elected our officers at the monthly board meeting. Staff continues work to get the word out about the NACD Poster Contest by emailing local teachers. Staff has also launched a video series on how to take your garden from where it is right now to a more sustainable, soil friendly no-till home garden. Short videos post each Friday on our website and on our Facebook page...and we get to play in the garden! We have also installed a rain gauge and will be joining CoCoRaHS.

Sumter District staff attended "How's My Waterway" through the EPA Watershed Academy; the Sumter Stormwater Solutions monthly meeting; and the NACD Annual Meeting. The monthly board meeting was held on the 18th, and a new associate commissioner was elected. The grain drill has been repaired and is being rented again. Sumter SWCD has begun the planning for an environmental teacher workshop to be held this summer. We continue to assist the NRCS with EQIP and CSP contracts in the office and out in the field.

York District staff met with the Fishing Creek Watershed Board February 24th and they have accepted a bid to repair two drain on the dams. District staff is busy communicating with contacts at Comporium and CN2 regarding the Stormwater commercial to increase outreach. Staff is also working with Tom Dissington on a project (1900-acre forested area) to promote growth for the Soil and Water Conservation District. We have reached out to Miracle Park about local project development and storm water ideas.

EARTH SCIENCE GROUP

Earthquake Activity: A M2.1 earthquake within the Town of Summerville, Dorchester County, February 13. No damage reported.

Special Mentions: Megan James is acknowledged for efforts on the Data Preservation project that just ended.

South Carolina Geological Survey Geological Information

STATEMAP: Kyle Gawinski and Zach Zelaya located drill sites in Mullins quadrangle, Dillon County, and called utility locator to clear those sites. Drilling in Fork and Mullins quadrangle, Dillon County, eighteen (22) holes, 875 feet; drilling in Fork completed. Robby Morrow completed seven (7) traverses in the southern and central portion of the Edgefield Quadrangle, Edgefield County. Mapping focused on delineating relations within the Modoc shear zone. Mapping identified several NW-striking fracture zones that appear to control the orientations of creeks in the quadrangle. Will Doar and Andy Wykel organized a stratigraphic spreadsheet detailing the geologic units on maps for FY19, part of the deliverables for FY19. Mr. Wykel worked on a structure contour map for Horry County and completed three cross-sections in Duford and Nichols quadrangles. Mr. Gawinski continued to update lithologic logs in Strater from Survey123 to be current with drilling. Mr. Gawinski and Will Doar discussed the geology of the area new mapping area and results from recent drilling and development of lithologic logs.

Other Mapping including Outsource Mapping:

Earth Mapping Resources Initiative: Will Doar, Robby Morrow, and Scott Howard submitted a project proposal for FY21 Earth MRI program (request \$100,000, match \$39,341). The project would expand mapping within the current project area, producing 4 additional 1:24,000-scale quadrangle maps in the Upper Coastal Plain, near Orangeburg, Orangeburg County. Andy Wykel and Robby Morrow spoke with Dave Barbeau (USC) about building an ultrasonic separator to process Earth MRI samples for geochemistry. Taylor Turbyfill provided graphics for the proposal. Mr. Morrow and Dr. Doar continued edits of Dr. Anji Shaw's (USGS) manuscript for an Earth MRI paper focused on Charleston-area REE deposits.

General: Scott Howard, Will Doar, and Robby Morrow met with Sean Taylor and Keith Bradley, Heritage Trust, to discuss the geology of a prospective DNR property in Cayce, Lexington County. The area is mostly underlain by fluvial terrace deposits of the Congaree River, but older Cretaceous sediments not previously mapped appear to be present. A geology summary report to Heritage Trust will be submitted. Mr. Taylor also requested geological information for Coosaw Island, (Beaufort Quadrangle, Beaufort County); Dr. Doar and Ms. Luciano will submit that report. At the request of OEP, Dr. Doar and Ms. Luciano reviewed a revised permit application from Dominion Energy to bore a gas pipeline under the Waccamaw River along SC HWY 9, Horry County.

Staffing: Zach Zelaya and Eli Covell updated travel logs and per diem reimbursements. Scott Howard filed his statement of economic interests as required by the State Ethics office, and he wrote a letter of support for Dr. David Barbeau (USC)

Drilling Services and Core Repository:

Thirty-five (35) bags of bentonite and a box of rod pins were purchased. Drill rods were refurbished by Eli Covell and Zach Zelaya. The Ford F-250 was diagnosed with misfiring ignition coils; the truck is now at a local dealership for repairs. A safety meeting for the drill crew was held.

Digital Products and the Digital Information Program (DIP)

STATEMAP: Andy Wykel corrected edge mapping errors in Nichols, Duford, Galivants Ferry, and Bayboro quadrangles that were created by using conflicting quad boundaries. Taylor Turbyfill worked on cartography edits for the Duford, Nichols, and Galivants Ferry STATEMAP quadrangles, using both ArcGIS and Adobe Illustrator. Because of the projection and edge mapping issue found last month, worked on correcting this problem to produce an accurate map product. Ms. Turbyfill continued to make and refine a detailed document of the STATEMAP cartography workflow developing a step-by-step instruction guide for the process. Katie Luciano, Dr. Will Doar, and Robert Clark (LWC-GIS) provided Dr. Josh Long (USGS) with a copy of the coastal map compilation developed by Dr. Doar and Tanner Arrington (SCDNR-GIS) in 2018.

Other Mapping including Outsource Mapping: Using reviews from Chris Swezey, USGS, Taylor Turbyfill made corrections to USGS maps of Middendorf and Patrick quadrangles. A second round of corrections is currently underway.

Data Preservation: Project ended 2/28/2021. Megan James submitted metadata covering the project work. Ms. James met with Joe Gellici (Hydrology Section) to discuss final updates to the cross sections and well logs; continued work on contour and isopach maps; Compiled core descriptions and hydrographs for the dashboard; and provided graphics for the final technical report. Robby Morrow and Ms. James provided input for FY19 Data Preservation final technical report, and Scott Howard is compiling the report.

Geologic Map Schema (GeMS): Several SCGS staff met with geologists and GIS personnel from the North Carolina Geological Survey and the Virginia Department of Mines and Mineral Resources to discuss implementing the GeMS schema and efforts to produce 3D geologic map products. Scott Howard and Robby Morrow met with Kelvin Ramsay, Delaware Geological Survey, and discussed the DGS collaboration with other MidAtlantic states to refine stratigraphic correlations across state boundaries; the goal is to implement a similar partnership with NC and VA. The Coastal Plain section of the Southeastern GeMS collaboration group (NC, VA, and SC) discussed how this cross-border stratigraphic correlations would be set up and agreed to meet next month for a presentation on lithofacies mapping in the Coastal Plain. As a result of the GeMS SE group meeting, Megan James began creating a 3D model of the Centenary quad. Ms. James met with the NGMDB working group to present the newly created GeMS-geologic mapping survey.

General: Megan James and Kyle Gawinski used Arc Hydro to generate borehole forests for Centenary quadrangle trying to generate a cross-section using digital techniques; initial results are favorable and work on the process will continue. Ms. James began developing a webpage on the geology of Carolina bays; Andy Wykel wrote a summary about Carolina Bays for the webpage. Ms. James also began work on developing a webpage to distribute BOEM offshore data and project results. Staff (Morrow, Doar, James, and Turbyfill) attended a virtual session of the Mapping Forum.

Outreach

General: General information was provided to 11 customers; 4 meteorite ID; 0 gold RFI; 2 sinkhole inquiries; no requests for blue granite. One (1) Rock and Mineral kit was ordered, and one (1) map and publication order from the College of Charleston, Geology Department (130 Piedmont quadrangle maps). Will Doar assisted with a request for information on sinkholes near Santee, Orangeburg County maps of Vance and St. Paul quadrangle were provided. Robby Morrow assisted Grace Scott of Wyndham Hotel, Greenville, with an inquiry about a potential sinkhole on their property in Greenville County. Geologic maps of the area indicate that the property is not favorable for sinkhole development, and the issue was likely manmade. They should contact the original builder or a local geotechnical engineer. Mr. Morrow assisted Lily Herrera, a resident of Columbia, Richland County, on how to mitigate erosional issues on her property. Dr. Doar answered questions about the surficial geology and soils in Beaufort County for USDA; they are investigating the ages of soil formation in Beaufort County. Ms. Luciano assisted Melissa Griffin (LWC-Climatology) with retrieving a piece of a large live oak tree (250-300 years old, est) from a property in Berkeley County. The tree was cut down earlier

in the month for a road widening project on Clements Ferry Road. The sample will be submitted for a dendrochronology study.

Coastal Program (Ft. Johnson Satellite Office)

Hydrology

Groundwater

Potentiometric Mapping-Groundwater Program: Brooke Czwartacki spent two days in the field for Crouch Branch potentiometric measurements; wells were measured in Charleston and Colleton Counties. Ms. Czwartacki and Dr. Will Doar started installing bollards for the Seven Oaks Park wells in Georgetown County. Ms. Czwartacki completed processing water-level and conductivity measurements collected during the winter ADR run. She also attended the LWC Hydrology staff meeting the first week of February, the SC Water Resources Conference Committee Planning Meeting February 11th, and the SC GW Technical Advisory Committee meeting February 24th.

National Ground Water Monitoring Network (NGWMN): Ms. Czwartacki updated all outstanding water-level measurements, registry updates, and edits, and she contracted with Pinckney Well Drilling to complete well repair (install protective metal housings) at two groundwater network monitoring sites in Jasper and Hampton Counties.

Saltwater Intrusion Monitoring: Ms. Czwartacki received comments from Jim Landmeyer (USGS) on her report titled, "An assessment of groundwater-quality conditions and chloride distribution in the Charleston and Gramling aquifers in Charleston, Dorchester, Berkeley Counties, South Carolina, 2020"; the report edits continue, and a Teams Meeting was held on Feb 9th to discuss comments and data.

Interagency Review Team, Groundwater Technical Advisory Committee, Mitigation Banks: Ms. Czwartacki attended the regular IRT (Interagency Review Team) meeting for February.

Geology

Coastal Vulnerability

Murrells Inlet to Capers Island Coastal Vulnerability Project: Katie Luciano continued organizing Charleston County data for analysis by digitizing and clipping shorelines for the Capers Inlet, Sewee Bay, Bull Island, and Awendaw quadrangles and explored other online data portals and map viewers that share shoreline location and change-analysis data.

Surface Elevation Tables-SET

Katie Luciano and Dr. Will Doar measured sixteen (16) SET stations throughout the state in during the month. They also met with Sandra Upchurch and Kim Sitta (SCDNR MRD- ACE Basin NERR) to discuss converting raw SET data to orthometric elevations. Bill Clendenin (Volunteer) reviewed a manuscript for the SET project.

USACE-South Atlantic Coastal Study (SACS)

Dr. Doar and Ms. Luciano attended the USACE South Atlantic Coastal Study quarterly status web meeting.

Botany Bay and Pockoy Island Projects

Ms. Luciano proposed project to quantify erosion rates on Pockoy Island was approved by Botany Bay WMA property managers. She submitted a NERR research form detailing the work to Dr. Denise Sanger (SCDNR MRD-ACE Basin NERR). The project will quantify short-term erosion rates on Pockoy Island through measurements collected at four transects throughout the year. The project will provide beneficial information to coastal managers and outreach volunteers who work at Botany Bay WMA, as well as LWC-Archaeology, who need information about short-term erosion on Pockoy Island. The data also could inform the role that king tides play in the high erosion rate at this location.

Ms. Luciano prepared a proposal and budget for a project collaborating with the College of Charleston (Dr. Scott Harris) to do geophysical mapping offshore of Botany Bay WMA in late spring, 2021. Ms. Luciano worked with Gary Sundin (SCDNR-MRD) and Tanner Arrington (SCDNR-GIS) to compile recent UAV (2018, 2019, 2021) and other (specifically, SCDNR 2020) imagery datasets into ArcGIS for shoreline-change analysis using AMBUR. These rates will help inform coastal managers at Botany Bay WMA, as well as LWC-Archaeology, about recent erosion trends. This work will complement the erosion-rate project described above.

BOEM

Ms. Luciano shared with PI's from BOEM SE Collaborative project (Dr.'s Reid Corbett and Dave Mallinson – ECU; Dr. J.P. Walsh – University of Rhode Island; Dr. Clark Alexander – UGA/Skidaway Institute of Oceanography) the results of a NASA-Develop project on marsh vulnerability from 2020. She also worked with Mr. Arrington and Mr. Evan Cook (SCDNR – MRD) to send this information to the South Carolina Coastal GIS Users Group. Ms. Luciano, Dr. Scott Howard, and Megan James are organizing BOEM project data and deliverables to make available on the SCGS website; met 2/16 to discuss. First efforts will involve coordination with Dr. Josh Long (formerly Coastal Carolina PhD student, presently USGS) to format vibrocore logs and report into an open-file report. Ms. Luciano attended a webinar on 2/23

entitled ‘Regional Ocean Data Sharing: Southeast Sand Resources.’ She was interviewed for this project in the fall of 2020; project includes information about deliverables from our multi-year projects with BOEM. Ms. Luciano discussed bathymetric datasets for state waters offshore of Charleston County with Jessica Boynton (SCDHEC-OCRM).

General and Outreach

Brooke Czwartacki attended a Hydrology section staff meeting. Ms. Luciano met virtually with Tanner Arrington, Evan Cook (SCDNR MRD-GIS), Alex Braud (CofC), Landon Knapp (SC Sea Grant), Denise Sanger (SCDNR MRD), and Andrew Tweel (SCDNR MRD) about using and developing results from NASA DEVELOP marsh vulnerability mapping project (2020) for upcoming coastal vulnerability projects at Kiawah Island and potential thin-layer placement pilot areas along the Atlantic Intracoastal Waterway (AIWW). Ms. Luciano organized and attended Coastal GIS Users Group meeting and attended quarterly officer’s meeting for Geological Society of America Marine and Coastal Geoscience Division. Dr. Doar answered questions about the surficial geology and soils in Beaufort County for a former USDA employee looking into age of soils formation in Beaufort County. Staff assisted SCDNR MRD with an inquiry of a granite benchmark exposed on the shoreface of Pockoy Island, Charleston County; no information was available in our records and this question was forwarded to the SC Geodetic Survey.

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, MRRI
College of Charleston	SCDOT	USC-Civil and Mechanical Engineering
Coastal Carolina University	SGS Canada	Clemson U. Civil Engineering

HYDROLOGY

Water Planning

Surface Water Assessments: Priyanka More finished a review of the Broad SWAM model and prepared a list of revisions needed to update the model through 2019. Scott Harder reviewed the revisions with Ms. More, and Ms. More submitted the recommendations to CDM Smith, Inc., who has been contracted to update the Broad SWAM model this spring.

Ms. More participated in a virtual SWAM training workshop (February 3rd) held for the Edisto River Basin Council (RBC) and hosted by CDM Smith, Inc. Scott Harder coordinated with the agency’s media team and Megan James to post the workshop recording on the Hydrology website. Mr. Harder posted the updated Edisto SWAM model on an FTP site and the model is now accessible through the Hydrology website.

Groundwater Assessments: Mr. Harder, Joe Gellici, and Andrew Wachob completed a proposal for the United States Geological Survey (USGS) to serve as the outside contractor in charge of performing the groundwater modeling work associated with the Edisto River basin water planning efforts. The proposal has been submitted to the USGS for final approval.

Jess McDaniel continued training on the use of the Soil-Water-Balance (SWB) model, which generates aquifer-recharge data for input into the Coastal Plain groundwater flow model. Mr. McDaniel is working to replicate previously generated recharge rates for the years 1979–2016. Mr. McDaniel also continued comparing the list of wells included in the USGS groundwater flow model with SCDNR and SCDHEC well records.

Mr. Wachob presided over the first meeting of the Groundwater Technical Advisory Committee (GWTAC) on February 24th. The GWTAC currently consists of 11 members having expertise in various aspects of groundwater science, modeling, and management. During the virtual meeting, Mr. Wachob reviewed the roles, responsibilities, and expectations of the GWTAC and explained how the GWTAC will assist the Edisto RBC during the water planning process. During this meeting, Mr. Harder reviewed the water planning process and updated the GWTAC on the status of the ongoing Edisto River basin water planning efforts.

Edisto River Basin Planning: Ms. More, Mr. Harder, Mr. Gellici, Mr. Wachob, and Alex Pellett attended an Edisto RBC Meeting on February 17th. Mr. Harder, Mr. Gellici and Mr. Wachob participated in a Planning Team debrief meeting on February 19th to discuss the proceedings of the previous RBC meeting and to coordinate for upcoming RBC meetings. The Planning Team includes representatives from Clemson University, CDM Smith, Inc, SCDNR, and SCDHEC. Mr.

Harder met with the RBC Facilitator, the RBC Coordinator, and Trey McMillan (RBC member) to review a series of past meetings that Mr. McMillan had missed over the past several months.

Mr. Harder, with assistance from Megan James, updated the Edisto River Basin Planning website and added meeting documentation for public accessibility.

Water-Demand Projections: Mr. Pellet updated the report “DRAFT Water Demand Projections for the Edisto River Basin 2020-2070” with the updated results based on changes discussed with the Edisto RBC. Updates included the incorporation of 2019 data and an additive high-impact factor for non-agriculture water demands (with a multiplicative high-impact factor for agriculture, as in the previous draft).

Other: Mr. Harder began a review of the South Carolina State Water Planning Framework to develop recommended revisions to the document that may improve the river basin planning process. Recommendations will be presented to the Planning Process Advisory Committee in April.

Groundwater Program

Groundwater Monitoring Network: Mr. Harder reviewed and added groundwater-level data to the database for 14 wells in Laurens, Saluda, Cherokee, and Greenville Counties (Region 1). Mr. Harder also measured and downloaded data from 9 wells in Greenville and Cherokee Counties. Josh Williams downloaded water-level data and recorded manual measurements from 6 wells in Colleton, Hampton, and Jasper Counties (Region 4) and processed recently collected water-level data from wells in Aiken and Jasper Counties and updated the data to the groundwater-level database. Mr. Williams continued working to resolve the technical problems with the telemetry systems that are preventing the transmission of real-time water-level data to the Columbia office.

Data Preservation Project: Joe Gellici worked closely with Megan James (SCGS) to finalize the Data Preservation Project, which is designed to make the Hydrogeologic Framework of the South Carolina Coastal Plain more accessible and usable to the public by converting graphical files to data-driven files, building a GIS database, and developing a web application. The goal of this project was to make the Hydrogeologic Framework data more accessible and to preserve institutional knowledge of the Hydrogeologic Framework in a way that is easily used and maintained by SCGS and Hydrology Section staff, as well as other stakeholders.

The Hydrogeologic Framework, which describes the locations and properties of aquifers and confining units throughout the Coastal Plain, was developed by the SCDNR Hydrology Section, and includes hydrographs, geophysical logs, lithologic logs, and stratigraphic logs from boreholes across the Coastal Plain. These data are used to generate cross sections, with hydrogeologic units interpolated between boreholes. Hydrogeologic Framework information is used in USGS and SCDNR groundwater modeling and state water planning.

