

Shoreline Inventory for Northumberland County 2014: Land use, land cover

Shapefile



Tags

Virginia, Yeocomico River, Judith Sound, Glebe River, Coan River, Hull Creek, Little Wicomico River, Great Wicomico River, Cockrell Creek, Mill Creek, Dividing Creek, Indian Creek

Summary

To inventory Northumberland County tidal shoreline conditions.

Description

Shoreline Situation Reports (SSR) were first generated by VIMS in the 1970's to report the condition and status of the shore lands. The SSR series were published in hardcopy on a county by county basis for each of the Tidewater Virginia localities. The reports were intended to assist planners, managers, and regulators in decisions pertaining to management of coastal areas and natural resources therein. Data collected describes conditions in the immediate riparian zone, the bank, and along the shore. Northumberland County was last inventoried in 2002.

Credits

There are no credits for this item.

Use limitations

These data should not be used for jurisdictional permit determinations beyond providing general shoreline condition or status information. These data have not been surveyed to property boundaries.

Extent

West -76.600680 **East** -76.232404

North 38.030119 **South** 37.681316

Scale Range

Maximum (zoomed in) 1:5,000

Minimum (zoomed out) 1:150,000,000

ArcGIS Metadata

Topics and Keywords

THEMES OR CATEGORIES OF THE RESOURCE farming, boundaries, environment, structure

*** CONTENT TYPE** Downloadable Data

EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No

PLACE KEYWORDS Virginia, Yeocomico River, Judith Sound, Glebe River, Coan River, Hull Creek, Little Wicomico River, Great Wicomico River, Cockrell Creek, Mill Creek, Dividing Creek, Indian Creek

THEME KEYWORDS Land use, Shoreline Inventory, Bank cover, Shoreline Stability, Bank Height, Beach, Access Structures, Shoreline Structures

Citation

TITLE Shoreline Inventory for Northumberland County 2014: Land use, land cover

PUBLICATION DATE 2014-12-31 00:00:00

EDITION DATE 2014-12-31

PRESENTATION FORMATS * digital map

Citation Contacts

RESPONSIBLE PARTY

INDIVIDUAL'S NAME Marcia Berman

ORGANIZATION'S NAME Comprehensive Coastal Inventory, Virginia Institute of Marine Science

CONTACT'S POSITION Director Comprehensive Coastal Inventory Program

CONTACT'S ROLE principal investigator

Resource Details

DATASET LANGUAGES * English (UNITED STATES)

DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

SPATIAL REPRESENTATION TYPE * vector

SUPPLEMENTAL INFORMATION

There are four shapefiles that are part of the 2014 Northumberland County Shoreline Inventory database: Northumberland_lubc_2014, Northumberland_sstru_2014, Northumberland_astru_2014 and Northumberland_tm_2014.

Northumberland_lubc_2014 (land use and bank cover for Northumberland County) is a linear shapefile containing data about land use, tree fringe, bank height, bank cover, bank stability and beach status along the shoreline.

Northumberland_sstru_2014 (Northumberland County shoreline structures) is a linear shapefile delineating hard structures in place at the shoreline (bulkhead, dilapidated bulkhead, riprap, wharf, unconventional, debris, marina < 50 slips, marina > 50 slips, jetty, marsh toe revetment, groinfield and breakwaters). Northumberland_astru_2014 (Northumberland County access structures) is a point shapefile with locations of docks, dilapidated docks, boathouses, and private and public boat ramps. Northumberland_tm_2014 (Northumberland County tidal marshes) shows the location, size, species and type of tidal marshes. The attributes of these four shapefiles are explained in the Entity and Attribute Information section below.

