

Michaux's Sumac - Potential Habitat, October 2022 - NC Department of Transportation

File Geodatabase Feature Class



Tags

Michaux's Sumac, *Rhus michauxii*, *Rhus_mich*, Vascular Plant, Terrestrial, endangered, random forest model, machine learning, Transportation, NRTR, NCDOT, Environment, Location, North Carolina, ATLAS

Summary

This dataset was originally created in March 2020 and updated in August 2022 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.

The Michaux's sumac model is a Random Forest (machine-learning) model. As such, it returns the probability of potential habitat, based on the core assumption that current presence locations are representative of potential habitat within the state of North Carolina. For the purposes of ATLAS applications, this model is reclassified to a 3-level map product distinguishing 30-m raster grid cells with predicted low, moderate, and high probability of potential habitat.

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 Michaux's sumac Potential Habitat dataset is a polygon layer depicting high, moderate and low potential habitat locations for Michaux's sumac in NC counties that have a USFWS "current" status listing.

Michaux's sumac (*Rhus michauxii*), endemic to the inner Coastal Plain and lower Piedmont, grows in sandy or rocky, open, upland woods on acidic or circumneutral, well-drained sands or sandy loam soils with low cation exchange capacities. The species is also found on sandy or submesic loamy swales and depressions in the fall line Sandhills region as well as in openings along the rim of Carolina bays; maintained railroad, roadside, power line, and utility rights-of-way; areas where forest canopies have been opened up by blowdowns and/or storm damage; small wildlife food plots; abandoned building sites; under sparse to moderately dense pine or pine/hardwood canopies; and in and along edges of other artificially maintained clearings undergoing natural succession. In the central Piedmont, it occurs on clayey soils derived from mafic rocks. The plant is shade intolerant and, therefore, grows best where disturbance (e.g., mowing, clearing, grazing, periodic fire) maintains its open habitat.

The three levels are: Low, Moderate, and High Probability of Potential Habitat (based on similarity of environmental conditions to those found at known occurrence locations). These levels represent the fact that given limited knowledge of species biology, continuously changing environments, and potential for gaps and error in both species and environment data, a model prediction dependent on remotely-sensed data can never predict species occurrence or habitat with absolute accuracy and precision. Thus, "Low" probability habitat represents regions and sites where biologists would be very surprised to find this species and its habitat (occurrence here should be extremely rare). In "High" probability habitat, biologists expect to frequently encounter areas that look like potential habitat based on visible environmental and vegetation community characteristics. The thresholds for this species are: Low-Moderate (0.2) and Moderate-High (0.63).

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

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Extent

West -81.558971 **East** -77.696487
North 36.268134 **South** 34.273361

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, inlandWaters, 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 2022-08-01 00:00:00
PUBLICATION DATE 2022-10-14 00:00:00

[Hide Thesaurus](#) ▲

THEME KEYWORDS Michaux's Sumac, Rhus michauxii, Rhus_mich, Vascular Plant, Terrestrial, endangered, random forest model, machine learning, Transportation, NRTR, NCDOT, Environment, Location, North Carolina, ATLAS

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[Hide Thesaurus ▲](#)

[Hide Topics and Keywords ▲](#)

Citation ▶

TITLE Michaux's Sumac - Potential Habitat, October 2022 - NC Department of Transportation

CREATION DATE 2022-08-01 00:00:00

PUBLICATION DATE 2022-10-14 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 ▶

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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.

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RESPONSIBLE PARTY

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CONTACT'S ROLE resource provider

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CONTACT'S ROLE point of contact

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[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 **2022-08-01 00:00:00**

ENDING DATE **2022-08-01 00:00:00**

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

EXTENT TYPE **Extent used for searching**

* WEST LONGITUDE **-81.558971**

* EAST LONGITUDE **-77.696487**

* NORTH LATITUDE **36.268134**

* SOUTH LATITUDE **34.273361**

* EXTENT CONTAINS THE RESOURCE **Yes**

EXTENT IN THE ITEM'S COORDINATE SYSTEM

* WEST LONGITUDE **1245406.689724**

* EAST LONGITUDE **2384319.009335**

* SOUTH LATITUDE **199975.239679**

* NORTH LATITUDE **916510.695713**

* 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 ►

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[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

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[Hide Resource Maintenance ▲](#)