Most of the project is now completed. To date, 14 cross sections have been prepared; 110 well profiles with hydrostratigraphic data, geophysical logs, screen settings, and lithology have been completed; and 87 hydrographs and 42 core descriptions have been linked to the database. Drafts of 14 structure contour maps of the aquifers and confining units are in review, as are isopach maps of the aquifers and confining units. When completed, users will be able to view the 14 cross sections online, view hydrographs of selected monitoring wells, view core descriptions of core holes used in the framework, view geophysical logs and other information about wells used in the framework, and view the structure contour and isopach maps.

Groundwater Monitoring Network Status Report: Josh Williams completed a draft of his report summarizing the expansion of the SCDNR groundwater monitoring network during the five years from 2015 through 2019. The report is undergoing review and editing by other Hydrology Section staff.

Outreach and Other Work

Mr. Wachob provided hydrologic and water-well information and other technical assistance to 4 groundwater customers.

Mr. Harder, Mr. Wachob, Mr. Williams, Mr. McDaniel, Ms. Czwartacki, and Mr. Gellici participated in two virtual meetings to discuss ongoing work and upcoming projects within the Groundwater Program.

Ms. Czwartacki, Mr. Wachob, and Mr. Gellici met with Jim Landmeyer of the USGS to discuss issues related to

saltwater intrusion in coastal aquifers.

Surface Water Program

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 met with Elliot Wickham and Hope Mizzell on several occasions to discuss several new products developed or in development by the State Climatology Office regarding drought and water resources. Discussions centered on the potential support of the Hydrology Section for several of these new products and on potential ways to communicate or present hydrology information. Mr. More and Mr. Harder reviewed several approaches to presenting hydrologic information and prepared draft plots and tables that summarize hydrologic conditions in the state. This review is still in progress.

Mr. Harder and Ms. More attended a Weather and Water Status Update webinar hosted by the State Climatology Office on February 24th.

SC Bio Flow Standards: Mr. Harder reviewed a draft report from Clemson University regarding South Carolina biological flow standards. The purpose of this study was to develop relationships between the health of aquatic species and various hydrologic metrics for wadable streams in the state. Results of the study may be applicable to the river basin planning process. Mr. Harder met with project team members from Clemson University, The Nature Conservancy, and the Research Triangle Institute to develop recommendations for flow standards that could be considered in the Edisto basin planning process.

R-Program Training: Mr. Pellet continued a series of workshops intended to provide R training for Ms. More as well as to develop an R-package entitled “SCWaterWithdrawalDataPackage”. The package contains the most up-to-date water withdrawal data received from SCDHEC, along with specialized functions to read the SCDHEC datasets and implement some quality assurance checks. Ms. More has learned how to document and test the functions written according to best-practices from the R development community. This software-based approach addresses data quality issues in the SCDHEC water withdrawal database and has already improved the surface water program’s ability to manage the dataset, and, in collaboration with SCDHEC, improve it. The new package which Ms. More is developing provides further improvements in efficiency, reproducibility, and reliability.

Outreach and Other Work:

Mr. Pellett attended a Lake Hartwell Partners for Clean Energy online meeting. Mr. Harder responded to one request for public assistance. Mr. Harder (7 workshops) and Ms. More (8 workshops) attended a series of workshops associated with the Catawba-Wateree Water Management Group’s (CWWMG) Citizens Water Academy (February 2nd, 4th, 9th, 11th, 16th, 18th, 23rd and 25th). Mr. Harder participated in a South Carolina Water Resource Conference Planning Committee meeting on February 11th to discuss various options for a conference in the fall. Mr. Harder met with Jill Miller from the South Carolina Rural Water Association (SCRWA) to discuss a presentation for the SCRWA’s 2021 Decision Makers Summit held on February 25th. Mr. Harder prepared and gave a presentation at the summit to review various SCDNR initiatives regarding water resource monitoring and planning.

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, and Hurricane Sally. The staff responded to 50 technical assistance requests. Zac has been studying for the Certified Floodplain Mangers exam and learning about the mapping program. Jessica Artz conducted 11 CAVs, conducted 2 CAC-V, closed 3 CAVs and reviewed 2 ordinances. Jessica continues to manage the 2017 and 2018 Flood Mitigation Assistance Grants. Jessica provided assistance regarding the FMA grant program in regard to scope of work changes, quarterly reports, questions form sub-applicants and fielded questions from potential new applicants. She also held the Monthly FEMA FMA coordination call (2/23), BRIC/FMA debriefing (2/10), Midlands COG (2/19), FEMA CAV call (2/22) and attended the FEMA Region IV the monthly mapping status call (2/16). Jessica and Maria taught a Floodplain Management 101 workshop (2/16-2/17). Jessica also taught What to expect when you are expecting a CAV (2/23) and Laura attended the training. Jessica and Maria attended the monthly Mitigation Coordination call with EMD and DRO

(2/3). Maria taught while Jessica, Laura and Zac attended the Disaster Duties training (2/24). Maria provided flood prediction assistance to Law Enforcement from 2/17 through 3/4. Maria presented to the Land, Water and Conservation Advisory Committee (2/16). Maria also attended the Resilience Planning Call with the Office of Resiliency (2/23). 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 FEMA's 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 of 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.

Handouts and Presentations

SCDNR Board Resolution
March 18, 2021

WHEREAS:

The Department of Natural Resources' primary mission is to protect the State's natural resources and is charged with enforcing the protections and safeguards set forth in the Dewees Island 1975 Conservation Easement; and

WHEREAS:

The Department by letter of April 25, 2019, directed the Dewees Island Property Owners Association ("POA") and other concerned individuals and stakeholders to meet to formulate an appropriate and reasonable framework for restricting, if not eliminating over time, commercialized rental activity and restoring residential and lodging activity consistent with the Conservation Easement and the Dewees Island Land Use Plan within 60 days thereof; and

WHEREAS:

To date, the POA has not been able to deliver such an approved framework; and

WHEREAS:

The Department remains concerned that unrestrained and unregulated commercial activity on Dewees Island associated with short-term rentals, as defined by Charleston County ordinance, would have detrimental impacts on the State's natural resources on and around Dewees Island, and hence would constitute violations of the Conservation Easement if continued unabated.

NOW THEREFORE BE IT RESOLVED:

The Department will continue to monitor Dewees Island under the 1975 Conservation Easement and enforce it as necessary to preserve the conservation values and natural resources protected under the Conservation Easement;

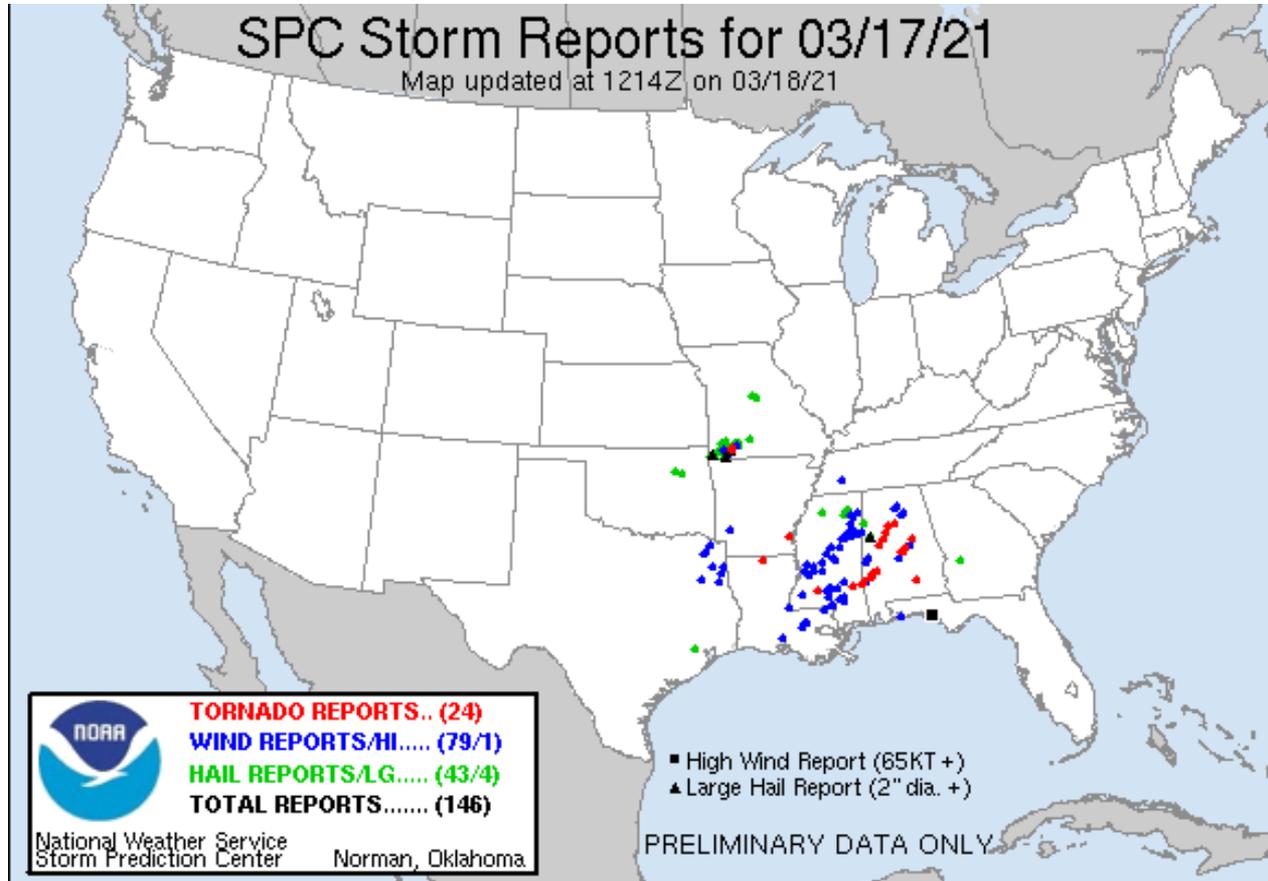
The Department will enforce the Conservation Easement should it feel that the Conservation Easement has been violated, or determines the conservation values and natural resources protected by the Conservation Easement are threatened by commercial activity, including short-term rentals; and

Unless and until the Department is presented with a duly approved framework consistent with the Department's letter of April 25, 2019 addressing unregulated and unrestrained commercial activity on Dewees Island associated with short-term rentals, no short-term rentals, as defined by Charleston County ordinance, on Dewees Island will be approved by the Department, other than owner-to-owner rentals.

