

# Pondberry - Potential Habitat, March 2021 - NC Department of Transportation

## File Geodatabase Feature Class



### Tags

Pondberry, *Lindera melissifolia*, Lind\_meli, Vascular Plant, Terrestrial, endangered, ecotone species, GIS-based model, expert model, Transportation, NRTR, NCDOT, Environment, Location, North Carolina, ATLAS

### Summary

This dataset was originally created in March 2020 as part of the Project ATLAS initiative at NCDOT to support the Environmental Analysis Unit (EAU) Mitigation and Modeling Unit with project delivery in the development phase.

Model output is binary and includes the USFWS species range, excluding historic counties. The species model range is split between "High" and "Low" potential habitat. "High potential habitat" represents GIS based layer areas deemed suitable habitat, and "Low potential habitat" representing areas identified as areas deemed low quality or non-habitat.

The USFWS Optimal Survey Window for Pondberry is: February - March and September - October

This dataset supports the production of the Natural Resources Technical Report (NRTR). This dataset also contains information that may assist biologists in preparing background information for field surveys, in order to address protected species for Threatened & Endangered Species Survey Reports, and/or Biological Assessments.

### Description

The Pondberry Potential Habitat dataset is a polygon layer depicting high and low potential habitat locations for Pondberry in NC counties that have a USFWS "current" status listing. This model identifies all year-round potential suitable habitat for the species.

Pondberry (*Lindera melissifolia*) occurs in seasonally flooded wetlands, sandy sinks, pond margins, and swampy depressions. This deciduous, aromatic shrub occurs in bottomland hardwood forests with perched water tables along inland areas of the southeastern United States. In the Coastal Plain of the Carolinas, the species occurs at the margins of limestone sinks and ponds and in undrained, shallow depressions of longleaf pine and pond pine forests. Known occurrences in North Carolina occur in the Small Depression Pocosin natural community, grow in soils with sandy sediments and high water table, contain high peat content in the subsurface, and include a prevalence of shrubs due to historically frequent or intense fires. It generally grows in somewhat shaded areas, but can tolerate full sun.

There are currently six known element occurrences (EOs) in NC, three of which are extant:

-Cumberland County (1)

-Sampson County (2)

-Onslow County (2). Note: One of the two Onslow County records is mapped with low accuracy.

-Bladen County: One Historical EO last seen in 1987 and believed to be destroyed (NC Natural Heritage Program (NHP) 2020). This county was excluded from the final model extent because of its' USFWS Historic status.

-One additional EO in Orange County is documented in NHP data based on a herbarium specimen from 1822. Site and surrounding areas have been surveyed extensively by experts on the species, and no potential habitat has been located (personal communication, J. Moore, U.S. Fish and Wildlife Service (USFWS)).

County Information:

- NHP listed counties: Cumberland, Onslow, and Sampson (Bladen and Orange are Historic)
- FWS listed counties: Cumberland, Onslow, and Sampson (Bladen is Historic)

For more information please click here

<https://xfer.services.ncdot.gov/gisdot/Metadata/Atlas/TechDocs/>

Datasets developed under Project ATLAS do not replace any NRTR work for future projects and may not be used as a replacement for site visits / field surveys by qualified professionals and hence should be used only as a supporting platform for decision making. Use of this dataset for project scoping or screening is merely pre-decisional.

### Credits

The Environmental Analysis Unit (EAU) Mitigation and Modeling Unit within NCDOT was tasked to create this dataset. This dataset supports the production of the Natural Resources Technical Report (NRTR). Annual maintenance of this dataset is handled by the EAU.

Support and maintenance of the enterprise spatial database where this data resides is handled by NCDIT's Transportation GIS Unit.

### Use limitations

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

Datasets developed under Project ATLAS do not replace any NRTR work for future projects and may not be used as a replacement for site visits / field surveys by qualified professionals and hence should be used only as a supporting platform for decision making. Use of this dataset for project scoping or screening is merely pre-decisional.

