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Northern Neck Regional Shallow Draft Channel Dredging Plan: Initial Phase

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Shoreline Studies Program
Virginia Institute of Marine Science
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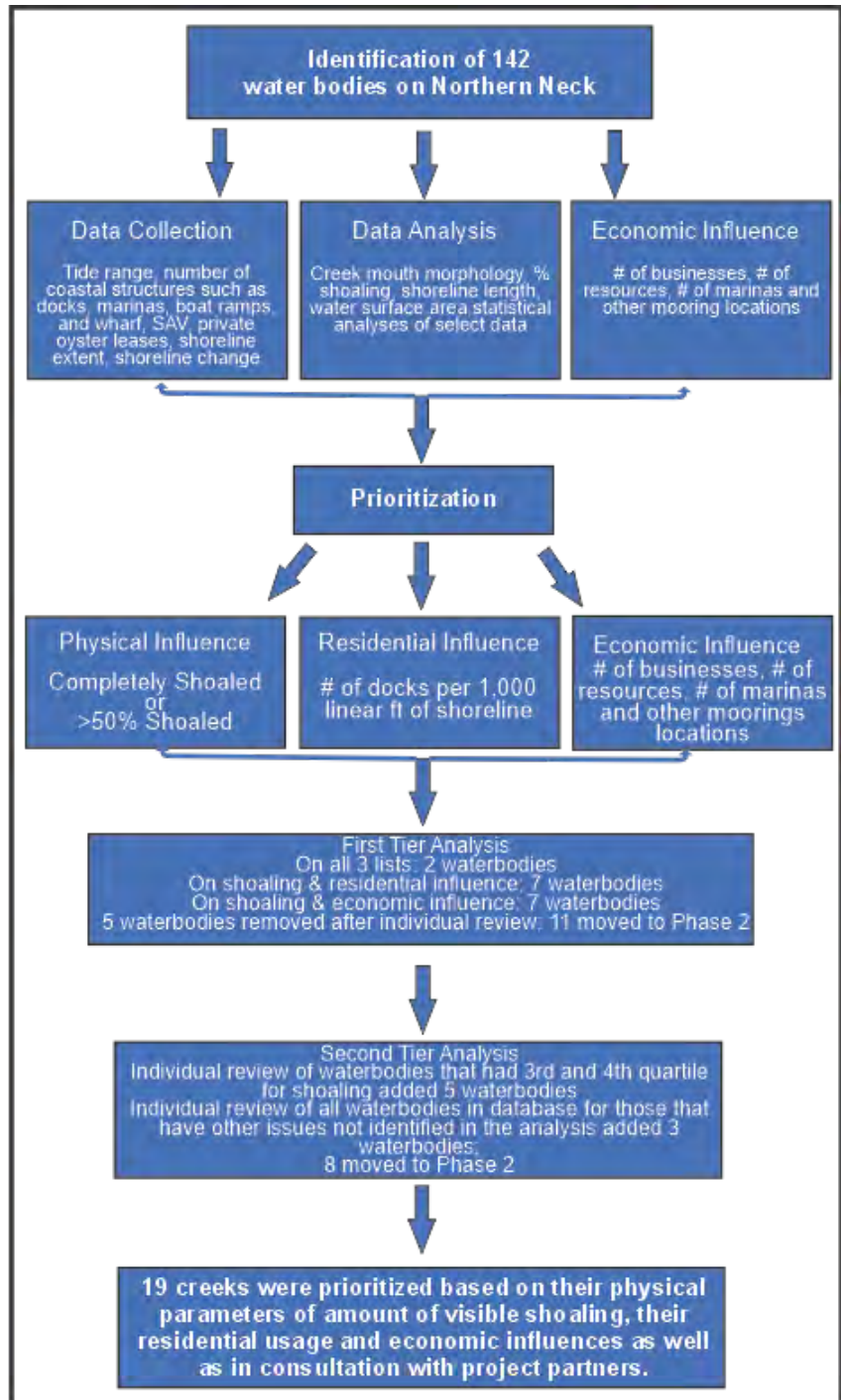


December 2023

Executive Summary

The purpose of this project is to develop a regional dredging program for the localities of the Northern Neck. This report encompasses Phase 1 of the project, which included creating a database of waterbodies in Lancaster, Northumberland, Richmond, and Westmoreland Counties and the Town of Colonial Beach along the Potomac and Rappahannock Rivers and Chesapeake Bay. Generally, these waterbodies can be categorized into three basic types of shallow draft channels: federally-authorized to include aids to navigation (ATONS), non-federal with ATONS, and non-federal without ATONS. Along the Northern Neck, presently identified, are 13 federal channels, 37 non-federal channels in creeks with ATONS, and 92 in creeks without defined channels or ATONS, for a total of 142 waterbodies. Additional non-federal creeks, coves, branches, and ponds (all are interchangeably identified as waterbodies in this report) occur in these localities, but the analysis was limited to waterbodies that had some residential or economic usage. These waterbodies occur in Lancaster (35 waterbodies), Northumberland (67 waterbodies), Richmond (4 waterbodies), and Westmoreland (31 waterbodies) counties. To avoid double counting of waterbodies, 5 additional waterbodies that are located on the boundaries of these counties were attributed to just one county for this report. These waterbodies have been grouped within one of their boundary counties bringing the number of waterbodies in Lancaster to 38 and Westmoreland to 33.

