State of South Carolina
Department of Natural Resources

P.O. Box 167
Columbia, S.C. 29202
803-528-4199

Robert H. Boyles, Jr., *Director*
Lorianne Riggin, *Director, Office of Environmental Programs*

September 22, 2023

Colby Myers
SCDHEC
2600 Bull Street
Columbia, SC 29202

RE: Mining P/N I-002403, Blue Water Industries, LLC
Salem Sand-Henry Tract Mine, Florence County

Dear Mr. Myers,

The South Carolina Department of Natural Resources (SCDNR) is the state agency charged by state law with the management, protection, and enhancement of wildlife, fisheries, and marine resources in South Carolina. In addition to natural resource management responsibilities through research, management and licensing, the SCDNR is also charged with statewide responsibilities for regulating watercraft operation and associated recreation on state waters, conducting geological surveys and mapping, promoting soil and water conservation, flood mitigation, drought response planning and coordination, and the coordination of the state scenic rivers program. SCDNR's mission is to serve as the principal advocate for and steward of South Carolina's natural resources. (SCDNR authorities and responsibilities are described in Titles 48, 49 and 50, South Carolina Code of Laws (1976), as amended). As such, personnel with the SCDNR have reviewed the proposed project, evaluated its impact on natural resources and offer the comments included below.

Project Description

The applicant proposes to mine sand from a 260-acre site near Salem in Florence County (33.880084, -79.500018). The proposed maximum depth of the mine is approximately 50 feet. The sand will be mined using a hydraulic dredge and will be piped to an on-site processing plant. The wash water from the plant will initially be directed to a tailings pond and eventually to the mining pit (Phase 1 Pit). The mine will be divided into 5 segments and reclamation will begin on each segment prior to beginning a new segment. The mine site will be prepared through timbering the mine area in approximately 35-acre blocks as mining advances. All stormwater from mine disturbed areas will be routed into the pit. Stormwater from the outside flanks of berms will be managed with brush barriers, diversion berms or silt fencing to control sediment until the soil can be stabilized with vegetation. The applicant has applied for a NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG730000); however, it is anticipated that there will not be a need to discharge pit water or wastewater through the NPDES outfall. The outfall will be permitted to provide flexibility to discharge water offsite in the event of an extreme storm event. A sediment and erosion control plan has not been submitted with the permit application. The reclamation plan included with the permit application indicates that the proposed mine site will be reclaimed to lake/pond and grassland.

Agency Comments

Based on a review of the information provided, aerial photography and other available maps, the proposed mine site consists primarily of upland pine plantation and wetlands associated with Deep Creek

which forms the southeastern boundary of the site. Deep Creek flows into the Lynches River, a State-Designated Scenic River, approximately 1.5 miles downstream of the site. The SCDNR owns and manages the 1,840-acres at the confluence of Deep Creek and the Lynches River. The Pee Dee Land Trust holds a conservation easement on a 1100-acre tract immediately downstream of the SCDNR Lynches River properties.

Protected Species

According to SCDNR data, there are several State Wildlife Action Plan species (SWAP) located within and adjacent to the proposed project (see Appendix 1 SCDNR Natural Heritage Database Report for a full list of these species) including occurrence records for American eel (*Anguilla rostrata*) in Deep Creek and in the Lynches River, records for American shad (*Alosa sapidissima*) and blueback herring (Alosa *aestivalis*); and records nearby for for pickerel frog (*Lithobates palustris*) and the federal at-risk species (ARS) Eastern diamond-backed rattlesnake (*Crotalus adamanteus*). SWAP species are those species of greatest conservation need not traditionally covered under any federal funded programs. Species are listed in the SWAP because they are rare or designated as at-risk due to knowledge deficiencies; species common in South Carolina but listed rare or declining elsewhere; or species that serve as indicators of detrimental environmental conditions. Please keep in mind that information in regards to the presence or absence of species is derived from existing databases, and SCDNR does not assume that it is complete. Areas not yet inventoried by SCDNR biologists may contain significant species or communities.

Spotted Turtles

Additionally, the SCDNR Natural Heritage Database includes records nearby of spotted turtle (*Clemmys guttata*). The spotted turtle is a state-threatened species and a federal At-Risk species (ARS). Please note that take of this state listed species is prohibited under S.C. Code of Laws §50-15-20(C).

