



Wildlife Conservation Values Assessment

Long Bay Marina LLC- Conservation Easement Property

North Myrtle Beach, Horry County, SC

18 September 2018

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This report provides an assessment of the wildlife conservation values of the 60 acre Long Bay Marina LLC conservation easement property located near the town of North Myrtle Beach in Horry County, SC. The property is held under conservation easement by North American Land Trust and is managed by EcoVest Capital Inc.

I reviewed existing mapping, species, and habitat data to determine conservation context on the landscape and potential for rare species. I also visited the property on multiple occasions in 2016, 2017, 2018 to perform wildlife surveys on the property, targeting detection of birds and mammals, including bats.

The property is one of four contiguous conservation properties (Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay Cove) totaling 145 acres, which are also held under easement by NALT and managed by EcoVest. Because the wildlife found on any one property are likely to occur on the neighboring properties, and for practical reasons, the wildlife survey results for all four properties are presented together.

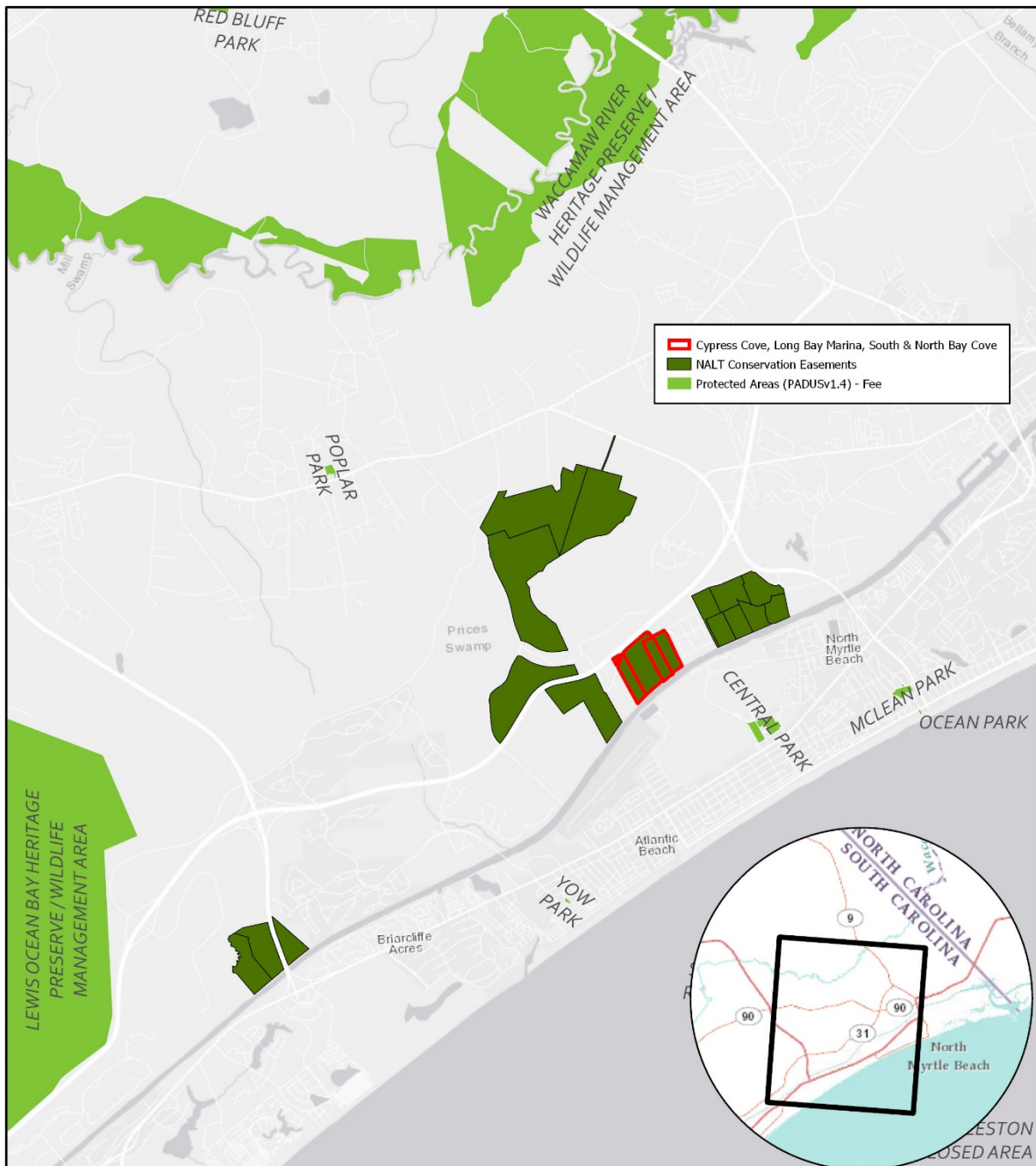
The Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay Cove properties are located in the Southeastern Coastal Plain ecoregion of South Carolina, roughly 1.5 miles from the Atlantic Ocean, and adjacent to the Atlantic Intercoastal Waterway. They are characterized by low elevations (<30") and flat topography. The Cypress Cove property is dominated by young Southern Atlantic Coastal Plain Mesic Hardwood Forest and contains ephemeral pools at the northern end of the property. Long Bay Marina is dominated by Loblolly Pine Plantation forest between 40-60' in height and contains a 1.5 acre meadow in the southwest corner of the property. The northern half of North Bay Cove and South Bay Cove are dominated by Southern Atlantic Coastal Plain Mesic Hardwood Forest that has recently been thinned using mulching machines, leaving a more open understory and scattered mature hardwood trees. The southern half of these two properties contains a large meadow with a forested buffer along the waterway. Vegetation types on the properties are better described in the Baseline Documentation Reports prepared by North American Land Trust.

Conservation Context – Adjacency and proximity to other protected areas helps to minimize habitat fragmentation, enhance ecological connectivity for various species and ecological processes, minimize easement stewardship and defense issues, and is an important conservation attribute recognized by IRS Treasury Regulations 1.170A-14(d)(4)(iv)(4).

Each of the four properties are contiguous with adjacent conservation properties, which together form a 145 acre contiguous conservation block. Protecting natural areas of this size in the highly urbanized Myrtle Beach region is uncommon.

The properties are less than 0.5 miles from, and imbedded within, 1,182 acres of additional conservation lands held by NALT which together form a 1,327 acre cluster of conservation properties collectively referred to as the Sandridge properties.

The Sandridge property cluster, as a whole, is 1.7 miles from the SCDNR-Waccamaw River Heritage Preserve / Wildlife Management Area to the north, 3.4 miles from the 10,427 acre SCDNR-Lewis Ocean Bay Heritage Preserve - Wildlife Management Area & State Natural Heritage Preserve to the west, and 2.7 miles from a 167 acre cluster of NALT conservation lands to the southwest (Belle Harbour Resort, Diamond Grande Resort, and Myrtle Cove).



Conservation Context

Cypress Cove, Long Bay Marina, South & North Bay Cove

Horry County, SC



0 0.5 1 Miles

Note: Easement and parcel boundaries depicted on this map are for informational purposes and do not represent legal boundary surveys.
Christopher R. Wilson
9/7/2018



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Aerial Imagery

Cypress Cove, Long Bay Marina, South & North Bay Cove

Horry County, SC

ESRI World Imagery 9/9/2017



0 250 500 US Feet

Note: Easement and parcel boundaries
depicted on this map are for informational
purposes and do not represent legal boundary
surveys.
Christopher R. Wilson
9/4/2018



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South Carolina Natural Heritage Trust GIS Database Review - The South Carolina Natural Heritage Trust is part of the South Carolina Department of Natural Resources and serves as an information clearinghouse in support of the conservation of rare plants, animals, and natural communities. Records of rare species are reported voluntarily to the trust by biologists and become part of the database. A lack of records for a property or county does not mean that a particular species does not occur; only that no records have been reported or, more likely, that surveys have not been conducted.

The SCNHT GIS database was queried for records on or near the properties.

- The SCNHT database has no records of rare species occurring on the properties
- 11 rare vertebrate species records occur within the county including: Spotted Turtle, Southern Hognose Snake, Black Bear, Red-cockaded Woodpecker, and Pine snake.