March Board Meeting

Hope Mizzell

SC State Climatology Office



moderate risk

1 2 3 **4** 5

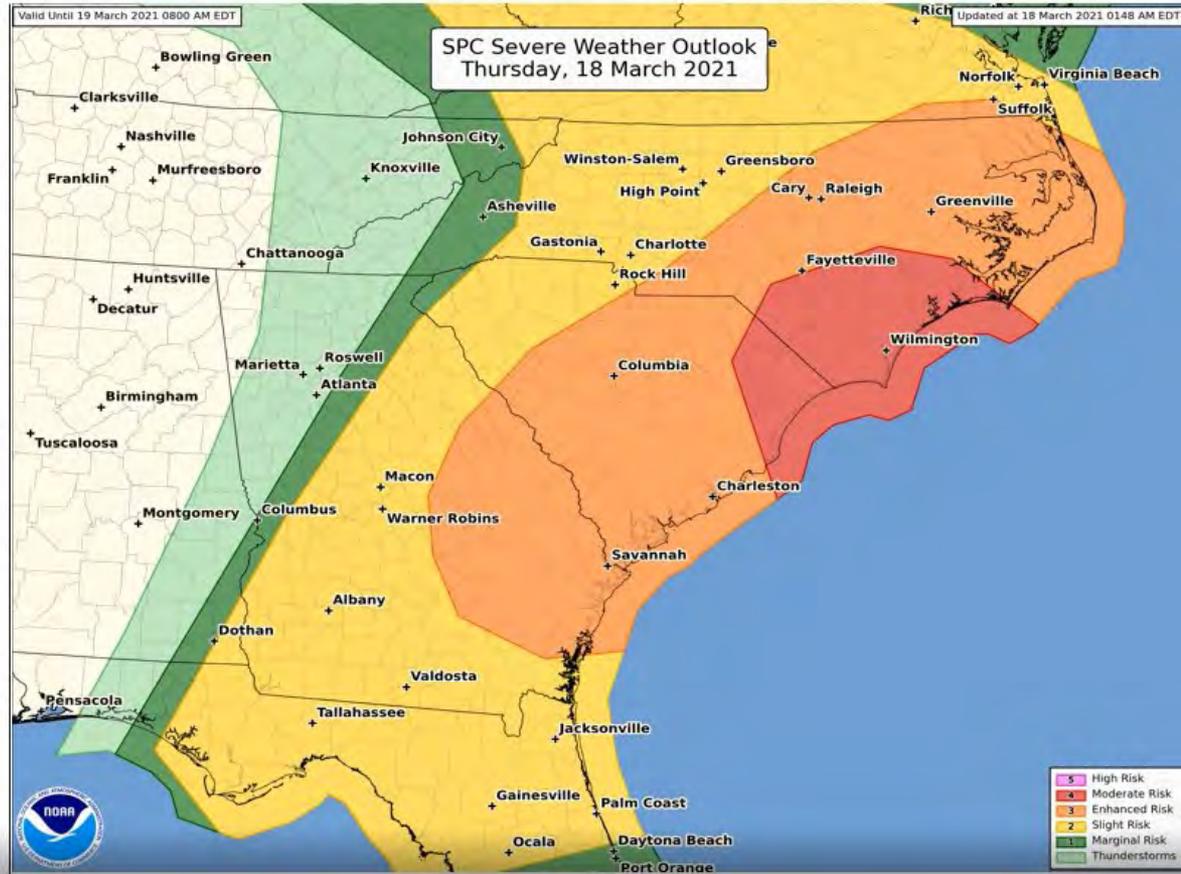
hazards

Several Tornadoes, Some Strong
Scattered Damaging Wind Gusts
Isolated Large Hail



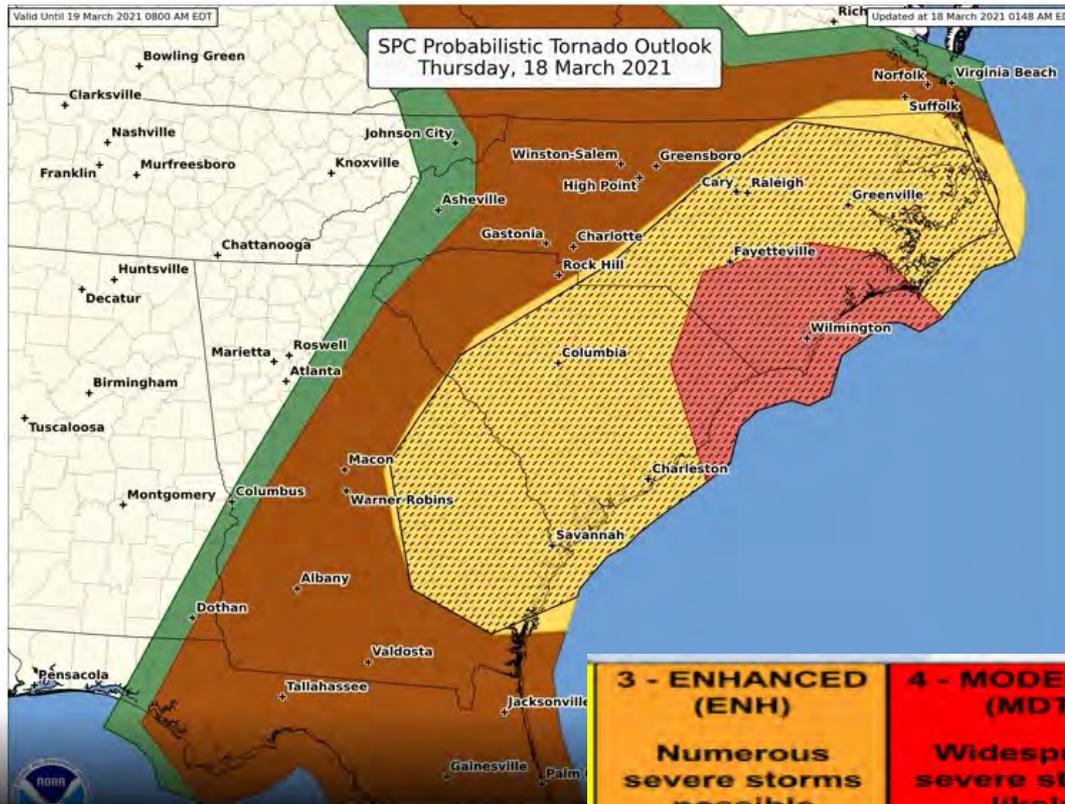
some cities in risk

Wilmington NC | Fayetteville NC
Raleigh NC | Durham NC
Savannah GA | Columbia SC





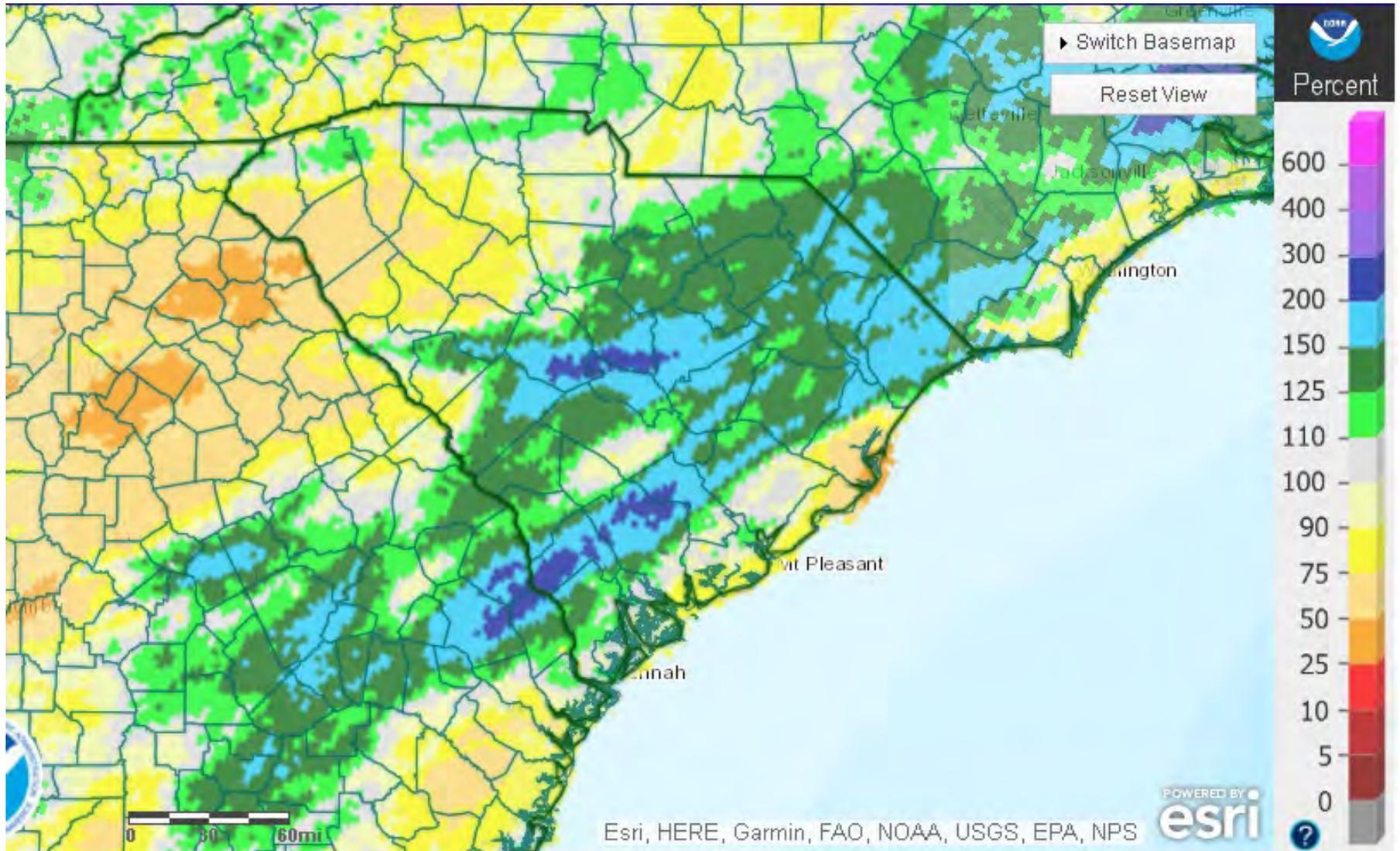
Day 1 Tornado Threat



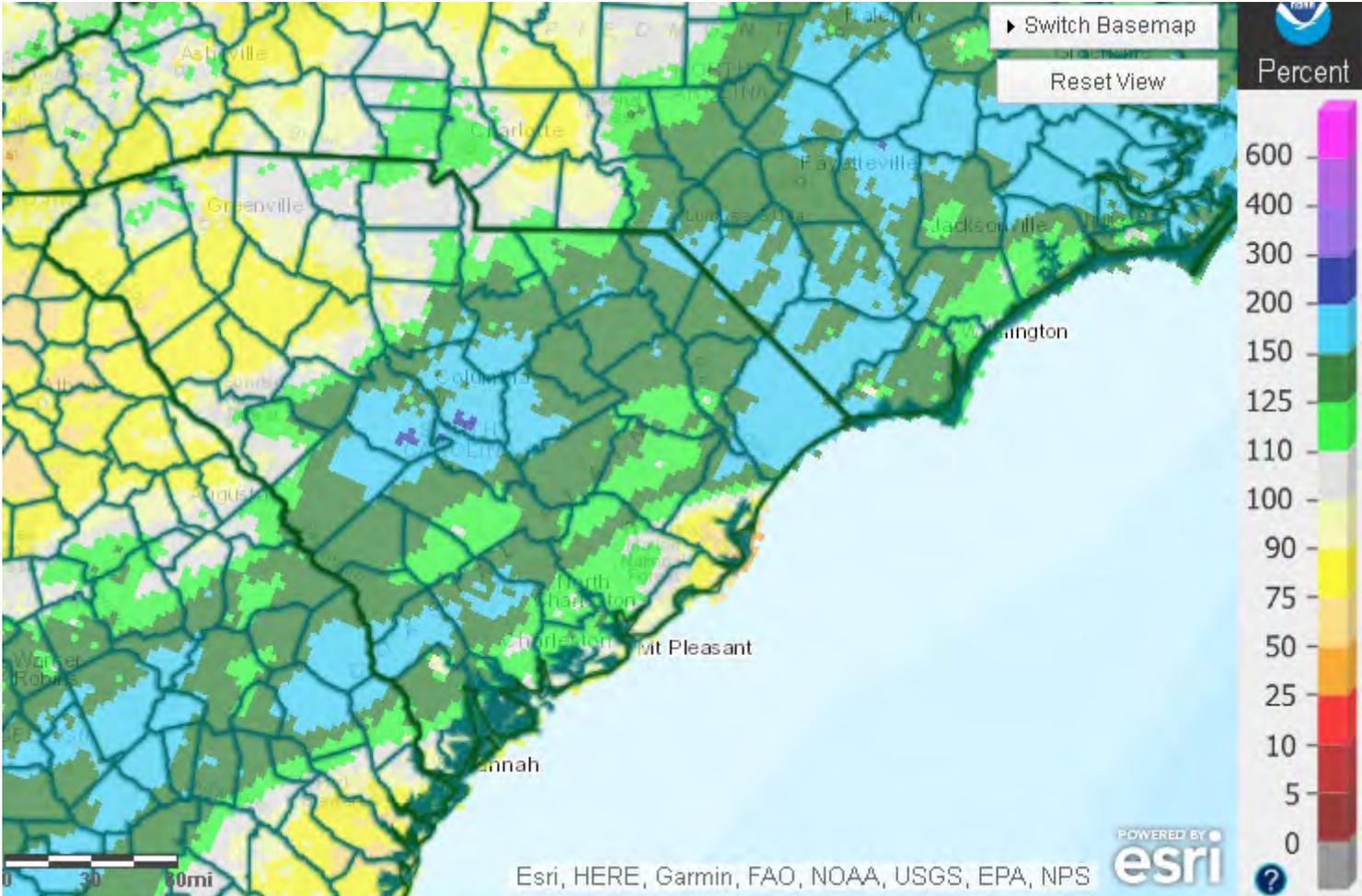
▶ 0:55 / 2:26



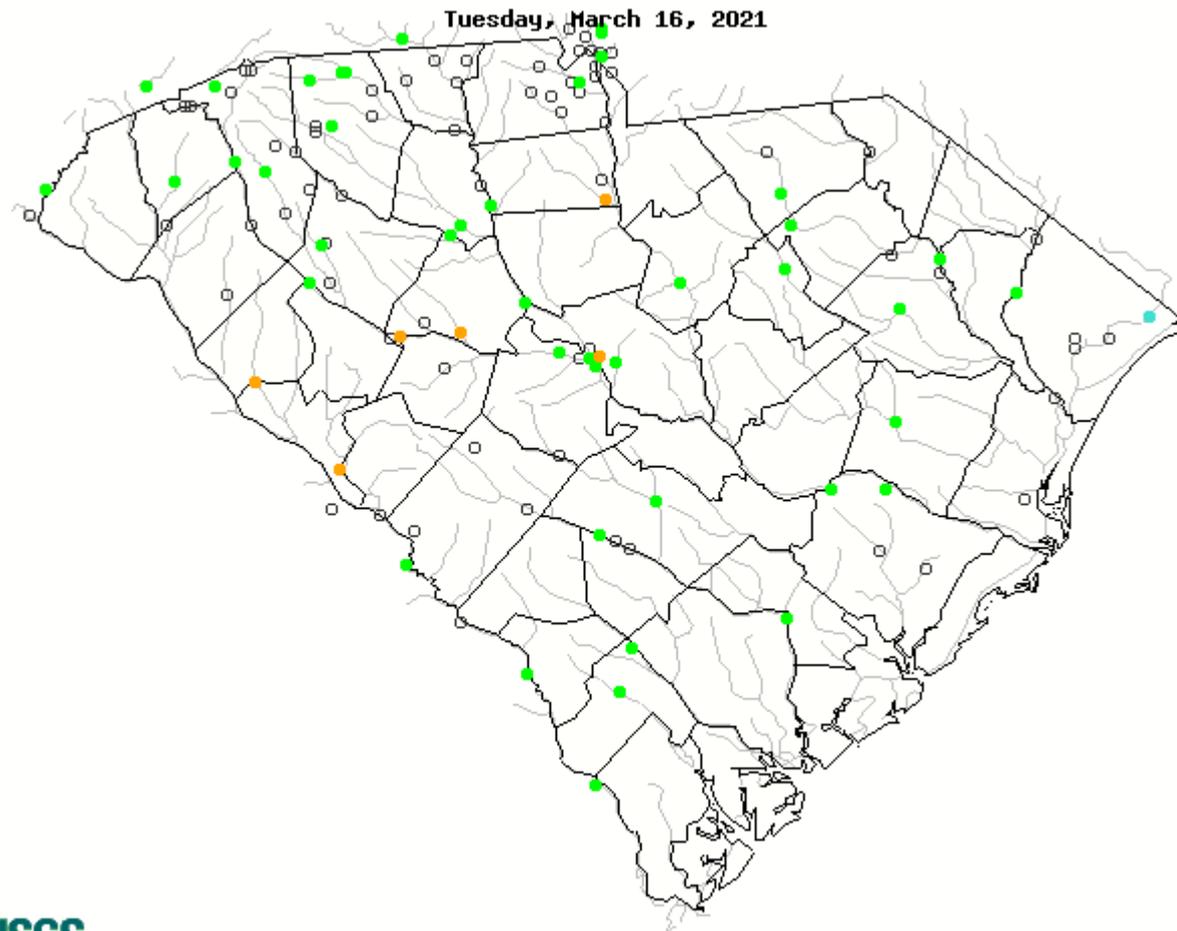
30-Day Percent of Normal Precipitation Ending March 17, 2021



90-Day Percent of Normal Precipitation Ending March 17, 2021

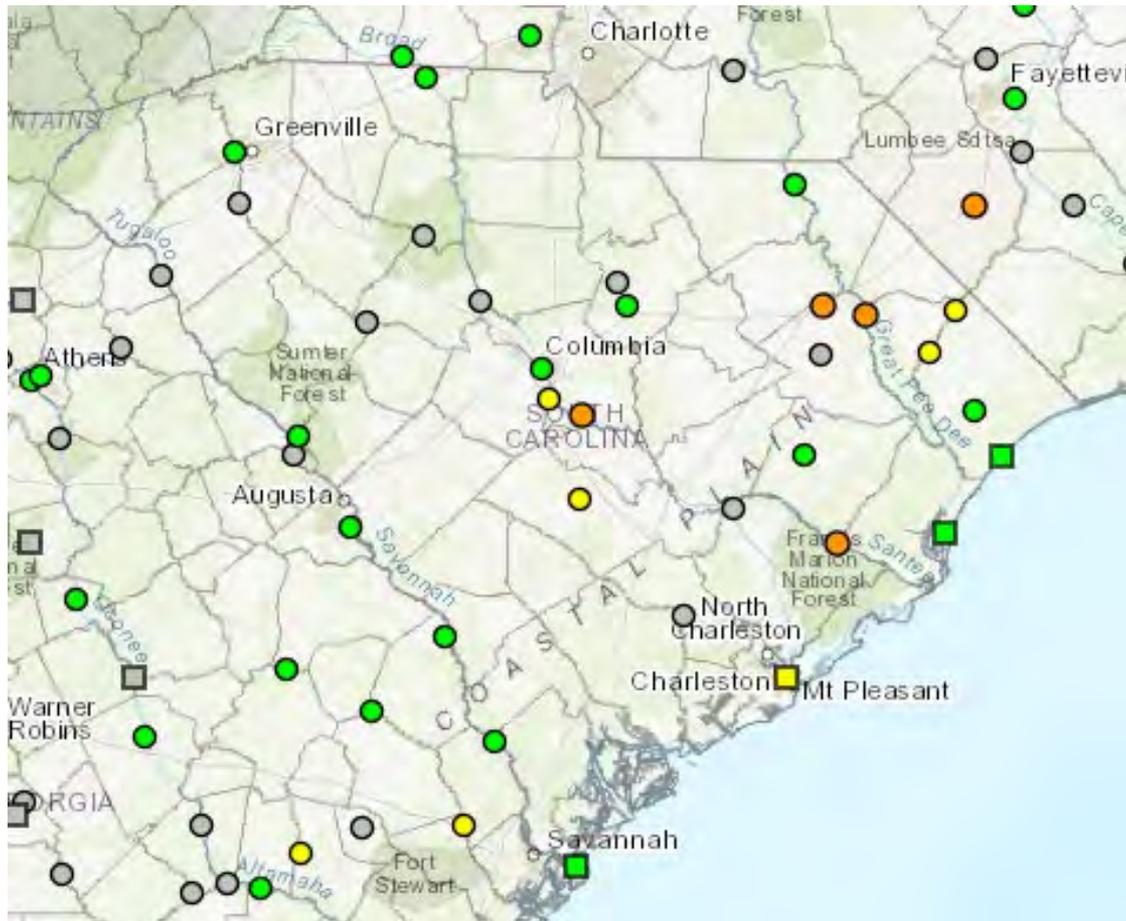


Map of 14-day average streamflow compared to historical streamflow for the day of the year (South Carolina)



Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Southeast River Forecast Center



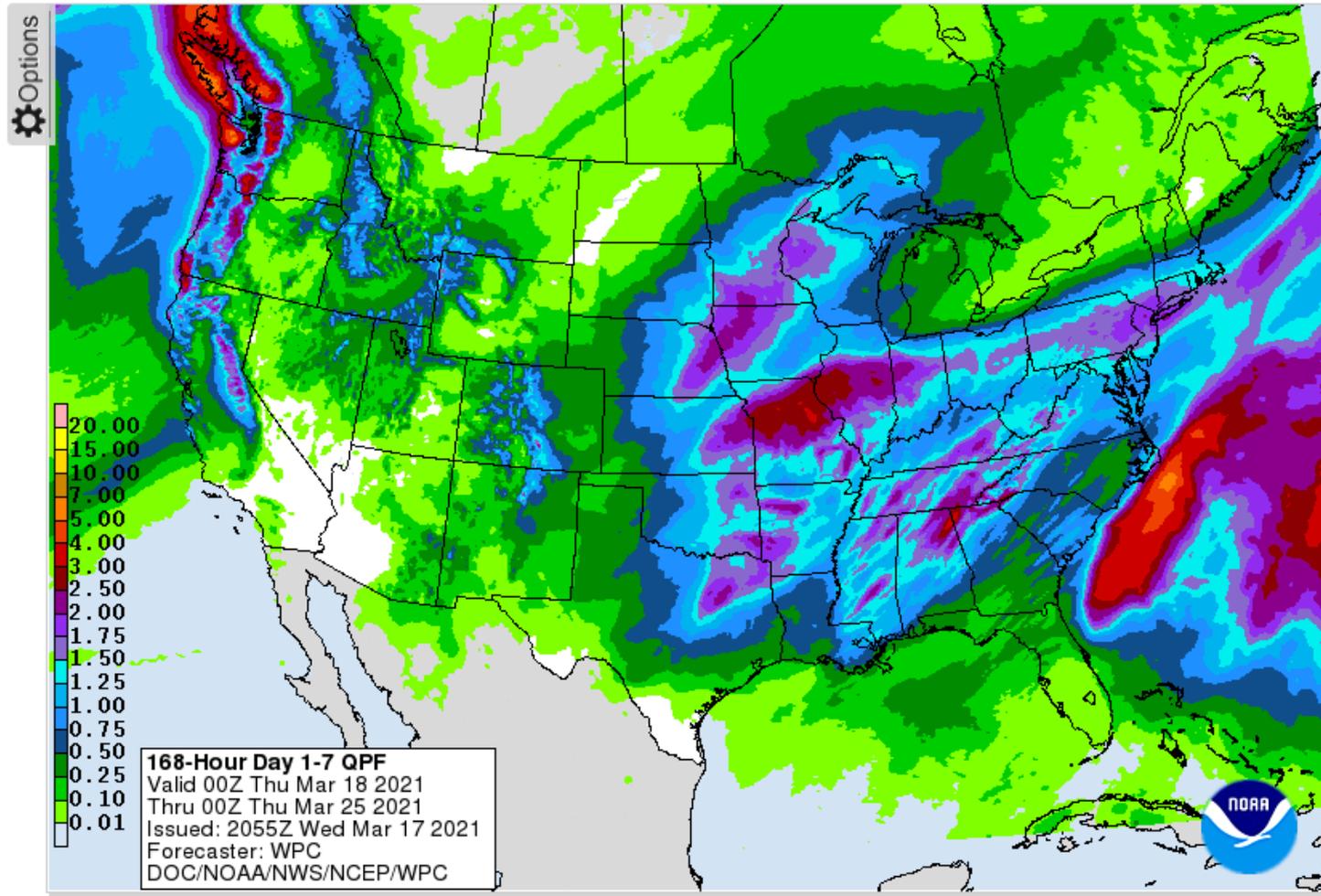
- 2 Gauges: Major Flooding
- 15 Gauges: Moderate Flooding
- 57 Gauges: Minor Flooding
- 50 Gauges: Near Flood Stage
- 56 Gauges: No Flooding
- 0 Flood Category Not Defined
- 0 At or Below Low Water Threshold
- 120 Gauges: Forecasts Are Not Current
- 0 Gauges: No forecast within selected timeframe
- 2 Gauges: Out of Service