### Extent

**West** -79.113187    **East** -77.081313  
**North** 35.317300    **South** 34.434951

### Scale Range

**Maximum (zoomed in)** 1:5,000  
**Minimum (zoomed out)** 1:625,000

[ArcGIS Metadata](#) ►

[Topics and Keywords](#) ►

THEMES OR CATEGORIES OF THE RESOURCE    biota, geoscientificInformation, location, transportation, environment

\* CONTENT TYPE    Downloadable Data

EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION    No

PLACE KEYWORDS North Carolina

THESAURUS ▶

TITLE User

CREATION DATE 2019-08-30 00:00:00

PUBLICATION DATE 2020-12-16 00:00:00

[Hide Thesaurus ▲](#)

THEME KEYWORDS Pondberry, Lindera melissifolia, Lind\_meli, Vascular Plant, Terrestrial, endangered, ecotone species, GIS-based model, expert model, Transportation, NRTR, NCDOT, Environment, Location, North Carolina, ATLAS

THESAURUS ▶

TITLE User

CREATION DATE 2020-03-02 00:00:00

PUBLICATION DATE 2021-03-15 00:00:00

[Hide Thesaurus ▲](#)

[Hide Topics and Keywords ▲](#)

## Citation ▶

TITLE Pondberry - Potential Habitat, March 2021 - NC Department of Transportation

CREATION DATE 2020-03-02 00:00:00

PUBLICATION DATE 2021-03-15 00:00:00

PRESENTATION FORMATS digital map

FGDC GEOSPATIAL PRESENTATION FORMAT vector digital data

[Hide Citation ▲](#)

## Citation Contacts ▶

RESPONSIBLE PARTY

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

CONTACT'S POSITION Environmental Program Consultant

CONTACT'S ROLE originator

CONTACT INFORMATION ▶

PHONE

VOICE 919-707-6136

ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

RESPONSIBLE PARTY

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
CONTACT'S POSITION Environmental Program Consultant  
CONTACT'S ROLE resource provider

CONTACT INFORMATION ►

PHONE

VOICE 919-707-6136

ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

RESPONSIBLE PARTY

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
CONTACT'S POSITION Environmental Program Consultant  
CONTACT'S ROLE point of contact

CONTACT INFORMATION ►

PHONE

VOICE 919-707-6136

ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Citation Contacts ▲](#)

## Resource Details ►

DATASET LANGUAGES English (UNITED STATES)  
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

STATUS completed  
SPATIAL REPRESENTATION TYPE vector

\* PROCESSING ENVIRONMENT Version 6.2 (Build 9200) ; Esri ArcGIS 10.8.1.14362

### CREDITS

The Environmental Analysis Unit (EAU) Mitigation and Modeling Unit within NCDOT was tasked to create this dataset. This dataset supports the production of the Natural Resources Technical Report (NRTR). Annual maintenance of this dataset is handled by the EAU.

Support and maintenance of the enterprise spatial database where this data resides is handled by NCDIT's Transportation GIS Unit.

[Hide Resource Details ▲](#)

## Extents ►

### EXTENT

#### DESCRIPTION

Data collection is complete.

#### GEOGRAPHIC EXTENT

##### BOUNDING RECTANGLE

WEST LONGITUDE -84.422111

EAST LONGITUDE -75.416034

SOUTH LATITUDE 33.730557

NORTH LATITUDE 36.617257

EXTENT CONTAINS THE RESOURCE Yes

#### TEMPORAL EXTENT

BEGINNING DATE 2020-03-02 00:00:00

ENDING DATE 2020-03-02 00:00:00

### EXTENT

#### GEOGRAPHIC EXTENT

##### BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching

\* WEST LONGITUDE -79.113187

\* EAST LONGITUDE -77.081313

\* NORTH LATITUDE 35.317300

\* SOUTH LATITUDE 34.434951

\* EXTENT CONTAINS THE RESOURCE Yes

#### EXTENT IN THE ITEM'S COORDINATE SYSTEM

\* WEST LONGITUDE 1966236.084348

\* EAST LONGITUDE 2572420.727619

\* SOUTH LATITUDE 254763.644866

\* NORTH LATITUDE 570407.510296

\* EXTENT CONTAINS THE RESOURCE Yes

[Hide Extents ▲](#)

