

CHAPTER 7: CULTURALLY IMPORTANT SPECIES AND HABITATS

Introduction

This chapter will somewhat deviate from the typical western European style of writing to discuss culturally significant species to South Carolina's Indigenous Peoples using terminology consistent with their relationship with their fellow living beings. We acknowledge that before European contact, several sovereign tribal nations called this landscape home and still do today, although some may no longer reside within the State's geopolitical borders. Traditional lands held and still hold unique plant and animal communities with enduring importance to these Indigenous Peoples, and their cultural knowledge is a valuable part of any conservation plan. These plant and animal species will be discussed as "relatives" throughout this chapter in keeping with the associations Indigenous Peoples have with these entities. Relatives are considered providers, teachers, and elders, giving humans food, medicine, and the gifts of technology and ceremonial items. Animals and plants appear in art and language but also support aesthetics/spiritual values (non-consumptive). Ultimately, many relatives provide useful services to tribes directly or indirectly (i.e. via ecosystem services). Both plants and animals are harvested for human use but should still be treated with gratitude and respect and humans reciprocating by providing space for them to live and flourish. All species have their own intrinsic value, not just a value imposed by humans based on usefulness, and tribal entities are uniquely positioned to lead a global reconnection with the environment from a biodiversity standpoint.

Although all relatives and habitats are important to maintain trophic structure and thus stability of natural systems, the nature of the State Wildlife Action Plan (SWAP) is to identify those native relatives that are rare, facing precipitous declines, and are under threat. It is also a requirement of the State and Tribal Wildlife Grants Program to identify Species of Greatest Conservation Need (SGCN) in order to receive implementation funding. Therefore, a prioritization process had to be utilized, resulting in the current SWAP SGCN list identified in this document. It should be acknowledged that non-native relatives may be culturally important to some Tribes, but the SWAP only includes native relatives. In this cultural chapter, institutional scientific approaches are interwoven with indigenous knowledge when discussing conservation actions needed to support relatives and their habitats. Tribes recognize the need to safeguard their local ecosystems from which they receive basic needs like subsistence hunting, fishing, and native plants used in Food Sovereignty Programs. Ecosystem resilience is therefore important to their well-being (Reyes-Garcia et al. 2018). In the past, Indigenous Peoples spoke a variety of languages so that the same plant or animal has several different traditional names. In addition to the number of names, sadly, some of the names of these relatives have been lost or mispronounced so that use in the SWAP would be more confusing than helpful. Therefore, the English common name is used as well as binomial nomenclature (Linnaean system) for clarity and precision.

Additionally, the South Carolina Department of Natural Resources (SCDNR) engaged the Gullah-Geechee Nation, comprised of descendants of African slaves brought over to America from the 1600s to 1800s. The name is derived from the people and locations from which slaves were brought: the Gola people from Angola became "Gullah" plus the Gidzi people from Sierra Leone became "Geechee." However, many more ethnic/cultural groups from other parts of

Africa were a part of the slave trade and combined into this one name. The Gullah-Geechee Nation is recognized for its people's valuable contributions to the cultural diversity of coastal South Carolina and is given a section in this chapter as it relates to native species identified as culturally important.

All 25 entities contacted by SCDNR to request involvement in this cultural chapter included those in Box 7-1, although some were unable to participate at this time. Those with an asterisk (*) provided comment and are listed in the Acknowledgements section at the beginning of this SWAP by participant's name. The SWAP is meant to be implemented by all people at all levels of the community, and the contributions of these cultural groups is greatly appreciated toward a common conservation goal. The SWAP is a living document so that future participation by tribes that could not comment this time always have the opportunity to contribute mid-revision cycle.