Physical parameter data was collected or created for each of these waterbodies. These data included creek mouth morphology, amount of shoaling in the waterbody mouth, waterbody type (primary, secondary, etc.), water surface area, combined shoreline length, historical (1971-2020) and current (2016-2020) SAV presence, private and public oyster



lease presence and the amount of area they cover, number of remotely-sensed coastal structures such as piers, marinas, boat ramps, and verified economic facilities such as marinas and other mooring places, resource, seafood related, and transportation facilities that impact the locality's economics.

Overall, 7 waterbodies were completely shoaled, and 36 had more than 50% shoaling. Forty waterbodies had less than 50% shoaling at the mouth and 59 had no visible shoaling. Twenty-eight waterbodies had restricted creek mouth morphology, and 66 had open creek mouth morphology. Nearly all the waterbodies (142) had at least one pier; 132 had marinas; and 23 had public or publicly-usable private boat ramps.

A total of 19 waterbodies were prioritized based on their physical parameters of amount of visible shoaling, the number of coastal use structures, and economic usage. These include 6 in Westmoreland County: Cabin Point Creek (ID_82), Lower Machodoc Creek Fed Channel (ID_84), Nomini Creek Fed Channel (ID_87), Bonum Creek Fed Channel (ID_102), Jackson Creek (ID_106) and Monroe Bay and Creek Fed Channel (ID_108).

Northumberland county has 8 waterbodies on the list: Bluff Neck Creek Southern Branch (ID_1), Jarvis Creek Fed Channel (ID_12), Little Wicomico River Fed Channel (ID_13), Cranes Creek Fed Channel (ID_52), Gougher Creek (ID_53), Whays Creek (ID_59), Cod Creek East (ID_94), and Hull Creek (ID_99).

There are 4 waterbodies in Lancaster County on the final list: Tabbs Creek (ID_45), Beach Creek (ID_112), Greenvale Creek Fed Channel (ID_117), Windmill Point Creek (ID_121).

Farnham Creek (ID_123) in Richmond County is the final waterbody on the list.

Utilizing the collected data, the steps that localities need to take for additional data collection to develop a dredging project were outlined, and recommendations were made for additional regional management considerations for use in Phases 2 and 3. Finally, next steps were suggested. By creating a regional program for dredging of shallow water, localities can save time, effort, and money. Such a program also provides ways for localities to plan for the utilization of dredge material to combat repetitive flooding and improve coastal resiliency.

Additional information is provided in the Appendices. Appendix A is a list of the Key Acronyms, Concepts, and Terms used in this report. Appendix B shows tables of waterbody descriptors for all the data by county. Waterbody-specific data table and maps are shown for each of the counties Lancaster, Northumberland, Richmond, and Westmoreland in Appendix C. Appendix D is the complete report of the Economic Facilities. Appendix E contains the reviewed list of economic influences by county.

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B Data Tables for Waterbodies of the Northern Neck by County
C Individual Waterbody Maps and Tables by County
D Complete Report of the Economic Facilities
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1 Introduction

1.1 Shallow-Draft Channel Background

Coastal and inland waterways are critical to commerce and recreation for localities in Chesapeake Bay. The natural channels that occur in waterbodies along Chesapeake Bay provide vital thoroughfares for industrial, commercial, and residential users to access its waters. The Northern Neck of Virginia (including Lancaster, Northumberland, Richmond, and Westmoreland Counties as well as the Town of Colonial Beach), consists of many tidal creeks and rivers that are used by residents and businesses for both recreation and their resources (Figure 1-1).

To assist with the transport and distribution of goods and resources, federally-designated shallow-draft channels (less than 14 ft deep with low commercial usage) were authorized by Congress between the turn of and mid-20th century to support the commercial seafood industry, working waterfronts, and other industrial uses. The natural depths of the creeks and rivers were not sufficient to allow safe passage, so channels and turning basins had to be created by dredging.