Rare, Threatened, and Endangered Species and Communities Known to Occur in Horry County, SC
June 11, 2014

Scientific Name	Common Name	USES Designation	State Protection	Global Rank	State Rank
<u>Vertebrate Animals</u>					
<i>Caretta caretta</i>	Loggerhead	LT: Threatened	ST: Threatened	G3	S3
<i>Clemmys guttata</i>	Spotted Turtle		ST: Threatened	G5	S5
<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat		SE: Endangered	G3G4	S2?
<i>Fundulus diaphanus</i>	Banded Killifish			G5	S1
<i>Haliaeetus leucoccephalus</i>	Bald Eagle		ST: Threatened	G5	S2
<i>Heterodon simus</i>	Southern Hognose Snake			G2	SNR
<i>Mycteria americana</i>	Wood Stork	LE: Endangered	SE: Endangered	G4	S1S2
<i>Picoides borealis</i>	Red-cockaded Woodpecker	LE: Endangered	SE: Endangered	G3	S2
<i>Pituophis melanoleucus</i>	Pine or Gopher Snake			G4	S3S4
<i>Sterna antillarum</i>	Least Tern		ST: Threatened	G4	S3
<i>Ursus americanus</i>	Black Bear			G5	S3?
<u>Invertebrate Animal</u>					
<i>Elleptio congaraea</i>	Carolina Slabshell			G3	S3
<i>Lampsilis splendida</i>	Rayed Pink Fatmucket			G3	S2
<i>Villosa delumbis</i>	Eastern Creekshell			G4	S4
<u>Animal Assemblage</u>					
Waterbird Colony				GNR	SNR
<u>Vascular Plants</u>					
<i>Agalinis aphylla</i>	Coastal Plain False-foxglove			G3G4	S1
<i>Agalinis maritima</i>	Salt-marsh False-foxglove			G5	S1
<i>Amaranthus pumilus</i>	Seabeach Amaranth	LT: Threatened		G2	S1
<i>Andropogon mohrii</i>	Broomsedge			G4?	S2
<i>Anthraenantia rufo</i>	Purple Silky scale			G5	S2
<i>Asclepias pedicellata</i>	Savannah Milkweed			G4	S2
<i>Balduina uniflora</i>	One-flower Balduina			G4	S2
<i>Calamovilfa brevifolia</i>	Pine-barrrens Reed-grass			G4	S1
<i>Calopogon barbatus</i>	Bearded Grass-pink			G4?	S2
<i>Chamaedaphne calyculata</i>	Leatherleaf			G5	SNR
<i>Coreopsis gladiata</i>	Southeastern Tickseed			G4G5	SNR
<i>Coreopsis integrifolia</i>	Ciliate-leaf Tickseed			G1G2	S1
<i>Coreopsis rosea</i>	Rose Coreopsis			G3	S2
<i>Crotonopsis linearis</i>	Narrowleaf Rushfoil			G5	SNR

Scientific Name	Common Name	USES/ESA Designation	State Protection	Global Rank	State Rank
<i>Dionaea muscipula</i>	Venus' Fly-trap			G3	S3
<i>Echinodorus tenellus</i>	Dwarf Burhead			G5?	S2
<i>Eupatorium recurvans</i>	Coastal-plain Thorough-wort			G3G4Q	S1?
<i>Fimbristylis perpusilla</i>	Harper's Fimbry			G2	S2
<i>Helenium brevifolium</i>	Shortleaf Sneezeweed			G4	S1
<i>Helianthemum georgianum</i>	Georgia Frostweed			G4	S2
<i>Ilex amelanchier</i>	Sarvis Holly			G4	S3
<i>Juncus abortivus</i>	Pinebarren Rush			G4G5	S2
<i>Lachnocaulon beyrichianum</i>	Southern Bog-button			G4	S2
<i>Lechea torreyi</i>	Piedmont Pinweed			G4	SNR
<i>Lilaeopsis carolinensis</i>	Carolina Lilaeopsis			G3G5	S2
<i>Lipocarpus micrantha</i>	Dwarf Bulrush			G5	S2
<i>Litsea aestivalis</i>	Pondspice			G3?	S3
<i>Lygodium palmatum</i>	Climbing Fern			G4	S3
<i>Minuartia godfreyi</i>	Godfrey's Stitchwort			G1	SX
<i>Oxypolis ternata</i>	Piedmont Cowbane			G3	S1
<i>Parnassia caroliniana</i>	Carolina Grass-of-parnassus			G3	S2
<i>Peltandra sagittifolia</i>	Spoon-flower			G3G4	S2
<i>Physostegia leptophylla</i>	Slender-leaved Dragon-head			G4?	SNR
<i>Plantago sparsiflora</i>	Pineland Plantain			G3	S2
<i>Pteroglossaspis ecristata</i>	Crestless Plume Orchid			G2G3	S2
<i>Pyxidanthra barbulata</i>	Well's Pyxie Moss			G4	S2
<i>Rhynchospora oligantha</i>	Few-flowered Beaked-rush			G4	S2
<i>Ruellia pedunculata</i> ssp. <i>pinetorum</i>	Stalked Wild Petunia			G5T3T4	SH
<i>Sabatia bartramii</i>	Bartram's Rose-gentian			G4G5	S1
<i>Sabatia kennedyana</i>	Plymouth Gentian			G3	S2
<i>Sarracenia rubra</i>	Sweet Pitcher-plant			G4	S3S4
<i>Schwalbea americana</i>	Chaffseed	LE: Endangered		G2G3	S2
<i>Scleria baldwinii</i>	Baldwin Nutrush			G4	S2
<i>Solidago pulchra</i>	Carolina Goldenrod			G3	S1
<i>Sporobolus teretifolius</i>	Wire-leaved Dropseed			G2	S1
<i>Stylisma pickeringii</i> var. <i>pickeringii</i>	Pickering's Morning-glory			G4T3	S1
<i>Tofieldia glabra</i>	White False-asphodel			G4	S1S2
<i>Xyris brevifolia</i>	Short-leaved Yellow-eyed Grass			G4G5	S1
<i>Xyris flabelliformis</i>	Savannah Yellow-eyed Grass			G4	S1
<u>Communities</u>					

Scientific Name	Common Name	USES Designation	State Protection	Global Rank	State Rank
Bald cypress - tupelo gum swamp				G5	S4
Bay forest				G3G4	S3
Bottomland hardwoods				G5	S4
Limestone sink				G3	S1S2
Maritime forest				G2	S2
Maritime grassland				G3G4	S2
Maritime shrub thicket				G4	S2S3
Pine flatwoods				G5	S3S4
Pine savanna				G3	S2
Pocosin				G3G4	S3S4
Pond pine woodland				G4G5	S3
Swale pocosin				G2?	S2?
Xeric sandhill scrub				G5	S3
<u>Geological</u>					
Carolina bay				GNR	SNR

Wildlife Field Surveys 2016 - 2018

Conservation Significance of Observed Species—Federal- and State Threatened and Endangered species are afforded special legal protections from take, harassment, etc, and are used to determine the significance of a property or habitat for regulatory purposes. While important, Threatened & Endangered species lists are not (by themselves) the best references for determining significance for conservation purposes, because they are too limited. Whether or not a species is listed as Threatened or Endangered under State and Federal Endangered Species Acts necessarily involves political considerations and lengthy bureaucracy, and many species are in-fact considered biologically endangered but are not on such lists. Also, when a species is listed as Threatened or Endangered, available options to save it may be severely limited and expensive, or it may be too late.

There are many factors that determine which species should be prioritized for conservation and if we limit ourselves to only acting on those species that are listed Threatened or Endangered, biodiversity will be lost. In response to the need for more robust and proactive methods to determine conservation significance, a number of different species prioritization schemes (besides State and Federal Endangered Species Lists) have been developed in recent decades.

In order to determine the conservation significance of wildlife species found on the properties, I referred to the following conservation plans that assign priority conservation status to wildlife species in the Southeastern Coastal Plain of South Carolina (Bird Conservation Region 27, or “BCR27”). Each of these programs are independent efforts, used different prioritization approaches, and were driven by different organizational objectives and constraints, thus their results will vary. However, each are government supported efforts meant to guide proactive and voluntary biodiversity conservation actions (such as conservation easements) and each should be considered a valid list for determining the significance of species for conservation.

South Carolina’s Comprehensive Wildlife Conservation Strategy (aka. – SC State Wildlife Action Plan, or SC SWAP)

The SC SWAP emphasizes a cooperative, proactive approach to conservation. The charge to state wildlife agencies to develop comprehensive strategies had its origins in the Wildlife Conservation and Recreation Program (WCRP) that was created in the federal Appropriations Act of 2001. Appropriations language provided that funds may be used for “...the planning and implementation of [a state’s] wildlife conservation and restoration program and wildlife conservation strategy, including wildlife conservation, wildlife conservation education, and wildlife-associated recreation projects” (114 STAT. 2762A -118 PUBLIC LAW 106–553 — APPENDIX B — Title IX). The WCRP appropriations language challenged the states to develop projects in the three major areas anticipated in the Teaming with Wildlife initiative: conservation, education, and recreation. WCRP appropriations language also provided that “Within five years of the date of the initial apportionment, [the states shall] develop and begin implementation of a wildlife

conservation strategy based upon the best available and appropriate scientific information and data”.