Because the project area contains a variety of wetlands and the fact that spotted turtles are known to move considerable distances between and within habitats[1] and the fact that they are known to occur near the proposed project, the SCDNR recommends the applicant assume spotted turtle presence on the proposed project site and to prevent the take of a spotted turtle abide by the following:

- Avoid any construction in areas within or adjacent to aquatic resources (wetlands, streams, etc.) from January 15th through May 31st.
- Prior to any construction activity, install silt fencing from November 15th through January 15th adjacent to all aquatic resources onsite. Silt fencing should include 45-degree arms to direct spotted turtles to the uplands adjacent to the waterbody and away from the construction site. The 45-degree arms should be placed at a minimum of 100 ft from the waterbody and no more than 300 ft from the waterbody. Additionally, silt fence arms should extend at least 50-ft and extend in each direction so that the ends of each 45-degree angle to the fence meet to form a triangle. Silt fencing should remain in place throughout the duration of the proposed construction activities. See Appendix 2 for a diagram explaining the placement of the silt fencing for exclusion of spotted turtles from project impacts.
- Prior to construction, monitor the silt fencing to ensure it is effectively working properly on a monthly basis. This should effectively exclude the species from the project area prior to construction activities. Once construction activities begin, the silt fence should be monitored weekly for the integrity of the fencing and the presence of spotted turtles or other herpetofauna or small wildlife species. If spotted turtles are encountered, the SCDNR state herpetologist should be notified immediately by calling 854-202-0472.

[1] A male can have a home range of 5 hectares, where females have been documented to have home ranges of 16 hectares (Litzgus and Mousseau 2004).

Should the applicant not be able to install the silt fencing in accordance with the proposed window, it will require the applicant to install the exclusion fencing when the species is more active and has the potential to trap individuals with the area of proposed construction. Therefore, the SCDNR recommends checking the perimeter of the fencing twice daily for 14 days prior to ground disturbance and/or clearing in areas adjacent to and near these wetlands to ensure that spotted turtles are not trapped within the proposed project footprint.

Any turtles found within the construction area during this initial monitoring period and the construction monitoring period described below must be relocated. The relocation plan must be submitted to SCDNR for review prior to the installation of the silt fencing and the proper permits acquired from the SCDNR Herpetologist for the movement of a state protected species per S.C. Code of Laws §50-15-20(C). Please contact the State Herpetologist by calling 843-527-8448.

During the initial 14 days of monitoring, the construction area should be entirely enclosed within the exclusion fence. After the 14-day installation period, a single point of access may be established in the exclusion fence, utilizing four 45-degree arms (two facing inward and two facing outwards (e.g., ---< >---) as outlined in the guidance below. Please note that the following guidance necessitates that a minimum 100' upland buffer be established between the affected area and the adjacent wetlands.

Silt fencing should include 45-degree arms to direct spotted turtles to the uplands adjacent to the waterbody and away from the construction site. The 45-degree arms should be placed at a minimum of 100 ft from the waterbody and no more than 300 ft from the waterbody. Additionally, silt fence arms should extend at least 50-ft and extend in each direction so that the ends of each 45-degree angle to the fence meet to form a triangle. Silt fencing should remain in place throughout the duration of the proposed construction activities.
Prior to construction, monitor the silt fencing to ensure it is working properly on a monthly basis. This should effectively exclude the species from the project area prior to construction activities. Once construction activities begin, the silt fence should be monitored weekly for the integrity of the fencing and the presence of spotted turtles or other herpetofauna or small wildlife species. If spotted turtles are encountered, the SCDNR state herpetologist should be notified immediately by calling 854-202-0472.

Spotted turtles may be allowed to be relocated into areas of suitable habitat, management, and conservation status; however, any plans for relocation should be submitted for review to SCDNR with a detailed description and images of the current and future habitat and proposed work plan and methodologies as it pertains to a relocation project. It should be noted that not all habitats are suitable for relocation.

Bats and Tree Clearing
Cavity- and tree-roosting bat species have been known to occur in Florence County including the federally threatened northern long-eared bat (*Myotis septentrionalis*) and the federally at-risk tricolored bat (*Perimyotis subflavus*). Please note the tricolored bat was proposed for listing by the U.S. Fish and Wildlife Service on September 13, 2022. As a conservation measure, it is recommended that any tree clearing activities be conducted during the inactive season for northern long-eared bat (November 1st through March 15th) to avoid negative impacts to the species. If any of the above species are found on-site, please contact the U.S. Fish & Wildlife Service and SCDNR.