Resource Constraints ►

LEGAL CONSTRAINTS

LIMITATIONS OF USE

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SECURITY CONSTRAINTS

CLASSIFICATION unclassified

CLASSIFICATION SYSTEM None

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[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 MichauxsSumacPotentialHabitat
* OBJECT TYPE composite
* OBJECT COUNT 202666

[Hide Vector ▲](#)

ARCGIS FEATURE CLASS PROPERTIES ►

FEATURE CLASS NAME MichauxsSumacPotentialHabitat
* FEATURE TYPE Simple
* GEOMETRY TYPE Polygon
* HAS TOPOLOGY FALSE
* FEATURE COUNT 202666
* 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 2019-09-26 00:00:00

PUBLICATION DATE 2021-12-29 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 2019-09-26 00:00:00

PUBLICATION DATE 2021-12-29 00:00:00

[Hide Product specification ▲](#)

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

DATA QUALITY REPORT - QUANTITATIVE ATTRIBUTE ACCURACY ▶

MEASURE DESCRIPTION

Version 1 Model Field Assessment Draft model reviews and analysis were conducted between September 2018 and July 2019. The AGOL review requested each reviewer to individually examine the model at approximately 20 flagged locations chosen by the modeler plus a minimum of 20

additional locations of the reviewer's choice. For this review, a binary representation of the continuous probability prediction was presented, where "potential habitat" represented a proposed threshold for "moderate to high probability of potential habitat" and "non-habitat" represented grid cells with lower probability. Comments addressed both modeled non-habitat and potential habitat, with at least 5 sites where they disagreed and 5 where they agreed with the classification within each category. At each location, the reviewer (1) indicated if the modeled classification (potential habitat or non-habitat) matched their own best professional judgment given their experience, the aerial imagery, and any additional information they chose to consult, and (2) commented on how they reached their conclusion. Multiple responses at flagged locations gave insight into reviewer consensus while their dispersed comments ensured breadth of spatial coverage. Reviewer comments informed model improvements and supplemented available occurrence data. Based on their feedback and modeler's review of model performance, the following changes were made: • Updated the transmission line data to improve representation of disturbed areas. • Updated the road data to improve representation of disturbed areas. • Merged road, rail and utility right-of-way data into a single Distance to Linear Disturbance layer. • Created a Distance to Agriculture layer to represent edge and to mask out interior of agricultural fields. • Updated the NLCD land cover and associated percent impervious layer with the new 2016 data. • Created and added geomorphon data as another potential indicator of wet/dry potential. • Force excluded elevation suspected of creating false E-W gradient based on sample bias Based on reviewer feedback, a mask was applied to the final model. Under any of the following conditions, model predictions were overruled and converted to 0 probability of potential habitat: Open water, High density urban development, Tidally influenced area, Tidally influenced and saline area, Impervious surface, Interior fields and ditches, Interior fields except along ditches

CONFORMANCE TEST RESULTS

TEST PASSED Yes

RESULT EXPLANATION

Pass

PRODUCT SPECIFICATION ►

TITLE NCDOT Geospatial Data Specifications

CREATION DATE 2019-09-26 00:00:00

PUBLICATION DATE 2021-12-29 00:00:00

[Hide Product specification ▲](#)

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

[Hide Data Quality ▲](#)

Lineage ►

LINEAGE STATEMENT

Species Data Source:

Presence data was from multiple sources listed below, and rasterized to a 30-m scale to match environmental data. Any grid cell intersecting known occurrence points or polygons was attributed as "presence". No true absence data were available, so the remaining grid cells (areas without known occurrence) were attributed as "pseudoabsence".

1. US Fish and Wildlife Service (USFWS) Range Data: The model extent was defined based on USFWS current range data, applied through agreements between NCDOT and USFWS.

2. NC Natural Heritage Program (NCNHP) Element Occurrence (EO) Data: Observations evaluated for use in the model included all plant species records where STATUS=Current and ACCURACY=1-Very High, 2-High, and 3-Medium as of the most recent Tier 2 data release. Some, but not all, models included the medium accuracy data.

3. NC Department of Transportation (NCDOT) Field Pre-Validation Survey Data: Field surveys conducted to verify current EO status and improve the accuracy of EO records for several species added new data for some species.

4. NCDOT Past NRTR Project Data: Data gathered from past project files provided 6 years of presence/absence polygons and up to 2 years of habitat/non-habitat polygons within NRTR study areas.

5. Expert Reviewer AGOL Desktop Review Data: Species experts completed a structured, spatially explicit review of a draft version of this model (see below). Experts' potential habitat/non-habitat judgments served as additional input for some models.