On the Northern Neck, 13 channels are federally-designated shallow draft channels. Each channel is unique in terms of tidal hydrodynamics and the need for maintenance dredging so their extent and controlling depths vary depending on the nature of boating requirements. Channel lengths were often determined by where an inside bathymetric contour would be “linked” to the same contour on the river or bay side. Controlling depths vary but generally range from 6 to

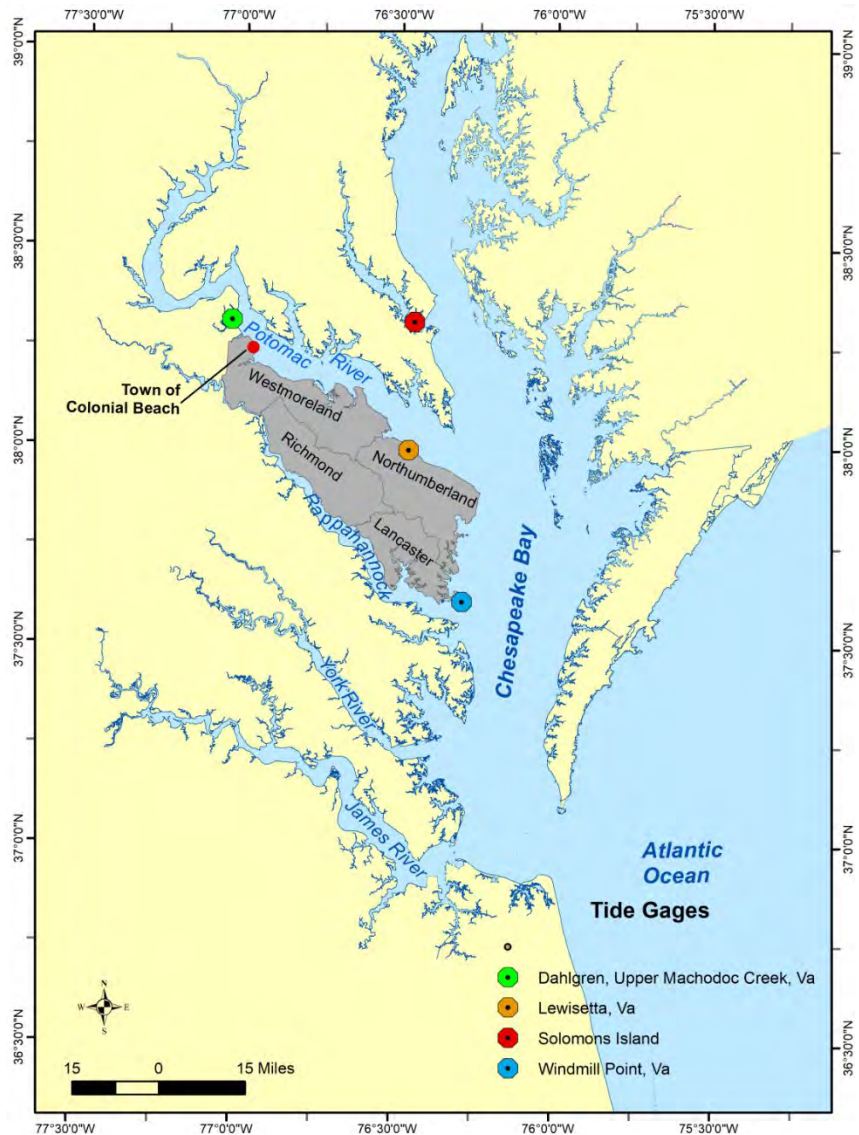


Figure 1-1. Location of the Northern Neck including the counties Westmoreland, Northumberland, Lancaster, Richmond and the Town of Colonial Beach within the Chesapeake Bay estuarine system.

10 feet MLW, and channel widths vary from 60 to 100 feet; both of these depend on the size and draft of the vessels using the channel.

In addition to these federally-defined channels, many other natural shallow draft channels occur in the creeks and rivers on the Northern Neck. These waterbodies have various configurations with some being naturally deep enough to allow easy access and some have shoaled restricting the channel. Though these channels have not been dredged, they are very important to both private property owners who utilize them for recreation and those that use them for business.

The Virginia Port Authority authorized the development of a Shallow Draft Navigation and Sediment Management Implementation Plan for the Northern Neck and appropriation was through the Virginia Port Authority Waterway Maintenance Grant Fund. This gives localities the opportunity to seek funding for shallow-draft navigable water channel maintenance dredging and the construction and management of areas for the placement of dredged material. To assist localities on the Northern Neck with implementation of these types of projects, a regional approach is needed when considering channels for shallow-draft dredging projects. The regional approach will assist localities in implementing the utilization of dredge material from shallow-draft channels to combat repetitive flooding and mitigating coastal erosion through placement along the shoreline at appropriate sites.

1.2 Project Goals

For the localities of the Northern Neck, creating a regional program for dredging of shallow water can save time, effort, and money because it provides a way for localities to plan for the utilization of dredge material to combat repetitive flooding and improve coastal resiliency. Developing a dredging plan for the region also allows the localities to prioritize dredging needs based on objective parameters – both physical and economic. When a channel is considered to be unsafe for navigation into and out of a creek, access channel, or other shallow navigation waterway, dredging can be used to maintain needed depths.

The Northern Neck Regional Shallow Draft Channel Plan was divided into three phases of work. Phase 1, the Initial Identification Phase, was addressed in this report. It identified waterbodies in the Northern Neck to comprise the shallow draft channel database utilizing aerial photography, topographic maps, historic shore change maps, and existing economic use data. Existing data was remotely sensed to determine the physical characteristics of the waterbodies and collected to determine their economic use. Understanding their physical parameters and morphology are essential for planning as is how the resource is used. The goal of the Initial Phase was to develop a methodology to determine which waterbodies had the greatest need to move forward to Phase 2.