Additional Concerns
The SCDNR has several outstanding concerns and questions regarding the proposed project. Please provide additional information on the following for the natural resources of the project to be fully evaluated:

1. The mine map included with the permit application indicates the presence of three 36" CMP pipes under U.S. Highway 378 between wetland W-2, north of the highway and across from the proposed mine, and the mine site. A drainage feature is indicated on the map from the road to W-12. This drainage feature passes through the area identified on the map as the Phase 2 Pit. It appears that this drainage feature provides a hydrologic connection between wetlands W-2 and W-12. How will the proposed Phase 2 Pit affect the hydrology of these wetlands? Will untreated water be allowed to discharge from the pit to W-12 and eventually to downstream aquatic resources?
2. The mine map also indicates that there is an existing road between wetlands W-12 and W-11. Is this road proposed to remain as part of the mine? If so, is the crossing made by culverts, pipes or bridges and what are their dimensions? The SCDNR prefers that the existing crossing be removed and restored; however, if a crossing must remain SCDNR recommends an appropriately sized bridge or arched culvert be employed.
3. The permit application states on page 5 of 13 that a NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG730000) will be applied for but that it is anticipated that there will not be a need to discharge pit water or wastewater through this NPDES outfall. The application indicates that the purpose of the outfall is to provide flexibility to discharge water offsite in the event of an extreme storm event. The permit application and the maps provided do not appear to show a proposed outfall location. Where is the location of the proposed outfall from the mine site?
4. The floodplain associated with Deep Creek is a Special Flood Hazard Area (Zone A) as determined by the Federal Emergency Management Agency. It appears that this regulatory floodplain extends several hundred feet into the mine site including portions of the proposed Phase 4 and Phase 5 pits. The permit application specifically requests on page 8 of 13 that a boundary for the 100-year floodplain be provided where appropriate. The SCDNR requests that a map be provided indicating the location and extent of the 100-year floodplain on the proposed mine site. Because the project area includes a FEMA special flood hazard area, a permit may be required from the County National Floodplain Insurance Program Manager before impacts occur to aquatic resources and the associated floodplains on site. Please refer to https://www.dnr.sc.gov/water/flood/documents/nfipadmindirectory.pdf to find the appropriate contact information.
5. Please provide an erosion and sediment control plan as required on page 5 of 13 of the permit application. The SCDNR requests the opportunity to review and comment on this plan and any supporting documentation.
6. The permit application requests on page 6 of 13 that any threatened or endangered species reports be provided. The applicant stated that "Considering the previously agricultural practices and young pine growth, it is not anticipated to be habitat for any threatened or endangered flora or fauna." The SCDNR submits that since Florence County is known to harbor numerous federal and state endangered, threatened, or protected species and the proposed mine is adjacent to sensitive wetlands that flow into a State Scenic River and protected conservation lands downstream the applicant should provide a protected species assessment to support the mine application. State protected species that should be considered in a habitat assessment include the following: broadtail madtom (*Noturus sp.*), Carolina gopher frog (*Lithobates capito*), red-cockaded woodpecker, shortnose sturgeon (*Acipenser brevirostum*), wood stork (*Mycteria americana*), swallow-tailed kite (*Elanoides forficatus*), spotted turtle, and bald eagle (*Haliaeetus leucocephalus*). A complete list of species can be found here: https://schtportal.dnr.sc.gov/portal/apps/sites/#/natural-heritage-program. The SCDNR recommends a habitat assessment be provided to the SCDNR for review to help evaluate next steps for the avoidance and minimization of take of a state protected species.

Mining BMPs
As the applicant finalizes mining plans, the SCDNR recommends that the following best management practices for mining be applied and considered by DHEC as permit recommendations.