In the 2015 revision to the SC SWAP, the SCDNR identified 825 species of flora and fauna to include on the State’s List of Species with the Greatest Conservation Need (SGCN, or “priority species”). Expert review helped to identify the current needs of wildlife in the state. These needs translate into conservation actions that can cross multiple scales, with treatments recommended at the species, habitat and regional level. Eight recurring conservation action areas were identified, including: education and outreach; habitat protection; invasive and nonnative species; private land programs; public land management; regulatory actions; survey and research needs; and urban and developing lands. All of South Carolina’s 62 priority actions to address problems and issues fall within these conservation action areas.

The SC SWAP Species of Greatest Conservation Need list was used to assess the conservation priority of wildlife species observed on the property.

<http://dnr.sc.gov/swap/index.html>

The Atlantic Coast Joint Venture - South Atlantic Migratory Bird Initiative (SAMBI) Implementation Plan (2006)

The ACJV is a partnership of federal, regional and state agencies and organizations focused on the conservation of habitat for native bird species in the Atlantic Flyway region of the United States. The joint venture coordinates planning and delivery of bird habitat conservation, resulting in more effective and efficient conservation and the ability to focus limited resources on continental, national, flyway and regional bird conservation priorities. It is administered through the U.S. Fish and Wildlife Service and coordinates much of the science guiding federal grant making for conservation projects (<http://acjv.org/>)

The ACJV-SAMBI Implementation Plan (v3.1, 2006) encompasses the eastern portion of BCR 27, the Southeastern Coastal Plain. The objective of the plan is to integrate the objectives of existing and emerging bird conservation plans into a single plan that land managers, biologists, administrators, and private landowners can use to achieve common goals and objectives for bird conservation across a regional landscape. The plan identifies priority species, priority habitats, priority areas, and strategies to achieve the conservation of “all birds across all habitats” in this region. This plan is a result of the collaboration of federal, state, non-governmental, and private interests to build a cohesive strategy for bird conservation in the southeastern United States.

The Priority Bird Species list for the region is categorized as Highest, High, and Moderate priorities as follows:

- Highest priority species are those of High Continental and/or Regional Concern in need of Immediate Management Attention

- High priority species are species of Continental or Regional Concern in need of Management Attention, and
- Moderate priority species are species where monitoring is needed to ensure population persistence, and which may also include additional Federally endangered species, State listed species, and other species of conservation or management interest.

An important habitat conservation strategy identified in the plan (Strategy B.2.) is the acquisition of conservation easements: "Conservation easements with private landowners and local governments will be used to acquire legal interests to conserve and manage important wetlands and associated upland habitats and limit development while allowing some use by the landowner consistent with the easement conditions." http://www.acjv.org/documents/SAMBI_Plan3.2.pdf

US Fish and Wildlife - Birds of Conservation Concern (BCC) 2008 –

"The 1988 amendment to the Fish and Wildlife Conservation Act mandates the U.S. Fish and Wildlife Service (USFWS) to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." Birds of Conservation Concern 2008 is the most recent effort to carry out this mandate."

"The overall goal of the Birds of Conservation Concern is to accurately identify the migratory and non-migratory bird species (beyond those already designated as Federally threatened or endangered) that represent the highest conservation priorities."

The USFWS Birds of Conservation Concern (BCC) list for BCR27 was used to determine the conservation significance of birds observed on the properties.

<https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

Breeding Bird Surveys – The diversity and distribution of breeding birds on the properties was sampled using 5-minute point-counts, which entails counting all individual birds heard or visually observed while standing in one location (a point-count station) for 5-minutes. Fifteen point-count stations were sampled throughout the properties during the month of May in 2016, 2017, and 2018. Each point-count location was sampled only once. In addition to point-counts, casual observations of birds were also noted. Results are presented in the tables and maps below.

- 37 bird species were observed across all four properties, 17 of which were identified as conservation priorities (16 SC-SWAP, 11 ACJV, and 1 BCC)
- Priority species were distributed among all four properties:
 - 23 bird species were observed at Cypress Cove, including 12 Priority species (11 SC-SWAP, and 8 ACJV)
 - 24 bird species were observed at Long Bay Marina, including 15 Priority species (14 SC-SWAP, 10 ACJV, and 1 USFWS-BCC)
 - 14 bird species were observed at North Bay Cove, including 6 Priority species (6 SC-SWAP, 3 ACJV, and 1 USFWS-BCC)
 - 29 bird species were observed at South Bay Cove, including 12 Priority species (12 SC-SWAP, 6 ACJV, and 1 USFWS-BCC)

The ten most frequently encountered species across the four properties were: Carolina Wren, Northern Cardinal, Carolina Chickadee, Tufted Titmouse, Pine Warbler, Red-bellied Woodpecker, Painted Bunting, Mourning Dove, Pileated Woodpecker, and Common Grackle.

On July 5, 2016, six Mississippi Kites were observed aerial foraging for dragonflies above the open field at the south end of the North Bay and South Bay properties.

The most notable species breeding on the properties is the Painted Bunting, which is highly ranked by all three conservation plans. There were at least 7 independent observations of singing Painted Buntings on the properties within the breeding season, all within roughly 800 feet of the Intercoastal Waterway along forest edges and in small forest openings.

Painted Buntings breeding in South Carolina belong to the Eastern subspecies, *Passerina ciris ciris* (which may eventually be described as full separate species). During the breeding season, this subspecies is restricted to four states along the Atlantic Coast: North Carolina, South Carolina, Georgia and Florida. South Carolina supports one third to one-half of the total breeding population of the Eastern subspecies. In general, the Painted Bunting utilizes a variety of habitats, primarily forest edge and shrub habitats along the coast. The greatest risk to the eastern population appears to be rapid loss of habitat along the outer Coastal Plain attributed to rapid development and other factors. (Fire Management Species Profile Painted Bunting (*Passerina ciris*), Division of Strategic Resource Management & the Division of Fire Management, USFWS, Southeast Region, Atlanta, GA <https://www.fws.gov/southeast/pdf/fire/painted-bunting-fire-management.pdf> ; William C. Hunter (USFWS) and Dean Demarest (USFWS). Supplemental Volume: Species of Conservation Concern SC SWAP 2015. <http://www.dnr.sc.gov/swap/supplemental/birds/paintedbunting2015.pdf>)

Bird Species Totals.

Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay
2016-2018

Totals	Total	Cypress Cove	Long Bay Marina	North Bay Cove	South Bay
Total Bird Species Observed	37	23	24	14	29
Total SC-SWAP	16	11	14	6	12
Total ACJV	11	8	10	3	6
Total USFWS-BCC	1	0	1	1	1
Total Priority	17	12	15	6	12

SC-SWAP Priority Bird Species Observed During the Breeding Season

Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay
2016-2018

SC-SWAP Priority	Total	Cypress Cove	Long Bay	North Bay Cove	South Bay Cove
High	5	3	3	3	3
Chimney Swift*	X			X	X
Eastern Kingbird	X	X	X	X	X
Eastern Towhee	X	X	X		
Purple Martin*	X			X	X
Yellow-billed Cuckoo	X	X	X		
Highest	1	0	1	1	1
Painted Bunting	X		X	X	X
Moderate	10	8	10	2	8
Blue Grosbeak	X		X		X
Carolina Chickadee	X	X	X		X
Carolina Wren	X	X	X	X	X
Indigo Bunting	X	X	X		X
Pileated Woodpecker	X	X	X	X	X
Pine Warbler	X	X	X		X
Red-bellied Woodpecker	X	X	X		X
Red-shouldered Hawk	X	X	X		
Summer Tanager	X	X	X		
White-eyed Vireo	X		X		X
Grand Total	16	11	14	6	12

*Flyover observations; breeding on the property not confirmed

ACJV (BCR27) Priority Bird Species Observed During the Breeding Season

Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay

2016-2018

ACJV (BCR27)	Total	Cypress Cove	Long Bay	North Bay Cove	South Bay Cove
High Priority	4	3	3	2	2
Chimney Swift*	x			x	x
Eastern Kingbird	x	x	x	x	x
Eastern Towhee	x	x	x		
Yellow-billed Cuckoo	x	x	x		
Highest Priority	1		1	1	1
Painted Bunting	x		x	x	x
Moderate Priority	6	5	6	0	3
Black Vulture*	x	x	x		
Indigo Bunting	x	x	x		x
Pine Warbler	x	x	x		x
Red-shouldered Hawk	x	x	x		
Summer Tanager	x	x	x		
White-eyed Vireo	x		x		x
Grand Total	11	8	10	3	6

