

ACE Basin Conservation

Regaining Control of the Flow

Over the past three years, the one-two-punch combination of flooding and hurricanes did some serious damage to dike systems and water control infrastructure in the ACE Basin.

In October of 2016, Hurricane Matthew blew through the South Carolina Lowcountry. Strong winds, rain and high tides driven by the storm raked the South Carolina coast and cut a wide path of destruction through the ACE Basin.

The damage at many properties in the ACE, such as Nemours Plantation on the Combahee River, was significant. Nemours suffered two significant dike breaches during Matthew, according to Nemours Wildlife Foundation President and CEO Dr. Ernie Wiggers.

“During Matthew, water came over our dikes and actually broke through them in a couple of places,” said Wiggers.

To make matters worse, Nemours and many other ACE properties were still trying to make repairs and improvements designed to avoid a repeat of the “Flood of 2015,” which also caused significant problems. That work mainly involved the retopping of dikes – i.e. trying to raise the height of them.

“The dikes that we repaired after the 2015 flood sustained fairly minor damage,” said Wiggers. “But on one large wetland that we were unable to get repaired, that’s where we had the most significant problems.”

For Nemours, and for many other ACE Basin properties with limited in-house resources, private contractors like Wetlands Contracting, and Wood Brothers were the answer. “You have to be able to move a lot of dirt, quickly when you go to fill one of those holes,” said Wiggers. “I don’t know that we would have been able to do that on our own.”

Managers at Nemours and other locations tried to do things to help mitigate the damage of future storms. At one location “we gave about two acres back to the river,”



Workers install sheet piling to close a major breach at the SCDNR’s Bear Island WMA.

said Wiggers, building a contraction dike to create more of a buffer between the river and the impoundment.

“If you have a broken dike, you don’t have any function,” said Wiggers. “Your impoundment is just going up and down with the tide and with the river. You may have freshwater in there sometimes and you may have saltwater in there sometimes, but you’re not really managing it anymore, because you no longer have that water control, and every time the water goes in and out, it washes out a little bit more, so that repair job grows with each tide, and the repair job can get much more involved because of that.”

That’s pretty much the scenario that unfolded at the South Carolina Department of Natural Resources-managed Bear Island WMA, where a dike separating the impoundments of the Springfield/Cut Unit from the South Edisto River suffered a major blow. Matthew’s tidal surge blew out a water control structure there, creating a significant breach in the dike and leaving property managers with no way to control the flow of



water on approximately 1,000 -1,500 acres of the unit.

“At high tide, water was running everywhere here,” said SCDNR wildlife biologist Daniel Barrineau, gesturing out the driver’s side window of his truck during a drive into the interior of Bear Island. To his left, across the Matthews Canal, the impoundments of Springfield/ Cut Unit stretched into the distance; to the right, the winding South Edisto River filled the view. As soon as the storm passed, the staff at Bear Island sprang into action, working around the clock using long arm trackhoes to scoop mud from the impoundment onto the top of the over-topped main dike, building it back up.

Temporary lips and coffer dams constructed on parts of the flooded section restored enough water control to some areas to allow waterfowl hunts scheduled for the 016-017 season to take place with only some minor adjustments. Of the six impoundments in the Springfield/ Cut Unit, “we were able to hunt five of them,” said Barrineau.

That was welcome news for hunters, but the real challenge still lay ahead; controlling the flow of water from the South Edisto into the unit. For that, the SCDNR, would call upon the specialized equipment and capabilities of two private contractors: Wetlands Construction and Salmons Dredging. Work on the breach began in late March of 2017. Barges brought in the necessary equipment and supplies: a large crane, amphibious trackhoe, stacks of sheet piling, metal rods and bolts, welding equipment and everything else the contractors would need to get the job done. Piece by piece, heavy sheet piling was driven into place and bolted together to create a connected bulkhead on either side of the breach. With the bulkhead in place, track hoes were finally able to fill the center of the breach with mud, knitting the dike back together. By the first week of April 2017, both the breach repair and the installation of a new water control structure were complete.

Similar efforts took place on private lands across the region, said Jamie Rader, Manager of Habitat Programs for Ducks Unlimited’s Southeast Region. DU is involved in large number of habitat conservation projects in the ACE Basin Focus Area, and Matthew devastated managed wetlands and



A new ricefield trunk was installed as part of the repair at Bear Island.

infrastructure on many private plantations in the ACE.