- Prior to beginning any land disturbing activity, appropriate erosion and siltation control measures (i.e. silt fences or barriers) must be in place and maintained in a functioning capacity until the area is permanently stabilized.
- All necessary measures must be taken to prevent oil, tar, trash and other pollutants from entering the adjacent offsite areas/wetlands/water.
- Once the project is initiated, it must be carried to completion in an expeditious manner to minimize the period of disturbance to the environment.
- Land disturbance should be kept to a minimum and accomplished in phases, when possible. Disturbed areas should be exposed only for the period of time required to extract the resource and vegetation should be re-established promptly.
- Land clearing should not begin until sediment basins and other conservation practices have been established. Clearing should be limited to the areas to be immediately mined.
- The number of overburden piles should be kept to a minimum and runoff should be diverted into sediment basins until vegetation can be established. Overburden piles should not be placed in drainage-ways or floodways.
- Upon completion, all disturbed areas must be permanently stabilized with vegetative cover (preferable), riprap or other erosion control methods as appropriate. SCDNR prefers and recommends the use of native warm season grasses and/or other native forbs that would be beneficial for wildlife and pollinators for stabilization. Native warm season grass species suggestions includes switchgrass (*Panicum virgatum*), indiangrass (*Sorghastrum nutans*), big bluestem (*Andropogon gerardii*) and little bluestem (*Schizachyrium scoparium*). A list of beneficial pollinator plant species, such as milkweed (*Asclepias spp*.), for the southeast may be found at www.xerces.org/pollinators-southeast-region/ or by visiting http://www.pollinator.org/guides. Additional South Carolina native pollinator plant species that may be applicable for use at the site during reclamation can be found in Appendix A of the Technical Guidance for the Development of Wildlife and Pollinator Habitat at Solar Farms at https://www.dnr.sc.gov/solar/assets/pdf/solarHabitatGuide.pdf.
- At the time of reclamation of the mine site to a pond, if the ultimate goal for the pond is to provide recreational fishing opportunities, SCDNR recommends that you consult with the Natural Resources Conservation Service and Clemson Extension to determine any modifications needed for increased productivity. These modifications could include the incorporation of as much shoreline variation with the use of peninsulas and islands in reclamation to provide ideal shoreline habitat for wildlife and aquatic vegetation. Care should be taken to create littoral zone habitat near shorelines, approximately 3 feet or less and the deeper portions of the pond should ideally be no more than 8 to 15 feet for recreational fishing. For your reference, the SCDNR Guidelines for Private Recreational Ponds can be found online at www.dnr.sc.gov/environmental/docs/private-ponds.pdf.
- According to the reclamation plan (MR-500), the seed selection includes Sericea Lespedeza (*Lespedeza cuneata*) and fescue. Native to eastern Asia, Sericea Lespedeza is considered a noxious, invasive plant pest, earning a “severe threat” designation by the South Carolina Exotic Pest Plant Council. A study of a reclaimed mine in Virginia found that northern bobwhite (*Colinus virginianus*) populations were limited due to poor habitat quality resulting from the monoculture plantings of Sericea Lespedeza and Tall Fescue (*Festuca arundinacea*) (Stauffer 2011). At a former surface mine site in Kentucky (now Peabody Wildlife Management Area), a 2015 study demonstrated that areas dominated by Sericea Lespedeza were not preferred habitat for bobwhite (Unger et al.), as it is not a preferred food for bobwhite (Ellis 1961), nor does it

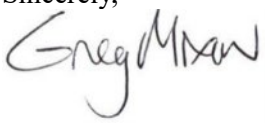
contain enough nutritional value to support a bobwhite population (Newlon et al. 1964). Due to its invasive nature and lack of benefit to wildlife, the SCDNR recommends against planting Sericea Lespedeza. Additionally, Bermuda grass and other non-native turf grasses, once established, will likely outcompete native vegetation and may create difficulties in establishing native vegetative habitat. Instead of planting Sericea Lespedeza and non-native turf grasses, the SCDNR prefers and recommends the use of native warm season grasses and/or other native forbs for stabilization that are beneficial for wildlife and pollinators. Native warm season grass species suggestions include: Indiangrass (*Sorghastrum nutans*), big bluestem (Andropogon gerardii) and little bluestem (*Schizachyrium scoparium*). A list of beneficial pollinator plant species, such as milkweed (*Asclepias spp.*), for the southeast may be found at www.xerces.org/pollinators-southeast-region/ or by visiting http://www.pollinator.org/guides. Additional South Carolina native pollinator plant species that may be applicable for use at the site during reclamation can be found in Appendix A of the Technical Guidance for the Development of Wildlife and Pollinator Habitat at Solar Farms at https://www.dnr.sc.gov/solar/assets/pdf/solarHabitatGuide.pdf.

- All plantings should consist of appropriate native species for the ecoregion and should exclude plant species found on the exotic pest plant council list: https://www.se-eppc.org/southcarolina/SCEPPC_LIST2014finalOct.pdf.

