

Shoreline Inventory for Stafford County, Virginia

2015: Shoreline structures

Shapefile



Tags

Virginia, Shoreline position, Stafford County, Rappahannock River, Potomac River

Summary

To inventory Stafford County tidal shoreline conditions.

Description

Shoreline Situation Reports (SSR) were first generated by VIMS in the 1970s 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. This report continues the process which updates and expands earlier reports. Data collected describes conditions in the immediate riparian zone, the bank, and along the shore. Stafford County was last inventoried in 2006.

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 -77.638392 **East** -77.283853
North 38.518942 **South** 38.237399

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 biota, inlandWaters, boundaries, environment, imageryBaseMapsEarthCover, structure

* CONTENT TYPE Downloadable Data
EXPORT TO FGDC CSDGM XML FORMAT AS RESOURCE DESCRIPTION No

PLACE KEYWORDS Virginia, Stafford County, Rappahannock River, Potomac River, Potomac Creek, Aquia Creek, Chpwamsic Creek

THEME KEYWORDS Shoreline structures, Imagery, Bulkhead, Marsh toe revetment, Riprap, Dilapidated Bulkhead, Breakwater, Groin field, Unconventional, Debris, Jetty, Marina >50 slips, Marina <50 slips, Wharf

Citation

TITLE Shoreline Inventory for Stafford County, Virginia 2015: Shoreline structures
CREATION DATE 2015-05-05 00:00:00
PUBLICATION DATE 2015-09-30 00:00:00

PRESENTATION FORMATS * digital map

Citation Contacts

RESPONSIBLE PARTY
ORGANIZATION'S NAME Comprehensive Coastal Inventory, Virginia Institute of Marine Science
CONTACT'S ROLE originator

RESPONSIBLE PARTY
ORGANIZATION'S NAME Virginia Institute of Marine Science
CONTACT'S ROLE publisher

CONTACT INFORMATION

ADDRESS
DELIVERY POINT Gloucester Point, Virginia

RESPONSIBLE PARTY
INDIVIDUAL'S NAME Sharon Killeen
ORGANIZATION'S NAME Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science
CONTACT'S ROLE processor

Resource Details

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

STATUS completed
SPATIAL REPRESENTATION TYPE * vector

SUPPLEMENTAL INFORMATION

There are four shapefiles that are part of the 2015 Stafford County Shoreline Inventory database: Stafford_lubc_2015, Stafford_sstru_2015, Stafford_astru_2015 and Stafford_tm_2015. Stafford_lubc_2015 (land use and bank cover for Stafford County) is a linear shapefile containing data about land use, tree fringe, bank height, bank cover, and beach status along the shoreline. Stafford_sstru_2015 (Stafford 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). Stafford_astru_2015 (Stafford County access structures) is a point shapefile with locations of docks, dilapidated docks, boathouses, and private and public boat ramps. Stafford_tm_2015 (Stafford 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 StaffordCo_sstru_2015
* SIZE 0.357
* LOCATION *****
* ACCESS PROTOCOL Local Area Network

Extents

EXTENT
DESCRIPTION
ground condition at time of survey.

TEMPORAL EXTENT
BEGINNING DATE 2001-06-05
ENDING DATE 2005-09-01

EXTENT
GEOGRAPHIC EXTENT
BOUNDING RECTANGLE
EXTENT TYPE Extent used for searching
* WEST LONGITUDE -77.638392
* EAST LONGITUDE -77.283853
* NORTH LATITUDE 38.518942
* SOUTH LATITUDE 38.237399
* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM
* WEST LONGITUDE 269956.437474
* EAST LONGITUDE 300139.240699
* SOUTH LATITUDE 4235422.544148

* NORTH LATITUDE 4265886.118935
* EXTENT CONTAINS THE RESOURCE Yes

Resource Points of Contact

POINT OF CONTACT

INDIVIDUAL'S NAME Marcia Berman
ORGANIZATION'S NAME Virginia Institute of Marine Science (VIMS)
CONTACT'S POSITION Director Comprehensive Coastal Inventory Program
CONTACT'S ROLE point of contact

CONTACT INFORMATION

PHONE

VOICE (804) 684-7188
FAX (804) 684-7179

ADDRESS

TYPE postal
DELIVERY POINT P.O. Box 1346
CITY Gloucester Point
ADMINISTRATIVE AREA Virginia
POSTAL CODE 23062
COUNTRY US
E-MAIL ADDRESS marcia@vims.edu

Resource Maintenance

RESOURCE MAINTENANCE

UPDATE FREQUENCY not planned

MAINTENANCE CONTACT

INDIVIDUAL'S NAME Sharon Killeen
ORGANIZATION'S NAME Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science
CONTACT'S ROLE processor

Resource Constraints

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.

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.