BOX 7-1: Cultural Groups Contacted for SWAP Input

Federally Recognized Tribes

- Catawba Indian Nation*
- Absentee-Shawnee Tribe of Indians of Oklahoma
- Alabama-Quassarte Tribal Town
- Cherokee Nation
- Chickasaw Nation
- Eastern Band of Cherokee Indians of North Carolina*
- Eastern Shawnee Tribe of Oklahoma
- Kialegee Tribal Town
- Miccosukee Tribe of Indians of Florida
- Muscogee (Creek) Nation
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- Shawnee Tribe
- Thlopthlocco Tribal Town
- Tuscarora Nation of New York
- United Keetoowah Band of Cherokee Indians in Oklahoma

State of South Carolina Recognized Tribes

- Beaver Creek Indians
- Edisto Natchez Kusso Tribe of South Carolina
- Pee Dee Indian Nation of Upper South Carolina
- Pee Dee Indian Tribe
- Piedmont American Indian Association, Lower Eastern Cherokee Nation of South Carolina
- The Santee Indian Organization
- Sumter Tribe of Cheraw Indians
- The Waccamaw Indian People*
- The Wassamasaw Tribe of Varnertown Indians

Other Cultural Groups in South Carolina

- Gullah-Geechee Nation [African-American]*

Indigenous Peoples' (Native American Tribes') Perspective

Indigenous Peoples (Tribes) that provided input this iteration of the SWAP included the Catawba Indian Nation, Eastern Band of Cherokee Indians of North Carolina, and Waccamaw Indian People. Indians. Ancestral lands of the Catawba stretched from the upstate (SC and NC) down to the coast of South Carolina, spanning multiple ecoregions and ecological communities. The Catawba people are known for their beautiful, burnished pottery with its unique mottled appearance that occurs as a result of the firing process. The clay used for this pottery is harvested from sacred clay holes along the riverbanks of the Catawba River. This practice is one of the oldest unbroken pottery traditions in the Americas having been passed down intergenerationally for at least 4,000 years. The Cherokee's ancestral lands once stretched over eight southeastern states from the peaks of the Appalachians to the flatlands. The Waccamaw Indian People's ancestral lands were more Coastal Plain from Cape Fear, NC down to the Waccamaw River, SC. However, many tribes had trading routes and ancestral lands that overlapped on the landscape so that most maps inaccurately describe their true presence within South Carolina's geopolitical boundaries. Indigenous Peoples identify themselves as stewards of the natural world to which they are intricately linked.

In planning this iteration of the SWAP, the SCDNR requested the following from participating tribes: (1) provide a list of relatives of cultural significance to their people for recognition in the SWAP and for cross-reference to SGCN, and (2) provide case studies of conservation projects in progress that demonstrate a shared approach to SWAP implementation. In the case of the Catawba Indian Nation, the Tribe is actively conducting surveys for relatives such as herpetofauna, deer, and bats to better inform management decisions on tribal lands. They are also in the process of recovering and restoring culturally, ecologically, and environmentally significant habitats that have been lost, severely declined, or suppressed since European arrival. The Nation is currently focused on three major reclamation/restoration efforts: Giant Rivercane, Rocky Shoals Spider Lily, and Piedmont prairies. The Waccamaw Indian People are actively compiling a list of plant relatives that have cultural significance to the Tribe as part of an investigation into lost indigenous knowledge. The Eastern Band of Cherokee Indians of North

Carolina have a current Wildlife Action Plan for which the 2022 update was consulted as a reference for their conservation programs in progress.

When it comes to reconciling the Tribes' species lists with the State's SGCN list, it is important to remember that South Carolina's SGCN were defined using a methodology based on ecological metrics. Where these species overlap with culturally significant relatives specifically named by a tribe, the resulting list is Table 7-1:



Red Wolves in captivity at Cape Romain National Wildlife Refuge in 2021.
Photo by Anna Smith, SCDNR.

Relatives of Conservation Concern (RCC). Sometimes relatives were listed only generally by tribes so that without further clarification, it is not known if the SGCN matched the RCC. For example, general terms included “ant”, “bat”, “bee/bumblebee”, “butterfly”, “catfish”, “crayfish”, “clam”, “cricket”, “damselfly”, “fly”, “glass lizard”, “green grasshopper”, “leech”, “mole”, “mudpuppy” (larval form of salamander), “mussels”, “perch”, “salamander”, “snail”, “spider”, “swan”, “toad”, “tree frog”, “wasp”, “water snake”, “freshwater fish assemblages”, and “*Hypericum* sp.” (Saint John’s Wort). Where logical assumptions could be made based on tribal ancestral lands and relatives’ known ranges, some RCC are further defined and included in Table 7-1. Some plants that are important to the tribes are non-native/exotic or agricultural products and are excluded from this SWAP which focuses on native species only. The SWAP does consider the full breadth of species that would benefit from whole ecosystem approaches to conservation and encourages “keeping common species common”. Unfortunately, nine additional relatives are no longer on the South Carolina landscape due to extirpation or extinction. In alphabetical order, these are: American Bison (extirpated), Carolina Parakeet (extinct), Eastern Cougar (extinct), Elk (extirpated), Gray Wolf (extirpated), Ivory-billed Woodpecker (extinct), Jaguar (extirpated), Passenger Pigeon (extinct), and Red Wolf (extirpated). Their absence is a powerful reminder of the critical role education, habitat protection, partnerships, and funding have on conservation outcomes.