For Phase 2, the Feasibility Phase, 19 waterbodies were chosen by Northern Neck Planning District Commission (NNPDC) in conjunction with the localities, using the analysis from Phase 1. The data collected for Phase 2 will be presented in a subsequent report. Phase 3 includes the design and permit development of specific dredging projects. Funding for Phase 3 is not available at this time.

This report describes the methodology and results used determine the physical and economic parameters of list of waterbodies that have economic and recreational value. It is not an exhaustive list of creeks, rivers, and bay on the Northern Neck. It was developed specifically for shallow-draft channel planning and to determine the channels that received a detailed evaluation in Phase 2 of this effort. This method can be used for other regions to have them start to look at all their creeks rather than just the federal channels or those with larger marinas. It allows for the inclusion of other creeks that might otherwise be overlooked.

2 Northern Neck Channel Morphology

The Northern Neck of Virginia lies in the Coastal Plain Province and is bordered on the north, east and south by the Potomac River, Chesapeake Bay, and the Rappahannock River, respectively (Figure 1-1). The underpinning geology controls the morphology of the lateral tidal waterbody drainage patterns and the height and the composition of the eroding shorelines along the Bay, rivers, and creeks. The topography, a function of geology, shows the older and higher strata occupying the central portion of the Northern Neck except where they outcrop of the Potomac River at Westmoreland State Park.

Elevation differences across the Neck are the result of changes of sea-level through time (Figure 2-1) which modified the geology. Over the last several million years, sea-level has risen and fallen many times on the Northern Neck. Each time the sea-level rose, it would erode the upland leaving erosional scarps and high banks along the shoreline and flatter areas in the nearshore where sediment was deposited. When sea-level subsequently fell again, drainages would be cut through the existing landscape. Because the maximum level of sea-level rise differed each time, various paleo-shorelines are recorded in the geology. This is most evident in the Quaternary geology because during the Quaternary time period, many fluctuations of sea-level occurred (Appendix A).

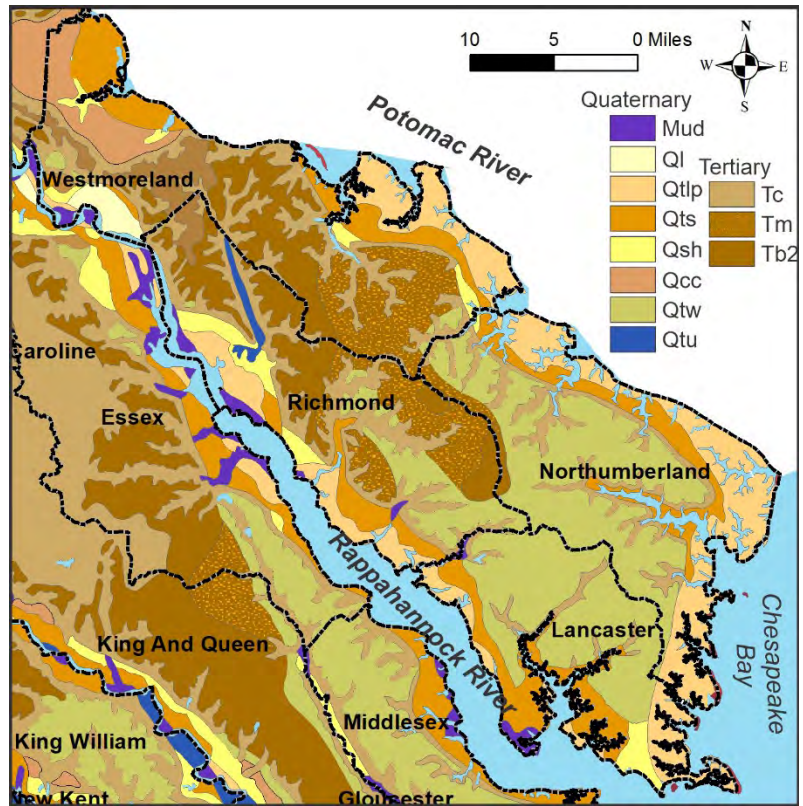


Figure 2-1. Geology of the Northern Neck.

The resultant geology is expressed in the elevations of the Northern Neck (Figure 2-2). The higher elevations (red and orange on the map) are part of upper Tertiary sediments of the Pliocene, 1 to 10 million years old. The yellow elevations represent formations that span the Tertiary/Quaternary boundary. The low, green elevations are the younger, more recent Quaternary sediments that mostly occupy the terrace along the coast separated from older sediments by the approximate 30 to 50-foot contour “scarp”. This clearly shows the tidal waterbody drainages entrenched into the landscape.

About 15,000 years ago sea level was about 300 feet lower and the ocean coast was about 60 miles to the east. Since then, the coastal plain of Virginia has been progressively inundated and the Chesapeake Bay shoreline has receded in response with flooding of the watershed. As the marshes erode

away the upland banks are exposed and begin to erode, providing sediments to the littoral system creating beaches and spits (Figure 2-3).

