

NC Stream Assessment Method (NC SAM) Potential Sand Bed Streams Zones, March 2025 - NC Department of Transportation

Geodatabase Feature Class



Tags

NCSAM, Natural sand bed, streams occur only in certain areas of the Piedmont and Mountains. Transportation, North Carolina Stream Assessment Method, Zones, Streams, Mountain, Piedmont, Inner Coastal Plain, Outer Coastal Plain, EPA, NCDOT, Environment, Location, ATLAS, North Carolina

Summary

The North Carolina Stream Assessment Method (NC SAM) Potential Sand Bed Streams Zones lists soil for potential Sand-bed Stream Areas in the Piedmont and Mountains ecoregion. It outlines lithologies in the Piedmont and Mountain ecoregion NC SAM zones with the potential to support sand-bed streams.

Description

The NC Stream Assessment Method (NC SAM) Potential Sand Bed Streams Zones dataset is a statewide polygon layer that lists soil types for potential Sand-bed Stream Areas in the Piedmont and Mountains ecoregion. It should be noted that due to the map scale and level of detailed geologic mapping available, this map is a general indication of where sand-bed streams might occur, but there will be locations within the areas highlighted that do not have natural sand-bed streams. Natural sand-bed streams occur only in certain areas of the Piedmont and Mountains.

Natural sand-bed streams will be characterized by predominantly sand-sized particles (fragments with a median axis length of between 0.062 and 2 millimeters) in the streambed. However, riffle sections and natural bars may contain up to 30 percent fine and very fine gravel-sized particles (fragments with a median axis length of larger than 2 millimeters [0.08 inch] but less than 4 millimeters [0.16 inch]). Parent material with a similar grain size distribution should be evident in the banks, streamside areas, and/or the floodplain valley wall. For some natural sand-bed streams, stream banks and floodplain valley walls may contain saprolite. Saprolites associated with natural sand-bed streams will be highly weathered, friable, and break down easily into sand and finer gravel-sized particles. Outside the Coastal Plain, natural sand-bed streams will usually be associated with "a" valley shapes and lower stream and stream valley gradients.

The inclusion of specific geologic units is based on their broad lithologic descriptions and limited field reconnaissance. Generally, in non-sedimentary rocks, factors such as higher feldspar content and

greater degree of metamorphism tend to produce saprolites that yield sandy sediments. Less altered intrusive rocks can supply sandy sediments, but tend to be associated with bedrock or gravel/cobble controlled streams.

Datasets developed under Project ATLAS may not be used as a replacement for site visits / field surveys by licensed 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). Quarterly 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.

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Extent

West -83.559442

East -77.567351

North 36.611180

South 34.736017

Scale Range

Maximum (zoomed in) 1:5,000

Minimum (zoomed out) 1:625,000

Topics and Keywords

Themes or categories of the resource Farming, Boundaries, Inland Waters, Location, Planning & Cadastral, Transportation, Environment

Content type Downloadable Data

Theme keywords NCSAM, Transportation, North Carolina Stream Assessment Method , Zones, Streams, Mountain, Piedmont, Inner Coastal Plain, Outer Coastal Plain, EPA, NCDOT, Environment, Location, ATLAS, North Carolina

Thesaurus

Title User

Creation date 2025-02-06 00:00:00

Publication date 2025-03-31 00:00:00

Place keywords North Carolina

Thesaurus

Title User

Creation date 2025-02-06 00:00:00

Publication date 2025-03-31 00:00:00

Citation

Title NC Stream Assessment Method (NC SAM) Potential Sand Bed Streams Zones, March 2025 - NC Department of Transportation

Creation date 2025-02-06 00:00:00

Publication date 2025-03-31 00:00:00

Presentation formats digital map

Citation Contacts

Responsible party - originator

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

Contact's position Environmental Program Consultant

Contact information

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Address

Delivery point 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.

Responsible party - point of contact

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

Contact's position Environmental Program Consultant

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Responsible party - resource provider

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

Contact's position Environmental Program Consultant

Contact information

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Voice 919-707-6136

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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

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Extents

Extent

Geographic extent

Bounding rectangle

West longitude -84.321825

East longitude -75.459954

South latitude 33.841212

North latitude 36.588144

Extent contains the resource Yes

Extent

Description

Data collection is complete.