## Resource Points of Contact ►

### POINT OF CONTACT

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
CONTACT'S POSITION Environmental Program Consultant  
CONTACT'S ROLE originator

### CONTACT INFORMATION ►

#### PHONE

VOICE 919-707-6136

#### ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

#### HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

#### CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Resource Points of Contact ▲](#)

## Resource Maintenance ►

### RESOURCE MAINTENANCE

UPDATE FREQUENCY as needed

SCOPE OF THE UPDATES dataset

#### OTHER MAINTENANCE REQUIREMENTS

Maintenance of this dataset is handled by the Environmental Analysis Unit (EAU) Mitigation and Modeling Unit . Currently updating this dataset has not been planned. Support and maintenance of the enterprise spatial database where this data resides is handled by NCDIT's Transportation GIS Unit.

### MAINTENANCE CONTACT

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
CONTACT'S POSITION Environmental Program Consultant  
CONTACT'S ROLE originator

### CONTACT INFORMATION ►

#### PHONE

VOICE 919-707-6136

#### ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS ATLAS@ncdot.gov

#### HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

#### CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Resource Maintenance ▲](#)

## Resource Constraints ►

#### LEGAL CONSTRAINTS

##### LIMITATIONS OF USE

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

#### SECURITY CONSTRAINTS

CLASSIFICATION unclassified

CLASSIFICATION SYSTEM None

##### LIMITATIONS OF USE

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

#### CONSTRAINTS

##### LIMITATIONS OF USE

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

Datasets developed under Project ATLAS do not replace any NRTR work for future projects and may not be used as a replacement for site visits / field surveys by qualified professionals and hence should be used only as a supporting platform for decision making. Use of this dataset for project scoping or screening is merely pre-decisional.

[Hide Resource Constraints ▲](#)

## Spatial Reference ►

### ARCGIS COORDINATE SYSTEM

- \* TYPE Projected
- \* GEOGRAPHIC COORDINATE REFERENCE GCS\_North\_American\_1983
- \* PROJECTION NAD\_1983\_StatePlane\_North\_Carolina\_FIPS\_3200\_Feet
- \* COORDINATE REFERENCE DETAILS

#### PROJECTED COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 102719  
X ORIGIN -121841900  
Y ORIGIN -93659000  
XY SCALE 3048.0060960121918  
Z ORIGIN -100000  
Z SCALE 10000  
M ORIGIN -100000  
M SCALE 10000  
XY TOLERANCE 0.0032808333333333331  
Z TOLERANCE 0.001  
M TOLERANCE 0.001  
HIGH PRECISION true  
LATEST WELL-KNOWN IDENTIFIER 2264

#### WELL-KNOWN TEXT

PROJCS["NAD\_1983\_StatePlane\_North\_Carolina\_FIPS\_3200\_Feet",GEOGCS["GCS\_North\_American\_1983",DATUM["D\_North\_American\_1983",SPHEROID["GRS\_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Lambert\_Conformal\_Conic"],PARAMETER["False\_Easting",2000000.002616666],PARAMETER["False\_Northing",0.0],PARAMETER["Central\_Meridian",-79.0],PARAMETER["Standard\_Parallel\_1",34.33333333333334],PARAMETER["Standard\_Parallel\_2",36.16666666666666],PARAMETER["Latitude\_Of\_Origin",33.75],UNIT["Foot\_US",0.3048006096012192],AUTHORITY["EPSG",2264]]

### REFERENCE SYSTEM IDENTIFIER

- VALUE 2264
- \* CODESPACE EPSG
  - \* VERSION 6.12(9.0.0)

[Hide Spatial Reference ▲](#)

## Spatial Data Properties ►

### VECTOR ►

- \* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

#### GEOMETRIC OBJECTS

FEATURE CLASS NAME PondberryPotentialHabitat  
\* OBJECT TYPE composite  
\* OBJECT COUNT 66262

[Hide Vector ▲](#)

### ARCGIS FEATURE CLASS PROPERTIES ►

FEATURE CLASS NAME PondberryPotentialHabitat  
\* FEATURE TYPE Simple  
\* GEOMETRY TYPE Polygon  
\* HAS TOPOLOGY FALSE  
\* FEATURE COUNT 66262  
\* SPATIAL INDEX TRUE  
\* LINEAR REFERENCING FALSE



