



Roy Cooper  
Governor

D. Reid Wilson  
Secretary, Department of Natural and Cultural Resources

Will Summer  
Director, Division of Land and Water Stewardship  
Executive Director, NC Land and Water Fund

November 30, 2023

RE: Nomination of Black River in North Carolina for National Natural Landmark recognition

To Whom it May Concern:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about the natural heritage resources associated with the Black River. NCNHP has recognized the Black River ecosystem as among the most significant ecological resources of the state from the program's early days. All three of the separately defined NCNHP natural areas that make up the nomination receive the program's Exceptional rating, the highest category of importance for biodiversity. The outstanding features in the three are different and complement each other to represent much of the diversity found in Southern blackwater river systems.

Best known is the ancient cypress stand in the middle portion of the river. This is the oldest stand of trees in eastern North America. Since the first documentation of the age of trees by dendrochronologist David Stahle in the early 1990s, knowledge of the value of this area has continued to grow. Newer study has documented older and older trees, ranging at least to 2,600 years. Tree ring patterns show a signal from weather that makes them an unparalleled scientific resource for studying past climatic changes. In addition to the value of the individual trees, the great age of the stand makes it one of the premier examples of a cypress-gum swamp forest community and provides a special attraction for public enjoyment. Rare bats, present along all parts of the river, particularly benefit from this area.

The upstream part of the river is higher and less swampy. Its large areas of mature forest make it the best site in North Carolina, and perhaps in the larger region, for the bottomland hardwood forests of blackwater rivers. Several distinct community types of bottomland oaks occur here. In addition to rare bats, several rare plant and animal species occur here. These include the thin-wall quillwort (*Isoetes microvela*), a narrow endemic of the southern outer Coastal Plain of North Carolina. The species is being considered for federal listing and the population along the Black River is considered key to the survival of the species. Other rare species associated with this stretch of the Black River include golden hedge-hyssop (*Gratiola lutea*), kidney sedge (*Carex reniformis*), and rainbow snake (*Farancia erythrogramma*), among others.

The downstream part of the Black River floodplain is influenced by tidal fluctuations spreading upstream from Wilmington. It supports some of the most extensive mature tidal swamp forests known in the state, as well as a rare type of tidal freshwater marsh.

Multiple rare plant species here include one of the largest populations of riverbank evening-primrose (*Oenothera riparia*) and grassleaf arrowhead (*Sagittaria weatherbiana*), among others. This portion of the river shows the effects of rising sea level. While the swamp forests can be expected to change over time, this area provides habitat to which the diverse tidal freshwater marshes downstream will be able to migrate as sea level continues to rise.

The accompanying tables list all of the natural heritage resources in the nominated area. Besides the value of the individual features, the interconnected nature of the river, the large amount of conserved land, and the potential for additional conservation make this an ideal system for broad scale conservation effort.

Thank you for the opportunity to comment on this proposal.

Sincerely,

A handwritten signature in black ink that reads "Misty Buchanan". The signature is written in a cursive, flowing style.

Misty Buchanan  
Deputy Director for Natural Heritage

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area  
 Black River NNL nomination  
 November 30, 2023  
 NCNHDE-24149

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Animal Assemblage	12981	Waterbird Colony	Waterbird Colony	1996-05	H?	3-Medium			GNR	S3
Bird	15722	<i>Dryobates borealis</i>	Red-cockaded Woodpecker	2015	E	3-Medium	Endangered	Endangered	G3	S2
Bird	38155	<i>Elanoides forficatus</i>	Swallow-tailed Kite	2018-05-05	E	3-Medium		Significantly Rare	G5	S1B
Bird	24110	<i>Mycteria americana</i>	Wood Stork	2006-06-12	E	3-Medium	Threatened	Threatened	G4	S1B,S1N
Freshwater Bivalve	18640	<i>Elliptio folliculata</i>	Pod Lance	2022-04-21	E	3-Medium		Special Concern	G2G3	S2
Freshwater Bivalve	1439	<i>Elliptio marsupiobesa</i>	Cape Fear Spike	2005-05-12	E	3-Medium		Special Concern	G3Q	S2
Freshwater Bivalve	27	<i>Elliptio marsupiobesa</i>	Cape Fear Spike	1999-09-01	H?	3-Medium		Special Concern	G3Q	S2
Freshwater Bivalve	26073	<i>Elliptio marsupiobesa</i>	Cape Fear Spike	1998-11-09	H?	3-Medium		Special Concern	G3Q	S2
Freshwater Bivalve	1450	<i>Fusconaia masoni</i>	Atlantic Pigtoe	1995-09-27	H?	3-Medium	Threatened	Threatened	G1	S3
Freshwater Bivalve	25392	<i>Lampsilis cariosa</i>	Yellow Lampmussel	1990-07-12	H?	3-Medium		Endangered	G3G4	S3
Freshwater Bivalve	708	<i>Lampsilis radiata</i>	Eastern Lampmussel	2016-08-17	E	3-Medium		Threatened	G5	S3
Freshwater Bivalve	25941	<i>Lampsilis radiata</i>	Eastern Lampmussel	1990-07-12	H?	3-Medium		Threatened	G5	S3
Freshwater Bivalve	29612	<i>Villosa delumbis</i>	Eastern Creekshell	1995-08-25	H?	3-Medium		Significantly Rare	G4	S4
Freshwater Bivalve	29613	<i>Villosa delumbis</i>	Eastern Creekshell	2022-04-21	E	3-Medium		Significantly Rare	G4	S4
Freshwater Bivalve	29614	<i>Villosa delumbis</i>	Eastern Creekshell	1998-11-05	H?	3-Medium		Significantly Rare	G4	S4
Freshwater Fish	32173	<i>Cyprinella sp. cf. zanema</i>	Thinlip Chub	2019-09-23	E	3-Medium		Special Concern	G2Q	S2