Geographic extent

Bounding rectangle

West longitude -84.125201

East longitude -75.426058

South latitude 33.829738

North latitude 36.556356

Extent contains the resource Yes

Temporal extent

Beginning date 2025-02-06 00:00:00

Ending date 2025-02-06 00:00:00

Extent

Geographic extent

Bounding rectangle

Extent type Extent used for searching

West longitude -83.559442

East longitude -77.567351

North latitude 36.611180

South latitude 34.736017

Extent contains the resource Yes

Extent in the item's coordinate system

westBL 660597.275683

eastBL 2420594.729763

southBL 388948.609763

northBL 1041412.881932

exTypeCode Yes

Resource Points of Contact

Point 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 information

Phone

Voice 919-707-6136

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Resource Maintenance

Resource maintenance

Update frequency as needed

Scope of the updates dataset

Other maintenance requirements

Data updates are made by the BLM and downloaded periodically by the EAU. Support and maintenance of the enterprise spatial database where this data resides is handled by NCDIT's Transportation GIS Unit.

Resource Constraints

Legal constraints

Limitations of use

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Security constraints

Classification unclassified

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Constraints

Limitations of use

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Spatial Reference

ArcGIS coordinate system

Type Projected

Geographic coordinate reference GCS_NAD_1983_2011

Projection NAD_1983_2011_StatePlane_North_Carolina_FIPS_3200_Ft_US

Coordinate reference details

ProjectedCoordinateSystem

WKID 103122
XOrigin -121841900
YOrigin -93659000
XYScale 3048.0060960121928
ZOrigin 0
ZScale 1
MOrigin 0
MScale 1
XYTolerance 0.0032808333333333331
ZTolerance 0.001
MTolerance 0.001
HighPrecision true
LatestWKID 6543
WKT
PROJCS["NAD_1983_2011_StatePlane_North_Carolina_FIPS_3200_Ft_US",GEOGCS["GCS_NAD_1983_79.0],PARAMETER["Standard_Parallel_1",34.33333333333334],PARAMETER["Standard_Parallel_2",3

Reference system identifier

Value 2264
Codespace EPSG
Version 8.2.10(10.3.1)

Spatial Data Properties

Vector

Level of topology for this dataset geometry only
Geometric objects
Feature class name GdbGisuPubC.ATLAS.NCSAMPotentialSandBedStreams
Object type composite
Object count 49

ArcGIS Feature Class Properties

Feature class name GdbGisuPubC.ATLAS.NCSAMPotentialSandBedStreams
Feature type Simple
Geometry type Polygon
Has topology FALSE
Feature count 49
Spatial index TRUE
Linear referencing FALSE

Data Quality

Scope of quality information

Resource level dataset

Data quality report - Completeness omission

Data quality measure reference

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 2025-02-06 00:00:00

Publication date 2025-03-31 00:00:00

Data quality report - Conceptual consistency

Data quality measure reference

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 2025-02-06 00:00:00

Publication date 2025-03-31 00:00:00

Data quality report - Quantitative attribute accuracy

Data quality measure reference

Measure description

SMA is topologically aligned with PLSS CAD NSDI which has been through a series of quality checks to catch as many potential coding errors as possible.

Conformance test results

Test passed Yes

Result explanation

Pass

Product specification

Title NCDOT Geospatial Data Specifications

Creation date 2025-02-06 00:00:00

Publication date 2025-03-31 00:00:00

Lineage

Lineage statement

This layer was created by extracting soil types for potential sand bed streams in accordance with the NC SAM Manual.

Data was downloaded from: North Carolina State Geologic Map 1985 Esri Geodatabase Download from NC DEQ (<https://www.deq.nc.gov/about/divisions/energy-mineral-and-land-resources/north-carolina-geological-survey/ncgs-publications/statewide-geologic-maps-north-carolina>).

Process step

Description

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

Process contact - point of contact

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

Contact's position Environmental Program Consultant

Contact information

Phone

Voice 919-707-6136

Address

Delivery point 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.

Process step

Description

Data was reviewed in ESRI's Data Reviewer tool to verify geometry. No legitimate errors were found.

Process contact - point of contact

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

Contact's position Environmental Program Consultant

Contact information

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Distribution

Distributor

Contact information - distributor

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit

Contact's position Environmental Program Consultant

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Voice 919-707-6136

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Delivery point 1020 Birch Ridge Drive

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Distribution format

Version 10.5

Name SDE Feature Class

Fields

Details for object GdbGisuPubC.ATLAS.NCSAMPotentialSandBedStreams

Type Feature Class

Row count 49

Definition

Potential Sand-bed Stream Areas in the Piedmont and Mountains ecoregion

Definition source

NCDOT

Field OBJECTID

Alias OBJECTID

Data type OID

Width 4

Precision 10

Scale 0

Field description

Internal feature number.