Summary

The SCDNR finds that additional information is needed for impacts to natural resources to be fully evaluated prior to permit issuance for the project as currently proposed. Please provide the additional information requested as soon as possible. Should you have any questions or need more information, please do not hesitate to contact me by email at mixong@dnr.sc.gov or by phone at 803.734.3282.

Sincerely,



Greg Mixon
Office of Environmental Programs

References

Ellis, J. A. 1961. Consumption of some food items by pen-reared bobwhites. *Journal of Wildlife Management*.

Newlon, C. F., T. S. Baskett, R. P. Breitenbach, and J. A. Stanford. 1964. Sustaining values of emergency foods for bobwhites. *The Journal of Wildlife Management*.

Stauffer, D. F. 2011. Potential of reclaimed mine–land habitat to support northern bobwhite bobwhite–a pilot study. Virginia Department of Game and Inland Fisheries, Richmond.

Unger, A. M., E. P. Tanner, C. A. Harper, P. D. Keyser, F. T. Van Manen, J. J. Morgan, and D. A. Baxley. 2015. Northern bobwhite seasonal habitat selection on a reclaimed surface coal mine in Kentucky. *Journal of the Southeastern Association of Fish and Wildlife Agencies*.

Appendix 1. Natural Heritage Database Report

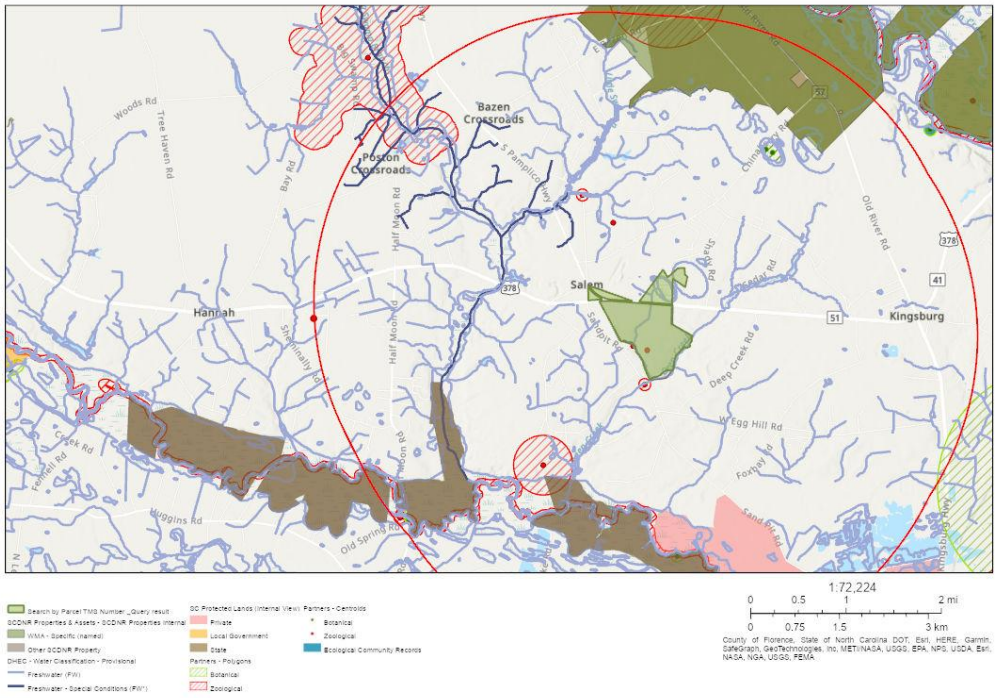
Image

SC Natural Heritage Species Screer

Area of Interest (AOI) Information

Area : 23,798.81 acres

Sep 22 2023 9:39:04 Eastern Daylight Time



Summary

Name	Count	Area(acres)	Length(mi)
Species Occurrence Records	23	1,802.55	N/A
Designated Critical Habitat	0	0	N/A
Ecological Community Records	0	0	N/A
Protected Lands	6	2,768.22	N/A