Waterbodies are the hydrodynamic and hydrologic connection between the uplands and the Bay. Each has its unique setting based on where it sits in the antecedent watershed of Chesapeake Bay (Hardaway & Byrne, 1999). Along the Northern Neck, they are typically the lateral drainages that vary in size and types of connections into the main rivers and the Bay. These are identified as lateral waterbodies because they generally have lateral connectivity to the floodplain during high water events.

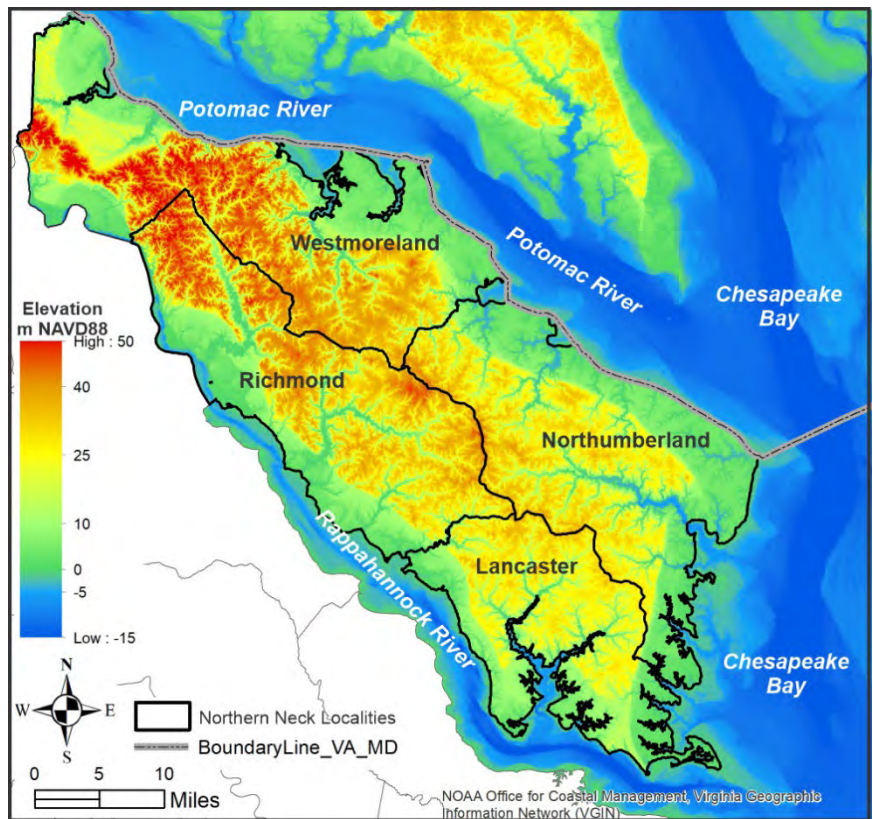


Figure 2-2. The elevations of landforms of the Northern Neck depicting its underlying geology. Data source US Geological Survey/NOAA three-dimensional (3D) topobathymetric elevation model.

The present shoreline and waterbody settings are a product of the interaction between hydrodynamic forces of the Bay and the material resistance of the underlying geology. These may be marsh shoreline and/or eroding upland banks which provide sediments to the littoral system and interact with the waterbody entrances. Along the Northern Neck, 142 waterbodies were identified (Figure 2-4). It is not an exhaustive list of creeks, rivers, and bay on the Northern Neck. It was developed specifically for shallow-draft channel planning and to determine the channels that received a detailed evaluation in Phase 2 of this effort. Classifying the physical characteristics and characterizing the economic uses of these waterbodies often is a result of the waterbody’s morphology.

The waterbody morphology is a function of where they sit in the landscape as sea level rise transgresses the Virginia coast. The waterbody’s connection is related, in part, to its size (area), the tidal prism, and the nature of the adjacent river and bay watersheds. Waterbody entrances vary from open mouths to restricted to tidal inlets. For tidal inlets, the cross-section of the channel at its mouth has a direct relationship to the tidal prism. The tidal prism is the tidal area of a waterbody times the tide range which determines the volumetric exchange of the waterbodies tidal water with the adjacent river or Bay. Given these elements, each waterbody is in a state of dynamic equilibrium as those force impact and fluctuate over time. Issues arise due to anthropogenic modifications and the need for navigation access to the waterbodies of the Bay. The natural equilibrium of the channel mouths is often inadequate for navigation needs over the years.