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Freshwater Fish	4982	Cyprinella sp. cf. zanema	Thinlip Chub	2019-10-03	E	3-Medium	---	Special Concern	G2Q	S2
Freshwater Fish	37054	Enneacanthus chaetodon	Blackbanded Sunfish	2016-12-19	E	2-High	---	Significantly Rare	G3G4	S3
Freshwater Fish	36903	Notropis chalybaeus	Ironcolor Shiner	1976-08-01	H	3-Medium	---	Threatened	G4	S2S3
Freshwater Fish	37302	Notropis chalybaeus	Ironcolor Shiner	2016-12-19	E	3-Medium	---	Threatened	G4	S2S3
Freshwater Fish	10158	Noturus sp. 2	Broadtail Madtom	1973	H	3-Medium	---	Special Concern	G2	S1
Mammal	17113	Corynorhinus rafinesquii macrotis	Eastern Big-eared Bat	2022-01-11	E	3-Medium	---	Special Concern	G3G4T3	S3
Mammal	38957	Corynorhinus rafinesquii macrotis	Eastern Big-eared Bat	2017-06-07	E	2-High	---	Special Concern	G3G4T3	S3
Mammal	38966	Myotis austroriparius	Southeastern Bat	2017-03-29	E	2-High	---	Special Concern	G4	S2
Mammal	41485	Myotis septentrionalis	Northern Long-eared Bat	2022-02-22	E	2-High	Endangered	Threatened	G2G3	S2
Mammal	37521	Myotis septentrionalis	Northern Long-eared Bat	2017-06-14	E	2-High	Endangered	Threatened	G2G3	S2
Mammal	39034	Perimyotis subflavus	Tricolored Bat	2017-03-29	E	2-High	Proposed Endangered	Endangered	G3G4	S3
Mayfly	35325	Amercaenis cusabo	a mayfly	1993-08	H?	3-Medium	---	Significantly Rare	G3	S1
Mayfly	18107	Dolania americana	American Sand Burrowing Mayfly	1980-Pre	H	3-Medium	---	Significantly Rare	G4	SH
Moss	23413	Bruchia brevifolia	A Pygmy Moss	1954-02-18	H	3-Medium	---	Significantly Rare Throughout	G3G4	S1?
Natural Community	490	Blackwater Bottomland Hardwoods (High Subtype)	---	2017-05-30	A	3-Medium	---	---	G3G4	S2S3
Natural Community	41819	Blackwater Bottomland Hardwoods (High Subtype)	---	2022-05-19	C	2-High	---	---	G3G4	S2S3