“Matthew hit the areas along the Edisto River basin pretty hard, as well as the Combahee River,” said Rader. “There was a lot of overtopping of dikes. Several plantations were under in excess of ten feet of water, and there was a lot of erosion on exterior dikes, as well as damage to water control structures.

One thing that did help tremendously in responding to these events was the “Managed Tidal Impoundment General Permit” issued by the Charleston District of the U.S. Army Corps of Engineers. The General Permit allows enrolled property owners to start emergency repairs right away, without waiting for a time-consuming permit application for each needed repair project.

“That’s really important,” said Nemours Foundation CEO Ernie Wiggers, “It cuts down on costs, and it allows you to get in there and start that repair before it gets too large or involved.”

For both public agencies and private landowners, storm recovery is an expensive endeavor. “It’s remarkable how much has been invested in these dikes and trunks over the last couple of storm periods we’ve had. It’s pretty substantial,” said Wiggers. “It’s quite a commitment that landowners have made to try and maintain those resources.”



Bear Island wildlife biologist Daniel Barrineau watches as the crew from Wetlands Construction drives in a piece of steel sheet pile.



Coming Home

At Donnelley WMA and private plantations, red-cockaded woodpeckers are making a long-awaited return to the ACE.

The excitement in the air at the Donnelley Wildlife Management Area lodge the morning of October 22nd, 2016 was palpable. Despite the early hour and the pre-dawn chill, staff and volunteers from the South Carolina Department of Natural Resources, the U.S. Fish and Wildlife Service, and other conservation organizations gathered at the lodge were eager to get started on the day's mission, releasing eight breeding pairs of endangered red-cockaded woodpeckers (RCWs) "translocated" from Carolina Sandhills National Wildlife Refuge. For SCDNR Region IV Wildlife Coordinator Dean Harrigal, who's spent most of his career involved with the management of Donnelley and Bear Island WMAs, and Caroline Causey, the SCDNR's RCW Project Leader, the morning was the culmination of years of effort and planning.

"When I started this job in 2014 and met Dean, one of the first things he said to me was that establishing a breeding population of RCWs at Donnelley was a long-term priority of his," said Causey. "I told him I would do what I could to help him reach that goal."

Translocation involves moving pairs of RCWs from places where efforts to increase their populations have been successful and releasing them into new areas where habitat has been carefully managed with that goal in mind. The hope is that the birds will establish breeding populations in and around the release sites. RCWs have also been released at other sites within the ACE, on private plantations where conservation-minded management is also a priority.

Habitat management is critical to this effort. At the time of European settlement, the eastern coastal plain of what would become the United States of America was home to more than 1.5 million clusters of RCWS (a cluster is a family unit, and includes a breeding pair and sometimes several younger male "helpers"). Other grassland-dwelling species thrived in the "piney woods" as well, where frequent fire kept the understory open and allowed sunlight to hit the ground, encouraging the growth of favorable forbes and grasses, but perhaps no other species was so perfectly suited as the RCW –

nesting, roosting and thriving in cavities chipped from heartwood high in the trunks of mature longleaf pines, where constantly dripping sap could provide a barrier against egg-stealing predators.

But those millions of acres of towering pines were soon coveted by another species — homo sapiens. Longleaf pines provided millions upon millions of board feet of lumber for homes and cities, as well as barrels of turpentine, rosin and other useful products. As the habitat changed, the RCW population dropped. When the U.S. Endangered Species Act was passed in the early 70s, only an estimated 10,000 of the birds remained.

You can't just go grab any old RCW and move it to a new place and expect to be successful. It takes close to a year of planning. Juvenile birds begin looking to disperse from their natal sites in the fall, but work starts months earlier – in early summer – to identify "source birds" that may be good candidates for translocation. After joining the SCDNR in 2014, Causey was able to secure a three-year grant for a translocation project and began coordinating with USFWS wildlife biologist Nancy Jordan,

who oversees a thriving RCW population at Carolina Sandhills NWR.

Prior to translocation, a male and female RCW are identified for each available site, which has been carefully prepared for their arrival. RCWs are cavity nesters,

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A red-cockaded woodpecker translocated to Donnelley WMA leaves its nesting cavity for the first time.



The widely spaced longleaf pines and fire-controlled understory on this section of Donnelley WMA provides ideal habitat for RCWs.

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but excavating a cavity from the heart of a mature longleaf pine can take years. Specially constructed RCW “condos” that mimic the bird’s natural roosting places are used to jump-start the process.