WPC 7-Day Precipitation Forecast

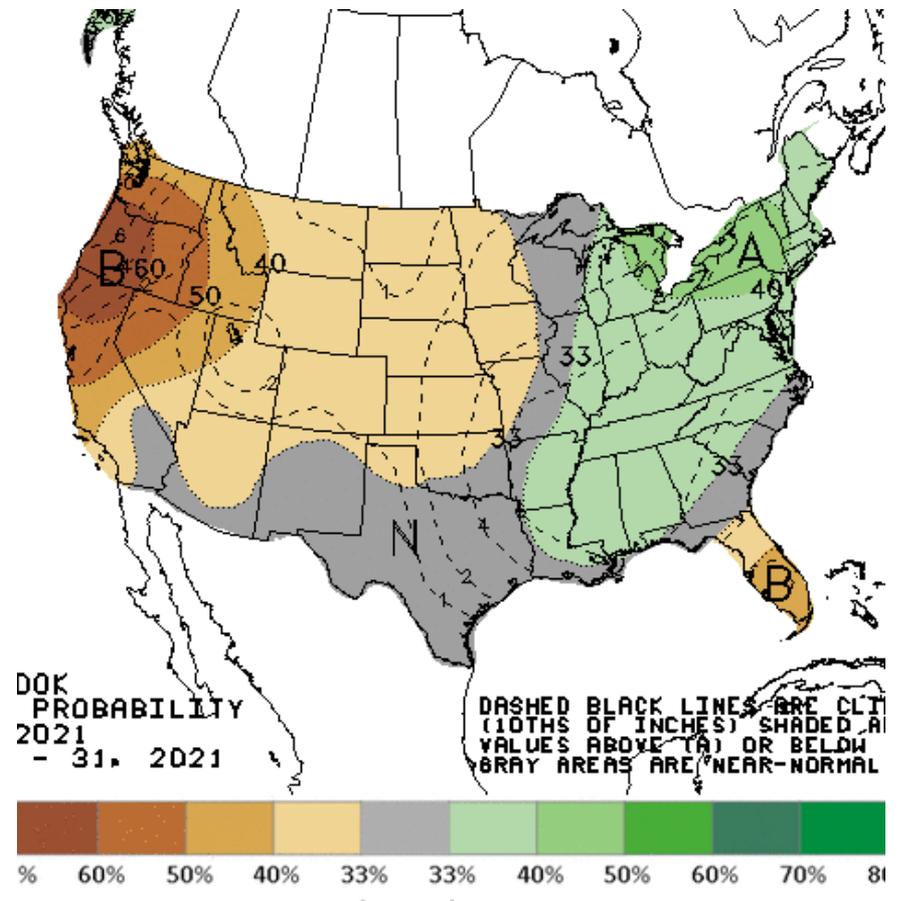
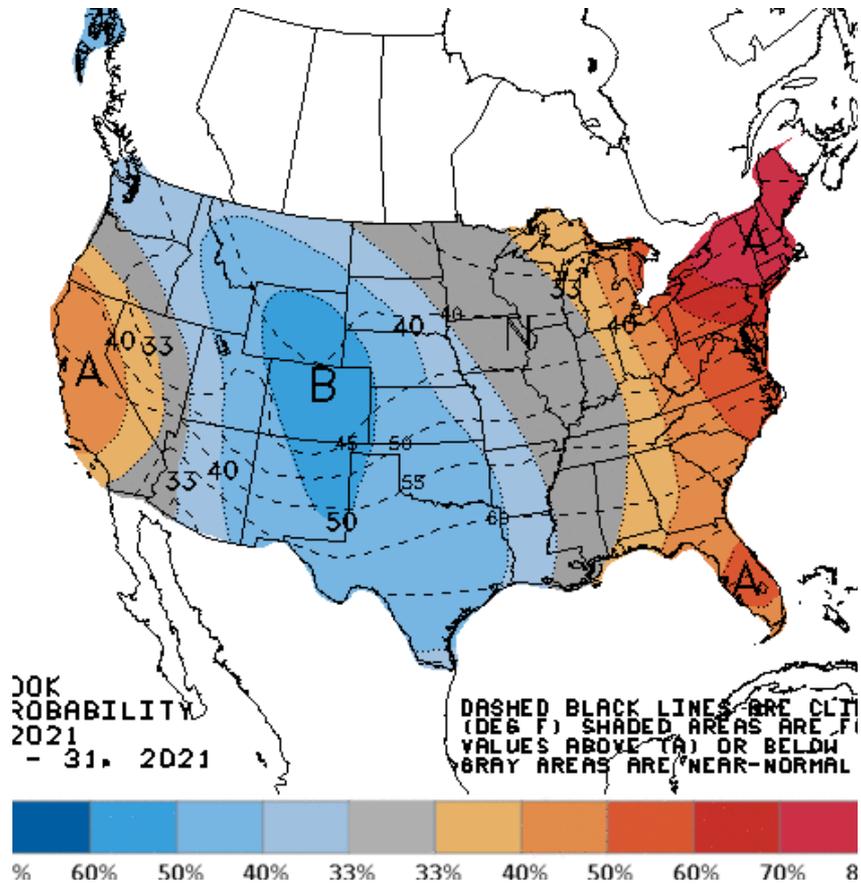
Quantitative Precipitation Forecasts [Legacy Page:](#)

Valid 00Z 03/18/2021 - 00Z 03/25/2021

Day 1 Day 2 Day 3 Day 4 Day 5 Day 6 Day 7 | Total: Day 1-2 Day 1-3 Day 1-5 **Day 1-7**



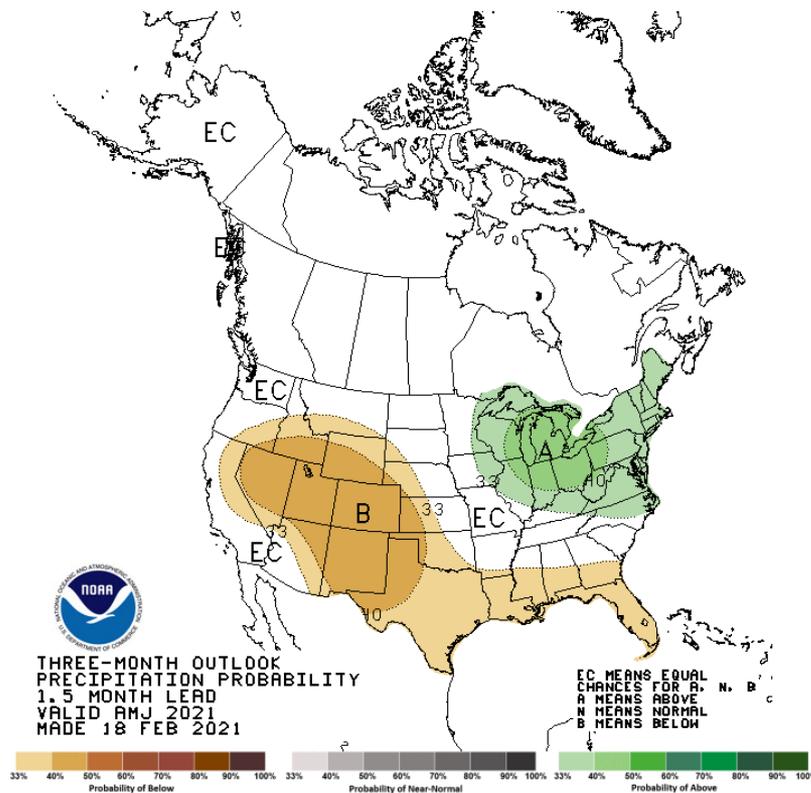
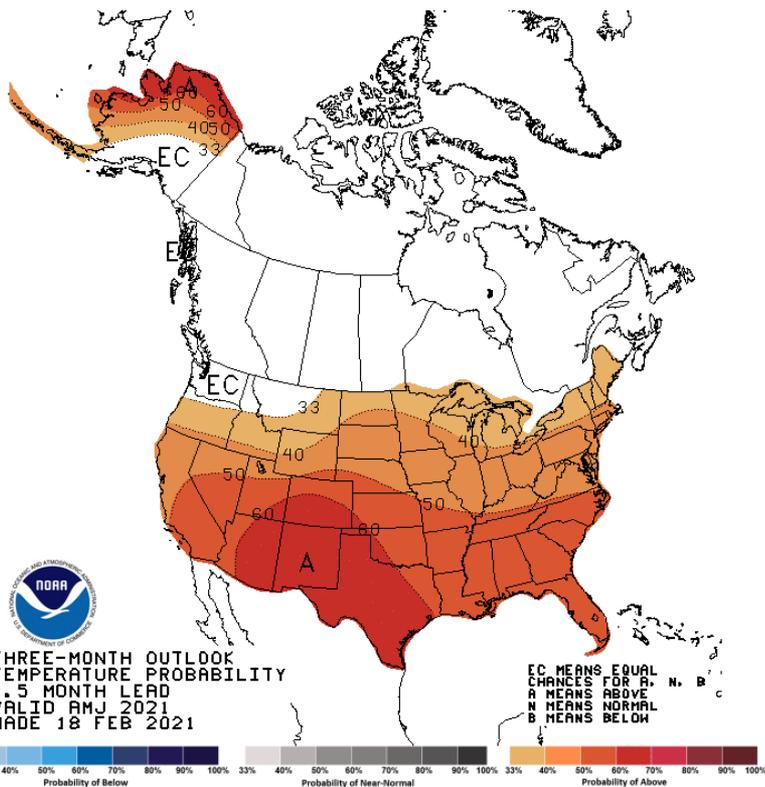
8 to 14 Day Outlook: Mar 25 - 31



April – June 2021 Outlook

Temperature

Precipitation





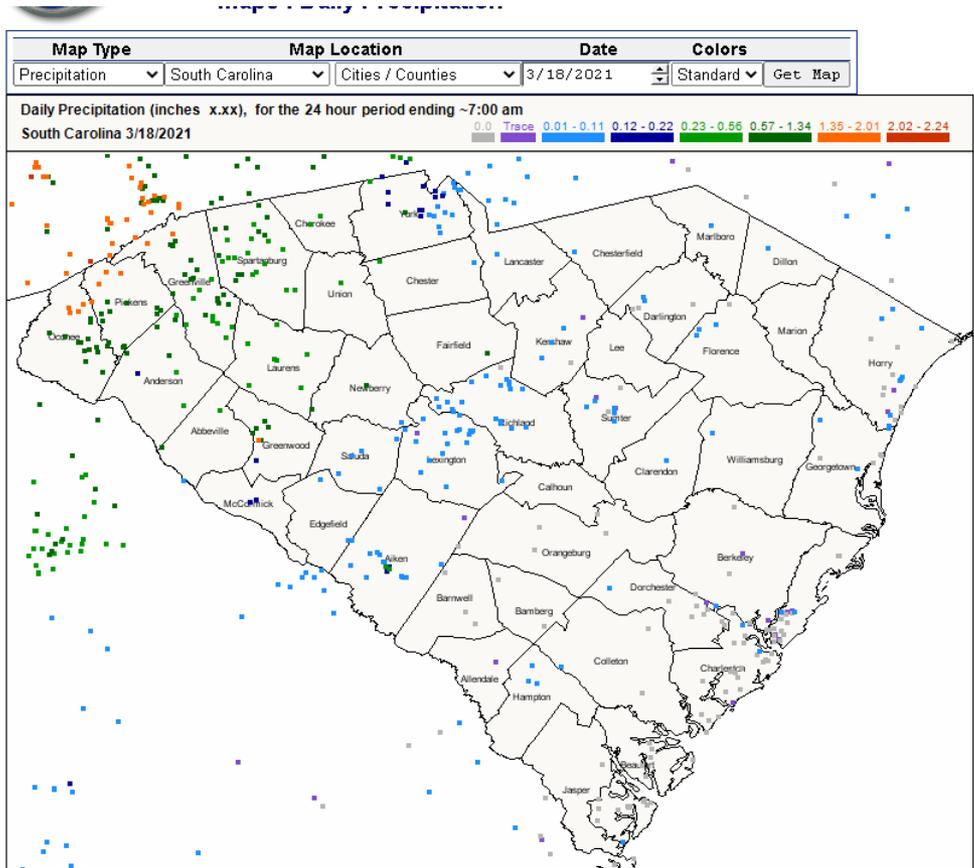
CURRENT STANDINGS - March 18, 2021

Traditional Count Top Five

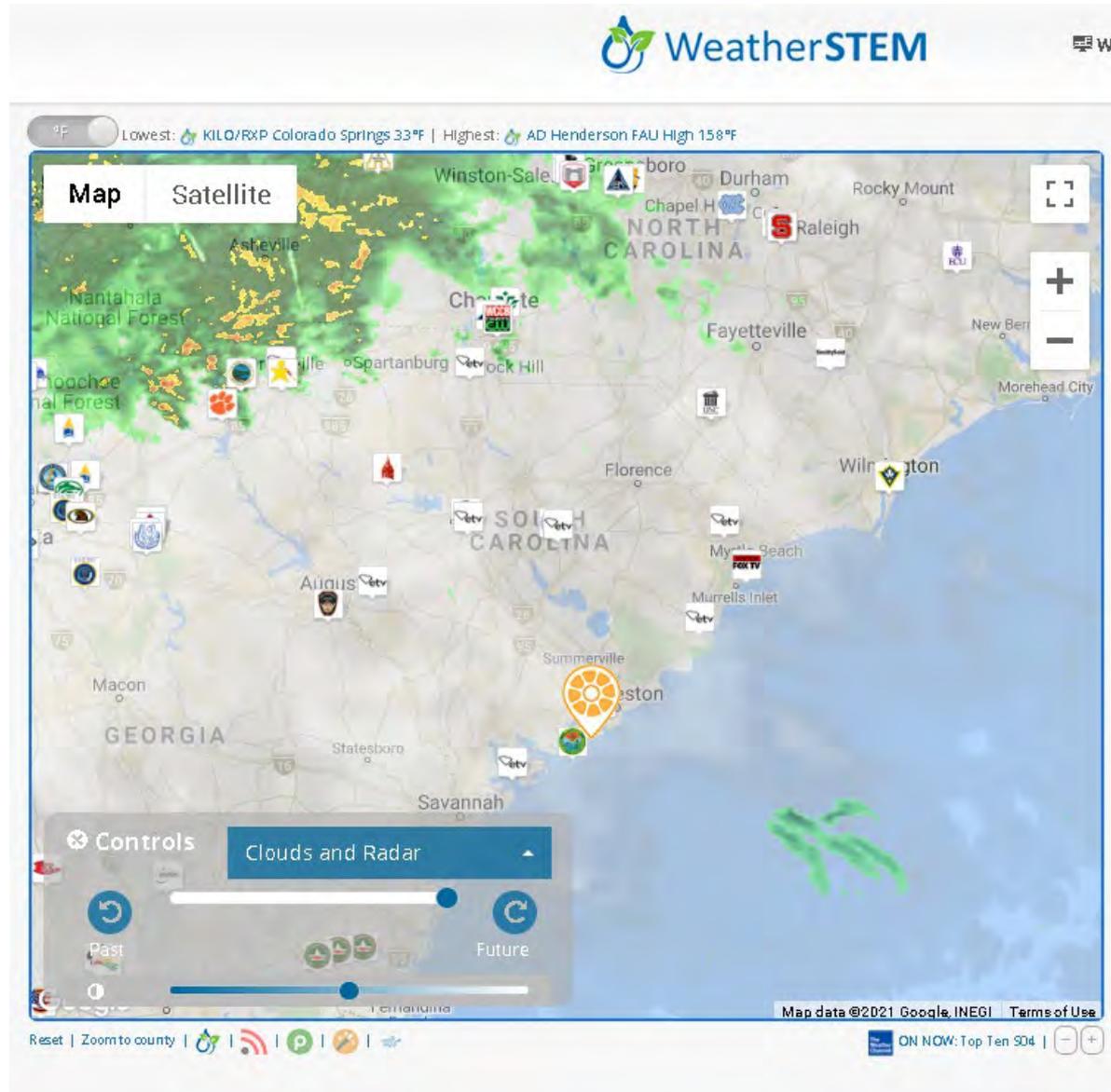
104	Minnesota
102	South Carolina
89	Wisconsin
51	Ohio, Rhode Island
46	Massachusetts, Texas

Per Capita* Count Top Five

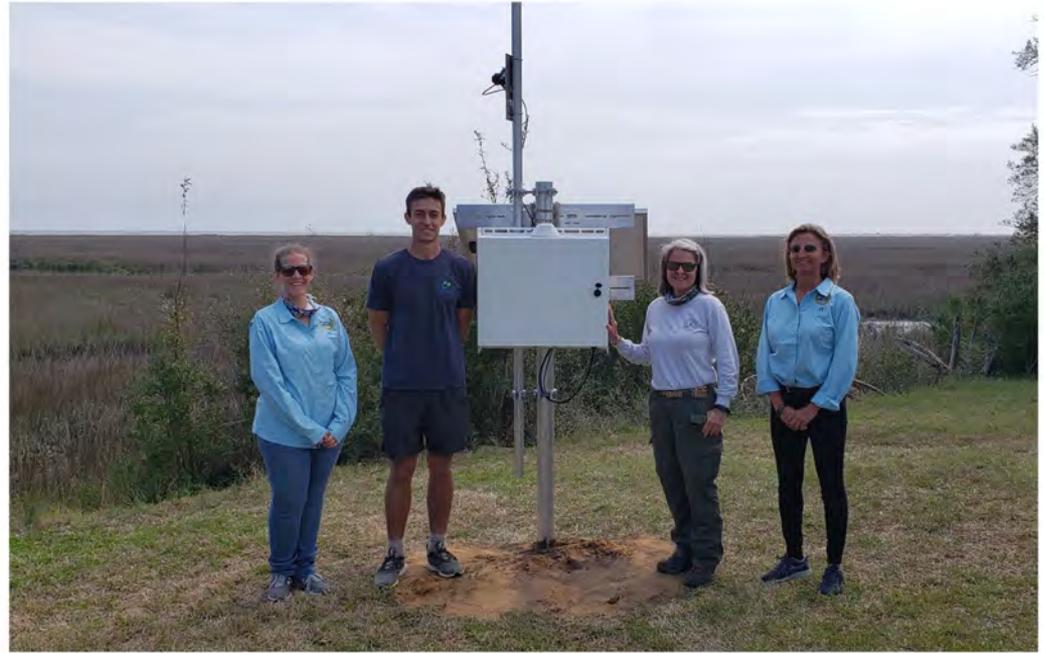
48.45	Rhode Island
23.79	North Dakota
22.05	South Carolina
19.61	Minnesota
15.65	Wisconsin



New Automated Weather Station at Botany Bay Installed March 17, 2021



New Automated Weather Station at Botany Bay Installed March 17, 2021



Botany Bay Heritage Preserve Real-time conditions



Lightning/Heat Guidance Live Stream Portrait Radar & Satellite Sky Video Station Map ZapMap

65 °F

Cloudy, Windy (100% cloud cover)
 Visibility 1.5 miles
 59°F Low @ 12:00 AM
 66°F High @ 10:40 AM

Tweet Share

Key Details (updated in real time)

Wind SSE @ 13 mph with gusts to 19 mph

Humidity 92.4%

Closest ⚡ (in Last 30m) 163.85 mi. WSW (11 minutes, 41 seconds ago)

Rainfall (last 24 hour) 0 in

Last rain N/A

Next Hour Cloudy

All Sensors Cameras Sun/Moon/Planets Historical Rain

Health COVID-19

Sensor	Reading
10 Minute Wind Gust	19 mph
Anemometer	13 mph
Barometer	29.926 in. Hg (1013.41 mb)
Barometer Tendency	Falling
Dewpoint	62.7 °F
Heat Index	66.2 °F
Hygrometer	92.4 %
Rain Gauge	0.00 in.
Rain Rate	0.00 in/hr
Solar Radiation Sensor	292 W/m ²
Thermometer	65 °F / 18.3°C
UV Radiation Sensor	2.7 Moderate Risk
Wet Bulb Globe Temperature	65 °F
Wind Chill	62 °F
Wind Vane	SSE 168 °
Raw data	

Botany Bay Heritage Preserve Real-time conditions



[Lightning/Heat Guidance](#) [Live Stream](#) [Portrait](#) [Radar & Satellite](#) [Sky Video](#) [Station Map](#) [ZapMap](#)

63 °F

Cloudy (100% cloud cover)
Visibility 1.4 miles
59°F Low @ 12:00 AM
64°F High @ 6:54 AM



Key Details (updated in real time)

[Tweet](#)

[Share](#)

Wind S @ 2 mph with gusts to 5 mph

Humidity 98.2%

Closest ⚡ (in Last 30m) [238.13 mi. WSW \(11 minutes, 41 seconds ago\)](#)

Rainfall (last 24 hour) 0 in

Last rain N/A

Next Hour Cloudy

[All Sensors](#) [Cameras](#) [Sun/Moon/Planets](#) [Historical](#) [Rain](#)

[Health](#) [COVID-19](#)

Camera	Elevation	Heading
Cloud Camera    	19.82°	99.00°

24-hr
Time
Lapse

Live
Stream

Time Lapse
Library

Previous
Sunrise /
Sunset



2021/03/18 10:53:33



Botany Bay Heritage Preserve Real-time conditions

Lightning/Heat Guidance Live Stream Portrait Radar & Satellite Sky Video Station Map ZapMap

62 °F
Cloudy (100% cloud cover)
Visibility 4 miles
59°F Low @ 12:00 AM
64°F High @ 6:54 AM

Key Details (updated in real time)

Wind	SSW @ 1 mph with gusts to 8 mph	Rainfall (last 24 hour)	0 in
Humidity	98.2%	Last rain	N/A
Closest ⚡ (in Last 30m)	240.09 mi. W (3 minutes, 00 seconds ago)	Next Hour	Cloudy

All Sensors Cameras Sun/Moon/Planets Historical Rain

Health COVID-19

Camera	Elevation	Heading
Cloud Camera	19.82°	99.00°

Here is the direct URL for the site: <https://charleston.weatherstem.com/botanybay>

Here is also a tiny URL: <https://qrgo.page.link/oMYta>

www.weatherstem.com or download the app





Use of Prescribed Fire on SCDNR Properties

SCDNR Board Meeting

Johnny Stowe
Forester, Wildlife Biologist
Heritage Preserve Manager & Fire *Lighter*
Wildlife Section: W&FF Division
18 March 2021



The worldview of a society is often written more truthfully on the land than in its documents.