* **PROCESSING ENVIRONMENT** Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.1.0.3035

ARCgis ITEM PROPERTIES

* **NAME** Northumberland_lubc_2014

* **SIZE** 3.122

* **LOCATION** <http://ccrm.vims.edu/ccrmp/index.html>

* **ACCESS PROTOCOL** Comprehensive Coastal Resource Management Portal

Extents

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching

* **WEST LONGITUDE** -76.600680

* **EAST LONGITUDE** -76.232404

* **NORTH LATITUDE** 38.030119

* **SOUTH LATITUDE** 37.681316

* **EXTENT CONTAINS THE RESOURCE** Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

* **WEST LONGITUDE** 359509.281250

* **EAST LONGITUDE** 391335.874749

* **SOUTH LATITUDE** 4171651.567113

* **NORTH LATITUDE** 4209880.215550

* **EXTENT CONTAINS THE RESOURCE** Yes

Resource Constraints

CONSTRAINTS

LIMITATIONS OF USE

These data should not be used for jurisdictional permit determinations beyond providing general shoreline condition or status information. These data have not been surveyed to property boundaries.

LEGAL CONSTRAINTS

LIMITATIONS OF USE

The Comprehensive Coastal Inventory Program (CCI) at VIMS performs a service by distributing data generated by either CCI or public agencies which offer data without restriction or charge. CCI assumes no responsibility for data accuracy or precision, metadata completeness or correctness for digital information. CCI assumes no

liability for misuse of any data which may arise as a result of any alteration, conversion, or combination with other data sources. As well, the timeliness and scale of these products must be considered when evaluating appropriate use.

LIMITATIONS OF USE

These data should not be used for jurisdictional permit determinations beyond providing general shoreline condition or status information. These data have not been surveyed to property boundaries.

Spatial Reference

ARCGIS COORDINATE SYSTEM

- * TYPE Projected
- * GEOGRAPHIC COORDINATE REFERENCE GCS_North_American_1983
- * PROJECTION NAD_1983_UTM_Zone_18N
- * COORDINATE REFERENCE DETAILS

PROJECTED COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 26918

X ORIGIN -5120900

Y ORIGIN -9998100

XY SCALE 450445547.3910538

Z ORIGIN -100000

Z SCALE 10000

M ORIGIN -100000

M SCALE 10000

XY TOLERANCE 0.001

Z TOLERANCE 0.001

M TOLERANCE 0.001

HIGH PRECISION true

LATESTWKID 26918

WELL-KNOWN TEXT

PROJCS["NAD_1983_UTM_Zone_18N",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["Transverse_Mercator"],PARAMETER["False_Easting",500000.0],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",-75.0],PARAMETER["Scale_Factor",0.9996],PARAMETER["Latitude_Of_Origin",0.0],UNIT["Meter",1.0],AUTHORITY["EPSG",26918]]

REFERENCE SYSTEM IDENTIFIER

- * VALUE 26918
- * CODESPACE EPSG
- * VERSION 7.9.4

Spatial Data Properties

VECTOR

- * LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

GEOMETRIC OBJECTS

FEATURE CLASS NAME Northumberland_lubc_2014

* OBJECT TYPE composite

* OBJECT COUNT 13145

ARCGIS FEATURE CLASS PROPERTIES



FEATURE CLASS NAME Northumberland_lubc_2014

* FEATURE TYPE Simple

* GEOMETRY TYPE Polyline

* HAS TOPOLOGY FALSE

* FEATURE COUNT 13145

* SPATIAL INDEX TRUE

* LINEAR REFERENCING FALSE

Data Quality

SCOPE OF QUALITY INFORMATION

RESOURCE LEVEL dataset

Lineage

PROCESS STEP



WHEN THE PROCESS OCCURRED 2014-06-01 00:00:00

DESCRIPTION A small draft boat was used to collect data in the field. Data is logged using a geo-referenced video camera. The Red Hen System provides hardware and software to collect geo-referenced video and photo data in the field. A standard video camera (sony ACC-HDV7) is interfaced with a GPS antennae via the Red Hen hardware device - VMS 300. VMS 300 converts GPS data into audio signals, which are sent to a video camera through its microphone input connector. As the video is recorded, GPS data are transmitted once per second to the video camera by VMS 300. Each GPS location is linked with a time code on the video. Therefore, the survey is a set of videos containing geographically referenced shoreline data.