That morning last October, when the sun began peeking through the tops of mature longleaf pines, the birds – which at sundown the night before had been collected from their roosts at Carolina Sandhills, trucked in specially built transport boxes all the way to Donnelley

and placed in their new homes in the middle of the night, began chirping and pecking at the wire mesh panels keeping them inside. A quick tug on strings attached to the panels and the birds shot out and into their new surroundings. With furious bursts of vocalizations, the RCWs took stock of their new surrounding and of each other, while the broad smiles of the people on the ground made it clear what a special moment this was. One more small victory in the ongoing effort to re-establish the RCW across its former range.

RCW Science — ACE Landowners Encouraged to Enroll in Safe Harbor

The program to restore the endangered Red Cockaded Woodpecker (RCW) to suitable habitat in the ACE Basin involving private landowners working with state and federal agencies, that we first reported on in the ACE Basin Newsletter a few years ago is now well underway, and we wanted to update everyone on its accomplishments.

To date, about eighty-eight RCWs have been released into the ACE Basin on three private properties and one state owned property, Donnelley WMA. This past year, young were produced in fourteen clusters, which was a very pleasant surprise and is a good indicator that these birds are off to a good start. Additional releases on these properties are planned over the next several years to ensure a sustainable population is established. As these birds reach maturity and breed, their offspring will begin establishing new territories, some hopefully outside of the sites where they were released. Typically this entails a bachelor male between two and four years old breaking off from his family unit and establishing his own territory. The male may spend up to two years excavating a cavity in a living pine tree within his new territory. Once the cavity is finished, he will try to attract a female and begin a new cluster.

What this means for landowners is that if your property is near existing RCW clusters and you have suitable habitat, birds may colonize your property over time. Whether they wish to actively encourage RCWs to inhabit their property or not, it’s still a great idea for landowners within the ACE to consider enrolling in the “Safe Harbor” program. The goal of the program is to provide conservation benefits to RCWs while removing regulatory restrictions to landowners who are voluntarily restoring or enhancing suitable habitat through improvement projects, such as timber thinning, long-rotation stands, and prescribed burning. In particular, landowners who are interested in restoring or enhancing upland pine habitat, but concerned about additional regulatory restrictions if RCWs either become

established on their property or are already established, are encouraged to seek enrollment in the program. Properties suitable for enrollment typically have older (> thirty-year-old) pines being managed as long-rotation stands and are adjacent or near properties that already have active RCW clusters. The safe harbor agreement is voluntary and a landowner can withdraw from it at any time.

During the application process, the landowner hires a permitted biologist to conduct a baseline on-ground survey of the property to determine if there are any RCW clusters currently active. If none are found, then the property is assigned a 0-baseline value. If RCW’s move onto your property in the future and you do not want these birds on your property, you can have them removed after giving a 60-day notification to SCDNR/USFWS, returning your property to a 0-baseline value. Or, you can accept these birds and they will exist as “above-baseline” or Safe Harbor clusters. New RCWs on a property enrolled in Safe Harbor always remain as above-baseline clusters, or “in Safe Harbor,” unless the landowner wishes to increase his or her baseline number. Landowners are always able to remove above-baseline birds in the future, as long as 60-day notification is given and birds are not removed during breeding season (March 1-July 30). The application process for Safe Harbor is fairly simple, non-intrusive, and voluntary. To date, about 175 landowners involving more

than 350,000 acres have enrolled in this program. If your neighbors have done this, then why not you?

Caroline Causey is the RCW project leader for the SCDNR and coordinates the safe harbor agreement program in South Carolina. She can be reached at (803) 603-9391 or via e-mail at Causeyc@dnr.sc.gov. Paula Sisson is the RCW project leader for the US Fish and Wildlife Service and can be reached at (843) 727-4707, ext. 226 or paula_sisson@fws.gov. Additional information about RCWs and the safe harbor program can be found at <http://www.dnr.sc.gov/birds/pubs/SCSHProgramOverview.pdf>.



The offspring of RCWs being re-introduced to the ACE Basin may help to establish a new population.