[Hide ArcGIS Feature Class Properties ▲](#)

[Hide Spatial Data Properties ▲](#)

## Data Quality ▶

SCOPE OF QUALITY INFORMATION ▶

RESOURCE LEVEL **dataset**

[Hide Scope of quality information ▲](#)

DATA QUALITY REPORT - COMPLETENESS OMISSION ▶

MEASURE DESCRIPTION

After processing, the dataset is checked for drawing display and number of records and file sizes compared with source materials.

CONFORMANCE TEST RESULTS

TEST PASSED **Yes**

RESULT EXPLANATION

**Pass**

PRODUCT SPECIFICATION ▶

TITLE **NCDOT Geospatial Data Specifications**

CREATION DATE **2020-03-02 00:00:00**

PUBLICATION DATE **2021-03-15 00:00:00**

[Hide Product specification ▲](#)

[Hide Data quality report - Completeness omission ▲](#)

DATA QUALITY REPORT - CONCEPTUAL CONSISTENCY ▶

MEASURE DESCRIPTION

The dataset is converted to file geodatabase (FGDB) format using tools in ArcGIS. The geometry is checked, and if needed repaired

CONFORMANCE TEST RESULTS

TEST PASSED **Yes**

RESULT EXPLANATION

**Pass**

PRODUCT SPECIFICATION ▶

TITLE **NCDOT Geospatial Data Specifications**

CREATION DATE **2020-03-02 00:00:00**

PUBLICATION DATE **2021-03-15 00:00:00**

[Hide Product specification ▲](#)

[Hide Data quality report - Conceptual consistency ▲](#)

DATA QUALITY REPORT - QUANTITATIVE ATTRIBUTE ACCURACY ►

MEASURE DESCRIPTION

- ArcGIS Online (AGOL) Review:
  - o A model prediction file was shared with select subject matter experts for review on AGOL. Points were placed within the USFWS potential habitat (county range map) as well as the modeled potential habitat in order to solicit feedback. Reviewers could place additional comments for consideration by the modeler.
  - o AGOL review was completed in February 2019 on a draft version of this model
  
- Independent Data Review:
  - o Data sources: NC Natural Heritage Program element occurrence data, NatureServe Ecological System data, VegBank plot data, United States National Vegetation Classification Database, NCNHP community classifications, and county soil surveys.
  - o Methods: Literature searches and reviews of available environmental GIS data were conducted to determine how best to represent potential habitat for pondberry.
  - o NatureServe ecosystems and soil series were found to be the best choices for identifying potential pondberry habitat.
  - o The model was independently reviewed using NHP EO data and field survey results from recent natural resource investigations for NCDOT projects.

CONFORMANCE TEST RESULTS

TEST PASSED Yes

RESULT EXPLANATION

Pass

PRODUCT SPECIFICATION ►

TITLE NCDOT Geospatial Data Specifications

CREATION DATE 2020-03-02 00:00:00

PUBLICATION DATE 2021-03-15 00:00:00

[Hide Product specification ▲](#)

[Hide Data quality report - Quantitative attribute accuracy ▲](#)

[Hide Data Quality ▲](#)

## Lineage ►

LINEAGE STATEMENT

ArcGIS Model Builder version 10.5.1 was used to build a model

Input Environmental data layers for model:

1) County Boundaries

- Layer description: Selected Bladen, Cumberland, Onslow and Sampson Counties
- Layer selection justification: The four counties listed contain the only recent occurrences of pondberry in the state according to NHP and USFWS data (see Species Information above)

- “Habitat” versus “Non-habitat” designations: Potential habitat will be within the 3 listed USFWS Current counties.

## 2) GAP/Landfire National Terrestrial Ecosystems 2011

- Layer description:

- The GAP/Landfire National Terrestrial Ecosystems 2011 landcover data, version 3.0. developed by the U.S. Gap Analysis Program (GAP). 2017. Attributes include NatureServe’s Ecological Systems Classification.