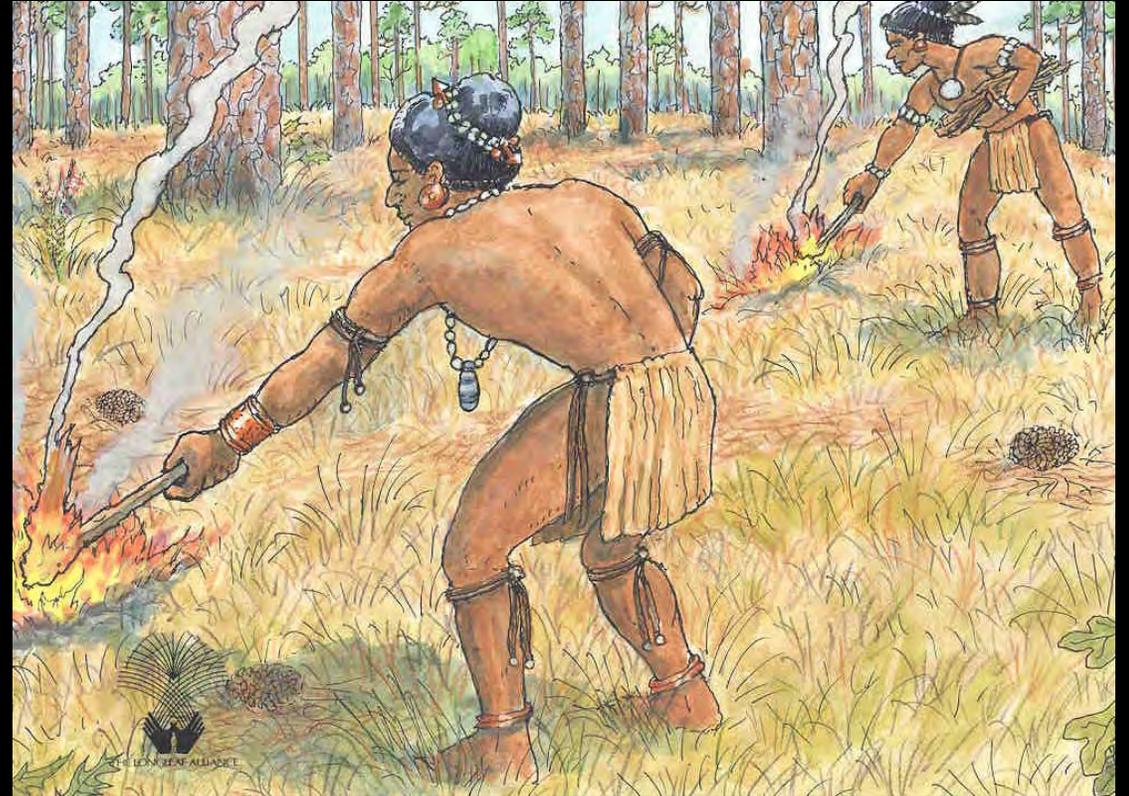
Kimmerer and Lake



The Longleaf Pine *Fire*Forest ... & Woodlands ... & Savannas



Lightning Fire



Human Fire

Frequent Fire



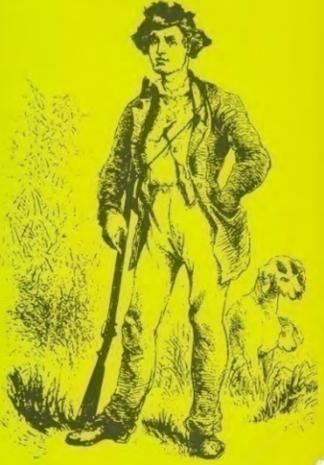
**Black Folks Burning in the Southland: A Profound, Deep-Time Legacy
As Yet Largely Ignored. This History Needs to be Documented & Celebrated.**

Cracker Culture

Celtic Ways in the Old South

Grady McWhiney

With a Prologue by Forrest McDonald



Celtic Cracker Culture

**Burning, Herdin, Huntin-n-Fishin,
Horse Racin & Fiddlin**



These Folk Brought to Our Country a Tradition of Controlled Burning to Manage Rangelands for Livestock



Reed Noss



Philip Juras

Some longleaf pine **firelands** are called **forests**, others having less trees are called **woodlands**, & the most open, fire-dependent pine ecosystems are **savannas** like these. All have special attributes.



Fire-Prone Pocosin Wetlands In Carolina Bays & other Isolated Freshwater Wetlands

SCDNR Role in General Assembly Task Force

<https://www.scstatehouse.gov/CommitteeInfo/IsolatedWetlandsandCarolinaBaysTaskForce/>

Swamp Juniper: Atlantic White-Cedar

Stowe, J. 2003. Juniper Wetlands: Disappearing Treasures. SC Wildlife. 50:2. 36-39.

General Wade Hampton's Bear Hunting Honey Holes

Canebrakes



Stowe, J. 2006. Raising Cane. SC Wildlife. 53:4. 22-25.

Stowe, J. 2007. Beautiful Bottomlands. SC Wildlife. 54:4. 5-11.

The Grand Savanna

Fire-Shaped Carolina Piedmont Prairies



Stowe, J. and E. Renedo. 2008. Carolina Grasslands: Waltzing with Fire. SC Wildlife. 55:3. 4-11.



American Chestnut ... Burned by the Indians and Hill Folks



Fire-Sculpted by the Cherokee

Keowee Valley

Philip Juras

The valley was a kind of paradise for those who depended on hunting

Partridges were plentiful and there would be generally from thirty to forty in one covey. When flushed, they flew a hundred or a hundred and fifty yards and could then be walked up and bagged with a muzzle loaded gun.

J.S. Young 1855-1949

Northwest Georgia Ridge and Valley



The Dixie Crusaders



In the 1920s, Washington Began Its Attack on the Multicultural Southern Tradition of Controlled Burning



Clarke-McNary Act of 1924 prohibited funding to any state that tolerated Rx Burning

Southerners Were Mocked and Vilified Through a Series of Well-Funded Campaigns, in Both the Mainstream Media and Popular Press as well as through Psuedo-Science

Southerners who set the Woods on Fire

By ED KERR

Drawings by Bernard Perlin

The South has 80 per cent of the nation's forest fires—many of them set by cold-blooded arsonists. A report on why they do it, what kind of people they are, and how their costly antics might be stopped.

MOST people in Jeff Davis county in southern Mississippi were in church that Sunday morning in March. Not everybody though—not the fifteen men who were planning to burn a forest before sunset.

The arsonists gathered at one man's home, consumed several rounds of beer and liquor, and mullied things over. At about 1:50 p.m., well-grimed, they set out in nine cars and traveled the county roads, throwing matches and cigarettes and roman candles until all their ammunition was gone. One man brazenly stepped out of the car and set a fire in full view of a company forester.

"We're going to burn Gaylord up!" he announced. He meant the Gaylord Container Corporation, Division of Crown Zellerbach.

On this afternoon spree these men set a hundred fires and burned a thousand acres of forest lands.

Outrageous, yes—but not unusual in the South, where more than 80 per cent of the nation's



forest fires occur each year. In the eleven states which are classed as Southern by the U. S. Fore Service, 102,710 forest fires occurred in 1956. Heavy rains kept fires down in 1957, but if 1958 continues the promise of its early months, its danger will be at a peak again. Over one week end in early February, for example, more than 200 forest fires—most of them called incendiary by state forestry officials—burned over 8,000 acres of Louisiana woodland, while in Mississippi foresters tried vainly to stop a hundred fires that consumed nearly 4,000 acres during that Friday night alone.

Woods burning is a felony in these states; in Mississippi it is subject to a maximum of five years in prison and a fine of \$1,000. But arson is hard to prove when it's impossible to produce witnesses, and many Southern courts are reluctant to send a man to the penitentiary for burning trees. The question of why this kind of lawlessness persists has to be answered before any frontal attack on it can succeed. But, like alcoholism, incendiary woods burning seems to have scores of causes, not one. Many of them are peculiarly Southern.

If carelessness were the major factor, the South would merely share the problems of other wooded regions; but it is not. A total of 3 per cent of Southern forest fires in 1956 were caused by deliberate woods burners. In our states of the Deep South, like Louisiana, Mississippi, and Florida, the percentage of arson fires runs as high as 30 per cent. Firebugs are actually responsible for a good 80 per cent of the four-acreage loss because they burn on purpose—when the ground is dry and the wind high.

"OUR PAPPIES BURNED THE WOODS"

And Set a Pattern of Human Behavior in Southern Forests That Calls for New Methods of Fire Prevention

By JOHN P. SHEA

Psychologist, United States Forest Service

(Photographs by the Forest Service)



"Pappy" and sons—residents of a national forest in the South. "Their strongest law is the custom of their forefathers," says the author.

"WOODS burnin' 's right. We almos done it. Our pappies burned th' woods an' their pappies afore 'em. It was right for them an' it's right for us."

So spoke a lean resident of the pappy woods—one of hundreds I interviewed in the course of a six months' study last year during which as a psychologist I was supposed to find the "inner most" reason why inhabitants of the forest lands of the South cling persistently to the custom of burning the woods.

"Fire do a heap of good," continued my "patient."

"Kill th' boll weevil, snakes, ticks an' lean locusts. Grows up the grass. Keeps us healthy by killin' fever germs."

When I asked if more timber growing on unused lands might make living better for the local people he allowed not. "Might hol' the floods a mite and make a few more squirrels," he conceded, "but it ad make living harder and we'd see more rattlesnakes."

These honest words sum up a long accepted explanation of the annual fires that for more than a century have characterized the land and social economy of our southern states. The extent of the annual burnings, the harm they do and the barrier they raise to successful forest culture throughout the South are well known to federal, state and private forest agencies. On their walls hang maps and records showing that approximately one-half of the forest fires occurring yearly in the United States are recorded in the eleven southern states. And what is more challenging is the fact that over ninety per cent of these southern fires are caused by the hand of man. The average southerner is inclined to accept the record and the practice as a sort of birthmark upon the land about which little can be done. Outsiders visiting or returning

stocked and appalled by the miles of fire running free in the woodlands and the palls of smoke that dull the sun and often make motoring hazardous.

"Why," they demand, "cannot these fires be stopped or controlled?"

The question is one with which all forest agencies have been at grips for the past twenty years. Hundreds of thousands of dollars of public and private funds are spent annually in efforts to prevent the fires and to extinguish or control them after they have been set by unseen hands. Progress has been made but all too slowly, as evidenced by the fact that each year the number of man-caused fires remains at an appalling height. Prevention efforts have been predicated largely upon educational activities but results indicate that these educational sermons either have been too dilute or have not reached the blood-stream of the fire-minded population.

Seeking a new educational approach, the federal Forest Service last summer decided to delve deeper into the human or social roots of the woods-burning problem. It was hoped that here might be found a point of vaccination that with an improved educational serum would reach the germ of the woods-burning disease. Accordingly, a unit of a National Forest in the Deep South was selected for study by a research

Harpers 1958

American Forests 1940

GETTING AT THE ROOTS OF MAN-CAUSED FOREST FIRES

By

John P. Shea, Psychologist
United States Department of Agriculture
Forest Service

ACKNOWLEDGMENTS

This investigation has been a cooperative enterprise. So many persons, within and without the Forest Service, have generously lent their aid that it is obviously impossible to mention each by name. To all anonymous cooperators thanks are hereby offered.

For counsel on the method used, or conclusions drawn, or both, grateful acknowledgment is made to the Advisory Council on Human Relations as a whole, and to the following scientists as individuals:

Anthropologists -

Dr. B. Malinowski, Yale University.
Dr. Frederick Osborn, American Museum of Natural History.
Dr. Clark Wissler, Yale University and American Museum of Natural History.

Psychologists -

Dr. J. F. Brown, University of Kansas.
Dr. Alice I. Bryan, Columbia University.
Dr. B. S. Burks, The Carnegie Institution.
Dr. Hadley Cantril, Princeton University.
Dr. J. F. Dashiell, University of North Carolina.
Dr. Horace B. English, The Ohio State University.
Dr. Mark A. May, Yale University.

Sociologists -

Dr. John Dollard, Yale University.
Dr. Arthur S. Emig, University of Missouri.
Dr. C. E. Lively, University of Missouri.

Thanks are due to Dr. C. H. Bean and Professor A. D. Folweiler, Louisiana State University; Dr. J. E. Greene, University of Georgia; Dr. W. Reichenberg, Riverdale Country School; and Drs. John R. McLure, D. A. Ramsdell and V. M. Sims, University of Alabama, for cooperation and helpful suggestions.

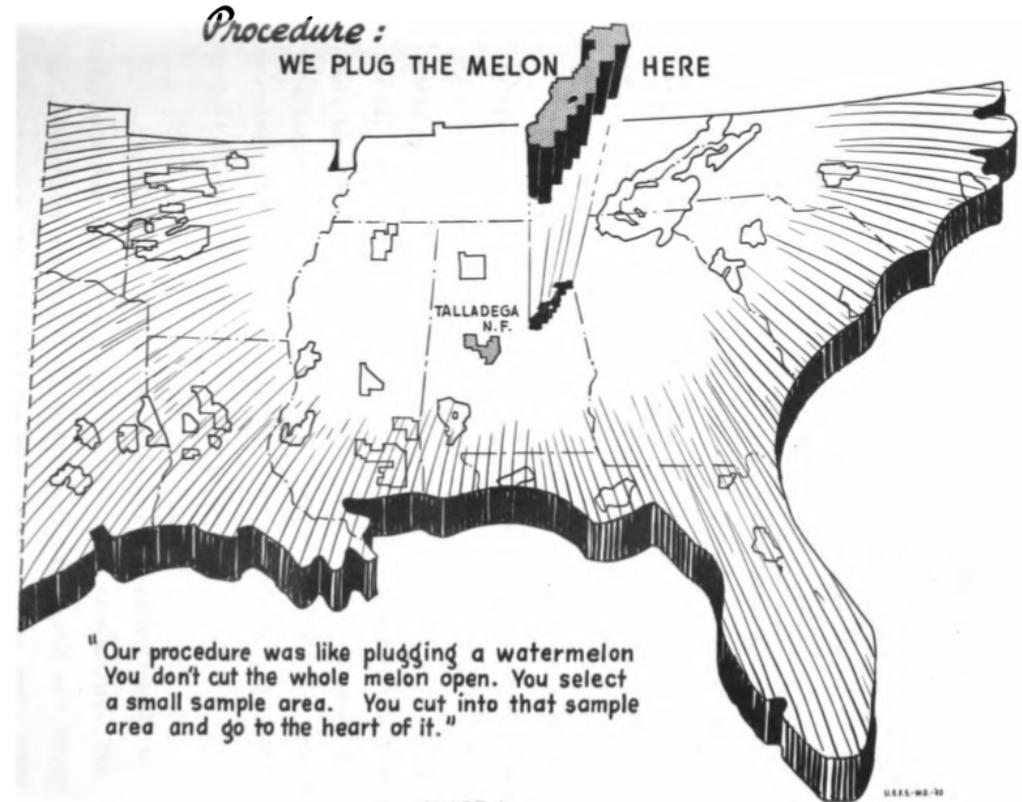


CHART 1

In the 1930s, Dr. John Shea Led a Team of 3 Anthropologists, 8 Psychologists & 3 Sociologists in Attacking the Southern People's Heritage of Controlled Burning

All These Publications and Programs Reveal an
Ossified, Condescending, Big-Government Smugness.

They Never Show Any Sign of Trying To Understand
The Southern People & Their Burning Traditions.
These Southern Traditional Rural Lifeways (TRL)
Are Now Recognized Globally For Their Wisdom,
And Are Emulated Worldwide.



JULY 1958 ▶ SIXTY CENTS

Harper's magazine

Veterans: Our Biggest
Privileged Class
John E. Booth

Time on Our Hands
Russell Lynes

A Grass-roots Guide
to '58 and '60
William G. Carleton

The Catskills:
Still Having Wonderful Time
David Boroff

School for Statesmen
Joseph Kraft

The Article as Art
Norman Podhoretz

SOUTHERNERS WHO SET THE
WOODS ON FIRE by Ed Kerr

Only you can prevent forest fires.

We can't.

Forest fires burn more than trees.

Please...
help people be more careful!

Remember—Only you can PREVENT WOODS FIRES!

Remember: there are babes in the woods.

This shameful waste WEAKENS AMERICA!

Remember—Only you can PREVENT WOODS FIRES!

Every tree is a family tree. So please help Smokey...

ONLY YOU CAN PREVENT FOREST FIRES!