Property Spotlight - 403 Acres of South Fenwick Island added to public access

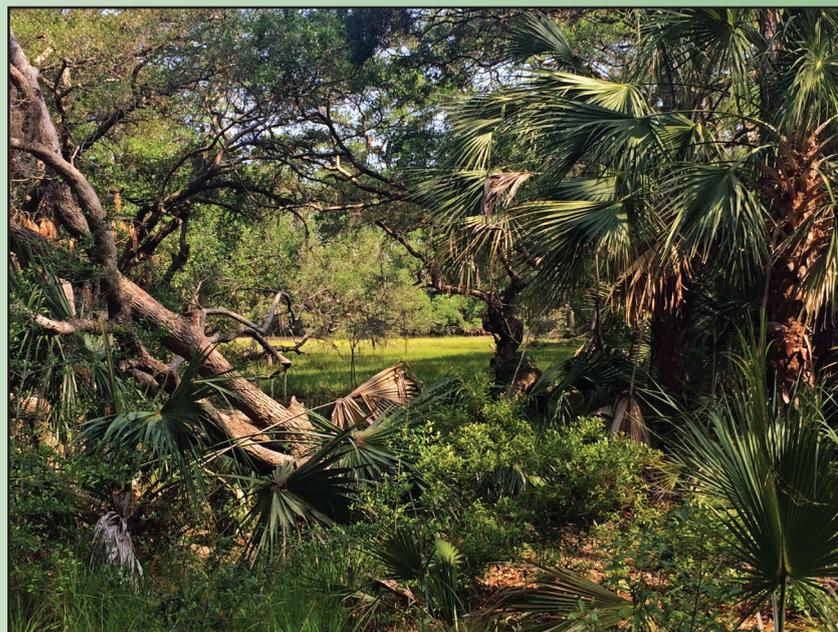
The South Carolina Department of Natural Resources is proud to announce that South Fenwick Island opened to the public on October 16th 2017. Final closing was completed in August of 2017 on a joint venture between The Nature Conservancy and SCDNR nearly three years in the making.

The SCDNR Board first voted to pursue acquisition of the property in partnership with TNC in 2014. The tract was purchased from the original owner and held by TNC until earlier this year. A management plan for the property is being completed that will include public access of the property, including overnight primitive camping by permit. Currently there are three primitive campsites available, one on the Fenwick Cut, and two along Fish Creek. All the campsites are best suited for kayaks for those campers wanting to access the campsites directly by water. Both boaters and paddlers will be able to enjoy the short trip to the island from the boat ramp at Bennett's Point near the ACE Basin NERR Field Station.

Bounded on one side by the South Edisto River and on the other side by the Ashepoo River, the 500-acre island (of which SCDNR will manage 400 acres) is connected by a maze of salt marsh to nearby Otter Island. With a mix of maritime forest, salt marsh, and open, former agricultural lands on the property, South Fenwick is home to a range of wildlife, including white-tailed deer, wild turkey, raccoons, Eastern diamondback



An existing dock on the island will provide boating access for visitors.



The interior of South Fenwick Island has some beautiful vistas. (photo by Al Seegars)

rattlesnakes, and a variety of songbirds, waterfowl, and wading birds.

Like many of the Lowcountry Sea Islands, South Fenwick has a rich history. Through the colonial and antebellum periods, the island was home to indigo and cotton plantations. After the Civil War, a small Gullah-Geechee community farmed and fished on the island for nearly a century. South

Fenwick and North Fenwick Islands were formerly just one island, but in the early 1900s, the U.S. Army Corps of Engineers dredged a canal connecting the South Edisto and Ashepoo rivers for the Intracoastal Waterway, dividing the island in two. Today, South Fenwick Island has no full-time residents, but a number of private landowners still hold property there.

South Fenwick Island can only be accessed by boat. The primary access point is an SCDNR-marked dock on the Ashepoo River with limited space, which is open to campers and day-use visitors.



Egrets and other wading birds call the island home.

There are no facilities on South Fenwick, so visitors should be prepared for primitive conditions and plan to carry away any waste they produce for disposal on the mainland. Four trails offer visitors a chance to explore the property's inland maritime forest and salt marsh views. For those that wish to visit the island, check in is required at the kiosk at the dock. Camping permits and more information can be obtained from the ACE Basin NERR Field Station at (843) 844 8822.

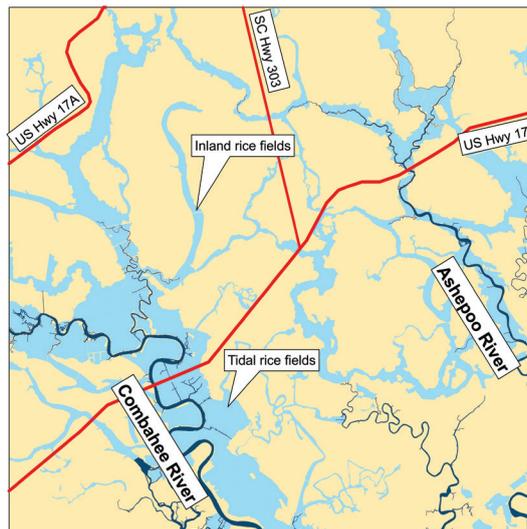
Mapping the rice fields of the ACE (and beyond)

Inland and tidal rice fields are historic 17th to 19th century man-made landscape features that allow land managers to meet 21st century conservation goals.