TABLE 7-1: Relatives of Conservation Concern provided by tribal entities. Note that this is not a comprehensive list that may overlap with SGCN but are simply those specifically called out by name by the participating tribes. The Waccamaw Indian People also recognize a variety of fungi which are not covered in SC’s SWAP.

ANIMALS	Taxa Group	Catawba	EBCI	Waccamaw
American Alligator	Reptile	X		X
American Kestrel	Bird	X		
American Eel	Fish	X		
American Shad	Fish	X		
American Woodcock	Bird	X		
Atlantic Blue Crab	Marine Invertebrate			X
Bald Eagle	Bird	X	X	
Black Rail	Bird			X
Bog Turtle	Reptile		X	
Brown Shrimp	Marine Invertebrate			X
Carolina Heelsplitter	Mussel	X		
Carolina Pygmy Sunfish	Fish			X
"Carolina" Redhorse	Fish	X		
Carolina Sandhills Crayfish	Crayfish			X
Cedar Creek Crayfish (previously Waccamaw Crayfish)	Crayfish			X
Chuck-will's Widow	Bird	X		
Chimney Swift	Bird	X		
Common Nighthawk	Bird	X		
Eastern Box Turtle	Reptile	X	X	X
Eastern Brook Trout	Fish		X	

Eastern Diamondback Rattlesnake	Reptile	X		
Eastern Lampmussel	Mussel			X
Eastern Meadowlark	Bird	X		
Eastern Mud Turtle	Reptile	X		
Eastern Musk Turtle	Reptile	X		
Eastern Oyster	Marine Invertebrate			X
Eastern Painted Turtle	Reptile			X
Eastern Pondmussel	Mussel			X
Eastern River Cooter	Reptile			X
Eastern Whip-poor-will	Bird	X		X
Flat Bullhead	Fish	X		
Florida Gar	Fish	X		
Golden Eagle	Bird	X	X	X
Green Heron	Bird	X		
Hickory Shad	Fish	X		
Humpback Whale	Mammal			X
Knobbed Whelk	Marine Invertebrate			X
Lightning Whelk	Marine Invertebrate			X
Little Blue Heron	Bird	X		X
Monarch Butterfly	Insect			X
North Atlantic Right Whale	Mammal			X
Northern Bobwhite	Bird	X		X
Northern Long-eared Bat	Mammal		X	
Oak Toad	Amphibian	X		
Pee Dee Lotic Crayfish	Crayfish			X
Peregrine Falcon	Bird	X		
Red-headed Woodpecker	Bird	X		
Ruffed Grouse	Bird	X	X	
Southern Fox Squirrel	Mammal	X		X
Spotted Skunk	Mammal	X		
Snail Bullhead	Fish	X		
Snapping Turtle	Reptile	X		X
Striped Bass	Fish			X
Striped Mud Turtle	Reptile	X		
Swamp Rabbit	Mammal			X
Timber Rattlesnake	Reptile	X	X	
Waccamaw Spike (synonymized with Carolina Slabshell)	Mussel			X
White Catfish	Fish	X		
Wood Thrush	Bird	X		
Whooping Crane	Bird	X		

Yellow-billed Cuckoo	Bird	X		
PLANTS				
PLANTS	Taxa Group	Catawba	EBCI	Waccamaw
American Pennyroyal (<i>Hedeoma pulegioides</i>)	Plant	X		
Giant Cane (<i>Arundinaria gigantea</i>) - canebreak habitat	Plant	X		
Little Heartleaf (<i>Hexastylis minor</i>)	Plant	X		
Longleaf Pine (<i>Pinus palustris</i>) - as a habitat component	Plant	X		
Mannagrass (<i>Glyceria obtusa</i>)	Plant	X		
Sarsaparilla Root (<i>Aralia nudicaulis</i>)	Plant	X		
Shoals Spiderlily/Cahaba Lily (<i>Hymenocallis coronaria</i>)	Plant	X		
Shortleaf Pine (<i>Pinus echinata</i>) - as a habitat component	Plant	X		
Venus Flytrap (<i>Dionaea muscipula</i>)	Plant			X
Yellow Wood (<i>Cladrastis kentuckea</i>)	Plant	X		

In the Supplemental Volume, a cultural icon is beside the names of species that are of cultural importance. The concept of icon representations is adapted from the Ojibwe's Ganawenindiwig Team (2023).