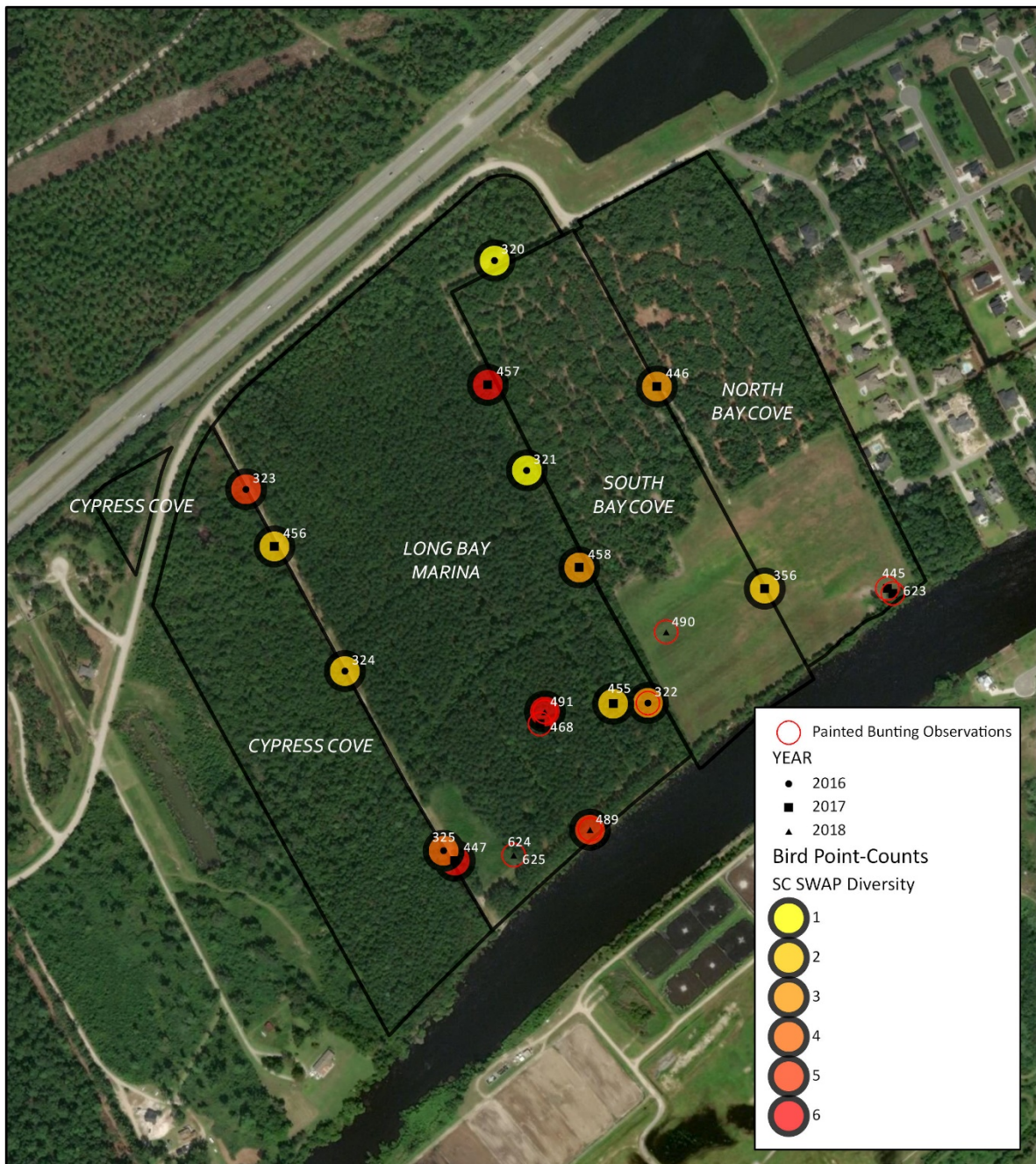
*Flyover observations; breeding on the property not confirmed

USFS-BCC (BCR27) Priority Bird Species Observed During the Breeding Season

Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay

2016-2018

USFWS-BCC (BCR27)	Total	Cypress Cove	Long Bay	North Bay Cove	South Bay Cove
Painted Bunting	X		X	X	X



Priority Bird Species Observations **Cypress Cove, Long Bay Marina, South & North Bay Cove** Horry County, SC



0 250 500 US Feet

Note: Easement and parcel boundaries depicted on this map are for informational purposes and do not represent legal boundary surveys.
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9/18/2018



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Diversity of Priority Bird Species Observed at Point Locations
Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay
2016-2018

Protocol	POINT ID#	#SC-SWAP Priority Spp	#ACJV Priority Spp	#USFWS-BCC Priority Spp
Casual Observation	445	1	1	1
Casual Observation	468	1	1	1
Casual Observation	490	1	1	1
Casual Observation	623	1	1	1
Casual Observation	624	1	1	1
Casual Observation	625	3	2	1
Stationary Count	320	1	0	0
Stationary Count	321	1	1	0
Stationary Count	322	3	2	1
Stationary Count	323	5	3	0
Stationary Count	324	2	0	0
Stationary Count	325	4	2	0
Stationary Count	356	2	2	0
Stationary Count	446	3	0	0
Stationary Count	447	6	3	0
Stationary Count	455	2	0	0
Stationary Count	456	2	0	0
Stationary Count	457	6	2	0
Stationary Count	458	3	0	0
Stationary Count	489	5	2	1
Stationary Count	491	6	3	1

Bird Observations

Cypress Cove, Long Bay Marina, North Bay Cove, and South Bay
2016-2018

BIRD OBSERVATIONS	INDIVIDUALS OBSERVED
Casual Observation	
445	
Painted Bunting	2
468	
Painted Bunting	2
490	
Painted Bunting	1
623	
Osprey	1
Painted Bunting	1
624	
Painted Bunting	2
625	
Painted Bunting	1
Pine Warbler	1
Red-bellied Woodpecker	1
Point-count (5-min count)	
320	
Blue Jay	1
Carolina Chickadee	1
Northern Cardinal	1
Red-tailed Hawk	1
Tufted Titmouse	2
321	
American Redstart	1
Barn Swallow	1
Blue-gray Gnatcatcher	1
Common Yellowthroat	1
Pine Warbler	1
Tufted Titmouse	2
322	
American Crow	1
Barn Swallow	2
Blue Grosbeak	1
Boat-tailed Grackle	1
Brown-headed Cowbird	1
Painted Bunting	1
Tufted Titmouse	2
White-eyed Vireo	1
323	
Carolina Chickadee	1
Carolina Wren	2
Eastern Kingbird	1
Eastern Towhee	1
Northern Cardinal	1
Summer Tanager	2
324	
Boat-tailed Grackle	1
Brown-headed Cowbird	1
Carolina Wren	2
Northern Cardinal	1
Pileated Woodpecker	2
Tufted Titmouse	1
325	
Black Vulture	2
Boat-tailed Grackle	1
Brown-headed Cowbird	1

Carolina Chickadee	3
Carolina Wren	1
Fish Crow	1
Northern Mockingbird	1
Red-bellied Woodpecker	2
Tufted Titmouse	2
Yellow-billed Cuckoo	1
356	
Chimney Swift	3
Common Grackle	3
Eastern Kingbird	2
Fish Crow	1
Great Crested Flycatcher	1
gull sp.	15
Northern Cardinal	2
446	
Blue Jay	2
Carolina Wren	1
Great Crested Flycatcher	1
Mourning Dove	2
Northern Cardinal	1
Pileated Woodpecker	1
Purple Martin	1
447	
Blue-gray Gnatcatcher	1
Carolina Chickadee	1
Carolina Wren	2
Common Grackle	1
Indigo Bunting	1
Northern Cardinal	2
Pine Warbler	2
Red-bellied Woodpecker	2
Red-shouldered Hawk	1
Turkey Vulture	2
455	
Blue Grosbeak	1
Carolina Wren	2
Northern Cardinal	2
Tufted Titmouse	1
456	
Carolina Chickadee	2
Carolina Wren	3
Great Crested Flycatcher	1
Mourning Dove	3
457	
Carolina Chickadee	1
Carolina Wren	3
Indigo Bunting	1
Pileated Woodpecker	1
Pine Warbler	1
Red-bellied Woodpecker	1
Tufted Titmouse	1
458	
Carolina Chickadee	3
Carolina Wren	2
Great Crested Flycatcher	1
Laughing Gull	1
Northern Cardinal	1
Red-bellied Woodpecker	1
489	
Blue Jay	1
Carolina Chickadee	2
Carolina Wren	2

gull sp.	4
Northern Cardinal	1
Painted Bunting	3
Pine Warbler	3
Red-bellied Woodpecker	1
491	
Carolina Chickadee	1
Carolina Wren	2
Northern Cardinal	3
Painted Bunting	1
Pine Warbler	3
Red-bellied Woodpecker	1
Summer Tanager	1
Tufted Titmouse	2

Bat Surveys- Bats were surveyed using Wildlife Acoustics SM2BAT+ and SM4BAT acoustic detectors and SMX-UT and SMM-U1 omnidirectional microphones. The microphones were mounted on 12' high painters-poles and the units were deployed at 6 locations across the properties for a total of 19 detector-nights of sampling effort.