A defining feature of the ACE Basin is the centuries old rice fields found along its waterways. These range from inland fields developed in the late 17th century to the tidal rice fields from the latter 18th and early 19th centuries. The presence of these managed wetlands has contributed to the conservation significance of the ACE Basin for decades.

These rice fields were first appreciated for their potential as waterfowl hunting grounds after the demise of commercially successful rice culture, but biologists are now developing a greater understanding of the conservation significance of these wetland resources for other wildlife as well. For example, historic tidal rice fields in the ACE and Lowcountry can provide critical foraging habitat for shorebirds migrating between the southern and northern hemispheres. While the conservation value of these rice fields has been well-known, there have been few attempts to systematically map them across the landscape. Mapping efforts in the 1970s and 1980s focused on acreage estimates of tidal rice fields exclusively and did not produce digital, spatial data that could be useful to subsequent investigations.

To fill this data gap, Nemours Wildlife Foundation, the South Carolina Department of Natural Resources (SCDNR) and Folk Land Management collaborated on



Two types of historical ricefields are found along the South Carolina coast. Tidal ricefields which occur along the major river systems and their tidally influenced tributaries and inland fields which occurred further up the drainage systems and relied on trapped rainwater for flooding. Inland fields were abandoned by the planters in favor of tidal fields which offered more dependable growing conditions.

a pilot project in summer 2015 using GIS technology to begin mapping both tidal and inland rice fields in the ACE Basin. The goal was to develop a greater understanding of their spatial juxtaposition and of the resources required to complete mapping for the ACE Basin. The pilot project was a tremendous success, with nearly 90 percent of the ACE Basin's rice fields mapped and delineated in GIS software. As of August 2015, the project had identified 21,802 acres of functional tidal rice fields, 14,642 acres of broken tidal rice fields and 29,232 acres of inland rice fields. Areas of tidal and inland rice fields along portions of the Edisto River have yet to be mapped, so these acreages do not reflect cumulative total acres of rice fields in the ACE Basin.

Building on the success of this initial project, researchers have undertaken an effort to map

the rice fields in the remainder of the South Carolina Lowcountry. Work on this phase of the project began as a graduate project at Clemson University in May of 2016. The Lowcountry Land Trust and Audubon South Carolina have joined the research team as project collaborators. Mapping all of these remaining historic rice fields will enable conservationists and historians to better understand the spatial extent of these landscape features, and the data collected will allow researchers to make detailed analyses of current and future wetland management strategies in the ACE Basin and the wider Lowcountry region, given the possibility of changes in tidal amplitude and salinity over the coming decades.

Lowcountry Land Trust Protection Update

With the help of partners in conservation and private landowners who have protected their properties for the benefit of wildlife, water quality, preservation of traditional Lowcountry rural land use practices, and for the enjoyment of future generations, the Lowcountry Land Trust (LLT) has now protected a total of approximately 52,691 acres in the ACE Basin over the past three years.

In 2015, LLT closed on an easement for the 289-acre Brosnan Forest Wetland Mitigation Area in Dorchester County. In 2016, the LLT closed on ten new conservation

easements in the ACE Basin totaling 5,902 acres. The LLT also accepted one conservation easement transfer on a 195 acre tract in Dorchester County. The properties protected range from active agricultural lands to managed timberlands and bottomland hardwood wetlands adjacent to major rivers and creeks and included:

- Mims Tract, Dorchester County; 182 acres
- Salisbury Tract, Dorchester County; 70 acres
- Long Tract, Dorchester County; 71 acres Cypress Swamp, Berkeley and Dorchester Counties; 249 acres