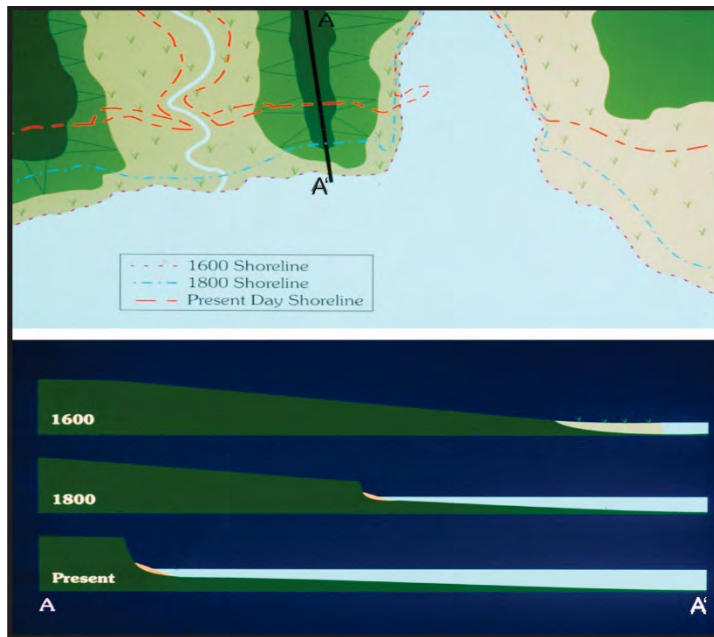


Figure 2-3. Eroding marshes expose interfluves (eroding upland banks) and provide sediments to the littoral system creating beaches and spits over time. From Hardaway et al. (1999).

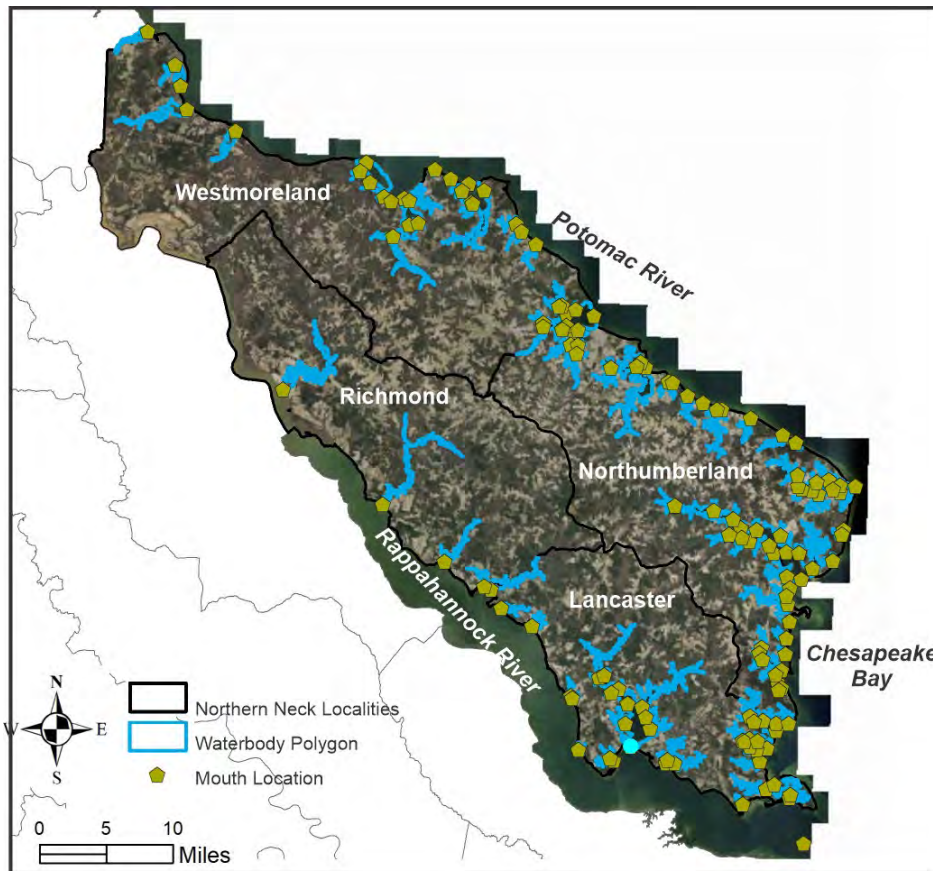


Figure 2-4. Mouth location (green dot) of the 142 waterbodies identified in the Northern Neck.

3 Database Creation

The first phase of this project, the initial identification phase, was comprised of a remote assessment of existing data. No field data was collected. Waterbodies were identified for inclusion in a database. Each creek/river/waterbody on the Northern Neck (Lancaster, Northumberland, Richmond, and Westmoreland Counties) was given a unique identification number (**Creek ID**). Note: Column names in the database tables will be identified by bold type throughout this report. Not all creeks, coves, branches, and ponds (all interchangeably identified as waterbodies in this report) that occur in these localities were included in the database. Generally, the non-federal waterbodies included in the database were larger in size, had existing public or private piers and/or marinas, or had an economic entity.