Case Study: Rivercane Restoration by the Catawba Indian Nation



Harvesting mature rivercane. Photo by Aaron Bumgardner, Catawba Indian Nation.

Rivercane, or technically Giant Cane (*Arundinaria gigantea*), is a valuable cultural relative for many Indigenous Peoples in the Southeast. This plant once formed large patches called canebrakes which can be considered their own ecosystems as they produce their own microclimate, stabilize floodplain soils, and provide habitat for a suite of species, some of which are now extinct. In



Tribe member Aaron Baumgardner weaving a rivercane basket. Photo provided by Aaron Bumgardner, Catawba Indian Nation.

addition, the plant itself was utilitarian for many indigenous cultures in the Southeast, including the Catawba. Once dried, it is more resistant to cracking or splitting, making it suitable for making mats, fishing poles, musical instruments, fishing weirs, and for weaving. The area between the joints on the stems are long

and therefore can be fashioned into blowguns for hunting. Birds that are known to rely on rivercane for nesting habitat include Hooded Warbler and Swainson's Warbler and the now extinct Bachman's Warbler, Carolina Parakeet, and Passenger Pigeon. Black bears and other mammal and herpetofauna relatives found shelter in its thickets. Unfortunately, rivercane has experienced a 98% decline over its range from habitat degradation (e.g. wild hog rooting, cattle browsing new shoots) and habitat destruction (agriculture and urban development). Catawba rivercane restoration is showcased by the United South and Eastern Tribes' (USET) through two videos: [USET Celebrates Earth Day and Honors the Work of the Catawba Indian Nation](#) and [Catawba Nation Rivercane Restoration](#).



Weaving a rivercane mat. Photo by Michelle Long, EBCI

Tribal citizen restoration of rivercane is a multifaceted effort, beginning with identifying and mapping existing areas of rivercane. This is followed by the development and implementation of a vigorous invasive species suppression and eradication strategy. Canopy openings are also created to allow sunlight to reach ground level through removal of understory and pruning of existing large trees in the overstory. The Tribe is also partnering with regional public and private landowners to identify remnant rivercane populations and create agreements to access populations for cultural harvests and ecological restoration transplants.

Through this rivercane restoration initiative, an opportunity is created for existing rivercane to grow and thrive. To expedite this process, the Catawba Indian Nation is currently experimenting and seeing success in three areas. First, there has been clearing and “freeing” of existing rivercane in areas where growth has been suppressed by significant invasives such as Chinese Privet (*Ligustrum sinense*).



Flagged rivercane restoration test plots on Reservation lands along the Greenway Trail (part of the Carolina Thread Trail) by the Catawba River. Photo by Anna Smith, SCDNR.

Secondly, harvesting and transplanting of rhizomes from other areas has taken place directly into other areas with existing rivercane to augment the population. Additionally, other populations have been rescued from areas slated for infrastructure development and grown out in the Tribe's greenhouse for future use in streambank restoration projects or for erosion control. Thirdly, large clumps of rivercane are being harvested from collaborative partners to create a continuous canebrake along a portion of the Catawba River on tribal lands.

Case Study: Rocky Shoals Spider Lily Restoration by the Catawba Indian Nation

The Catawba River is currently home to the largest Rocky Shoals Spider Lily (*Hymenocallis coronaria*) population in the world. The population is threatened by human activities such as hydroelectric dams that were constructed in the early 1900's, pollution, development, and climate change. This lily is charismatic and indicative of healthy water quality. Creation stories speak of the lily's leaves as the raiment of First Woman, but the plant is also a modern-day symbol of the river that shares the namesake of the Nation. Being good stewards of the land means recognizing the intrinsic value of relatives and caring for all of them regardless of their historic cultural value. This relative is also a SGCN of 'highest conservation priority' in the South Carolina SWAP.