Within the USFWS range there are 30,606,319 30-m raster grid cells. From the intersection of these grid cells with the available occurrence data, was obtained:

- Presence: 751 cells attributed as high precision, current observations of Michaux's sumac. All presence locations were used to train the model, because the random forest model process includes randomized out-of-bag testing as part of development.
- Mediums: 798 cells attributed as moderate precision, but current observations. The use of these presence cells to train the model depended on how much noise versus signal they added. Medium cells were included from this version of the model.
- Historic: 652 cells attributed as historic (extirpated) observations. These observations were not used to train the model but were referenced during model review.
- Associates: 0 cells attributed as current, high precision observations of associated species, but without record of the Michaux's sumac. If present, these observations were not used to train the model but were referenced during model review.
- Target Taxa Group: 15,393 cells attributed as current, high precision observations of other plant species where the Michaux's sumac was not documented as present. Target taxa group cells were handled as a special class of pseudoabsence data.
- Pseudoabsence: No true absence data were available for this project, so random draws from the remaining grid cells served as pseudoabsence data. The number of points drawn for each model run was equal to the total number of presence points.

Environmental Data Source:

There was access to 70 environmental data layers across 6 thematic areas: Geology and Soils, Land Cover and Vegetation, Disturbance, Landform, Spectral, Climate. All data are in NAD 1983 State Plane North Carolina FIPS 3200 (US feet), 30-m spatial resolution, with statewide extent.

This model was initiated with a subset of 25 variables based on variable importance in earlier drafts (the reviewed draft initiated with all 52 layers available at that time), previously untested layers (new or updated data layers), reviewer feedback, and interpretation of patterns in earlier versions. The initial subset of variables presented to the model was further refined by testing for multicollinearity and performing model selection.

Update for August 2022:
New data was added.

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 ▶

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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

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PROCESS STEP ►

DESCRIPTION

Model Approach and Output :

Random forest models generate predictions through repeated construction of decision-tree style models. At multiple points during model construction and assessment, the random forest draws a random subset of presence and pseudoabsence data, as well as random subset of available environmental data. The model procedure tracks

(1) how frequently sites are predicted to be presence vs absence, (2) which variables contribute most to accurate classification of presence vs absence sites, and (3) overall statistics about model performance.

Model was run in R using the randomForest and rfUtilities packages.

The model predicts the probability of potential habitat for the species, given the assumption that the available presence data are representative of suitable habitat within the state.

The predicted probability of potential habitat (0 to 1) reflects the frequency with which a raster grid cell was classified as potential habitat versus non-habitat through all the permutations of random forests.

3-levels (low, moderate, and high probability of potential habitat) representation of the model prediction by setting probability thresholds at 0.2 (low/moderate) and 0.63 (moderate/high) were created. These thresholds were set through discussion with the expert biologists in reference to their observations of model strengths and weaknesses during the field assessments. The selection of a threshold is a judgement based on acceptable risk and desired level of precaution for a given application of the model. As a threshold is dropped, more area with decreasing similarity to known presence locations will be categorized as the higher level class (e.g., lowering the moderate/high threshold labels more habitat as high probability).

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CONTACT'S POSITION Environmental Program Consultant

CONTACT'S ROLE originator

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[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 ►

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VOICE 919-707-6136

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[Hide Distributor ▲](#)

DISTRIBUTION FORMAT

* NAME File Geodatabase Feature Class
VERSION 10.5

[Hide Distribution ▲](#)

Fields ►

DETAILS FOR OBJECT [MichauxsSumacPotentialHabitat](#) ►

* TYPE Feature Class
* ROW COUNT 202666

DEFINITION

Potential Habitat areas for Michaux Sumac 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, Moderate or High potential habitat

DESCRIPTION SOURCE

NCDOT

LIST OF VALUES

VALUE Low

DESCRIPTION Low Potential

ENUMERATED DOMAIN VALUE DEFINITION SOURCE NCDOT

VALUE Moderate

DESCRIPTION Moderate Potential

ENUMERATED DOMAIN VALUE DEFINITION SOURCE NCDOT

VALUE High

DESCRIPTION High 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 MichauxsSumacPotentialHabitat ▲](#)

[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 14:12:18
LAST MODIFIED IN ARCGIS FOR THE ITEM 2024-01-26 19:01:34

AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes
LAST UPDATE 2024-01-26 19:01:34

[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

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 ►

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[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

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[Hide Metadata Constraints ▲](#)