The physical parameter data was collected or created for each of these waterbodies. This data includes the waterbody's **Channel** name and the **Main River** name, which identifies the waterbody into which the **Channel** runs. Additional data, described below, includes the mouth type, amount of shoaling in the waterbody mouth, waterbody type (primary, secondary, etc.), water surface area, combined water surface length, historical and current SAV presence, private and public oyster leases, number remotely-sensed coastal structures such as pier, marinas, boat ramps, and physically verified economic facilities such as marinas and other mooring places, resource, seafood related, and transportation facilities. In addition, Federal channel information collection and volumes from USACE surveys, and areas were identified for alongshore dredge material placement. Tables of all the data are shown by County in Appendix B. Maps showing individual waterbodies and the waterbodies individual data are shown in Appendix C.

3.1 Physical Description of Waterbodies

Using existing aerial imagery and topographic maps, waterbodies were identified in the Northern Neck for inclusion in the dredging database. Figure 3-1 shows an example of the mouth location and the waterbody polygon, identified for each of the waterbodies. Waterbodies were generally included if they had some economic, residential, or cultural or natural resource use. Names for waterbodies, identified as **Channel** in the database tables, were obtained from USGS topographic maps, Google Earth, and ArcGIS online maps. If a name did not exist on any of those, a name was created using morphology in the area. The **Main River** is the waterbody into which the channel flows. The Latitude and Longitude (**LAT mouth** and **LONG mouth**, respectively on database tables) location of each waterbody mouth was documented.

Using the ArcGIS online Aids to Navigation (ATONs) layer, each creek **Type** was categorized as a *federal* (federally authorized creek), *Non-federal with ATONs*, or *Non-federal* (creek without ATONs). Table 3-1 describes the federally authorized shallow draft channels on the Northern Neck.

Table 3-1. Federal shallow-draft channels on the Northern Neck with their description.

Federal Navigation Project, County, Major Waterbody	Authorizing Legislation	Authorized Dimensions ¹
Rappahannock River Multiple Counties	River and Harbor Act of 3 March 1905	A channel 12 ft deep and 200 ft wide from the mouth to Port Royal, VA, thence 12 ft deep and 100 ft wide to Fredericksburg, VA, a distance of 30 miles. The construction of 20,401 linear ft of crib and pile dikes and 1,906 linear ft of riprap stone dike. ²
Greenvale Creek Lancaster Rappahannock River	Section 107 of the River and Harbor Act of 1960	A channel 6 ft deep and 60 ft wide from that depth in the Rappahannock River to the mouth of Greenvale Creek, a distance of approximately 950 ft, and thence 6 ft deep and 50 ft wide. into the creek for a distance of approximately 2,400 ft.
Carters Creek Lancaster Rappahannock River	River and Harbor Act of 13 June 1902	A channel from the Rappahannock River 15 ft deep, 200 ft wide, with a jetty 742 ft long at the entrance; a channel in the Eastern Branch at Gallyhook Point 12 ft deep, 100 ft wide, and 1,100 ft long.
Dymers Creek Lancaster Chesapeake Bay	River and Harbor Act of 25 June 1910	A channel 15 ft deep and 200 ft wide from the Chesapeake Bay through the bar in the mouth.
Jarvis Creek Northumberland Chesapeake Bay	This project was never constructed	A channel 8 ft deep, 2,300 ft long and 80 ft wide; a turning basin 8 ft deep 180 ft long and 120 ft long. This project was never constructed.
Cranes Creek Northumberland Chesapeake Bay	River and Harbor Act of 2 March 1945	A channel 6 ft deep and 80 ft wide from deep water in the Great Wicomico River to deep water in Cranes Creek.
Little Wicomico River Northumberland Potomac River/Ches Bay	River and Harbor Act of August 30, 1935	A channel 8 ft deep and 150 ft wide from the Potomac River to deep water in the Little Wicomico River; two stone jetties, 1,000 ft and 1,300 ft long at the entrance and 1,007 linear ft of timber bulkhead to stabilize the dredged inner channel. The project length is 4,800 ft.
Coan River Northumberland Potomac River	Section 107 of the River and Harbor Act of 1960	A channel 10 ft deep and 60 ft wide from the 10-ft contour in the Potomac River to deep water in the Coan River; protected by one 500-ft long stone jetty.
Bonum Creek Westmoreland Potomac River	Section 107 of the River and Harbor Act of 1960	A channel 6 ft deep and 60 ft wide from that depth in the Potomac River to and including an anchorage basin of the same depth, 160 ft wide and 200 ft long. The project also provides for the entrance channel to be protected on both sides by jetties. The north jetty is about 100 ft long and the south jetty is about 300 ft long. The project length is 3,795 ft.
Branson Cove Westmoreland Potomac River	River and Harbor Act of 1945	An entrance channel 7 ft deep, 60 ft wide, and 950 ft long; with boat basins 7 ft deep, 120 ft wide, and 430 ft long; and 7 ft deep, 200 ft wide, and 370 ft long.
Lower Machodoc Creek Westmoreland Potomac River	River and Harbor Act of 1892	A channel 7 ft deep and 60 ft wide through the bar at The Narrows. The project length is 4,700 ft.
Nomini Bay and Creek Westmoreland Potomac River	River and Harbor Act of 1872	A channel 9 ft deep and 150 ft wide across the bar at the mouth of Nomini Creek; a stone jetty 2,410 ft long at the mouth.
Monroe Bay and Creek Westmoreland Potomac River	River and Harbor Act of 1930	A channel 8 ft deep and 100 ft wide through a bar at the entrance to the creek; and a channel 7 ft deep and 100 ft wide within the creek with a turning and anchorage basin 500 ft wide at Robins Grove Point. The project length is 3,450 ft.