Each recorder unit was placed at the edge of a forest and some kind of opening (meadow, forest road, powerline ROW, etc.) or near pooled water, where feeding bats are likely to concentrate. Acoustic filter settings and programming of the recorders followed the manufacturer's recommendations for USFWS protocol surveys for Indiana Bats (utilizing the 2015 version of the "Indiana.set" file). Wildlife Acoustics Kaleidoscope software (5.0.3) was used to clean the recordings, automatically identify the bat species call, and provide a probabilistic statement about the certainty of the identification. The eastern North America classifiers (4.3.0) were used and were set to +1 More Accurate (the most conservative setting), which minimized false positive identifications. The analysis was limited to bat species identified in the *SC Bat Conservation Plan* (SCDNR 2016) as occurring in the Coastal Zone & Coastal Plain. A probability of false identification value (or p-value) of <0.05 was chosen as a threshold for accepting the species identification and assuming presence on the property.

Bat detector deployed along edge of field – South Bay Cove property



Over 2,000 individual recordings of bats were collected, indicating significant bat foraging activity on the properties. Of these, 1,093 recordings were assigned to one of ten species by Kaleidoscope Pro. Seven species were identified with a p-value <0.05 . These were: Red Bat, Hoary Bat, Northern Yellow Bat, Silver-haired Bat, Evening Bat, Tri-colored Bat, and Brazilian Free-tailed Bat. Five are considered “Highest Priority” by the SC SWAP. The Tri-colored bat is currently under review for listing under the Federal Endangered Species Act (Endangered and Threatened Wildlife and Plants; 90-Day Findings for Five Species. December 20, 2017. Federal Register Volume 82, Number 243, Pages 60362-60366).

Bat Species Identified by Kaleidoscope Pro (p<0.05)
Cypress Cove/Long Bay/North Bay/South Bay properties

CODE	SCIENTIFIC NAME	COMMON NAME	G-RANK	S-RANK	SC SWAP PRIORITY	Habitat
LABO	<i>Lasiurus borealis</i>	Red Bat	G5	SNR	Highest	thinned stands; roost on smaller branches or twigs, often in the hardwood tree canopy; may roost in leaf litter
LACI	<i>Lasiurus cinereus</i>	Hoary Bat	G5	S?	Highest	tree cavities, trunks, tree foliage, squirrel nests, and Spanish moss
LAIN	<i>Lasiurus intermedius</i>	Northern Yellow Bat	G4/G5	S?	Highest	forage over open areas such as fields, pastures, golf courses, marshes, and along lake and forest edges; roost in clumps of Spanish moss or under old palm fronds
LANO	<i>Lasionycteris noctivagans</i>	Silver-haired Bat	G5	SNR	Highest	roosts include tree cavities, under loose bark, rock crevices, under tree foliage, and occasionally in buildings, stacks of firewood, and bird boxes; forage over water
NYHU	<i>Nycticeius humeralis</i>	Evening Bat	G5			bottomland forests, waterways, Roosts in hollow trees, loose bark, Spanish moss, under palm fronds, in buildings/ attics
PESU	<i>Perimyotis subflavus</i>	Tri-colored Bat	G5	SNR	Highest	abandoned mines and caves, bridges, buildings
TABR	<i>Tadarida brasiliensis</i>	Brazilian Free-tailed Bat	G5			Use wide variety of foraging habitats. Day roosts: buildings, attic, bridges, hollow trees.

The identification of the Red Bat was confirmed through manual vetting of the recordings. The remaining species require additional manual vetting to confirm identifications with high certainty. The Silver-haired Bat is not thought to occur in the coastal plain during the summer, and is probably misidentified by Kaleidoscope.

Acoustic bat survey methods are biased toward the detection of species that 1) have louder calls, 2) forage closer to ground (near the detectors), and 3) forage in less cluttered areas (such as the edges of clearings). Species that specialize in foraging in cluttered forested areas (many *Myotis* species), or above the forest canopy, are usually under-represented in acoustic sampling. Thus, additional species are likely utilize the properties yet remain undetected.

In addition to acoustic sampling, bats were surveyed on Long Bay Marina and South Bay Cove using mist-nets on July 8, 2018. Three nets were placed along the forest road separating the two properties for one night. No bats were captured. However, bats obviously use the properties as demonstrated by the acoustic data, and additional mist-net surveys conducted that July successfully captured Eastern Red Bat, Evening Bat, Seminole Bat, and Southeastern *Myotis* on nearby conservation properties (within 1,500' to 6,000' away) managed by EcoVest.

It's worth noting that the captured Seminole Bat is acoustically indistinguishable from the Red Bat and may contribute many of the supposed Red Bat recordings collected in acoustic surveys on the properties. Many of the calls identified as Red Bat may actually represent two species instead of one.

Cypress Cove/Long Bay/North Bay/South Bay Properties 2016-2017

KALEIDOSCOPE 5.0.3			SEPT 11 2018																
Bats of North America 4.3.0 S/A:+1																			
DATE	UNIT		CORRAF	EPTFUS	LASBOR	LASCIN	LASINT	LASNOC	LASSEM	MYOQUS	MYOLUC	MYOSEP	PERSUB	TADBRA	NYCHUM	TOTAL ID	NOID	TOTAL BAT FILES	NOISE
ALL	ALL	ALL UNITS		2	160	14	52	20	54		4		105	23	659	1,093	956	2,049	155
Long Bay	Jun-17	1004			22	9	5	4	1		2		50	1	103	197	127	324	17
Long Bay / South Bay	Jul-16	622		2	3		3				1		1		11	21	38	59	10
Long Bay / South Bay	Jun-17	1033			132	5	30	11	50				47	21	535	831	686	1,517	43
Long Bay/ Cypress	Jul-16	32														-	6	6	1
North Bay	Aug-17	622									1		1			2	30	32	58
South Bay	Aug-17	1037			3		14	5	3				6	1	10	42	69	111	26

Presence P-Values:			SC-SWAP HIGHEST PRIORITY SPECIES												
Property	DATE	UNIT	CORRAF	EPTFUS	LASBOR	LASCIN	LASINT	LASNOC	LASSEM	MYOAUS	MYOLUC	MYOSEP	PERSUB	TADBRA	NYCHUM
ALL		ALL UNITS	1.00	1.00	0.00	0.00	0.00	0.00	0.86	1.00	1.00	1.00	0.00	0.00	0.00
Long Bay	Jun-17	1004	1.00	1.00	0.00	0.00	0.01	0.40	1.00	1.00	1.00	1.00	0.00	1.00	0.00
Long Bay / South Bay	Jul-16	622	1.00	0.21	0.01	1.00	0.02	1.00	1.00	1.00	0.97	1.00	0.39	1.00	0.00
Long Bay / South Bay	Jun-17	1033	1.00	1.00	0.00	0.62	0.00	0.02	0.41	1.00	1.00	1.00	0.00	0.00	0.00
Long Bay/ Cypress	Jul-16	32	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
North Bay	Aug-17	622	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.18	1.00	0.05	1.00	1.00
South Bay	Aug-17	1037	1.00	1.00	0.03	1.00	0.00	0.02	0.29	1.00	1.00	1.00	0.00	0.99	0.12

Red shaded cells represent p-values < 0.05 .