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

DIMENSION horizontal
* 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 StaffordCo_sstru_2015
* OBJECT TYPE composite
* OBJECT COUNT 1121

ARCGIS FEATURE CLASS PROPERTIES

FEATURE CLASS NAME StaffordCo_sstru_2015

- * FEATURE TYPE Simple
- * GEOMETRY TYPE Polyline
- * HAS TOPOLOGY FALSE
- * FEATURE COUNT 1121
- * SPATIAL INDEX TRUE
- * LINEAR REFERENCING FALSE

Data Quality

SCOPE OF QUALITY INFORMATION

RESOURCE LEVEL dataset

Lineage

PROCESS STEP

WHEN THE PROCESS OCCURRED 2015-03-01 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 20013 imagery at a scale of 1:1000. Conditions were also verified using Bing Birds Eye, VBMP 2011, and VBMP 2009 imagery. For the land use/bank cover shapefile arcs were split and coded for land use, bank height, bank cover, 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, dilapidated bulkhead, riprap, unconventional, debris, wharf, breakwater, groinfield, jetty, marsh toe revetment and marina >50 and <50 slips.

PROCESS CONTACT

INDIVIDUAL'S NAME Sharon Killeen

ORGANIZATION'S NAME Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science

CONTACT'S ROLE processor

PROCESS STEP

WHEN THE PROCESS OCCURRED 2015-03-01 00:00:00

DESCRIPTION The shoreline produced for the 2001 Stafford County Shoreline Inventory Report was copied and corrected to the new 2013 VBMP imagery. Other resources, such as Google Earth and Bing Maps, were used when shoreline visibility was obscured.

PROCESS STEP

WHEN THE PROCESS OCCURRED 2015-04-01 00:00:00

DESCRIPTION A small draft boat was used to collect tidal marsh inventory data in the field. A video camera is set up and collects imagery of the coastline as it passes by the camera lens. 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 2015-07-01 00:00:00

DESCRIPTION The first step in the QAQC process involves complete checks of shoreline coding by a GIS Programmer/Analyst and a Marine Scientist.

PROCESS STEP

WHEN THE PROCESS OCCURRED 2015-08-01 00:00:00

DESCRIPTION The second and third step in the QAQC process involves complete checks of shoreline coding by a GIS Programmer/Analyst and a Marine Scientist.

Distribution

DISTRIBUTOR

CONTACT INFORMATION

ORGANIZATION'S NAME Virginia Institute of Marine Science (VIMS)

CONTACT'S POSITION Director Comprehensive Coastal Inventory Program

INDIVIDUAL'S NAME Marcia Berman

CONTACT'S ROLE distributor

CONTACT INFORMATION

PHONE

VOICE (804) 684-7188

ADDRESS

TYPE postal

DELIVERY POINT P.O. Box 1346

CITY Gloucester Point

ADMINISTRATIVE AREA Virginia

POSTAL CODE 23062

COUNTRY US

E-MAIL ADDRESS marcia@vims.edu

CONTACT INSTRUCTIONS

Contact via email

DISTRIBUTION FORMAT

* NAME Shapefile

VERSION Shapefile

TRANSFER OPTIONS

* TRANSFER SIZE 0.357

ONLINE SOURCE

LOCATION <URL:<http://www.vims.edu/ccrm/gis/gisdata.html>

Fields

DETAILS FOR OBJECT [StaffordCo_sstru_2015](#)

* TYPE Feature Class

* ROW COUNT 1121

DEFINITION

Feature class is digital line shapefile

DEFINITION SOURCE

File creator

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 19
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
Length of arc in meters

DESCRIPTION SOURCE
File creator

DESCRIPTION OF VALUES length of arc segment in meters.

FIELD shoreline

* ALIAS shoreline
* DATA TYPE String
* WIDTH 50
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
Upland Base shoreline

DESCRIPTION SOURCE
Processor

DESCRIPTION OF VALUES value is upland

FIELD Structure

* ALIAS Structure
* DATA TYPE String
* WIDTH 50
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION

Erosion control conditions at the shoreline: breakwater, bulkhead, dilapidated bulkhead, debris, groinfield, jetty, marina >50 slips, marina <50 slips, marsh toe revetment, riprap, unconventional and wharf.

DESCRIPTION SOURCE

Processor

LIST OF VALUES

VALUE Bulkhead

DESCRIPTION Bulkheads are traditionally treated wood or steel “walls” constructed to offer protection from wave attack. More recently, plastics are being used in the construction. Bulkheads are vertical structures built slightly seaward of the problem area and backfilled with suitable fill material. They function like a retaining wall, as they are designed to retain upland soil, and prevent erosion of the bank from impinging waves.

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

VALUE Breakwater

DESCRIPTION Breakwaters are structures that sit offshore and generally occur in a parallel series along the shore. Some breakwaters are attached to the land and are referred to as headland breakwaters. Their purpose is to attenuate and deflect incoming wave energy, protecting the fastland behind and between the structures.

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

VALUE Debris

DESCRIPTION Debris represents nonconforming materials and rubble dumped along the shoreline in a haphazard manner. Debris can include tires, bricks, broken concrete rubble, and railroad ties as examples. The inventory maps Unconventional instead of Debris when the material is deliberately placed for shoreline protection in a manner similar to riprap, bulkhead, and other shoreline protection structures.