Description source

Esri

Description of values

Sequential unique whole numbers that are automatically generated.

Field Shape

Alias Shape

Data type Geometry

Width 4

Precision 0

Scale 0

Field description

Feature geometry.

Description source

Esri

Description of values

Coordinates defining the features.

Field Geocode

Alias Geocode

Data type String

Width 5

Precision 0

Scale 0

Field description

Thes are the 2–4-digit codes of the rock formation (e.g. PPgb = Pee Dee Grabbro , Zg =metamorphosed granitic rock, etc.)

Description source

NCDOT

Field Belt

Alias Belt

Data type String

Width 75

Precision 0

Scale 0

Field description

Geologic Belt – a zone of Earth's crust affected by orogeny.

Description source

NCDOT

Field Belt2

Alias Belt2

Data type String

Width 33

Precision 0

Scale 0

Field description

Alternate names for the geologic belt.

Description source

NCDOT

Field Grp

Alias Group

Data type String

Width 51

Precision 0

Scale 0

Field description

Rock Group

Description source

NCDOT

Field Type

Alias Type

Data type String

Width 33

Precision 0

Scale 0

Field description

Rock Type

Description source

NCDOT

Field Formation

Alias Formation

Data type String

Width 66

Precision 0

Scale 0

Field description

The formation within a Group or Type
(https://ngmdb.usgs.gov/Prodesc/proddesc_55091.htm)

Description source

NCDOT

Field Eon

Alias Eon

Data type String

Width 23

Precision 0

Scale 0

Field description

The eon is the largest unit of time, spanning billions of years (Hadean, Archean, Proterozoic and Phanerozoic)

Description source

NCDOT

Field Era

Alias Era

Data type String

Width 27

Precision 0

Scale 0

Field description

The era is a shorter subdivision of an eon, lasting hundreds of millions of years. (i.e.

Paleozoic, Mesozoic and Cenozoic are the divisions of the Phanerozoic eon)

Description source

NCDOT

Field Period

Alias Period

Data type String

Width 25

Precision 0

Scale 0

Field description

the period is the subdivision of the era and last tens of millions of years, there are several periods within the era (i.e. the Triassic, Jurassic and Cretaceous periods are within the Mesozoic era.)

Description source

NCDOT

Field AbsAge

Alias AbsoluteAge

Data type String

Width 8

Precision 0

Scale 0

Field description

Estimated geologic age in millions of years

Description source

NCDOT

Field RefNum

Alias ReferenceNumber

Data type String

Width 15

Precision 0

Scale 0

Field description

A unique identification number of the digital source reference (from the References table).

Description source

NCDOT

Field Desc_

Alias Description

Data type String

Width 254

Precision 0

Scale 0

Field Label

Alias Label

Data type String

Width 50

Precision 0

Scale 0

Field description

Is the rock formation code (to I assume added to have a clear attribute column to use in the symbology)

Description source

NCDOT

Field Name

Alias Name

Data type String

Width 250

Precision 0

Scale 0

Field description

Rock Name

Description source

NCDOT

Field Weblink

Alias WebAddress

Data type String

Width 250

Precision 0

Scale 0

Field description

Weblink to picture of that rock type

Description source

NCDOT

Field Shape.STArea()

Alias Shape.STArea()

Data type Double

Width 0

Precision 0

Scale 0

Field Shape.STLength()

Alias Shape.STLength()

Data type Double

Width 0
Precision 0
Scale 0

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 2026-10-13

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 2026-10-13 11:34:33
Last modified in ArcGIS for the item 2026-10-13 11:34:02
Automatic updates
Have been performed Yes
Last update 2026-10-13 11:33:51

Metadata Contacts

Metadata contact - point of contact

Organization's name North Carolina Department of Transportation - EAU Mitigation and Modeling Unit
Contact's position Environmental Program Consultant
Contact information
Phone
Voice 919-707-6136
Address
Delivery point 1020 Birch Ridge Drive
City Raleigh
Administrative area NC
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Metadata Maintenance

Maintenance

Update frequency as needed

Other maintenance requirements

Maintenance of the metadata 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.

Metadata Constraints

Security constraints

Classification unclassified

Classification system None

Limitations of use

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Thumbnail and Enclosures

Thumbnail

Thumbnail type

Image file