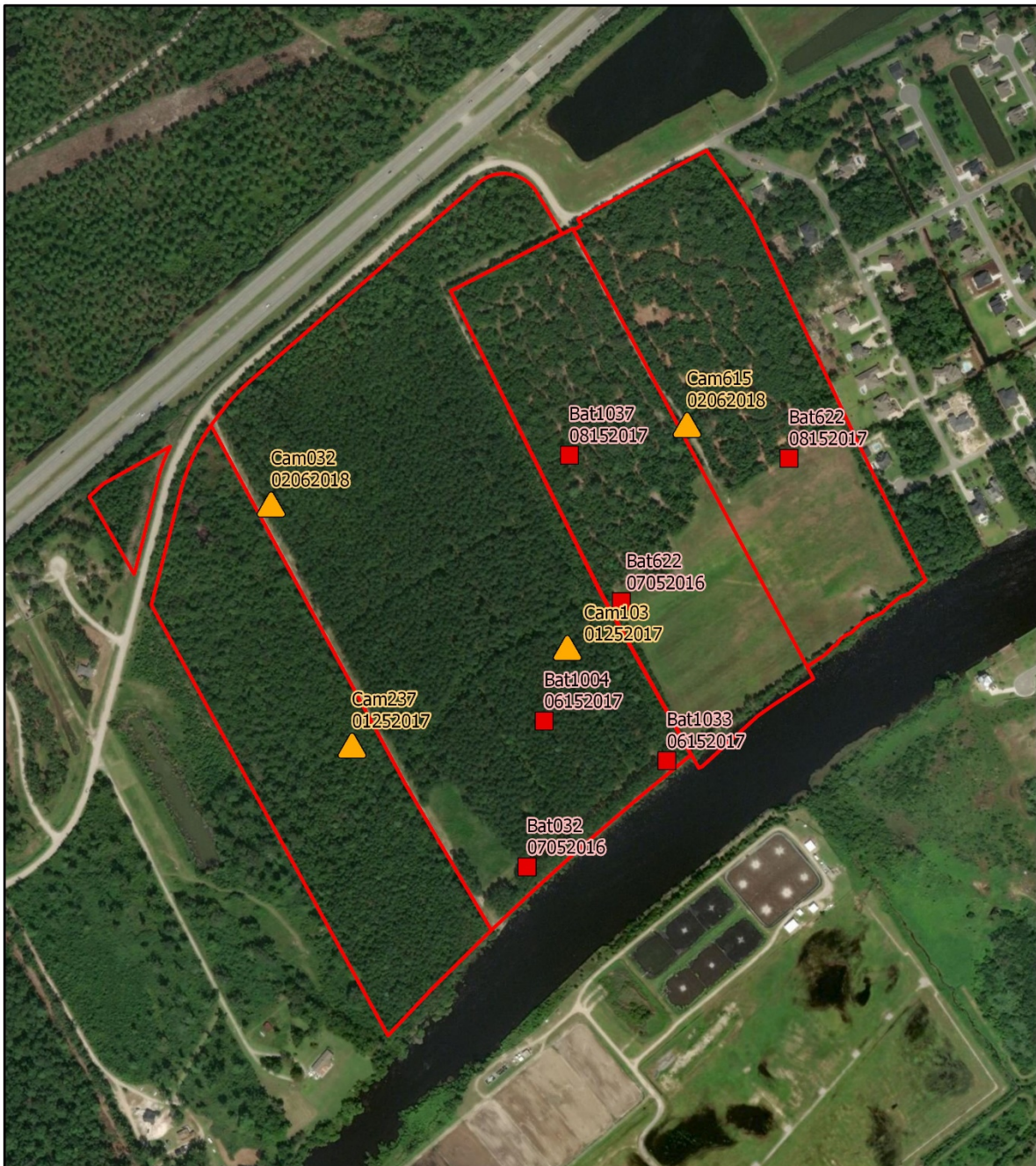
Bat Species Codes and Scientific Names

Species Codes	Species Name	Pronunciation	Meaning	Common Name
CORRAF • CORA	<i>Corynorhinus rafinesquii</i>	Core—ee—no—rine—us raff—ah— nesk —kee—eye	Rafinesque's club—noised one	Rafinesque's big—eared bat
CORTOW • COTO	<i>Corynorhinus townsendii</i>	Core—ee—no—rine—us town— send —ee—eye	Townsend's club—noised one	Townsend's big—eared bat
EPFUS • EPFU	<i>Eptesicus fuscus</i>	Ey— tes —ah—cus fuss —cuss	Flying brown one	Big brown bat
LASNOC • LANO	<i>Lasiotycteris noctogans</i>	Lay—zee—oh— nick —ter—is nock—ti—vah—gans	Hairy and nocturnal night wanderer	Silver—haired bat
LASBOR • LABO	<i>Lasiurus borealis</i>	Lay—zee— your —us bore—ee—al—is	Hairy tailed northern one	(Eastern) red bat
LASCI • LACI	<i>Lasiurus cinereus</i>	Lay—zee— your —us sa— near —ee—pe—us	Hairy tailed ash colored one	Hoary bat
LASINT • LASI	<i>Lasiurus intermedius</i>	Lay—zee— your —us in—ter— meed —ee—us	Hairy tailed one from the middle	Northern yellow bat
LASSEM — LASE	<i>Lasiurus seminus</i>	Lay—zee— your —us sem—a— nole —us	Hairy tailed Seminoe one	Seminoe bat
MYOADS • MYAR	<i>Myotis austroriparius</i>	My— oh —tis ari—tröh—rye— pare —ee—us	Mouse—eared southern streambed one	Southeastern myotis
MYOGRI • MYGR	<i>Myotis grisescens</i>	My— oh —tis gri— sess —sens	Mouse—eared one beginning to gray	Gray myotis
MYOLEI • MYLE	<i>Myotis leibii</i>	My— oh —tis lee—bee—eye	Mouse—eared one of Leib's	Eastern small—footed myotis
MYOLUC • MYLU	<i>Myotis lucifugus</i>	My— oh —tis loo— off —ah—guss	Mouse—eared light—fleeing one	Little brown myotis
MYOSEP • MYSE	<i>Myotis septentrionalis</i>	My— oh —tis sep— ten —tree—oh— nal —is	Mouse—eared northern one	Northern (long—eared) myotis
MYOSOD • MYSO	<i>Myotis sodalis</i>	My— oh —tis so— dal —is	Mouse—eared comrade	Indiana myotis
NYCHUM • NYHU	<i>Nycticeius humeralis</i>	nitch—tahn—zee—us hume—er—al—is	Night hunter pertaining to the humerus	Evening bat
PERSUB • PESU	<i>Perimyotis (Pipistrellus) subflavus</i>	Pare—ee—my—oh—tis sub— flave —us	Somewhat mouse eared yellow one	Twin-colored bat (eastern pip)

Four-letter Code, Status, and Habitat Information

CODE	SCIENTIFIC NAME	COMMON NAME	G-RANK	S-RANK	LEGAL STATUS	SC SWAP PRIORITY	Habitat
CORA	<i>Corynorhinus rafinesquii</i>	Rafinesque's Big-eared Bat	G3/G 4	S2?	State Endangered	Highest	T-beam and I-beam bridges, abandoned buildings, old bunkers and tunnels, cavity trees, rock outcrops, mines, caves
EPFU	<i>Eptesicus fuscus</i>	Big Brown Bat	G5	SNR		Highest	buildings, cavity trees, under bridges and in bat boxes; forage in open fields or forest gaps
LABO	<i>Lasiurus borealis</i>	Red Bat	G5	SNR		Highest	thinned stands; roost on smaller branches or twigs, often in the hardwood tree canopy; may roost in leaf litter
LACI	<i>Lasiurus cinereus</i>	Hoary Bat	G5	S?		Highest	tree cavities, trunks, tree foliage, squirrel nests, and Spanish moss
LAIN	<i>Lasiurus intermedius</i>	Northern Yellow Bat	G4/G 5	S?	Of concern, State	Highest	forage over open areas such as fields, pastures, golf courses, marshes, and along lake and forest edges; roost in clumps of Spanish moss or under old palm fronds
LANO	<i>Lasionycteris noctivagans</i>	Silver-haired Bat	G5	SNR		Highest	roosts include tree cavities, under loose bark, rock crevices, under tree foliage, and occasionally in buildings, stacks of firewood, and bird boxes; forage over water
LASE	<i>Lasiurus seminolus</i>	Seminole Bat	G5	SNR		Highest	roost in large pines located near forested corridors; may roost in leaf litter
MYAU	<i>Myotis austroriparius</i>	Southeastern Bat	G3/G 4	S1	State Threatened	Highest	caves (including limestone sinks), mines, abandoned buildings, and large hollow trees; prefers to feed and roost over water

MYLE	<i>Myotis leibii</i>	Eastern Small-footed Myotis	G3	S1	State Threatened	Highest	caves, mines, abandoned buildings, rock crevices and shelters, and crevices within bridges in wooded areas
MYLU	<i>Myotis lucifugus</i>	Little Brown Bat	G5	S3?		Highest	buildings and picnic shelters, cavity trees, caves
MYSE	<i>Myotis septentrionalis</i>	Northern Long-eared Bat	G5	S4	Federally Threatened	Highest	crevices and cavities in dead or live-damaged trees, but they sometimes roost between loose bark and the bole of dead trees; forage in mature stands
NYHU	<i>Nycticeius humeralis</i>	Evening Bat	G5				bottomland forests, waterways, Roosts in hollow trees, loose bark, Spanish moss, under palm fronds, in buidings/ attics
PESU	<i>Perimyotis subflavus</i>	Tri-colored Bat	G5	SNR		Highest	abandoned mines and caves, bridges, buildings
TABR	<i>Tadarida brasillensis</i>	Brazilian Free-tailed Bat	G5				Use wide variety of foraging habitats. Day roosts: buildings, attic, bridges, hollow trees.



Bat Detector & Camera Trap Locations **Cypress Cove, Long Bay Marina, South & North Bay Cove** Horry County, SC

ESRI World Imagery 9/9/2017



0 250 500 US Feet

Note: Easement and parcel boundaries
depicted on this map are for informational
purposes and do not represent legal boundary
surveys.
Christopher R. Wilson
9/11/2018



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Camera Trapping Surveys—I used baited camera traps to detect the presence of large- and medium size mammals. *Reconyx Hyperfire PC800* cameras were deployed at four locations on the properties during January 2017 and February 2018. Each camera was attached to a tree with a cable lock approximately 2' above the ground. A perforated can of tuna was nailed to a tree approximately 3'-6' in front of the camera as bait to attract carnivore species (bears, weasels, mink, skunk, etc.). Peanut butter and jelly were also used as bait to attract rodents (woodrats, rabbits). The resulting photographs were identified and processed using Camelot software (v1.4.5). Results are listed in the tables below and representative photographs are included in the photo-document.