- Clipped/extracted raster to the selected counties from Layer 1

- Converted raster to a shapefile (polygon)

- Selected from the “gridcode” field: 9118, 9121, 9128 and 9305 and exported as a shapefile (see below for additional details)

- Layer selection justification: The GAP/Landfire National Terrestrial Ecosystems 2011 was chosen because it had the finest-level habitat mapping of the available datasets and its attribute data could be cross-referenced with vegetative community and rare species data available from NatureServe, the NHP, the Carolina Vegetation Survey, and VegBank.

- “Habitat” versus “Non-habitat” designations:

- Since so few populations occur in NC, habitat information from South Carolina (SC) populations was also considered when identifying potential habitat in the model.

- Beckley and Gramling (2013) studied habitats within pondberry populations in the southeastern US and described the following four vegetative communities, each found in NC and/or SC: Swamp Tupelo Depression Pond, Successional Swamp Forest, Pond-Cypress Pond and Pocosin, and Limestone Sink Forest. Using their habitat descriptions and various other sources, equivalent or similar NatureServe Ecological Systems were identified that could support pondberry.

- The following Ecological Systems were selected to represent pondberry habitat:

- Atlantic Coastal Plain Clay-based Bay Wetland (Ecological System Lifeform (ESLF) code 9128, Community Ecological System (CES) 203.245): This community is mapped at Big Pond Bay in Cumberland County (GAP/Landfire 2011, NCNHP 2018) and has been reported to contain pondberry (Schafale et al. 2015a). Of the landcover types mapped in the GAP/Landfire 2011 data, this habitat also most closely resembled the Swamp Tupelo Depression Pond community described by Beckley and Gramling (2013).

- Atlantic Coastal Plain Peatland Pocosin and Canebrake (ESLF code 9121): This community covers most bays in NC not mapped as Atlantic Coastal Plain Clay-based Bay Wetland, including an extant pondberry EO in Sampson Co. (Pondberry Bay) (GAP/Landfire 2011, NCNHP 2018). Like the previous community, pondberry has been documented in Peatland Pocosin and Canebrake habitat (Schafale et al. 2015b). High Pocosin and Pond Pine Woodland communities fall within this Ecological System (Schafale 2012, Schafale et al. 2015b), habitats which surround some known pondberry populations in SC (Beckley and Gramling 2013).

- Central Atlantic Coastal Plain Wet Longleaf Pine (ESLF code 9118): Much of the area mapped as this predominantly savanna and flatwoods Ecological System is not suitable habitat for pondberry; however, some small, suitable depressions are included in this mapping unit, including one extant EO in Sampson County (Newkirk Bay) (GAP/Landfire 2011, NCNHP 2018). Other rare species associated with bays have been documented within this community, including awned meadowbeauty (*Rhexia aristosa*) and Canby’s dropwort (*Oxypolis canbyi*) (Schafale et al. 2014a).

- Southern Atlantic Coastal Plain Depression Pond (ESLF code 9305, CES203.262): This community consists of wetlands in small basins formed in unconsolidated sediments (Schafale and Evans 2007). Found from southeastern Virginia to Florida, these ponds typically have sandy soils, with mucky surfaces in the wettest portions. Many of the small depression NVCS associations are listed in this Ecological System. Limesink depressions tend to fall in this system (Schafale and Evans 2007), as well as Small Depression Pocosins, which are known habitat for pondberry (Schafale and Weakley 1990). Note: Communities of this type in NC are currently mapped as inclusions within the other three communities listed, likely because they did not meet the minimum mapping unit used for the national map. This code was left in the model selection in case future landcover datasets include this community.