Rocky Shoals Spider Lily in the Catawba River.
Photo by Robert Clark.

Restoration is underway, in cooperation with the non-profit Catawba Riverkeeper Foundation, to identify, map, and prioritize areas along the Catawba River for re-establishing this plant relative. Areas of quality flow, depth, and structure that will support seed growth have been identified and mapped, and seeds have been harvested from existing populations and meticulously planted by hand in these areas. These areas will continuously be monitored, and the program will be evaluated and adapted for future success.

Case Study: Piedmont Prairie Restoration by the Catawba Indian Nation

Historically, vast expanses of prairie and grassland savannahs once covered the South Carolina Piedmont region, and by some estimates, 19 million acres or 63% of ancestral Catawba lands were in this cover type (Rua Mordecai, SECAS, pers. comm.). These areas were characterized by grasses and wildflowers, with a scattering of trees and shrubs, and were grazed by native herbivores such as bison and elk. This ecosystem was shaped in large part by the dormant season burns set by Indigenous Peoples of the region to maintain these habitats for their survival. These grassland ecosystems were important to Indigenous Peoples as habitat to hunt and forage for plants to use for food, medicine, and industry (thatch, cordage, crafts, etc.). In addition, these

ecosystems were home to many now federally listed relatives including the federally endangered Schweinitz's Sunflower (*Helianthus schweinitzii*), a SGCN of 'highest conservation priority' in the South Carolina SWAP. Once locally abundant but only found in the Carolinas, this plant was valued by the Catawba as the tubers were a food source. It is now considered one of the rarest sunflowers in the United States. The goal of this restoration project is to restore the prairie ecosystems on tribal lands their historic compositions as closely as possible.



Schweinitz's Sunflowers (left) bloom during the fall. The Catawba Indian Nation are growing this plant relative on their tribal lands in pots (above) for eventual reintroduction into a Piedmont prairie system. Photos by Keith Bradley, SCDNR

Roadsides, existing lawns around buildings, view corridors, and other areas will be prepared and seeded with a native seed mix identified and vetted with tribal input. This seed mix will represent as closely as possible, the plants that would have populated these ecosystems. Soil testing will take place, and based on soil type, seed mixes will be developed and initial seeding take place. Management of prairie and savannah areas will consist of monitoring for non-native invasive plants and need for re-seeding if necessary, timely mowing in the months following seed drop, and chemical applications/mechanical removal to eliminate woody vegetation and invasive/exotic/undesirable plants. Special consideration will be taken to re-introduce threatened and endangered relatives such as Schweinitz's Sunflower and Georgia Aster (SGCN of 'moderate conservation priority' in the South Carolina SWAP) onto the prairie landscape. Seed collection and grow-out efforts will be utilized to produce plants without depleting any native populations. Grow-out plants will be transplanted into different locations throughout the restoration areas to establish self-sustaining populations.

Case Study: Plant Research and Educational Outreach by the Waccamaw Indian People

Every equinox and solstice, the Waccamaw Indian People hold a native plant inventory walk on tribal lands to log species observations during all four seasons. Lead by a botanist, this survey not only enhances the Tribe's knowledge of the species inhabiting ancestral lands but ties back to research currently being conducted into past ethnobotany accounts to identify botanical species of past (and continued) cultural significance for food, medicine, and utilitarian uses. Results are

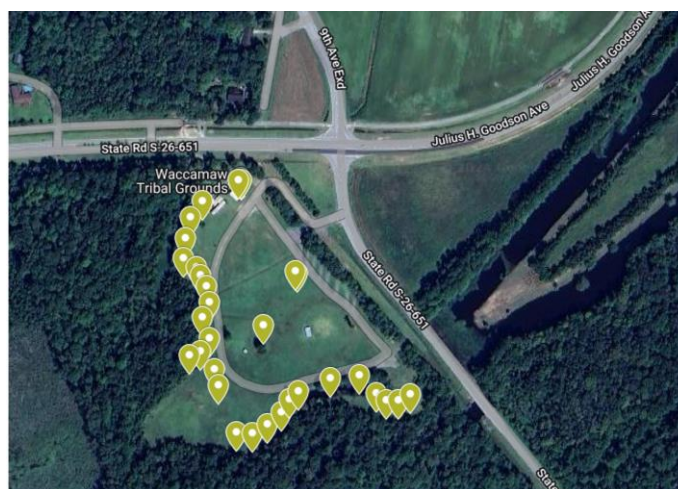
shared on iNaturalist which SCDNR's Natural Heritage Program data-mines for SGCN records. The Waccamaw Indian People value all native plants and animals and consider them relatives, important for their intrinsic value and not necessarily their usefulness to humans. Even some non-native species have been adopted for cultural uses (e.g. Dandylion).