Species Occurrence Records

#	EO ID	Scientific Name	Common Name	G Rank	S Rank	Federal Status	State Status	SWAP Priority	Last Observation Date	Area(acres)
1	6883	Gentiana autumnalis	Pinebarren Gentian	G3	S2	Not Applicable	Not Applicable	High	2020-12-04	0.02
2	22236	Asclepias perennis	Aquatic Milkweed	G5	S4	Not Applicable	Not Applicable	Not Applicable	2007-05-22	0.02
3	7041	Amphicarpum amphicarpon	Pinebarrens Peanut-grass	G4	S3	Not Applicable	Not Applicable	Not Applicable	2020-07-09	0.66
4	2464	Progne subis	Purple Martin	G5	S5B	MBTA: Migratory Bird Treaty Act	Not Applicable	High	2011-06-06	0.66
5	23282	Nuphar sagittifolia	Narrowleaf Pondlily, Bonnets	G5T2	S2	Not Applicable	Not Applicable	Not Applicable	2023-04-28	3.12
6	3964	Lithobates palustris	Pickerel Frog	G5	S3S4	Not Applicable	Not Applicable	High	1968-07-01	7.49
7	5648	Isoetes hyemalis	Wintergreen Quillwort	G2G3	S1	Not Applicable	Not Applicable	High	2008-04-24	7.76
8	8850	Anguilla rostrata	American Eel	G4	S3S4	Not Applicable	Not Applicable	Highest	1977-06-24	7.76
9	8857	Anguilla rostrata	American Eel	G4	S3S4	Not Applicable	Not Applicable	Highest	1977-06-06	7.76
10	6457	Eupatoriu m paludicola	Bay Boneset	G2	S1	Not Applicable	Not Applicable	Not Applicable	1998	18.13
11	6476	Tiedemannia canbyi	Canby's Cowbane	G2	S2	LE: Federally Endangered	Not Applicable	Highest	1998-08-21	18.13
12	6387	Rhynchospora tracyi	Tracy's Beaksedge	G4	S3	Not Applicable	Not Applicable	Not Applicable	1998-08-21	18.13
13	6394	Lobelia boykinii	Boykin’s Lobelia	G2G3	S2?	ARS: At-Risk Species	Not Applicable	High	1998-08-21	18.13
14	6378	Rhynchospora careyana	Carey's Horned Beaksedge	G4?Q	S3	Not Applicable	Not Applicable	Not Applicable	1998-08-02	18.13
15	6433	Rhexia aristosa	Awned Meadow-beauty, Bristly Meadow-beauty	G3G4	S3	Not Applicable	Not Applicable	High	1998-08-21	18.13
16	6468	Amphicarpum muehlenbergianum	Florida Peanut-grass, Blue Maiden-cane	G4	S2S3	Not Applicable	Not Applicable	Not Applicable	1998-08-02	18.13
17	5353	Macbridea caroliniana	Carolina Birds-in-a-nest, Carolina Macbridea	G2G3	S3	Not Applicable	Not Applicable	High	1985-07-23	42.48

18	1592	Dryobates borealis	Red-cockaded Woodpecker	G3	S2	LE: Federally Endangered	SE: State Endangered	Highest	1990-05-22	165.30
19	7210	Crotalus adamanteus	Eastern Diamond-backed Rattlesnake	G3	S3	ARS: At-Risk Species	Not Applicable	High	1986-07-07	194.00
20	403	Clemmys guttata	Spotted Turtle	G5	S3	ARS: At-Risk Species	ST: State Threatened	High	1998-03-22	264.09
21	20103	Alosa sapidissima	American Shad	G5	S4S5	Not Applicable	Not Applicable	Highest	2021	324.84
22	9080	Alosa aestivalis	Blueback Herring	G3G4	S5	Not Applicable	Not Applicable	Highest	2021	324.84
23	19045	Alosa mediocris	Hickory Shad	G4	S4	Not Applicable	Not Applicable	Highest	2021	324.84

Protected Lands

#	Category	Manager	SiteName	Owner	Area(acres)
1	Local Government	Florence County	Half Moon Landing	Florence County Of	0.61
2	State	South Carolina Department of Natural Resources	Riverstone Lynches Scenic River	South Carolina Department Of Natural Resources	369.45
3	State	South Carolina Department of Natural Resources	Lynches Scenic River	South Carolina Department Of Natural Resources	540.57
4	Private	Pee Dee Land Trust	Riverbend	*No Data*	806.73
5	State	South Carolina Department of Natural Resources	Pee Dee Station Site Wildlife Management Area	South Carolina Public Service Authority	1,050.86

Appendix 2. Spotted Turtle Silt Fence Exclusion Diagram