Fire destroys his trees, too

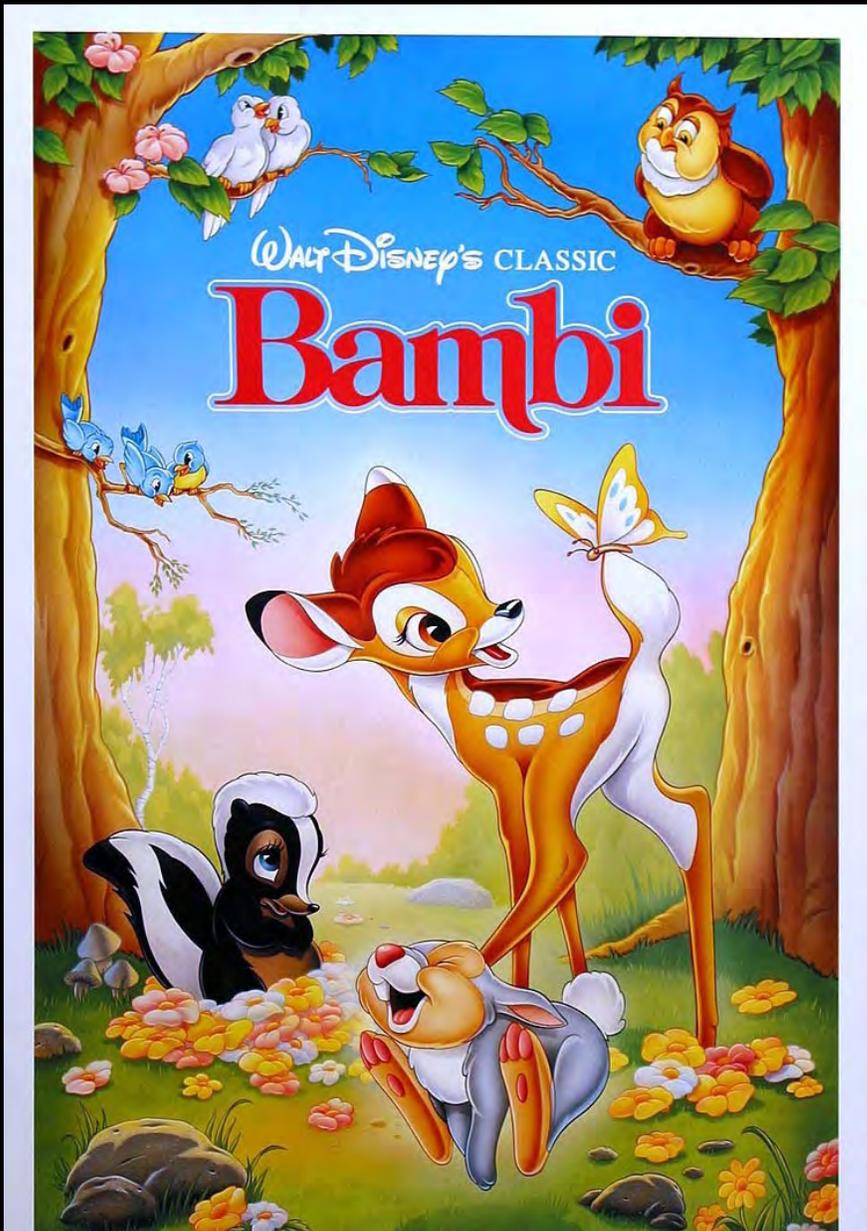
REMEMBER—ONLY YOU CAN PREVENT WOODS FIRES!

BEFORE YOU START ANY FIRE:

- FOLLOW LOCAL REGULATIONS
- BE SURE FIRE CAN'T SPREAD
- DON'T BURN ON DRY WINDY DAYS
- AND NEVER LEAVE FIRE UNATTENDED

PLEASE! Only you can prevent forest fires

Smokey Attacked All Fires As Enemies of Society and Mother Nature.



Smokey and Bambi Were Carefully Orchestrated to Play on People's Emotions.



Sue Griggs



JessLeePhotos.com



Mr. Herbert L. Stoddard: Father of Modern Fire Science
Iconoclastic and Ardent Supporter of Controlled Burning



Fire-Loving Grassland Birds



Philip Juras

Prescribed Burning Enhances Air Quality By Reducing Wildfire Risk

Stowe, J. 2021. *Lighting Fire to Fight Fire*.

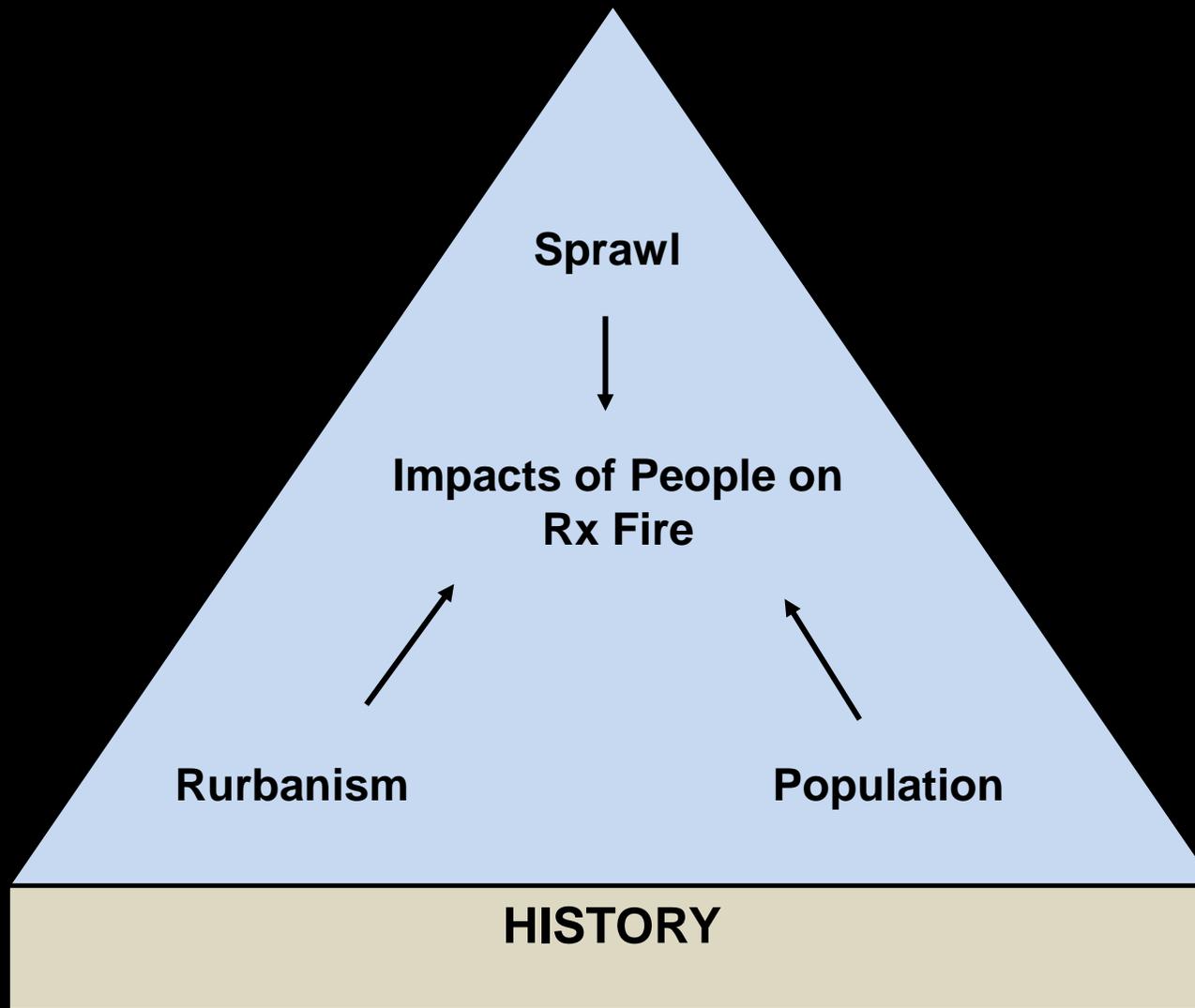
<https://www.iawfonline.org/article/lighting-fire-to-fight-fire/>

Frequently-burned Open Savannas are the Best Longleaf Habitat for Quail and Biodiversity, & The Trees as well as the Perennial Grasses and Herbs with **Large Root Systems Store Carbon Long-term**, which **Improves Air Quality**



Many Fire-Loving Rare Species Escaped Extinction
In Large Part Because Quail Managers Kept Good-Fire
On-the-Ground When No One Else Did.

We Restore and Maintain their Habitat with Frequent Fire

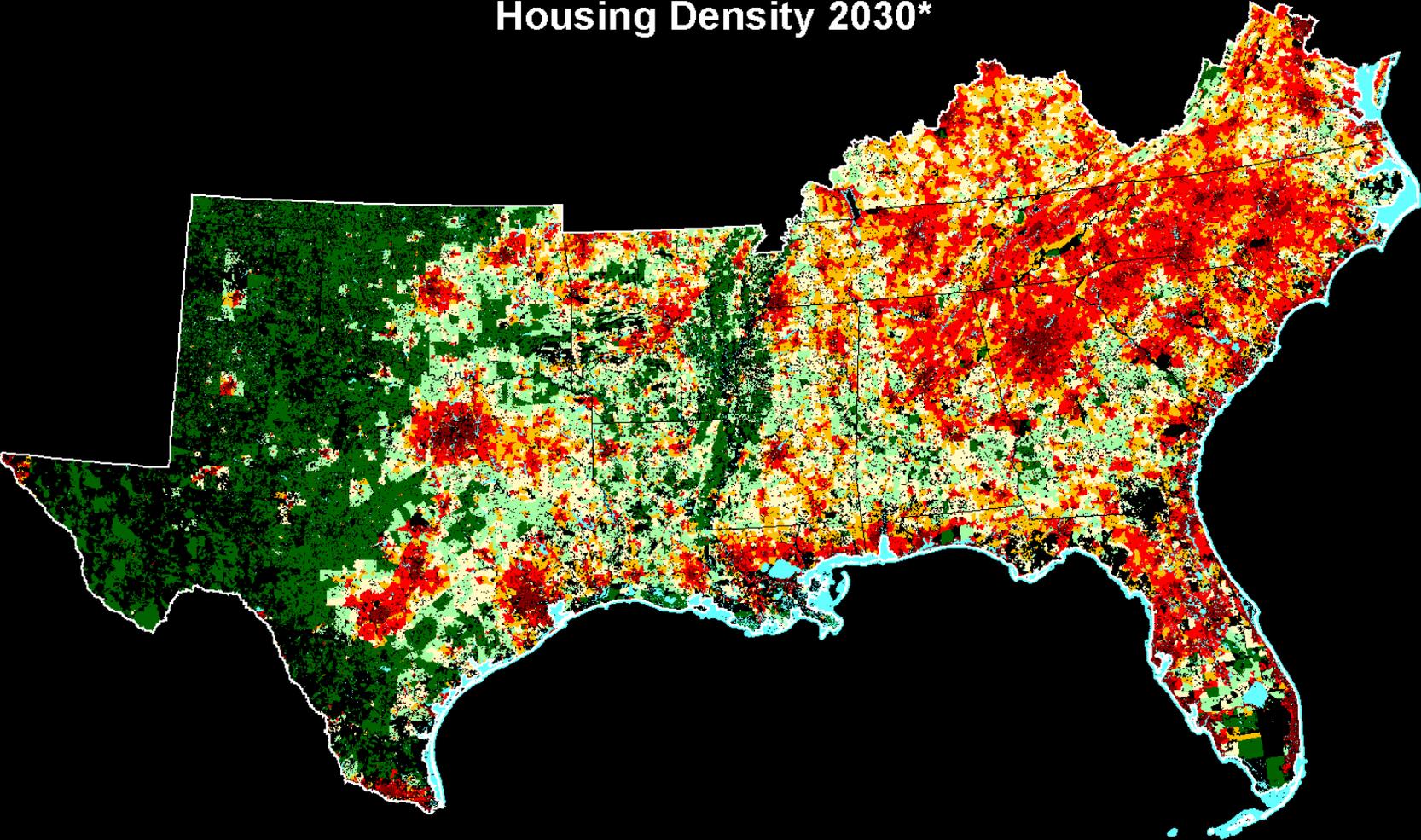


Stowe 2008

How Many People, Where They are and How They Live, and Their Attitudes

Southern Region

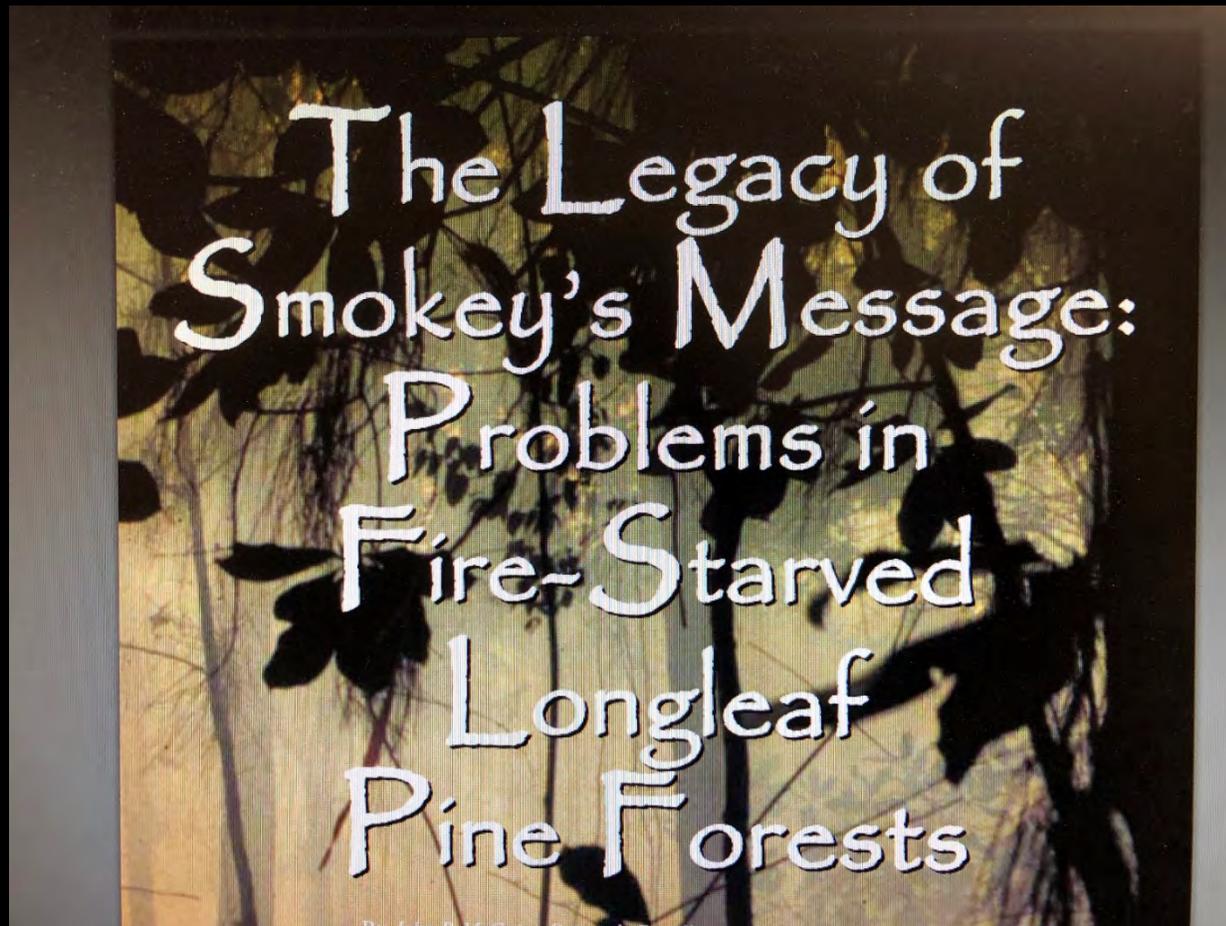
Housing Density 2030*



Housing Units per Km²

*Linear projection of 1990s growth





Not All of Smokey's Message is Bad. No One Should Carelessly or Maliciously Cause Wildfires, But That Was Not His Message, and Sadly, *Smokey Still Refuses to Quit Saying All Fire Is Bad.*

In 2001, **Smokey the Bear Officially Claimed to Change His Message** from Vilifying All Forest Fires to Only Wildfire

https://www.forestry.alabama.gov/Pages/Informational/Treasured_Forests/Magazine/2007_Spring.pdf John McGuire (2007)



*But 20 Years Have Passed
& He Has Never Quite
Got Around To It*

*The first thing to do when you find
yourself in a hole, is to stop digging.*

Will Rogers



Still On South Carolina's Roadsides

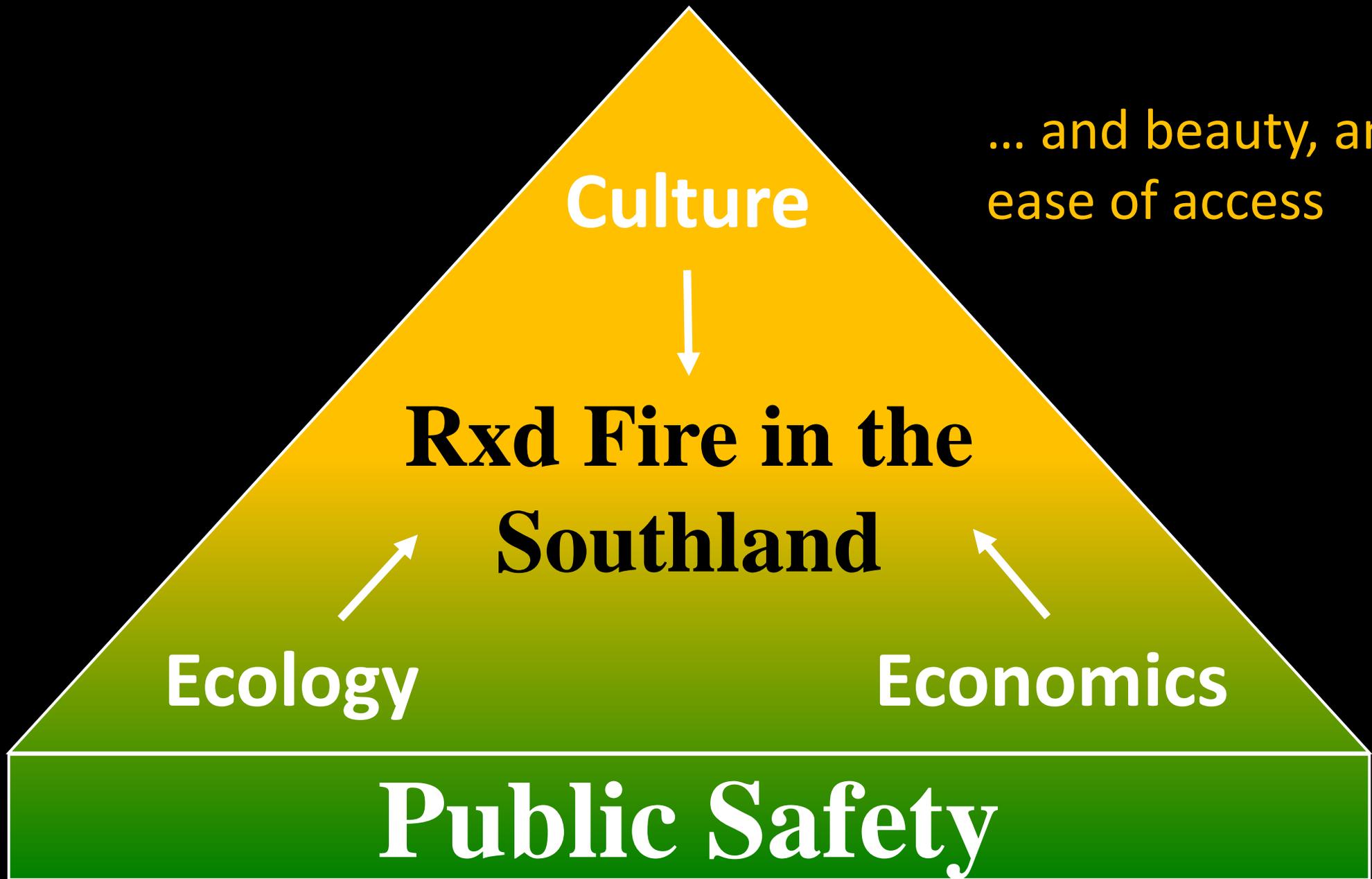
Invasive Exotic Species Harm Ecosystems & Human Welfare By Altering Fire Regimes

*We Have Met the Enemy and
He is Us Pogo*



Stowe, J. 2020. When Rxd Fire Meets a Plague of Pigs. Wildfire. IAWF.