A map of the [Waccamaw Ecological and Cultural Interpretive Trail](#) and signage is available on the Tribe's website.

In an effort to expand appreciation for plant relatives, especially those underrepresented freshwater aquatic ones, the Tribe is planning to expand their Waccamaw Indian People Heritage Trail, complete with interpretive signage and a floating dock destination at Chinnors Swamp. They plan to collaborate with the Horry County Museum in Conway, SC to create field trip opportunities that would bring visitors from the museum to tribal grounds in Aynor, SC. Historical signage would be located at relevant sites. Both tribal youth and local grade school children (1st – 5th grade) will be encouraged to participate in environmental education programs on site such as outdoor labs and nature walks in which a “find the plant” scavenger hunt is a component. The hope is to blend the cultural and the environmental importance of these relatives into a single program to emphasize the wholistic view of people as a part of the natural world and not separate from it.



Marion Craddock, Jr. (Waccamaw Indian People, Firekeeper) assists researcher, Cecelia Bailey, emerge from a patch of non-native, invasive Taro during a June 2023 summer solstice botanical survey. Photo by Cheryl Cail (Waccamaw Indian People).



The Waccamaw Ecological and Cultural Resources Interpretive Trail, a collaboration between the Waccamaw Indian People and Charleston Southern University. The yellowish-green pins represent sign locations.



Interpretive signs such as this one line the Waccamaw Cultural and Ecological Trail.
Sign created/photo provided by Dr. Carolyn Dillon, Dr. Katie Stringer Clary, and students Saree Porter and Ashlynn Wydock (Charleston Southern University)

Case Study: Eastern Band of Cherokee Indian Wildlife Action Plan

The Eastern Band of Cherokee Indians (EBCI) / Anikituwagi have a Wildlife Action Plan created using a social-ecological framework. The Tribe has been involved with multiple projects such as the restoration of Eastern Brook Trout, Eastern Hellbender, Giant Rivercane, and spruce-fir forests as well as planting native pollinator habitats. Additionally, EBCI members fluent in the Cherokee language were consulted by academic researchers in the naming of three new salamander species on tribal lands. As part of their Plan, the Tribe has created a list of relatives of concern based on whether they meet the criteria of being culturally or ecologically significant or both. Under the ecological category, the EBCI also include non-native species that have been adopted for cultural purposes (e.g. Japanese Honeysuckle, *Lonicera japonica*, for basket making). However, those non-native species that cause net harm to EBCI natural, cultural, and economic resources are targeted for control (e.g. feral swine and coyotes). Several of these relatives are not found in South Carolina but others are, and these will benefit from a range-wide/regional approach to conservation. Overall, the goal of the Tribe's Wildlife Action Plan is to maintain biodiversity which in turn maintains their cultural identity through the preservation of their aboriginal homelands. Research and survey on tribal lands informs management of those lands, and monitoring outcomes of those management regimes allows for adaptive management should efforts need to be adjusted due to external changes. [EBCI 2022]

Gullah/Geechee Peoples' Perspective

Along the Coastal Zone of South Carolina live the Gullah/Geechee people, the descendants of slaves of various ethnic backgrounds forcibly removed from their homelands of West and Central Africa, that worked and settled the area in the 1600s. Their unique language, culture, and artwork is a blend of elements taken from early colonial and African sources. Their Nation, formed in 2000 and internationally recognized, is now estimated to number one million people and stretches from Jacksonville, Florida to Jacksonville, North Carolina to 35 miles inland. The associated Gullah/Geechee Cultural Heritage Corridor is a National Heritage Area that was established by the United States Congress in 2006 to recognize and preserve the culture of the Nation. Queen Quet Marquetta L. Goodwine is the Chieftess and Head of State for the Gullah/Geechee Nation. She represents the Gullah/Geechee Nation at local, national, and international venues. Gullah/Geechee culture emerged from the soil of the Sea Islands. Gullah/Geechee people have become a central fixture on the landscape and adopted it and tended