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

VALUE Dilapidated Bulkhead

DESCRIPTION Groins are low profile structures that sit perpendicular to the shore. They can be constructed of rock, timber, or concrete. They are frequently set in a series known as a groinfield, which may extend along a stretch of shoreline for some distance. Unless only a single groin can be detected, this inventory does not delineate individual groins in a groinfield. The groinfield is mapped as one linear feature parallel to the shoreline running along the length of the groin series. When effective, groins will trap sediment moving alongshore.

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

VALUE Dilapidated Bulkhead

DESCRIPTION Dilapidated Bulkhead – A bulkhead which has failed due to deterioration from age or storm damage is called a dilapidated bulkhead. In many cases the structure may not be able to perform erosion control functions any longer.

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

VALUE Groinfield

DESCRIPTION Groins are low profile structures that sit perpendicular to the shore. They can be constructed of rock, timber, or concrete. They are frequently set in a series known as a groinfield, which may extend along a stretch of shoreline for some distance. Unless only a single groin can be detected, this inventory does not delineate individual groins in a groinfield. The groinfield is mapped as one linear feature parallel to the shoreline running along the length of the groin series. When effective, groins will trap sediment moving alongshore.

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

VALUE Jetty

DESCRIPTION A jetty is a structure generally constructed of stone which is perpendicular to the shoreline and generally located at the entrance of tidal creeks and tributaries or marina boat basins. The function of a jetty is to prevent sediment transported alongshore from accumulating in the inlet.

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

VALUE Marinas: < and > 50 slips

DESCRIPTION Marinas are denoted as line features in this survey. The infrastructure associated with the marina (e.g. bulkheading, docks, wharfs, etc) are not digitized individually. However, if a boat ramp is noted it will be surveyed separately and coded as private. Marinas are generally commercial operations. However, smaller scale community docks offering slips and launches for residences are becoming more popular. To distinguish these facilities from commercial marinas, the user could check the riparian land use delineation. If "residential" the marina is most likely a community facility. The survey estimates the number of slips within the marina and classifies marinas as those with less than 50 slips and those with more than 50 slips.

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

VALUE Marsh Toe Revetment

DESCRIPTION aka Marsh sill) -A low revetment placed offshore from an existing marsh or new planted marsh is classified as marsh toe revetment. The structure may include tidal openings to allow for the easy exchange of free swimming organisms during tidal cycles. Marsh toe revetments are mapped as offshore linear features running along the length of the structure. Marsh toe revetments are distinguished from breakwaters by the linear placement and presence of a tidal marsh instead of a sand beach landward from the structure. The classification can include best professional judgment.

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

VALUE Riprap

DESCRIPTION aka Revetments) - Sloped structures constructed with large, heavy stone or other materials placed against the upland bank for erosion protection are classified as riprap. Riprap is mapped as a linear feature along the shoreline. Riprap is also used next to failing bulkheads (bulkhead toe revetments). The inventory maps only riprap when this type of structure is co-located with bulkheads. A similar structure is used to protect the edge of eroding marshes. This use is mapped as marsh toe revetment, not riprap.

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

VALUE Unconventional

DESCRIPTION Unconventional features represent segments along the shore where alternative material has been deliberately placed for shoreline protection. Unconventional features may include unique materials placed in a similar manner as riprap or bulkheads, such as engineered pre-cast concrete products. It may also include unique placement or arrangement of conventional materials like riprap that does not fit other structure definitions. The inventory maps Debris instead of Unconventional when the material is haphazardly scattered and not providing any shoreline protection value.

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

VALUE Wharf

DESCRIPTION Typically describes a shore parallel structure where boats are tied. In this inventory, Wharf is generally associated with large industrial, public or commercial facilities.

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

FIELD Inv_update

* ALIAS Inv_update

* DATA TYPE String

* WIDTH 200

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

Imagery used

DESCRIPTION SOURCE

VBMP

FIELD Comments

* ALIAS Comments

* DATA TYPE String

* WIDTH 50

* PRECISION 0

* SCALE 0

Metadata Details

METADATA LANGUAGE English (UNITED STATES)

METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

METADATA IDENTIFIER 9E0A87E6-8A6A-4F61-B0BB-FC6D304CC0C2

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

* LAST UPDATE 2015-09-09

ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0

METADATA STYLE ISO 19139 Metadata Implementation Specification

STANDARD OR PROFILE USED TO EDIT METADATA NAP

CREATED IN ARCGIS FOR THE ITEM 2015-05-11 11:49:47

LAST MODIFIED IN ARCGIS FOR THE ITEM 2015-09-09 08:35:16

AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes

LAST UPDATE 2015-09-09 08:35:16

Metadata Contacts

METADATA CONTACT

INDIVIDUAL'S NAME Sharon Killeen

ORGANIZATION'S NAME Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science

CONTACT'S ROLE processor

Metadata Maintenance

MAINTENANCE

UPDATE FREQUENCY not planned

MAINTENANCE CONTACT

INDIVIDUAL'S NAME Sharon Killeen

ORGANIZATION'S NAME Comprehensive Coastal Inventory Program, Center for Coastal Resources Management, Virginia Institute of Marine Science

CONTACT'S ROLE processor