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Natural Community	30968	Blackwater Bottomland Hardwoods (Low Subtype)	---	2010	A	3-Medium	---	---	G4?	S3
Natural Community	41818	Blackwater Bottomland Hardwoods (Low Subtype)	---	2022-05-19	C	2-High	---	---	G4?	S3
Natural Community	30967	Blackwater Bottomland Hardwoods (Swamp Transition Subtype)	---	2010	A	3-Medium	---	---	G3G5	S3
Natural Community	14926	Blackwater Bottomland Hardwoods (Swamp Transition Subtype)	---	2016	BC	3-Medium	---	---	G3G5	S3
Natural Community	24673	Blackwater Bottomland Hardwoods (Swamp Transition Subtype)	---	2022-05-19	C	2-High	---	---	G3G5	S3
Natural Community	13613	Blackwater Levee/Bar Forest	---	1995-03-25	AB	3-Medium	---	---	G2G3	S2S3
Natural Community	17485	Blackwater Levee/Bar Forest	---	1994-06-01	C	3-Medium	---	---	G2G3	S2S3
Natural Community	15542	Brownwater Bottomland Hardwoods (Swamp Transition Subtype)	---	2010	B	2-High	---	---	G3G4	S3
Natural Community	20126	Brownwater Levee Forest (Low Levee Subtype)	---	2010	B	2-High	---	---	G3G4	S3S4
Natural Community	37066	Coastal Plain Small Stream Swamp	---	2012	A?	2-High	---	---	G4?	S4
Natural Community	757	Cypress--Gum Swamp (Blackwater Subtype)	---	2008-01-30	A	2-High	---	---	G4?	S4

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Natural Community	14696	Oxbow Lake (Blackwater Subtype)	---	1995-11-21	E	2-High	---	---	G3?	S2
Natural Community	110	Piedmont/Coastal Plain Heath Bluff	---	1994-06-01	B	3-Medium	---	---	G3	S3
Natural Community	37390	Tidal Freshwater Marsh (Narrowleaf Pondlily Subtype)	---	2022-05-19	B	2-High	---	---	G1G2	S1S2
Natural Community	37928	Tidal Freshwater Marsh (Southern Wild Rice Subtype)	---	2000-06-03	B	2-High	---	---	G3G5	S4
Natural Community	25634	Tidal Swamp (Cypress--Gum Subtype)	---	2022-05-19	A	2-High	---	---	G3G4	S4
Natural Community	18875	Tidal Swamp (Cypress--Gum Subtype)	---	2008-03-22	B	2-High	---	---	G3G4	S4
Natural Community	9220	Xeric Sandhill Scrub (Typic Subtype)	---	2018-08-10	BC	3-Medium	---	---	G3?	S3S4
Natural Community	3500	Xeric Sandhill Scrub (Typic Subtype)	---	1991-08-21	CD	2-High	---	---	G3?	S3S4
Reptile	39881	Crotalus horridus	Timber Rattlesnake	2021-10-25	B	3-Medium	---	Special Concern	G4	S3
Reptile	34907	Farancia erytrogramma	Rainbow Snake	2022-05-04	AB	3-Medium	---	Significantly Rare	G4	S3
Reptile	38365	Farancia erytrogramma	Rainbow Snake	2022-04-27	B	3-Medium	---	Significantly Rare	G4	S3
Vascular Plant	8160	Bacopa caroliniana	Blue Water-hyssop	1981-04-27	E	3-Medium	---	Threatened	G4G5	S1
Vascular Plant	31106	Bacopa rotundifolia	Round-leaf Water-hyssop	2022	F	2-High	---	Significantly Rare Disjunct	G5	SH
Vascular Plant	29876	Carex lupuliformis	False Hop Sedge	2017-08-31	A	3-Medium	---	Significantly Rare Peripheral	G4	S1
Vascular Plant	26115	Carex reniformis	Kidney Sedge	2007-05-24	E	2-High	---	Threatened	G4?	S1
Vascular Plant	28735	Carex reniformis	Kidney Sedge	2004-06-24	E	2-High	---	Threatened	G4?	S1