Sweetgrass baskets and photo by Cory Alston.

it as their own. Part of how their ancestors carved out a cultural landscape was via the rice impoundments they created that have now become critical habitat for a myriad of wildlife species. The slogan of the Gullah/Geechee Sea Island Coalition has been cited around the world: “Hunnuh mus tek cyear de root fa heal de tree.” (“You must take care of the root in order to heal the tree”). This mirrors their symbiotic relationship with the environment that provides their traditional food and craft materials. The Gullah/Geechee are known for their sweetgrass basketry (often incorporating

bullrush and long leaf pine needle components), storytelling, and their ties to the riverine, estuarine, and marine environments of the lower Coastal Plain and Coastal Zone. They frequently advocate for the restoration of the marsh, oyster reefs, and healthy populations of aquatic species important for subsistence fishing. The Gullah/Geechee are actively involved in surveying their own people to catalogue species of marine organisms that are culturally and socio-economically important to their nation as they are to Indigenous People (tribes). (Gullah/Geechee Nation 2023).

Case Study: Sweetgrass Plantings at Boone Hall Plantation

Sweetgrass (*Muhlenbergia sericea*) is known only from the southeastern states where it ranges on the Atlantic and Gulf coasts from North Carolina to eastern Texas. In South Carolina it is found in the wild mainly in the Coastal Zone in coastal grasslands and behind beach dunes where it provides shelter and travel corridors for small mammals, birds, and herpetofauna (Siegel and Kenworthy 2023). The plant is important for moisture retention and erosion control which are qualities important for maintaining coastal resilience from storm surges (Siegel and Kenworthy 2023). Threats to Sweetgrass include sea level rise from climate change, competition from other plants, and erosion and destruction associated with coastal development.

Apart from its wildlife habitat benefits, Sweetgrass is valued by the Gullah/Geechee community for use in basketry as they have for some 300 years (Dufault 2013). The baskets are sewn versus woven, a distinction made by the Gullah/Geechee when discussing the methodology used to create these functional works of art. In contrast to the closely-related Hairgrass (*Muhlenbergia capillaris*), and Savanna Hairgrass (*Muhlenbergia expansa*), the length and diameter of sweetgrass leaves and fibers as well as its flexibility make it amenable to basket making. Basket makers seek out “sweet spots” in the wild where they can harvest quality materials in suitable quantities (C. Alston, pers. comm.). Because the species is most frequently found in coastal areas where urbanization is increasing, not only is the plant disappearing from its native habitat but those stands that are left are often privatized so that basket weavers are no longer allowed to gather stems. South Carolina is losing more and more Sweetgrass every year and native stands are quickly becoming rare in the State.

In contrast to the decline of sweetgrass in the wild, the species has become extremely popular as a landscape plant. The reasons for its popularity are many, including very showy pink feathery flower heads, large size, clumping habit, and low maintenance needs. Many ornamental grasses are from other parts of the world and are spreading by seed and becoming invasive pests. This is not the case with sweetgrass which is well behaved where planted and does not spread by seed into artificial landscapes, likely due to seed germination requirements available only in natural environments.

The abundance of sweetgrass in cultivation would at first glance seem to be a benefit to basket makers seeking raw materials. However, these cultivated plants, despite being the same species, do not possess the same quality as wild-harvested plants. This is summarized by Hurley et al. (2013): “The cultivars and management techniques used by landscapers often produce plants that are of marginal quality—difficult to harvest, and less than ideal to work with.”

This dichotomy between demand for raw materials and the ease with which the species is cultivated has been the subject of much writing and some



Sweetgrass project at Boone Hall Plantation in Charleston County, SC.
Photo by Anna Smith, SCDNR

experimentation. The problems are discussed exhaustively by Dufault (2013). The author concludes that further experimentation is needed to determine how to cultivate sweetgrass to make it comparable in quality to wild grown sweetgrass. Problems to overcome include unknown reasons for early health declines in cultivated plants, ability to produce leaves with the same sewing qualities as wild plants, fire ant suppression, propagating materials with genetic diversity, and fertility practices.