PROCESS STEP



WHEN THE PROCESS OCCURRED 2014-08-01 00:00:00

DESCRIPTION All processing steps for the shoreline inventory were done using ArcGis version 10. Using the latest VBMP 2013 imagery as a background, conditions visible on shore were used to code a digital shoreline created using VBMP 2009 imagery. Conditions were also verified using Bing Birds Eye and aerial imagery. For the land use/bank cover shapefile arcs were split and coded for land use, bank height, bank cover, bank stability, tree fringe and presence or absence of beach, for the access structure shapefile arcs were coded for dock, dilapidated dock, boathouse, and public and private ramps, for the shoreline structure shapefile arcs were coded for bulkhead, delapidated bulkhead, riprap, unconventional,

debris, wharf, breakwater, groinfield, jetty, marsh toe revetment and marina >50 and <50 slips.

PROCESS STEP



WHEN THE PROCESS OCCURRED 2014-08-01 00:00:00

DESCRIPTION A shoreline for Northumberland County was created using 2009 VBMP imagery as a backdrop and using ArcGis version 10.0. Using this as a baseline the shoreline inventory was remotely generated using two sources: 2012 oblique Pictometry imagery available through Bing Maps, and 2013 high resolution imagery available from the Virginia Base Mapping Program (VBMP).

PROCESS STEP



WHEN THE PROCESS OCCURRED 2014-09-01 00:00:00

DESCRIPTION The Red Hen video data was used for QAQC.

Distribution

DISTRIBUTION FORMAT

* NAME Shapefile

VERSION Shapefile

TRANSFER OPTIONS

* TRANSFER SIZE 3.122

Fields

DETAILS FOR OBJECT Northumberland_lubc_2014

* TYPE Feature Class

* ROW COUNT 13145

DEFINITION

A collection of geographical features with the same geometry type (such as point, line or poly), same attributes, and the same spatial reference.

DEFINITION SOURCE

ESRI

FIELD FID



* 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.

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.

FIELD LENGTH



- * ALIAS LENGTH
- * DATA TYPE Double
- * WIDTH 18
- * PRECISION 17
- * SCALE 5
- * FIELD DESCRIPTION
Length of arc in meters

DESCRIPTION SOURCE
ESRI

DESCRIPTION OF VALUES Length of arc in meters

FIELD FEATURE



- * ALIAS FEATURE
- * DATA TYPE String
- * WIDTH 30
- * PRECISION 0
- * SCALE 0
- * FIELD DESCRIPTION
Feature refers to a combination of land use in the immediate riparian area within 100 feet of the adjacent shoreline and best professional judgement when the

infrastructure is setback on the parcel. Feature is labelled one of the following: agriculture, bare, commercial, detached marsh, forested, grass, industrial, marsh island, paved, residential, timbered and scrub-shrub.

DESCRIPTION SOURCE

Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

LIST OF VALUES

VALUE Agriculture

DESCRIPTION Land use defined as agricultural includes farm tracts that are cultivated and crop producing. This designation is not applicable for pastureland, which is coded as grass.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Bare

DESCRIPTION Land use defined as bare includes areas void of any vegetation or obvious land use. Bare areas include those that have been cleared for construction.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Commercial

DESCRIPTION Commercial is a land use classification denoting small commercial operations such as shops, restaurants, as well as campgrounds. These operations are not necessarily water dependent businesses.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Forested

DESCRIPTION Forest cover includes deciduous, evergreen, and mixed forest stands. of trees. The land use is classified as Forest if there is a dense cover of trees and no other land use category is apparent close to the shoreline, e.g. residential, commercial, industrial, agriculture, etc.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Grass