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	9845	Carex socialis	Social Sedge	1998-05-12	H	3-Medium	---	Significantly Rare Peripheral	G4	S1
Vascular Plant	14196	Clinopodium georgianum	Georgia Calamint	1994-03-19	H	3-Medium	---	Endangered	G4	S1
Vascular Plant	42370	Cyperus virens	Green Flatsedge	2022-08-04	CD	2-High	---	Special Concern Vulnerable	G5	S1
Vascular Plant	17950	Epidendrum conopseum	Green Fly Orchid	1981	E	3-Medium	---	Threatened	G4	S1S2
Vascular Plant	22888	Gratiola lutea	Golden Hedge-hyssop	2004-06-06	E	3-Medium	---	Special Concern Vulnerable	G5	S1
Vascular Plant	24606	Gratiola lutea	Golden Hedge-hyssop	2006-06-12	E	2-High	---	Special Concern Vulnerable	G5	S1
Vascular Plant	24607	Gratiola lutea	Golden Hedge-hyssop	2006-06-12	E	2-High	---	Special Concern Vulnerable	G5	S1
Vascular Plant	24604	Gratiola lutea	Golden Hedge-hyssop	2006-06-12	E	2-High	---	Special Concern Vulnerable	G5	S1
Vascular Plant	24605	Gratiola lutea	Golden Hedge-hyssop	2006-06-12	E	2-High	---	Special Concern Vulnerable	G5	S1
Vascular Plant	24602	Isoetes microvela	Thin-wall Quillwort	2021-06-15	C	2-High	---	Threatened	G1	S1
Vascular Plant	41033	Isoetes microvela	Thin-wall Quillwort	2021-06-18	A	2-High	---	Threatened	G1	S1
Vascular Plant	24601	Isoetes microvela	Thin-wall Quillwort	2021-06-18	B	2-High	---	Threatened	G1	S1
Vascular Plant	27002	Leersia lenticularis	Catchfly Cutgrass	2003-10-25	E	2-High	---	Significantly Rare Peripheral	G5	S2?
Vascular Plant	9952	Luziola fluitans var. fluitans	Southern Water Grass	2002-04-27	E	3-Medium	---	Significantly Rare Peripheral	G5T5	S1S2
Vascular Plant	26902	Oenothera riparia	Riverbank Evening-primrose	2022-08-04	A	2-High	---	Significantly Rare Limited	G2G3	S2S3

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	23398	Phanopyrum gymnocarpon	Swamp Panic Grass	2003-10-25	E	3-Medium	---	Significantly Rare Other	G5	S2
Vascular Plant	42372	Phanopyrum gymnocarpon	Swamp Panic Grass	2022-08-04	E	2-High	---	Significantly Rare Other	G5	S2
Vascular Plant	13408	Sagittaria filiformis	Water Arrowhead	1981-04-27	F	3-Medium	---	Significantly Rare Peripheral	G4G5	SH
Vascular Plant	41817	Sagittaria weatherbiana	Grassleaf Arrowhead	2022-05-19	A	2-High	---	Endangered	G3G4	S2
Vascular Plant	12093	Sagittaria weatherbiana	Grassleaf Arrowhead	1949-04-23	H	3-Medium	---	Endangered	G3G4	S2

Natural Areas Documented Within Project Area

Site Name	Representational Rating	Collective Rating
CPF/Black River Aquatic Habitat	R1 (Exceptional)	C3 (High)
Cones Folly	R2 (Very High)	C2 (Very High)
CPF/Black River Headwaters	R1 (Exceptional)	C5 (General)
CPF/South River Aquatic Habitat	R2 (Very High)	C4 (Moderate)
Black River Cypress Swamp	R1 (Exceptional)	C3 (High)
Lower Black River Swamp	R1 (Exceptional)	C3 (High)
Upper Black River Bottomlands	R1 (Exceptional)	C2 (Very High)
South River Swamp Forest	R2 (Very High)	C3 (High)
Lower Big Colly Swamp	R5 (General)	C5 (General)
421 Sand Ridge	R1 (Exceptional)	C1 (Exceptional)

Managed Areas Documented Within Project Area\*

Managed Area Name	Owner	Owner Type
Black River Preserve	The Nature Conservancy	Private
Cape Fear River Wetlands Game Land	NC Wildlife Resources Commission	State
North Carolina Coastal Land Trust - Black River Preserve	North Carolina Coastal Land Trust	Private
Pender County Open Space	Pender County	Local Government
Sampson County Open Space	Sampson County	Local Government
Sampson County Open Space	Sampson County	Local Government
NC Hazard Mitigation Buyout Property - Sampson County	NC DPS, Division of Emergency Management	State