In an effort to answer critical research questions, Sweetgrass is being grown at Boone Hall Plantation in Mount Pleasant, South Carolina in Charleston County through a collaboration with the basket makers of the local Gullah/Geechee community. *Muhlenbergia sericea* plants from a nursery were brought into the Charleston Place Hotel as part of a Juneteenth cultural exhibit and afterwards transferred to Boone Hall Plantation for this project. These plants have subsequently been divided and additional plots planted. Land managers and a representative from the Gullah/Geechee community have been learning how to get the soil requirements right for the plants to grow with proper flexibility which is critical for basketry use. The nature of this maintenance regime has been coined “benign neglect” by Dufault (2013) which also helps the plants re-adapt to their native soil conditions. The sweetgrass basket community’s generational knowledge of the species and quality needs of basket materials is being coupled with available land and farming equipment. This past year, the grass was harvested for the first time and members of the basket artisans community gathered materials. This is an ideal scenario to counter loss of wild populations of a culturally important species that is part of the identity of the Gullah/Geechee people. Lessons learned can be used to reintroduce plants into more natural settings as needed in hummock island and dune systems.



Clumps of native sweetgrass growing at the ecotone between the salt marsh and pine uplands in Jasper County, SC. Photo by Anna H. Smith, SCDNR

Case Study: Living Shorelines and Oyster Reef Restoration Projects

In an interview by the Pew Charitable Trust (2021), Queen Quet explained how the Gullah/Geechee people see themselves as stewards of the salt marshes, maritime forests, oyster reefs, and the diversity of species that inhabit them. These ecologically important areas also provide food and sacred spaces for rejuvenation for the people. Subsistence fishing out of hand-made wooden bateau (flat-bottom boats) for blue crabs, fish, oysters, clams, and shrimp is an important activity as these species are particularly important staples in the Gullah/Geechee diet.

Coastal development, with its wetland destruction, hardscaping, litter, and pollution, is threatening not only wildlife and their sensitive habitats, but also the way-of-life and cultural identity of the Gullah/Geechee people. Sea level rise is eroding maritime forests and marshes that often have nowhere to retreat as they abut urbanization. Ocean acidification is affecting the calcium components of shellfish. Because of their ties to the land and sea, the Gullah/Geechee Nation created the [Gullah-Geechee Nation Ocean Action Plan](#) and have been involved in many planning initiatives that impact coastal ecosystems. Examples include the South Atlantic Salt Marsh Initiative and South Carolina Green Infrastructure Plan. The Gullah/Geechee speak for the ocean, to give it a voice, and advocate for Earth Law-based management models. The [Earth Law Center](#) defines this as “the idea that ecosystems have the right to exist, thrive, and evolve—and that Nature should be able to defend its rights, just like people can.”

Since 2007, the Gullah/Geechee community has been engaged with the SCDNR Marine Resources Division and Clemson University to implement two community-based restoration programs: South Carolina Oyster Recycling and Enhancement Program (SCORE) and Living Shorelines initiative. The SCORE Program utilizes recycled oyster shells donated by citizens and restaurants to create substrates for new oyster reefs along shorelines.



Queen Quet places manufactured wired reefs (MWRs) on the shoreline. These MWRs were created by the Gullah/Geechee Fishing Association. Photo by Kwame Sha from Gullah/Geechee Alkebulan Archive.

Living Shorelines projects include the planting of marsh grasses like Smooth Cordgrass (*Spartina alterniflora*) to stabilize banks—often behind new oyster reefs—and combat erosion. These projects have helped protect wildlife habitat and people against flooding and storm surge. Queen

Quet participated in a NERR Science Collaborative project as a Project Advisory Committee member and helped to allocate more than 9,250 linear feet of oyster resources over the three years of this project. These resources were allocated in target areas such as the ACE Basin and additional areas in Beaufort County and Colleton County. The Gullah/Geechee Nation community has also been involved in constructing oyster reefs at multiple restoration sites over the years and they continue this effort. The Gullah/Geechee Sea Island Coalition has expanded this effort through the “Gullah/Geechee Saving Environmental Action (SEA) & Marine Environment (ME) program.” Gullah/Geechee SEA & ME encompasses a number of green infrastructure nature-based solutions to protect the southeastern coastline and thereby keep the Gullah/Geechee coast resilient.

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