- The following riparian and tidal Ecological Systems were selected to remove unsuitable pondberry habitat added from the soil series in Data Layer 3:

- Southern Atlantic Coastal Plain Tidal Wooded Swamp (ESLF code 9194):

- Southern Atlantic Coastal Plain Salt and Brackish Tidal Marsh (ESLF code 9236)

- Atlantic Coastal Plain Small Brownwater River Floodplain Forest (ESLF code 9315)

- Atlantic Coastal Plain Small Blackwater River Floodplain Forest (ESLF code 9318)

- Atlantic Coastal Plain Brownwater Stream Floodplain Forest (ESLF code 9320)

- Atlantic Coastal Plain Blackwater Stream Floodplain Forest (ESLF code 9322)

-- Southern Atlantic Coastal Plain Fresh and Oligohaline Tidal Marsh (ESLF code 9413)

### 3) Soils

- Layer description: Soil Survey Geographic (SSURGO) database for Bladen, Cumberland, Onslow and Sampson Counties
- Layer selection justification: Soils are another way of identifying areas that could support pondberry; particularly where landcover does not adequately represent all potential habitat.
- "Habitat" versus "Non-habitat" designations: Carolina Vegetation Survey plot summaries (2018), US National Vegetation Classification (NVCS) Association descriptions, VegBank (Peet et al. 2013) plot data, and NHP data were utilized to determine predominant soil series in vegetative communities known to support pondberry populations (CEGL codes 3733, 4441, and 4475). Soils listed in these sources, but described as being well drained, were excluded.
- o Potential habitat was defined as the following soil map units: Byars, Chipley, Goldsboro, Leon, Lynn Haven, Lynn Haven and Torhunta, Torhunta and Lynn Haven, McColl, Murville, Rains or Woodington.

### 4) National Land Cover Database (NLCD) (2016 edition)

- Layer description: Landcover dataset produced by the Multi-Resolution Land Characteristics (MRLC) Consortium. Landcover is classified into 15 broad categories.
- Layer selection justification: Landcover categories are more generalized in this dataset than in the GAP/Landfire dataset (Layer 2), but the areas classified as disturbed were more current than those in Layer 2.
- "Habitat" versus "Non-habitat" designations: The following "Land\_Cover" categories were considered to be non-habitat and were removed from the combination of the previous 2 layers: Developed, High Intensity; Developed, Medium Intensity; Developed, Low Intensity; Developed, Open Space; Cultivated Crops; Hay/Pasture; Barren Land; Open Water; and Emergent Herbaceous Wetlands.

### Known Issues with Model Data Layers:

The soils within many of the Carolina bays in Bladen County are mapped as Croatan, Pamlico or Dorovan muck, which were not found to be associated with pondberry in the data sources researched. However, the selected landcover codes identify the majority of these bays as potential habitat, thus overpredicting areas that could actually support pondberry. However, Bladen County has been excluded from the final model because of its USFWS Historic status.

### PROCESS STEP ►

#### DESCRIPTION

Geodatabase was forwarded on to the GIS Unit for publishing as part of data for project ATLAS.

### PROCESS CONTACT

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
CONTACT'S POSITION Environmental Program Consultant  
CONTACT'S ROLE originator

### CONTACT INFORMATION ►

#### PHONE

VOICE 919-707-6136

#### ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

### HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

[CONTACT INSTRUCTIONS](#)

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Process step ▲](#)

[PROCESS STEP ►](#)  
[DESCRIPTION](#)

Data was reviewed in ESRI's Data Reviewer tool to verify geometry.

[PROCESS CONTACT](#)

[ORGANIZATION'S NAME](#) North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
[CONTACT'S POSITION](#) Environmental Program Consultant  
[CONTACT'S ROLE](#) originator

[CONTACT INFORMATION ►](#)

[PHONE](#)

[VOICE](#) 919-707-6136

[ADDRESS](#)

[TYPE](#) physical

[DELIVERY POINT](#) Century Center Building B, 1020 Birch Ridge Drive

[CITY](#) Raleigh

[ADMINISTRATIVE AREA](#) NC

[POSTAL CODE](#) 27610

[COUNTRY](#) US

[E-MAIL ADDRESS](#) [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

[HOURS OF SERVICE](#)

9:00am – 5:00pm Monday - Friday

[CONTACT INSTRUCTIONS](#)

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Process step ▲](#)

[PROCESS STEP ►](#)  
[DESCRIPTION](#)

Summary of model steps:

- Select the four counties where the species is listed (Bladen, Cumberland, Onslow and Sampson), export as a shapefile.
- "Clip" (Extract by Mask) GAP/Landfire and NLCD landcover rasters to the selected counties, convert to shapefiles
- Select suitable landcover and soils, Union and Dissolve

- Select developed, agricultural and other disturbed areas from NLCD data, export as a shapefile, and Dissolve
- Erase disturbed areas from the Union of soils and suitable landcovers.
- Select unsuitable wetland Ecological Systems from the GAP/Landfire data, export as a shapefile, and Dissolve.
- Erase unsuitable wetland vegetative communities.
- Extract data from the three Current counties, add fields, and Dissolve by Potential Habitat (High and Low).