<https://www.iawfonline.org/article/when-prescribed-fire-faces-a-plague-of-pigs/>



SCDNR Prescribed Burning 2017-2020

From Jocassee Gorges to Coastal Islands: Statewide on 56+ SCDNR Properties

We Do More than Anyone to Help Landowners *Learn to Burn & Get Their Land Burned*

Four Year Average: 21,100 acres on ~ 56 properties

2017: 18,442 acres

2018: 15,487 acres

2019: 24,405 acres

2020: 26,065 acres

Heritage Preserves & Wildlife Management Areas (WMAs)

Forests, Woodlands, Savannas, Marsh and Agriculture

Region 1: Mountains and Western Piedmont 18+ Properties

Jocassee Gorges HP/WMA

Watson Cooper HP/WMA

Laurel Fork HP/WMA

Stevens Creek HP/WMA

Ashmore HP/WMA

Buzzards Roost HP/WMA

Brasstown Bald HP/WMA

Bunched Arrowhead HP (not WMA)

Bordeaux Dove Field

Pickens Rifle Range Dove Field

McCalla WMA

Tall Pines WMA

Long Creek WMA

Fant's Grove WMA

Cliff Pitts WMA

James L. Mason WMA

Thurmond Tract WMA

USACOE-owned SCDNR-managed land

Region 2: Pee Dee/Catawba 15+ Properties

Longleaf Pine HP/WMA

Lynchburg Savanna HP/WMA

Woods Bay HP

Rock Hill Blackjacks HP/WMA

Great Pee Dee River HP/WMA

Forty Acre Rock HP/WMA

Woodbury HP/WMA

Marsh HP/WMA

Sandhills Crossroads WMA

McBee WMA

Liberty Hill HP/WMA

Campbells Crossroads WMA

Pee Dee Station WMA

Lake Wallace WMA

Angelus WMA

Region 3: Midlands

10+ Properties

Aiken Gopher Tortoise HP/WMA
Junkyard Bay HP
Congaree Bluffs HP
Henderson HP/WMA
Peachtree Rock HP
Ditch Pond HP/WMA
Janet Harrison High Pond HP
Belfast WMA
Crackerneck WMA
Wateree River HP/WMA

Region 4: Coastal

13+ Properties

Webb Center WMA
Hamilton Ridge HP/WMA
Palachucola WMA
Donnelley WMA
Bear Island WMA
Bonneau Ferry WMA
Santee Coastal Reserve WMA
Lewis Ocean Bay HP/WMA
Cartwheel Bay HP/WMA
Tillman Sand Ridge HP/WMA
Samworth WMA
St. Helena Sound HP/WMA
Yawkey Center HP/WMA

In Many Cases, Such As Near *Lewis Ocean Bay Heritage Preserve* near Myrtle Beach ...

It Is Not A Matter of *If*, but of *When* These Pocosins Will Burn.

SCDNR's Controlled Burning Helps Prevent Catastrophic Wildfires By Reducing Fuels



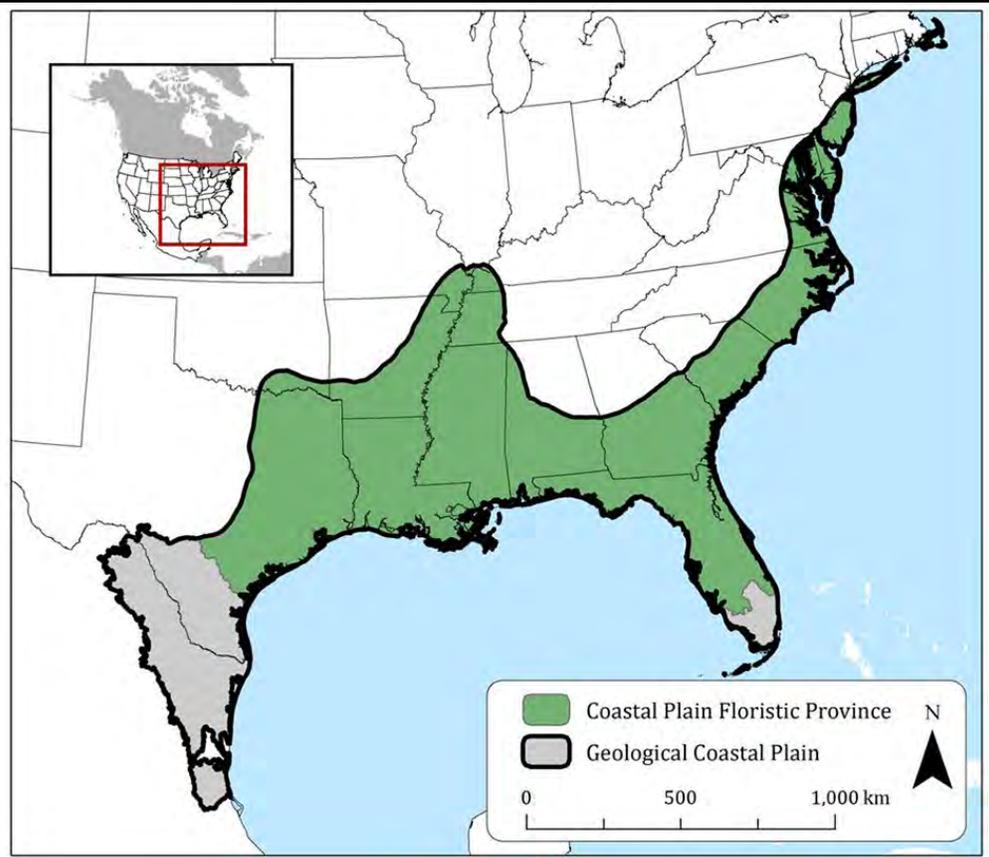
Pocosin Fire in Carolina Bay Wetlands ... Infrequent, but Naturally Intense



Pyro-Pruning



Artful Controlled Burning protects and enhances our timber investment while allowing for plenty of sunlight to hit the ground to support groundcover vegetation that is crucial habitat for many desirable species. You can grow a heap more trees and still have groundcover if you prune the lower limbs with fire.



Biotourism \$\$\$

Fire-Dependent Yellow-fringed Orchid

**Frequently-Burned SE US Coastal Plain
Recognized as Global Biodiversity Hotspot ...
*nobody makes a trip to see sweetgum thickets!***

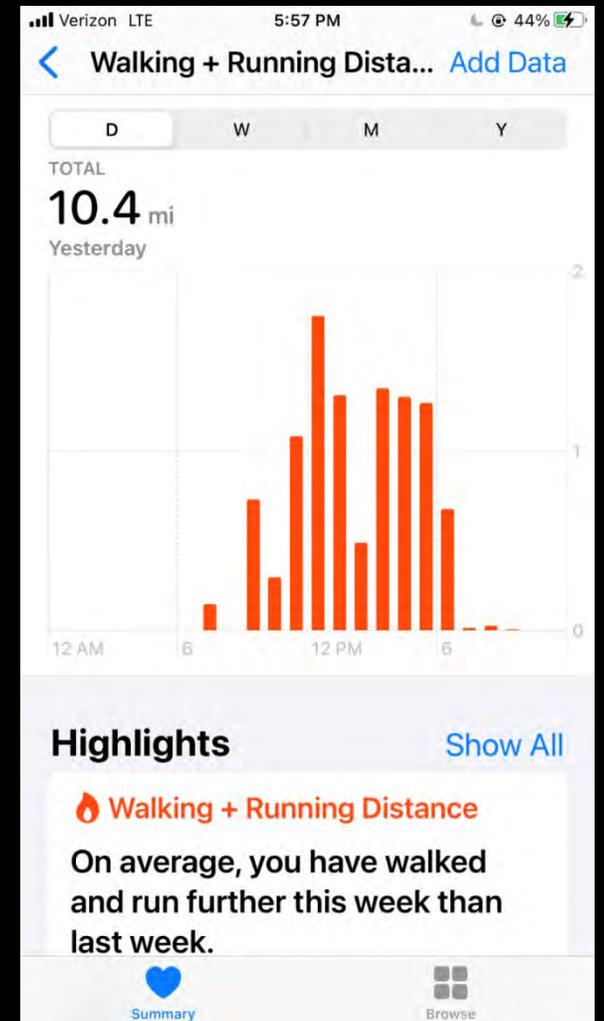
Stowe, J. 2016. Natural Areas of South Carolina Coastal Plain Recognized as Key Part of 36th Global Biodiversity Hotspot. SCDNR News Release

Skillfully applying fire to the land is an art as well as a science.

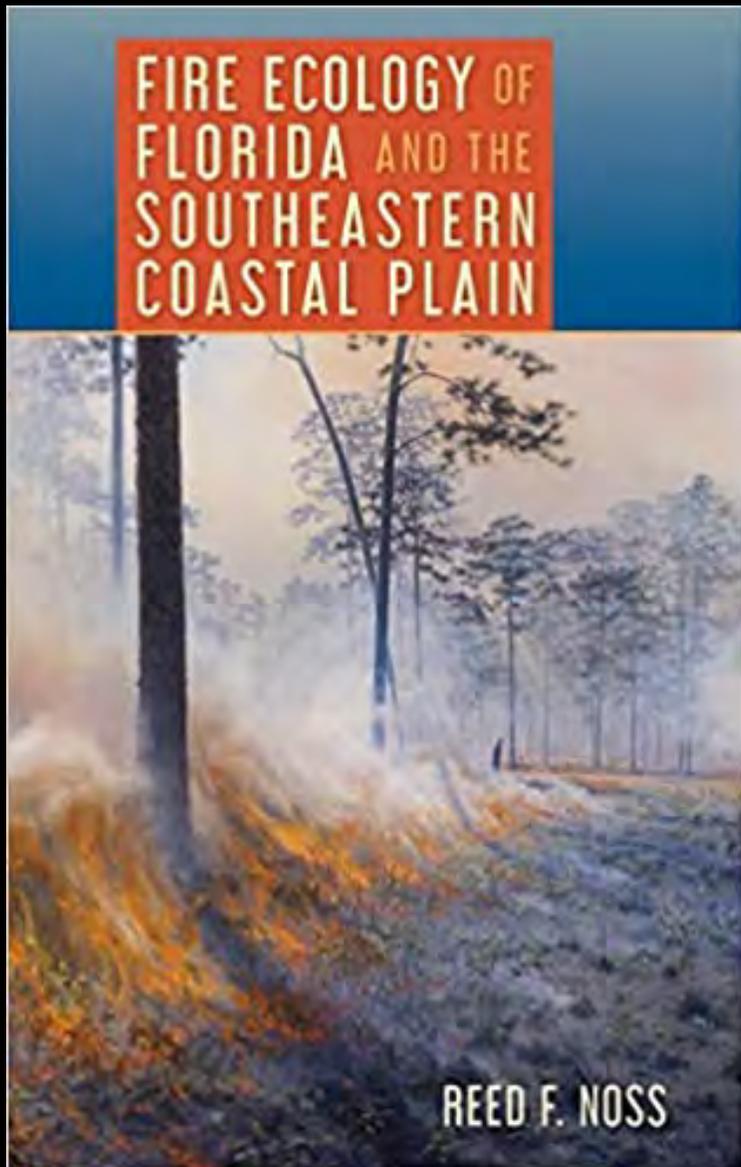
**Intensity
Season
Frequency
Scale** = **Habitat
Impacts**

**Controlled Burning is both
Restoration Fire & Maintenance Fire**

***Firelighters* in Mutualistic Symbiosis with Forests ... A Part of the Natural Process of Fire and Thus A Part of the Land We Depend Upon, Not Apart From It**



A good day's dragging the torch last week, firelighting to burn 170 acres of wet longleaf pine savanna for rare plants, bobwhite quail and songbirds, and clean-trunked trees



Lightning Season Burns

Operational & Ecological Complexity

Unique Benefits, Extra Burn Days, Only Chances We Get



Stowe, J. 2019. Essay-Review of Fire Ecology of Florida and the SErn Coastal Plain: By Reed Noss. Wildfire. IAWF. <https://www.iawfonline.org/article/review-fire-ecology-of-florida-by-reed-noss/>

**Multicultural
Southern Tradition
and Heritage**



Prescribed Burning



Pandisciplinary



Intergenerational

CRITICAL THINKING



SC Rxd Fire Council Chair Dr. Ernie Wiggers presenting a drip torch to Governor Mark Sanford with former SCDNR Director John Frampton.

State of South Carolina

Governor's Proclamation

WHEREAS, prescribed burning is the skilled application of fire under planned weather and fuel conditions to achieve specific management objectives; and

WHEREAS, ecosystems throughout the Palmetto State evolved in an environment in which fires occurred as often as every one to five years in the Coastal Plain and Piedmont and every seven to ten years in the mountains; and

WHEREAS, as a key tool in the management of South Carolina's woodlands, grasslands, and wildlife, prescribed fire is the most effective and economical protection against wildfires through the reduction of fuels which have accumulated in the absence of fire and is critical to the ecological integrity of our natural lands; and

WHEREAS, many plants and animals require fire for their survival; and

WHEREAS, the approximate 500,000 acres of South Carolina land that is burned annually represents only half of the estimated one million acres that could benefit from prescribed fire.

NOW, THEREFORE, I, Mark Sanford, Governor of the Great State of South Carolina, do hereby proclaim March 2006 as

PRESCRIBED FIRE AWARENESS MONTH

throughout the state and encourage all South Carolinians to learn more about prescribed burning and the essential role fire plays in the stewardship of our natural resources and protection of our citizens.



MARK SANFORD
GOVERNOR
STATE OF SOUTH CAROLINA



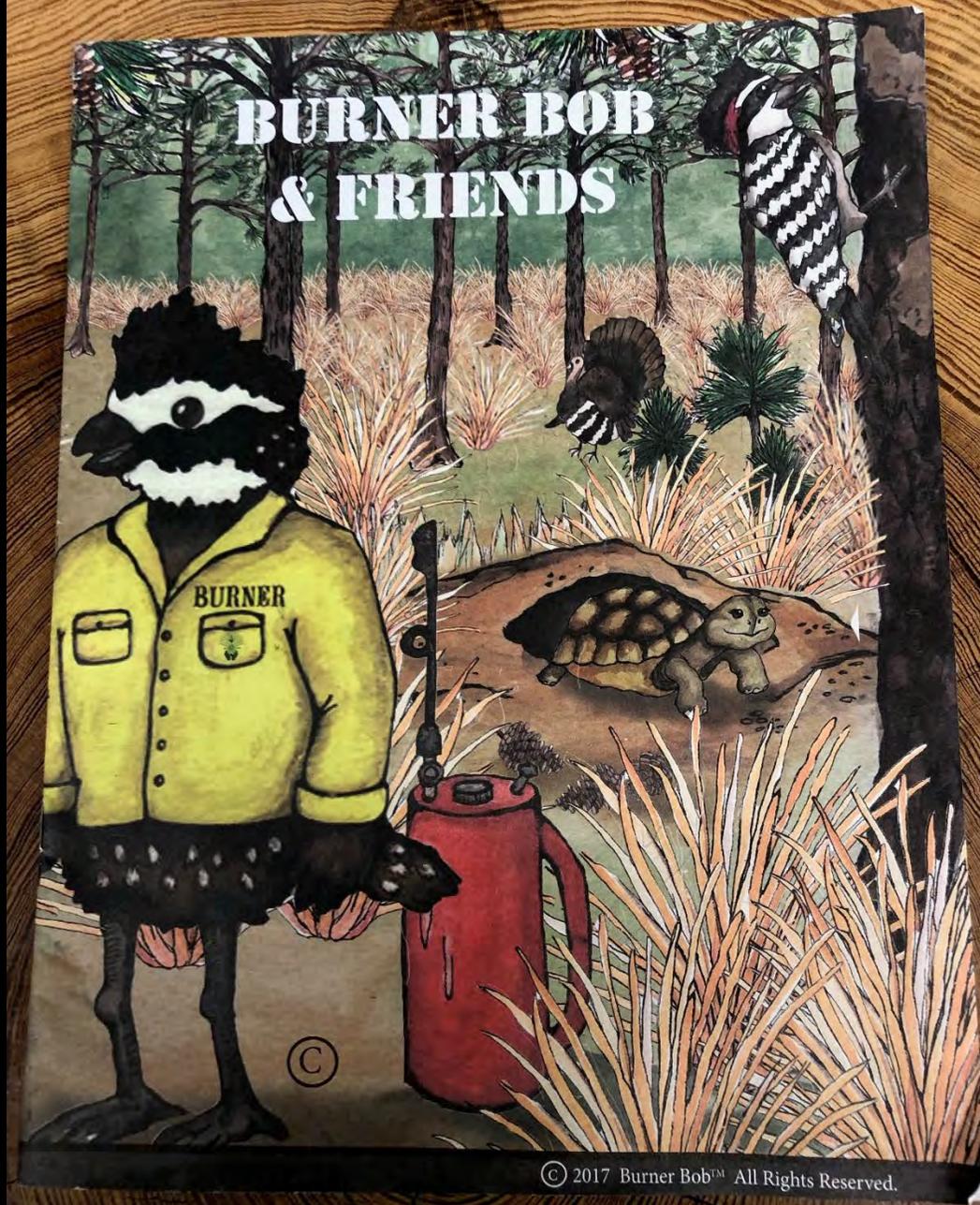
Lisa Lord: Chair: SC Prescribed Fire Council



— THE —
LONGLEAF
ALLIANCE

Co-Founded in 1995 by Georgetown Native Rhett Johnson

SCDNR Has Been a Vital Partner with the Alliance Since Its Inception,
Together Restoring the Southern Heritage of Controlled Burning



***Burner Bob advocates* wise woods-fires, a natural process, while restoring and sustaining an ancient South Carolina tradition and unique Southern heritage that enhances public safety, while providing economic and ecological benefits.**



Learnin' & Burnin' at the Griggs Farm



(Kobziar et al. 2009)



Passing the Torch

Miller, S. and J. Stowe. 2020. **Passing the Torch** to Tomorrow's Wildland Fire Professionals: Through Mentoring, Training and Pyrotourism. Wildfire. IAWF. Cover Image and Essay pp 36-39.