DESCRIPTION Grasslands include large unmanaged fields, managed grasslands adjacent to large estates, agriculture tracts reserved for pasture, and grazing. While a general rule of thumb will classify a tract as "grass" if a home sits behind a large tract of grass, a designation of "residential" may be made if there are similar tracts adjacent to each other. This designation can be determined using best professional judgment.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Detached Marsh

DESCRIPTION Vegetated wetland surrounded by water but still in close proximity to mainland or other marshes. A marsh that is completely isolated from the mainland and found in open water is called marsh island.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Grass

DESCRIPTION Grasslands include large unmanaged fields, managed grasslands adjacent to large estates, agriculture tracts reserved for pasture, and grazing. While a general rule of thumb will classify a tract as "grass" if a home sits behind a large tract of grass, a designation of "residential" may be made if there are similar tracts adjacent to each other. This designation can be determined using best professional judgment.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Industrial

DESCRIPTION Industrial operations are larger commercial businesses and can include areas where power plants, pulp mills, refineries, etc. are in operation along the coast.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Marsh Island

DESCRIPTION A marsh island is a vegetated wetland that is completely isolated from the mainland and found in open water. A marsh that is surrounded by water due to dissection from small tidal creeks is not a marsh island.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Paved

DESCRIPTION Paved areas represent roads which run along the shore and generally are located at the top of the banks. Paved also includes parking areas such as parking at boat landing, or commercial facilities.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Residential

DESCRIPTION Residential land use includes single and multi-family dwellings.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Scrub-Shrub

DESCRIPTION Scrub-shrub is a land use class that includes small trees, shrubs, and bushy plants. This land use is easily distinguished during remote sensing compared to Forest and Grass.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

DESCRIPTION OF VALUES Feature is labelled one of the following: agriculture, bare, commercial, detached marsh, forested, grass, industrial, marsh island, paved, residential, timbered and scrub-shrub.

BEGINNING DATE OF VALUES 2014-08-01

FIELD HEIGHT



- * ALIAS HEIGHT
- * DATA TYPE String
- * WIDTH 20
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Bank height is a visual inspection of the height of the bank from the base to the top. We estimate height from imagery, field inspection, videography or a combination of all three data sources. Bank height is labelled on of the following: 0-5 feet, 5-30 feet and >30 feet.

DESCRIPTION SOURCE

Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

LIST OF VALUES

VALUE 0-5

DESCRIPTION Bank is 0-5 feet high

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE 5-30

DESCRIPTION Bank is 5-30 feet high

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE >30

DESCRIPTION Bank is greater than 30 feet high

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

DESCRIPTION OF VALUES 0-5 feet, 5-30 feet and >30 feet.

BEGINNING DATE OF VALUES 2014-08-01

FIELD COVER



- * ALIAS COVER
- * DATA TYPE String
- * WIDTH 20
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Bank cover is a classification based on a visual inspection of the bank. "Cover" can include either vegetative or structural cover and is labelled one of the following: total, partial or bare.

DESCRIPTION SOURCE

Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

LIST OF VALUES

VALUE Bare

DESCRIPTION bare < 25% vegetative/structural cover

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Partial

DESCRIPTION partial 25-75% vegetative/structural cover

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Total

DESCRIPTION total > 75% vegetative/structural cover

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

DESCRIPTION OF VALUES Total, Partial or Bare

BEGINNING DATE OF VALUES 2014-08-01

FIELD EROSION



* ALIAS EROSION

* DATA TYPE String

* WIDTH 20

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

Bank stability is an observed estimate of how stable the bank is. It is not a true measure of erosion. Characteristics that would classify a bank as being unstable are exposed roots, bare soil, slumping, and falling trees. Characteristics of a stable bank would be one that is well vegetated and absent any signs of sediment slumping, scarps, and falling trees. If the bank condition can not be discerned from the observation point, the bank stability is classified as "unknown". Erosion is labelled one of the following: stable, unstable or unknown.