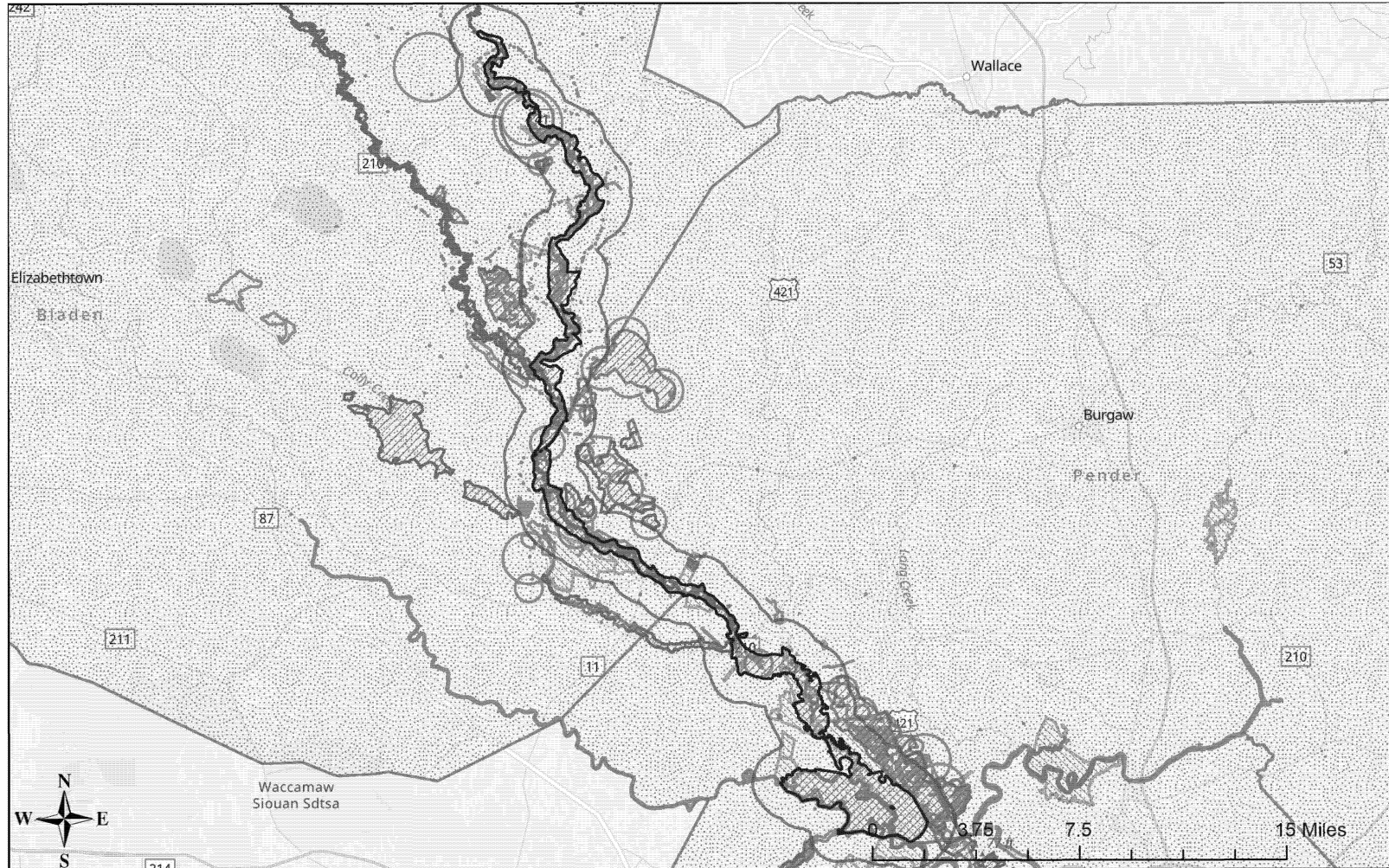
Managed Areas Documented Within Project Area\*

Managed Area Name	Owner	Owner Type
NC Hazard Mitigation Buyout Property - Sampson County	NC DPS, Division of Emergency Management	State
NC Hazard Mitigation Buyout Property - Sampson County	NC DPS, Division of Emergency Management	State
NC Hazard Mitigation Buyout Property - Sampson County	NC DPS, Division of Emergency Management	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Conservation Agreement	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State
North Carolina Coastal Land Trust Easement	North Carolina Coastal Land Trust	Private
North Carolina Coastal Land Trust Easement	North Carolina Coastal Land Trust	Private
Black River Cypress Swamp Registered Heritage Area (RMS)	NC DNCR, Natural Heritage Program	State
Cape Fear River Wetlands Game Land Dedicated Nature Preserve	NC DNCR, Natural Heritage Program	State
Upper Black River Bottomlands Registered Heritage Area (RMS)	NC DNCR, Natural Heritage Program	State

\*NOTE: If the proposed project intersects with a conservation/managed area, please contact the landowner directly for additional information. If the project intersects with a Dedicated Nature Preserve (DNP), Registered Natural Heritage Area (RHA), or Federally-listed species, NCNHP staff may provide additional correspondence regarding the project.

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on November 30, 2023; source: NCNHP, Fall (October) 2023. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

# NCNHDE-24149: Black River NNL nomination



November 30, 2023

-  Natural Heritage Element Occurrence (NHEO)
-  NHP Natural Area (NHNA)
-  Managed Area (MAREA)
-  Buffered Project Boundary
-  Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community  
 Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community