Species detected on the camera traps were Bobcat, Opossum, Raccoon, Grey Squirrel, White-tailed Deer, and Eastern Woodrat. Given their range size, abundance, and habitat requirements, all mammal species detected on camera traps are likely to occur across all four properties.

The Eastern Woodrat (*Neotoma floridana haematorea*) is a State Concern Species, is considered State Vulnerable (S3/S4), and is a SC SWAP Moderate Priority Species. Eastern woodrats are found within a variety of habitats, particularly mesic scrub thickets, deciduous forests, and hardwood pine forests within the coastal plain. Multiple photographs of the Eastern Woodrat were collected at CAM032 on the boundary between Cypress Cove and Long Bay within the pine plantation forest, which has a deciduous understory. In addition to the camera trap detections, woodrat middens were photographed at two locations on the South Bay Cove property (see photo-document).

Camera Trapping Results - Summary
Cypress Cove/Long Bay/North Bay/South Bay Properties
January 2017 & February 2018

Species	Number of Trap Stations Detected	Number of Photos	Independent Observations (>20 mins between trigger events)	Nocturnal (%)	Nights Elapsed	Abundance Index
Virginia Opossum	3	887	38	92.11	27	140.7
Common Raccoon	3	1761	20	100	27	74.1
White-tailed Deer	1	105	6	100	27	22.2
Eastern Gray Squirrel	2	8	2	0	27	7.4
Bobcat	1	30	1	0	27	3.7
Eastern Woodrat	1	10	1	100	27	3.7

Species Detected at Camera Trap Stations
Cypress Cove/Long Bay/North Bay/South Bay Properties
January 2017 & February 2018

Camera Station	Property/ Species Detected
Cam237 01252017	Cypress Cove
	Common raccoon
	Eastern Gray Squirrel
	Virginia Opossum
Cam032 02062018	Cypress Cove/Long Bay Marina
	Bobcat
	Eastern Woodrat
	Virginia Opossum
Cam103 01252017	Long Bay Marina
	Common raccoon
	Eastern Gray Squirrel
	Virginia Opossum
	White-tailed deer
Cam615 02062018	North Bay Cove / South Bay Cove
	Common raccoon

Herpetiles-

Southern Toad, Eastern Box Turtle, Eastern Glass Lizard, and Green Anole were encountered during field visits. The Eastern Box Turtle (*Terrapene carolina*) is a Moderate Priority Species under the SC SWAP. The box turtle prefers moist woodlands with sandy or loamy soils in the open for egg laying, as well as loose soils and leaf litter for burrowing. It was observed on the boundary between South Bay Cove and North Bay Cove properties, and likely occurs throughout all four properties.

Wildlife Species Observed During Surveys - 2016/ 2017/2018

GROUP	Common Name	SCIENTIFIC NAME	Cypress Cove	Long Bay	South Bay Cove	North Bay Cove	SC SRANK	SC STATUS	SC SWAP PRIORITY	SC SWAP HABITAT REQMNT	ACJV27 Priority	BCC27	Notes
Amphibian	Southern Toad	<i>Anaxyrus terrestris</i>		X	X								
Bird	American Crow	<i>Corvus brachyrhynchos</i>		X	X								
Bird	American Redstart	<i>Setophaga ruticilla</i>		X	X								
Bird	Barn Swallow	<i>Hirundo rustica</i>		X	X								Flyover
Bird	Black Vulture	<i>Coragyps atratus</i>	X	X							Moderate Priority		Flyover
Bird	Blue Grosbeak	<i>Passerina caerulea</i>		X	X		SNRB		Moderate	hardwood saplings or shrubs for nesting; open areas			
Bird	Blue Jay	<i>Cyanocitta cristata</i>		X	X	X							
Bird	Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	X	X	X								
Bird	Boat-tailed Grackle	<i>Quiscalus major</i>	X	X	X								
Bird	Brown-headed Cowbird	<i>Molothrus ater</i>	X	X	X								
Bird	Carolina Chickadee	<i>Poecile carolinensis</i>	X	X	X		SNR		Moderate	mature woodlands with dead snags for nest cavities; will use bird boxes			
Bird	Carolina Wren	<i>Thryothorus ludovicianus</i>	X	X	X	X	SNR		Moderate	woodland thickets; leaf litter; cavities or ledges for nesting; will use bird boxes and many other human material			
Bird	Chimney Swift	<i>Chaetura pelagica</i>			X	X	SNRB		High	open areas for foraging; cavity for nesting (often chimneys)	High Priority		Flyover
Bird	Common Grackle	<i>Quiscalus quiscula</i>	X	X	X	X							
Bird	Common Yellowthroat	<i>Geothlypis trichas</i>		X	X								
Bird	Eastern Kingbird	<i>Tyrannus tyrannus</i>	X	X	X	X	SNRB		High	open areas with scattered trees and other perches	High Priority		

Bird	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	X	X			SNR		High	brushy areas; woodland margins and understory	High Priority		
Bird	Fish Crow	<i>Corvus ossifragus</i>	X	X	X	X							
Bird	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	X	X	X	X							
Bird	gull sp.			X	X	X							Flyover
Bird	Indigo Bunting	<i>Passerina cyanea</i>	X	X	X		SNRB		Moderate	woodland margins; shrubby thickets in openings	Moderate Priority		
Bird	Laughing Gull	<i>Leucophaeus atricilla</i>		X	X								Flyover
Bird	Mourning Dove	<i>Zenaida macroura</i>	X	X	X	X							
Bird	Northern Cardinal	<i>Cardinalis cardinalis</i>	X	X	X	X							
Bird	Northern Mockingbird	<i>Mimus polyglottos</i>	X	X									
Bird	Osprey	<i>Pandion haliaetus</i>				X							Flyover
Bird	Painted Bunting	<i>Passerina ciris</i>		X	X	X	SNRB		Highest	woodland margins; dense thickets in openings	Highest Priority	BCC27 -YES	
Bird	Pileated Woodpecker	<i>Dryocopus pileatus</i>	X	X	X	X	SNR		Moderate	extensive mature forests with dead snags for nest cavities; probably prefer riverbottom hardwoods			
Bird	Pine Warbler	<i>Setophaga pinus</i>	X	X	X		SNR		Moderate	typically middle to mature pine forests	Moderate Priority		
Bird	Purple Martin	<i>Progne subis</i>			X	X	SNRB		High	forage over open areas near or over water; nest in man- made houses or gourds			
Bird	Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	X	X	X		SNR		Moderate	open, mature woods with dead snags for nest cavities; man-made poles with cavities			
Bird	Red-shouldered Hawk	<i>Buteo lineatus</i>	X	X			SNR		Moderate	wet or moist hardwood forests for nesting and foraging	Moderate Priority		
Bird	Red-tailed Hawk	<i>Buteo jamaicensis</i>		X	X								

Bird	Summer Tanager	<i>Piranga rubra</i>	X	X			S?		Moderate	dry, mixed woodlands	Moderate Priority		
Bird	Tufted Titmouse	<i>Baeolophus bicolor</i>	X	X	X								
Bird	Turkey Vulture	<i>Cathartes aura</i>	X	X									
Bird	White-eyed Vireo	<i>Vireo griseus</i>		X	X		S4?B		Moderate	dense, moist thickets	Moderate Priority		
Bird	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	X	X			S4		High	closed canopy deciduous forests with thick tangles	High Priority		
Mammal	Bobcat	<i>Lynx rufus</i>	X	X									
Mammal	Brazilian Free-tailed Bat	<i>Tadarida brasiliensis</i>		X	X								
Mammal	Common Raccoon	<i>Procyon lotor</i>	X	X	X	X							
Mammal	Eastern Gray Squirrel	<i>Sciurus carolinensis</i>	X	X									
Mammal	Eastern Woodrat	<i>Neotoma floridana</i>	X	X	X		S3/S4	Of concern, State	Moderate	wide variety of habitats			
Mammal	Evening Bat	<i>Nycticeius humeralis</i>		X									
Mammal	Hoary Bat	<i>Lasiurus cinereus</i>		X			S?		Highest	tree cavities, trunks, tree foliage, squirrel nests, and Spanish moss			
Mammal	Northern Yellow Bat	<i>Lasiurus intermedius</i>		X	X		S?	Of concern, State	Highest	forage over open areas such as fields, pastures, golf courses, marshes, and along lake and forest edges; roost in clumps of Spanish moss or under old palm fronds			
Mammal	Red Bat	<i>Lasiurus borealis</i>		X	X		SNR		Highest	thinned stands; roost on smaller branches or twigs, often in the hardwood tree canopy; may roost in leaf litter			