DESCRIPTION SOURCE

Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

LIST OF VALUES

VALUE Stable

DESCRIPTION Characteristics of a stable bank would be one that is well vegetated and absent any signs of sediment slumping, scarps, and failing trees.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Unstable

DESCRIPTION Characteristics that would classify a bank as being unstable are exposed roots, bare soil, slumping, and falling trees.

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE Unknown

DESCRIPTION If the bank condition can not be discerned from the observation point, the bank stability is classified as "unknown".

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

DESCRIPTION OF VALUES stable, unstable or unknown

BEGINNING DATE OF VALUES 2014-08-01

FIELD BEACH



* **ALIAS** BEACH

* **DATA TYPE** String

* **WIDTH** 20

* **PRECISION** 0

* **SCALE** 0

FIELD DESCRIPTION

Beaches are sandy shores that are visible during high tides. These features can be wide and persistent, or very thin lenses of sand.

DESCRIPTION SOURCE

Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

LIST OF VALUES

VALUE Yes

DESCRIPTION Beach is present

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE No

DESCRIPTION Beach is not present

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

DESCRIPTION OF VALUES Presence or absence of beach

BEGINNING DATE OF VALUES 2014-08-01

FIELD TreeFringe



* ALIAS TreeFringe

* DATA TYPE String

* WIDTH 10

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

When the dominant riparian land use is not forested but a line of trees is maintained along the bank edge, the land use is noted to include a tree fringe.

DESCRIPTION SOURCE

Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

LIST OF VALUES

VALUE Yes

DESCRIPTION Tree fringe is present

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

VALUE No

DESCRIPTION Tree fringe is not present

ENUMERATED DOMAIN VALUE DEFINITION SOURCE Glossary of Shoreline Features Defined, Center for Coastal Resources Management, VIMS

DESCRIPTION OF VALUES Presence or absence of tree fringe

BEGINNING DATE OF VALUES 2014-08-01

FIELD SURVEY



* ALIAS SURVEY

* DATA TYPE String

* WIDTH 20

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

Date of shoreline inventory processing or field survey date

DESCRIPTION SOURCE

Data Processor

DESCRIPTION OF VALUES Date of survey

BEGINNING DATE OF VALUES 2014-08-01

FIELD check



- * ALIAS check
- * DATA TYPE String
- * WIDTH 20
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Field verified.

DESCRIPTION SOURCE

Field Personnel

DESCRIPTION OF VALUES Field verified

BEGINNING DATE OF VALUES 2014-08-01

FIELD miles



- * ALIAS miles
- * DATA TYPE Double
- * WIDTH 19
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Length in miles

DESCRIPTION SOURCE

Data Processor

DESCRIPTION OF VALUES Length in miles

BEGINNING DATE OF VALUES 2014-08-01

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 2015-01-08

ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0

METADATA STYLE ISO 19139 Metadata Implementation Specification

STANDARD OR PROFILE USED TO EDIT METADATA ISO19139

CREATED IN ARCGIS FOR THE ITEM 2014-12-11 11:27:50

LAST MODIFIED IN ARCGIS FOR THE ITEM 2015-01-08 08:41:41

AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes

LAST UPDATE 2015-01-08 08:41:41

Metadata Contacts

METADATA CONTACT

INDIVIDUAL'S NAME Sharon Killeen

ORGANIZATION'S NAME Comprehensive Coastal Inventory, Virginia Institute of Marine Science

CONTACT'S POSITION GIS Programmer/Analyst

CONTACT'S ROLE point of contact

CONTACT INFORMATION

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ADDRESS

TYPE postal

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CITY Gloucester Point

ADMINISTRATIVE AREA Virginia

POSTAL CODE 23062

COUNTRY US

E-MAIL ADDRESS sharon@vims.edu

Thumbnail and Enclosures

THUMBNAIL

THUMBNAIL TYPE JPG