PROCESS CONTACT

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
 CONTACT'S POSITION Environmental Program Consultant  
 CONTACT'S ROLE originator

CONTACT INFORMATION ▶

PHONE

VOICE 919-707-6136

ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Process step ▲](#)

[Hide Lineage ▲](#)

**Distribution ▶**

DISTRIBUTOR ▶

CONTACT INFORMATION

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
 CONTACT'S POSITION Environmental Program Consultant  
 CONTACT'S ROLE distributor

CONTACT INFORMATION ▶

PHONE

VOICE 919-707-6136

ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive  
CITY Raleigh  
ADMINISTRATIVE AREA NC  
POSTAL CODE 27610  
COUNTRY US  
E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Distributor ▲](#)

DISTRIBUTION FORMAT

\* NAME File Geodatabase Feature Class  
VERSION 10.5

[Hide Distribution ▲](#)

## Fields ►

DETAILS FOR OBJECT [PondberryPotentialHabitat ►](#)

\* TYPE Feature Class  
\* ROW COUNT 66262

DEFINITION

Potential Habitat areas for Pondberry in NC

DEFINITION SOURCE

NCDOT

FIELD [OBJECTID ►](#)

\* ALIAS FID  
\* DATA TYPE OID  
\* WIDTH 4  
\* PRECISION 0  
\* SCALE 0  
\* FIELD DESCRIPTION  
Internal feature number.

\* DESCRIPTION SOURCE  
Esri

\* DESCRIPTION OF VALUES  
Sequential unique whole numbers that are automatically generated.

[Hide Field OBJECTID ▲](#)

FIELD Shape ▶

- \* ALIAS Shape
- \* DATA TYPE Geometry
- \* WIDTH 0
- \* PRECISION 0
- \* SCALE 0
- \* FIELD DESCRIPTION  
Feature geometry.
- \* DESCRIPTION SOURCE  
Esri
- \* DESCRIPTION OF VALUES  
Coordinates defining the features.

*Hide Field Shape ▲*

FIELD CommonName ▶

- ALIAS CName
- \* DATA TYPE String
- \* WIDTH 100
- \* PRECISION 0
- \* SCALE 0
- FIELD DESCRIPTION  
Common Name of Species
- DESCRIPTION SOURCE  
NCDOT

*Hide Field CommonName ▲*

FIELD SciName ▶

- ALIAS SName
- \* DATA TYPE String
- \* WIDTH 150
- \* PRECISION 0
- \* SCALE 0
- FIELD DESCRIPTION  
Scientific Name of Species
- DESCRIPTION SOURCE  
NCDOT

*Hide Field SciName ▲*

FIELD PotHabitat ▶

- ALIAS PotHab
- \* DATA TYPE String
- \* WIDTH 25
- \* PRECISION 0
- \* SCALE 0



FIELD DESCRIPTION

Model Output - Low or High potential habitat

DESCRIPTION SOURCE

NCDOT

LIST OF VALUES

VALUE High

DESCRIPTION High potential

ENUMERATED DOMAIN VALUE DEFINITION SOURCE NCDOT

VALUE Low

DESCRIPTION Low potential

ENUMERATED DOMAIN VALUE DEFINITION SOURCE NCDOT

*Hide Field PotHabitat ▲*

FIELD Shape\_Length ►

\* ALIAS Shape\_Length

\* DATA TYPE Double

\* WIDTH 8

\* PRECISION 0

\* SCALE 0

\* FIELD DESCRIPTION

Length of feature in internal units.

\* DESCRIPTION SOURCE

Esri

\* DESCRIPTION OF VALUES

Positive real numbers that are automatically generated.