Property Spotlight – East Edisto Conservancy Makes History in ACE Basin

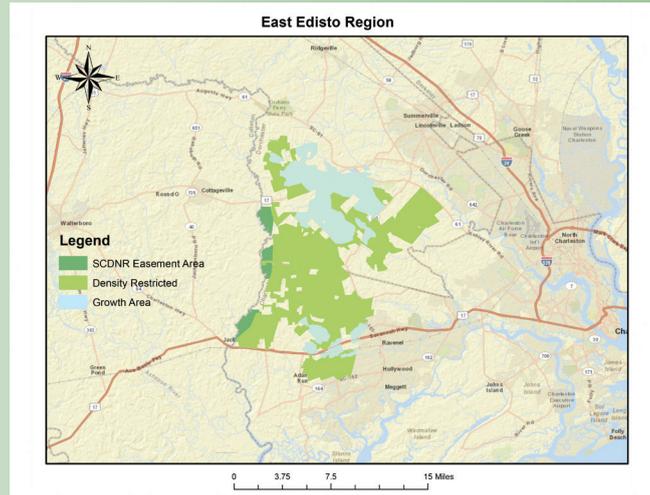
It's no exaggeration to say that the deal to place development-limiting conservation easements on 53,000 acres of prime rural real estate west of the city of Charleston between the Ashley and Edisto rivers, announced to great fanfare in February of 2016, was ground-breaking stuff. In fact, it has been described as the largest private land conservation transaction in the history of the Palmetto State.

A non-profit organization called the East Edisto Conservancy will protect more than 53,000 acres in perpetuity. To assure this, WestRock endowed the Conservancy with \$1.6 million to fund the ongoing conservation and protection efforts. The project was a longtime in the making.

"The careful planning and preservation of East Edisto started nine years ago, and presented an opportunity for WestRock and our partners to be part of the solution for growth in the Lowcountry," said Kenneth T. Seeger, former president of the WestRock Land and Development company.

The agreement and formation of the East Edisto Conservancy was hailed as a major step forward in combatting the unchecked development and growth that has plagued other areas outside the fast-growing city of Charleston.

"This landmark conservation agreement on more than 53,000 acres of land between the Ashley and the Edisto spans two counties and three major watersheds. It proves that commerce and conservation can not only coexist, but that they can dramatically enhance each other," said Dana Beach, executive director, Coastal



Conservation League. "It is important to remember that the stage for this achievement was set decades ago, with the pioneering efforts in the ACE basin and on Sandy Island, where creativity and collaboration merged to produce unprecedented conservation results."

The East Edisto Conservancy is a single purpose entity with the responsibility of holding a density restriction, which

significantly limits development on more than 53,000 acres in Dorchester and Charleston counties. Endowed by WestRock and led by a board of directors made up of conservation leaders and land owners, the conservancy will ensure that, outside of the planned communities of Summers Corner and Spring Grove, the "East Edisto region" will remain permanently rural. Along the Edisto River, an existing conservation easement insures that no homes will be built; and that this area will be used primarily for education and recreation.

"The East Edisto Vision Plan and its implementation demonstrates the great power of collaboration," said Ken Seeger. "We are grateful for the broad base of input and support, including the members of the ACE Basin Task Force and numerous other conservation organizations."

Board members for the conservancy include ACE Basin Task Force member Charles Lane, former SCDNR Board chairman and DU board member Mike McShane, Lord Berkeley Land Trust Executive Director Raleigh West, and Mac Rhodes, private landowner. Mac Baughman serves as executive director.

- Shell Point II, Colleton County; 1 acre
- Combahatchie, Colleton County 551 acres
- Perry Dam, Colleton County; 289 acres
- Bee Hive, Charleston County; 1,909 acres
- Baughman-Halsey Property II, Dorchester County; 195 acres
- Royal Tract, Colleton County; 1,774 acres
- Cope Tract, Colleton County; 806 acres

Total Protected: 6,097 acres:

Through October of 2017, the LLT had closed three new conservation easements in the ACE totaling 3,081 acres, including:

- New Lavington Plantation, Colleton County; 2,846 acres
- Mallard Tract, Colleton County; 206 acres
- Ravenwood Plantation III Amendment, Colleton County; 29 acres

– Reported by Lowcountry Land Trust



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ACE BASIN Conservation Sites as of 11/1/17

Public Sites	ACRES
Wildlife Management Areas	26,171
Bear Island, Donnelley, Botany Bay Plantation, Edisto River	
ACE Basin National Wildlife Refuge	11,939
Edisto Unit, Combahee Unit	
ACE Basin National Estuarine Reserve	26,127
Edisto Beach State Park	1,255
Hunting Island State Park	5,000
Sub-total	70,492
Private Sites	
Conservation Easements (174)	185,334
Deed Restrictions	33
Organization Ownership	
Nemours Plantation Wildlife Foundation, Bailey Island	10,575
Legacy Live Oak Park	
Other (Slann Island)	1,262
Sub-total	197,171
TOTAL	267,663