Mammal	Silver-haired Bat	<i>Lasionycteris noctivagans</i>		X	X		SNR		Highest	roosts include tree cavities, under loose bark, rock crevices, under tree foliage, and occasionally in buildings, stacks of firewood, and bird boxes; forage over water			Likely misidentified by Kaleidoscope
Mammal	Tri-colored Bat			X	X		SNR		Highest	abandoned mines and caves, bridges, buildings			
Mammal	Virginia Opossum	<i>Didelphis virginiana</i>	X	X									
Mammal	White-tailed Deer	<i>Odocoileus virginianus</i>		X									
Reptile	Eastern Box Turtle	<i>Terrapene carolina</i>			X	X	SNR		Moderate	moist woodlands; sandy or loamy soils in open for egg laying; loose soils and leaf litter for burrowing			
Reptile	Eastern Glass Lizard	<i>Ophisaurus ventralis</i>		X									
Reptile	Green Anole	<i>Anolis carolinensis</i>			X								

Total Wildlife Species Observed	28	49	39	16
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Total species across all four properties combined = 54

PHOTO-DOCUMENT

Cypress Cove/Long Bay Marina/North Bay Cove/South Bay Cove Properties
Photographs by Christopher Wilson
2016-2018



Photo-point Locations

Cypress Cove, Long Bay Marina, South & North Bay Cove

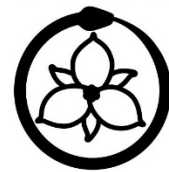
Horry County, SC

ESRI World Imagery 9/9/2017



0 250 500 US Feet

Note: Easement and parcel boundaries depicted on this map are for informational purposes and do not represent legal boundary surveys.
Christopher R. Wilson
9/10/2018



CONSERVATION
ECOLOGY LLC



Photo 1-Meadow--Christopher R. Wilson-Long Bay Marina-May 06, 2016



Photo 2-Planted pine forest-Hardwood understory-Christopher R. Wilson-Long
Bay Marina / Cypress Cove-May 06, 2016



Photo 3-Planted pine forest-Hardwood understory-Christopher R. Wilson-Long
Bay Marina-May 22, 2017



Photo 4-Field--Christopher R. Wilson-South Bay Cove / North Bay Cove-May 22, 2017



Photo 5-Field--Christopher R. Wilson-South Bay Cove / North Bay Cove-May 22, 2017



Photo 6-Temporary pools-Potential amphibian breeding habitat-Christopher R. Wilson-Cypress Cove-February 27, 2017



Photo 7-White-tailed Deer-Camera Trap photograph-Christopher R. Wilson-Long Bay Marina / South Bay-February 05, 2017



2018-02-07 2:12:03 AM M 4/5 46°F



PC800 PROFESSIONAL

Photo 8-Eastern_Woodrat-SC- State Concern species; SC-SWAP Moderate Priority-Christopher R. Wilson-Long Bay Marina / Cypress Cove-February 07, 2018



2018-02-08 7:32:12 AM M 5/5 53°F



PC800 PROFESSIONAL

Photo 9-Bobcat--Christopher R. Wilson-Long Bay Marina / Cypress Cove-
February 08, 2018



Photo 10-Eastern_Box_Turtle-SC-SWAP Moderate Priority Species-Christopher
R. Wilson-South Bay Cove / North Bay Cove-May 22, 2017



Photo 11-Carolina_Anole_--Christopher R. Wilson-South Bay Cove -May 22, 2017



Photo 12-Southern Toad--Christopher R. Wilson-Long Bay Marina / South Bay-
May 22, 2017



Photo 13-Eastern_Woodrat_midden-SC- State Concern species; SC-SWAP
Moderate Priority-Christopher R. Wilson-South Bay Cove -May 22, 2017



Photo 14-Eastern_Woodrat _midden-SC- State Concern species; SC-SWAP
Moderate Priority-Christopher R. Wilson-South Bay Cove -May 22, 2017



Photo 15-Painted_Bunting-SC-SWAP Highest Priority Species.-Christopher R.
Wilson-North Bay Cove-May 22, 2017



Photo 16-Painted_Bunting-SC-SWAP Highest Priority Species.-Christopher R.
Wilson-Long Bay Marina-May 03, 2018



Photo 17-Painted Bunting-SC-SWAP Highest Priority Species.-Christopher R.
Wilson-Long Bay Marina-May 03, 2018



Photo 18-Red-headed woodpecker-SC-SWAP Moderate Priority Species-
Christopher R. Wilson-Long Bay Marina-May 03, 2018



Photo 19-Pine_Warbler-SC-SWAP Moderate Priority Species-Christopher R.
Wilson-Long Bay Marina-May 03, 2018

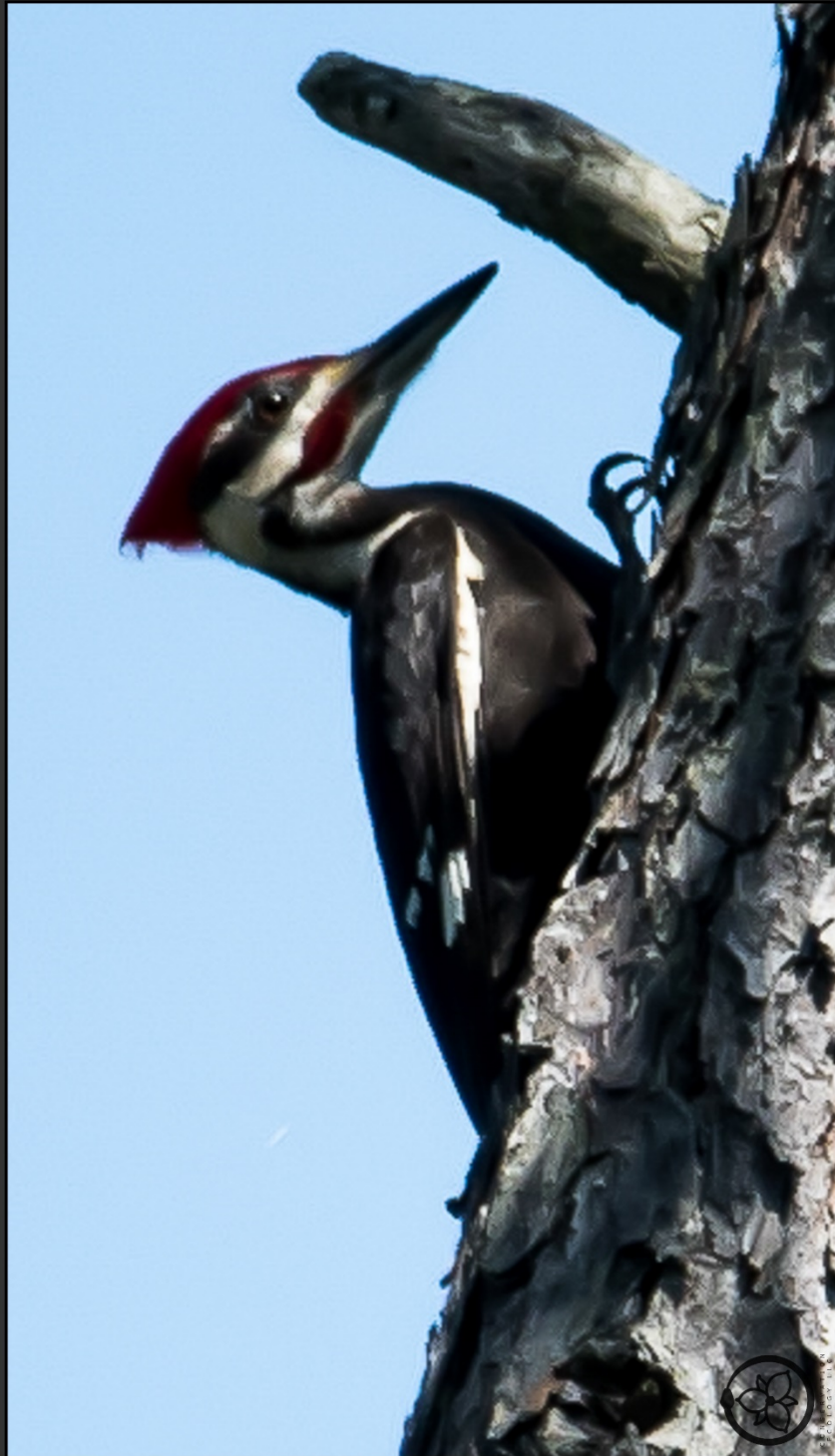


Photo 20-Pileated woodpecker-SC-SWAP Moderate Priority Species-Christopher R. Wilson-Long Bay Marina / Cypress Cove-May 03, 2018



Photo 21-Pileated woodpecker-SC-SWAP Moderate Priority Species-Christopher R. Wilson-Long Bay Marina / Cypress Cove-May 03, 2018