*Hide Field Shape\_Length ▲*

FIELD Shape\_Area ►

\* ALIAS Shape\_Area

\* DATA TYPE Double

\* WIDTH 8

\* PRECISION 0

\* SCALE 0

\* FIELD DESCRIPTION

Area of feature in internal units squared.

\* DESCRIPTION SOURCE

Esri

\* DESCRIPTION OF VALUES

Positive real numbers that are automatically generated.

*Hide Field Shape\_Area ▲*

*Hide Details for object PondberryPotentialHabitat ▲*

[Hide Fields ▲](#)

## Metadata Details ►

METADATA LANGUAGE English (UNITED STATES)  
METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset  
SCOPE NAME \*dataset

\* LAST UPDATE 2024-01-26

### ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0  
STANDARD OR PROFILE USED TO EDIT METADATA ISO19139  
METADATA STYLE ISO 19139 Metadata Implementation Specification

CREATED IN ARCGIS FOR THE ITEM 2024-02-01 14:13:33  
LAST MODIFIED IN ARCGIS FOR THE ITEM 2024-01-26 19:02:27

### AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes  
LAST UPDATE 2024-01-26 19:02:27

[Hide Metadata Details ▲](#)

## Metadata Contacts ►

### METADATA CONTACT

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit  
CONTACT'S POSITION Environmental Program Consultant  
CONTACT'S ROLE point of contact

### CONTACT INFORMATION ►

PHONE  
VOICE 919-707-6136

### ADDRESS

TYPE physical  
DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive  
CITY Raleigh  
ADMINISTRATIVE AREA NC  
POSTAL CODE 27610  
COUNTRY US  
E-MAIL ADDRESS ATLAS@ncdot.gov

### HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

### CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Metadata Contacts ▲](#)

## Metadata Maintenance ►

### MAINTENANCE

UPDATE FREQUENCY as needed

### OTHER MAINTENANCE REQUIREMENTS

Annual maintenance of this dataset is handled by the Environmental Analysis Unit (EAU) Mitigation and Modeling Unit .

Support and maintenance of the enterprise spatial database where this data resides is handled by NCDIT's Transportation GIS Unit.

### MAINTENANCE CONTACT

ORGANIZATION'S NAME North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

CONTACT'S POSITION Environmental Program Consultant

CONTACT'S ROLE originator

### CONTACT INFORMATION ►

#### PHONE

VOICE 919-707-6136

#### ADDRESS

TYPE physical

DELIVERY POINT Century Center Building B, 1020 Birch Ridge Drive

CITY Raleigh

ADMINISTRATIVE AREA NC

POSTAL CODE 27610

COUNTRY US

E-MAIL ADDRESS [ATLAS@ncdot.gov](mailto:ATLAS@ncdot.gov)

#### HOURS OF SERVICE

9:00am – 5:00pm Monday - Friday

#### CONTACT INSTRUCTIONS

Please send an email with any issues, questions or comments regarding the ATLAS Data Search Tool, ATLAS Screening Tool or ATLAS Workbench. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.

[Hide Contact information ▲](#)

[Hide Metadata Maintenance ▲](#)

## Metadata Constraints ►

### SECURITY CONSTRAINTS

CLASSIFICATION unclassified

CLASSIFICATION SYSTEM None

### LIMITATIONS OF USE

The North Carolina Department of Transportation shall not be held liable for any errors in this metadata. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data. Datasets developed under Project ATLAS do not replace any NRTR work for future projects and may not be used as a replacement for site visits / field surveys by qualified professionals and hence should be used only as a supporting platform for decision making. Use of this dataset for project scoping or screening is merely pre-decisional.

### CONSTRAINTS

#### LIMITATIONS OF USE

The North Carolina Department of Transportation shall not be held liable for any errors in this metadata. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data. Datasets developed under Project ATLAS do not replace any NRTR work for future projects and may not be used as a replacement for site visits / field surveys by qualified professionals and hence should be used only as a supporting platform for decision making. Use of this dataset for project scoping or screening is merely pre-decisional.

[Hide Metadata Constraints ▲](#)