<https://www.iawfonline.org/wp-content/uploads/2020/11/29.4-October-2020-Wildfire-Magazine-final.pdf>

ARE YOU A PYROMANIAC?



CLEMSON UNIVERSITY

STUDENT ASSOCIATION FOR FIRE ECOLOGY

INFO MEETING: WEDNESDAY, OCT. 4TH 2017
7PM - 9PM

Join us for our first information meeting!
Where: Lehotsky Room 134
Pizza will be served at 7pm.

WE INVITE ANYONE WITH A COMMON INTEREST AND
PASSION IN SCIENCE, FORESTRY, WILDLIFE,
FISHERIES, RECREATION, EDUCATION, AND OF
COURSE, FIRE.

SAFE Chapters



Clemson University Fire Tigers

Sharpe, C., H. Mohr, W. Bentley and J. Stowe. 2019. Clemson University Fire Tigers: Pouncing on Opportunities in Wildland Fire. SE Assn. of Fish & Wildlife Agencies. Hilton Head Island.



Aaron Robinson
Francis Marion University

Gittin' it Done ... On the Ground, Torch in Hand



Savanah Hebler
Francis Marion University



Caroline Sharpe
Clemson University



Daniel Jones
Clemson University

SC DNR Internship Programs

MARK TRAIL TELLS HOW PRESCRIBED FIRE

CAN BE HELPFUL TO SOUTHERN ECOSYSTEMS



Anna Harkin



Sadie, Sam and Lil Turner

Children Are Learning Prescribed Burning is a Vital & Unique Tool that Benefits South Carolina's Citizens and Visitors & that Just Like Guns, Fire is a Potentially Dangerous Tool that Must Only be Used Properly. This Helps Foster Responsibility.

SEWEE FIRE FEST

Think fire and forests don't mix?

Bring the family March 12 to discover how controlled burning is restoring South Carolina's native forests. See a safe, live burn up close!

- 🔥 **Live burn at 1 p.m.***
- 🔥 Birds of prey showcase at 1:30 p.m.
- 🔥 "History of Fire in the Southern Landscape" presentation at 10 a.m. - **PRE-FESTIVAL**
- 🔥 Meet Smokey Bear and Woodsy Owl
- 🔥 Bounce house, balloon art and face painting
- 🔥 Sweetgrass basket weaving and sales
- 🔥 Food vendors
- 🔥 Learn about local organizations bringing safe, natural fire to South Carolina's forests

Special thanks to National Fish and Wildlife Foundation, Center for Heirs' Property Preservation, U.S. Endowment for Forestry and Communities, USDA Natural Resources Conservation Services, USDA Forest Service, U.S. Fish and Wildlife Service and The Nature Conservancy for their generous sponsorship of this event.



 Sewee Longleaf
Conservation Cooperative

FREE

MARCH 12, 2016
11 a.m. - 2 p.m.

Sewee Visitor
and Environmental
Education Center
5821 Hwy 17 North
Awendaw, SC 29429

seweelongleafcoop.org
nature.org/sc

*Live burn weather permitting.



All photos © David Edwards



Burner Bob



This design copied from fire-friends at SJWMD in Florida, and is available to landowners minus DNR logo and weblink

Happy Neighbors Who Love to Have Us Burn Next Door



Society in the Faraway
Future Will See The Story
of SCDNR's Fire Program &
Our Overall Conservation of
Our State's Natural Resources
Laid Down and Writ Large
In the Rings of Trees Living Today



Tree-ring Research : Reading the Past

Tales Told Well in the Rings of Old Trees

Stowe, J. 1999. Fat Lighter. SC Wildlife. 46:6. 6-9.



A society is ultimately measured not by what it develops or consumes, but rather by what it has nurtured and preserved.

Jim Posewitz



Share the Flame!

Stowe, J. 2017. Fire-Ties that Bind: The Rekindling of Prescribed Fire Culture in North America. AFEx Talk. International Fire Ecology and Management Conference. <https://mediasite.video.ufl.edu/Mediasite/Play/339f90fe77c3494298ad64fdfa10d7ad1d>

Stowe, J. 2020. Fire-Ties that Bind. The Natural and Cultural Heritage of Controlled Burning in the Southland and the Rekindling of Global Fire Culture. Southern Fire Exchange. <https://www.youtube.com/watch?v=HvVcIMFgu-s>

A large flock of waterfowl, likely geese or ducks, is captured in flight over a wetland landscape. The birds are scattered across the sky, with a dense concentration in the middle ground. The foreground is dominated by tall, dry, golden-brown grasses. In the middle ground, there is a body of water, possibly a pond or a slow-moving stream, surrounded by more vegetation. The background shows a line of trees under a clear, light blue sky.

Category 1 Waterfowl Areas Update

**SCDNR Board Meeting
March 18, 2021**

Broad River



2020 Accomplishments

- Installed 2 new screw gates in Old Impoundment
- 100 feet of dike repaired from flood damage
- Continued ditching in DU Pond to alleviate flooding from Terrible Creek
- Installed new pipe, riser and screw gate in Greentree Reservoir and across the tracks
- Graded and re-topped main dike
- Mowed ditch banks
- Beaver trapping



Clemson

- Located adjacent to 18 Mile Creek and experiences frequent flooding
- Due to size, we can only provide 2 waterfowl blinds
- Utilized as a dove field in 2020

Short term needs include:
(est. cost \$150,000)

1. Replacement of the water control structure.
2. Re-core 1,000 linear feet of dike.
3. Excavate 800 linear feet of canal to restore drainage.
4. Grade and install riprap on 1,600 square feet of spillway.



Beaverdam

- 74 person/days were spent managing water levels in impoundments.
- 1.4 miles of dike were mowed.
- 0.5 miles for dike were graded and graveled.
- 8 acres were planted.



Waterree

- 62 man/days managing water levels
- 7 miles of dike were mowed
- 1.6 miles of fence cleared of tree stumps
- 5.6 miles of fence sprayed with herbicide
- 1.1 miles of hog panel installed
- 31 acres planted
- 22 acres replanted (due to crop loss, flooding)
- 2 flap gates installed on Goodwill pond
- 1 canal gate installed on Goodwill pond.
- 160ft of pipe replaced
- 1 flap gate fabricated and designed for Cook's Mountain pond (waiting on dry conditions for installation).
- Under contract: 0.75 miles of dike to be reworked at Cook's Mountain pond (waiting on dry conditions and low river level to start).
- Under contract- 27 acres of mulching in green tree reservoir



Bear Island



2020 Accomplishments

- 4.1 miles of dikes re-topped
- 1,750 feet of berm enhancement
- 5 trunks and wingwalls repaired
- 2 new water control structures installed
- 2 bulkheads repaired
- 211 miles of dike mowed
- 24 miles of dike herbicided
- 1.2 miles of dike rotovated
- 1 mile of dike mulched
- 2,284 acres of marsh burned
- 240 acres mowed



Sandy Beach



A vast flock of birds, likely shorebirds, is captured in flight across a wide, open landscape. The birds are scattered throughout the sky, appearing as numerous small dark silhouettes against a pale, overcast sky. Below the birds, a body of water is visible, bordered by dense, tall grasses in shades of green and gold. The foreground is dominated by out-of-focus, golden-brown grasses, suggesting a shallow depth of field. In the background, a range of low, rolling hills or mountains is visible under the same sky. A white rectangular box is overlaid on the upper right portion of the image, containing the text 'Santee Coastal Reserve' in a bold, black, sans-serif font.

Santee Coastal Reserve

2020 Accomplishments

An aerial photograph of a large waterfowl impoundment. A long, narrow dike runs diagonally across the frame, separating a large body of water on the right from a marshy area on the left. The water is a deep blue, while the marsh is a mix of brown and green. The sky is clear and blue.

- 154 man/days managing water levels in impoundments
- 3.4 miles of dike were re-topped
- 2,960 feet berm enhancement
- 131 miles of dike were mowed
- 12,000 feet dike rotovated
- 8.2 miles of dike was mulched (tree removal)
- 40 acres of marsh burned
- 45 areas impoundment mowed/rollerchopped
- 5 trunks and associated wingwalls were repaired
- 2 bulkheads installed
- 0.5 miles of canal cleaned out
- 800 foot setback dike constructed on Cedar Island as a result of a breach caused by Hurricane Isaias
- 126 acres of Phragmites was sprayed by airboat
- 1,300 acres of Phragmites was sprayed with herbicide (\$177,7412)
- 3 floating docks constructed and installed at Cedar and Murphy Islands.
- Two trackhoes operated during the entire waterfowl season.

Murphy Island





Cedar Island



The Cape Coastal Wetlands Grant



Santee Delta

- 8 man/days were spent monitoring water levels in impoundments
- 0.2 miles of dike were re-topped
- 56 miles of dike were mowed
- 107 acres marsh manipulated (mowed)

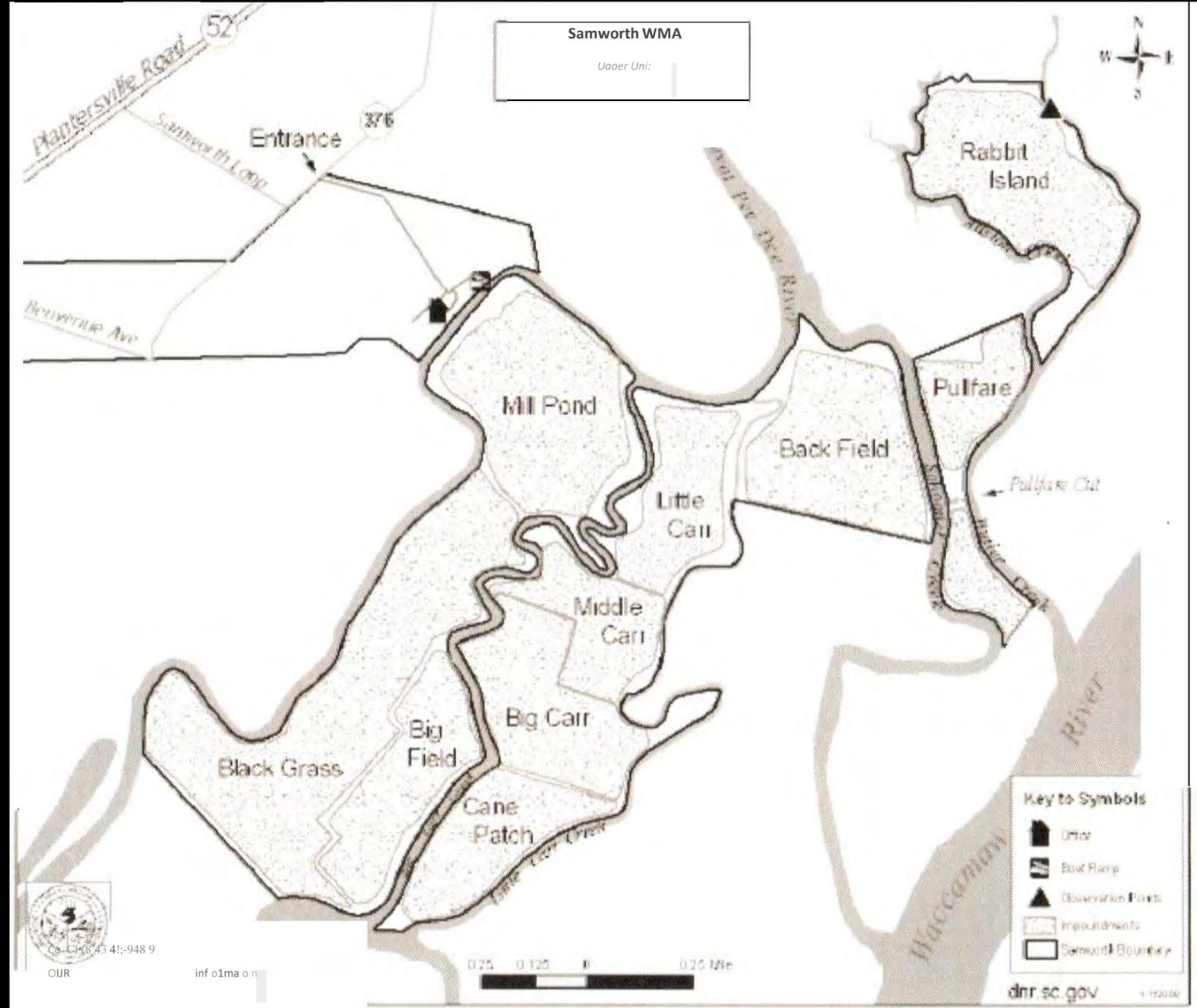
- No management of the impoundments can occur until the exterior dikes are re-keyed and raised along with all trunks being replaced.
- Significant leakage through the dikes and at the trunks.
- No lottery hunts were held during 2020-2021.
- Budget Proviso/NAWCA/DU

- Estimated Cost: \$2.45 Million





Samworth



Natural Disasters

- 100 year Flood of 2015
- Hurricane Matthew 2016
- Hurricane Irma 2017
- Hurricane Florence 2018
- Hurricane Dorian 2019
- Flood tides/King tides – (tides in Charleston Harbor over 7 ft that cause flooding)
- 2015 – 58 days
- 2016 – 55 days
- 2017 – 46 days
- 2018 - 42 days
- 2019 - 89 days
- 2020 - 68 days
- 2021 - 5 days (to date March 10)



2020 Accomplishments

- 45 man/days were spent managing water levels
- 3.6 miles of dike were re-topped
- 3,780 feet berm enhancement
- 2.6 miles interior ditching reclaimed
- 3,000 feet of canal cleaned out
- 47 miles of dike were mowed
- 2.2 miles of dike was mulched (tree removal)
- 91 acres marsh burned
- 12 acres planted in rice
- 128 acres marsh manipulated (disk, mow, rollerchop)
- 4 trunk and associated wingwalls repaired
- 3 bulkheads installed/repared
- 76 acres of canals sprayed to control noxious vegetation
- Multiple test plots were sprayed with different chemicals to determine the most effective means for killing white marsh
- 300 foot setback dike constructed in Cane Patch
- 60 1-ton sand bags placed on Upper Middleton corner to prevent dike from breaching
- Rented additional trackhoe for 4 months
- Amphibious trackhoe operated throughout entire waterfowl season.





Establishing quarter drains and re-keying dikes







Upper Middleton Renovation

- Installation of 4 wooden trunks
- Re-top 6,010 linear feet of interior dike
- Re-top 8,690 linear feet of perimeter dike
- Construct 2,060 linear feet of setback dike

Estimated cost \$1,310,010



117.6 miles of dikes (both interior and exterior)
(Bear Island, Samworth, Santee Delta, SCR)

- 620,928 linear feet
- On a good day in good material a trackhoe operator can re-top approximately 300 feet of dike a day.
(8 hr day)
- 2,070 man days to re-top the entire dike system just once
(making only one pass)
- If you account for holidays (13 per year) then it would take 8.3 years
for one trackhoe to re-top all the dikes on the coastal properties.

That does not take into account for any sick days, equipment failures, servicing the machine, fueling the machine, tides too high to operate in (68 days tides over 7 ft in 2020), stoppages to install trunks, stoppages to make emergency repairs in the dike at other locations, repairs to be made due to natural disasters, etc.



Even a rainy day in the field is fun
when you are with good company!

Questions.....





FY 2021-2022 REQUESTS

Rev 3/18/21

GENERAL FUNDS - RECURRING			9-Dec		8-Jan	3-Mar	
Priority	Division	Request Title*	DNR	FTE	Gov	Ways & Means	FTE
1	LE	Law Enforcement Officer Step Increases	\$ 706,066	-	\$ 706,066	\$ 706,066	-
2	LE	Law Enforcement Overtime	\$ 597,204	-	\$ -	\$ 597,204	-
3	LE	Law Enforcement Class - 30 New Officers	\$ 1,949,835	24.00	\$ -	\$ -	-
4	Admin	DTO Server Relocation/Consolidation and Lease	\$ 610,424	-	\$ -	\$ -	-
8	EX	Compliance Office Staffing & Operating	\$ 87,157	1.00	\$ -	\$ -	-
11	Admin	Headquarters Relocation	\$ 2,002,500	-	\$ -	\$ -	-
16	WFF	Statewide Waterfowl Project	\$ 100,000	1.00	\$ -	\$ 98,000	1.00
Subtotal			\$ 6,053,186	26.00	\$ 706,066	\$ 1,401,270	1.00

* Includes Employer Contribution portion

GENERAL FUNDS NON-RECURRING			DNR		Gov	Ways & Means
Priority	Division	Request Title	DNR		Gov	Ways & Means
5	MRD	MRRRI Lab Shoreline Stabilization	\$ 585,500		\$ 585,000	\$ 585,000
6	MRD	Ocean Research Vessel Replacement-Used	\$ 1,207,000		\$ -	\$ -
7	LWC/MRD	Special Projects (Coastal Water Intrusion, Energy Plant	\$ 653,750		\$ -	\$ -
9	LWC	State Water Plan - Pee Dee Basin & Broad River Basin	\$ 2,995,000		\$ 2,995,000	\$ -
10	WFF	Barnwell Fish Hatchery Maintenance	\$ 1,800,000		\$ -	\$ -
17	WFF	Category 1 Waterfowl Areas	\$ 2,800,000		\$ -	\$ 1,500,000
New	LE	COVID-related LE Overtime	\$ -		\$ 597,204	\$ -
New	Admin	Agency Headquarters Relocation	\$ -		\$ 2,002,500	\$ -
Subtotal			\$ 10,041,250		\$ 6,179,704	\$ 2,085,000

Total General Funds \$ 16,094,436 \$ 6,885,770 \$ 3,486,270 1.00

RECURRING OTHER/FEDERAL FUNDS			9-Dec		8-Jan	3-Mar	
Priority	Division	Request Title*	DNR	FTE	Gov	Ways & Means	FTE
12	LWC	Heritage Trust	\$ 914,572	10.00	\$ 608,010	\$ 278,559	6.00
13	OSS	Turkey Research/Tag Program	\$ 475,000	-	\$ 475,000	\$ 475,000	-
14	WFF	Water Rec Fund Projects	\$ 321,000	-	\$ 321,000	\$ 321,000	-
15	LWC	FEMA-Flood Mitigation	\$ 500,500	-	\$ 500,500	\$ 500,500	-
Subtotal			\$ 2,211,072	10.00	\$ 1,904,510	\$ 1,575,059	6.00

PROVISO CHANGES			DNR	Gov	Ways & Means
Action	Proviso	Purpose	DNR	Gov	Ways & Means
Establish	47.14	Waterfowl Impoundments-Qualified Entity Sole Sourc	Yes	Yes	Yes
Delete	117.136	Georgetown County - DOT Sandy Island Funds Transfe	Yes	Yes	Yes