Notes:

(1) All depths referred to mean low water.

(2) At some point prior to 1982 a traffic survey revealed that the maintenance of a 12-foot deep channel was not justified at that time. As such a 6-foot channel was indicated as the depth to be maintained until traffic indicates the need for a change.

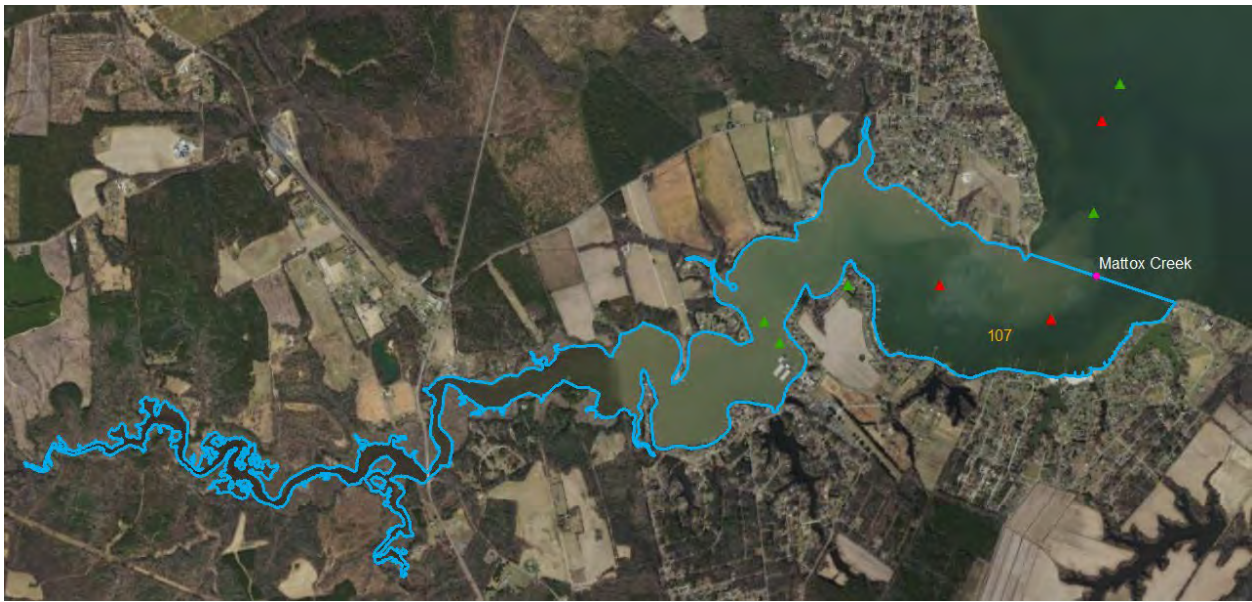


Figure 3-1. The shoreline was digitized for each creek/river/waterbody to determine the shoreline length, and the mouth was delineated so that a polygon could be created to determine water surface area of the waterbody.

3.1.1 Geology and Waterbody

The geology is important because the variation in elevations and dendritic watershed has resulted in many individual waterbodies within the overall system. The waterbodies identified as *primary*, *secondary*, *tertiary*, and *quaternary*, listed as **Creek_Type**. These are defined as: 1) Primary Waterbody flows into the Chesapeake Bay, Potomac, or Rappahannock River; 2) the Secondary Waterbody flows into the Primary Waterbody; 3) the Tertiary Waterbody flows into the Secondary Waterbody; and 4) the Quaternary Waterbody flows into the Tertiary Waterbody (Figure 3-2). These “sub-waterbodies” were given unique identifiers (**Creek ID**) and analyzed as individual waterbodies. For waterbody calculations, the sub-waterbodies are added to the waterbody that it flows into. The primary waterbody (#111) includes everything in secondary, tertiary, and quaternary sub-waterbodies. Example: To calculate the number of docks in #111, the number of docks in 111, 127, 130, and 132-142 are added together (Figure 3-2).

3.1.2 Waterbody Mouth Qualitative Assessment

Using the 2017 and 2021 Virginia Base Mapping Program (VBMP) aerial imagery, two qualitative assessments were made for the mouths of each waterbody: mouth type and amount of shoaling. **Mouth Type** included *open*, *semi-restricted*, *restricted*, and *inlet*. Open, semi-restricted, and restricted categories can be based on size of the mouth and/or how the shoaling affects water flow. An inlet has a narrow, very restricted channel such that the tidal range inside the creek may be suppressed. The amount of visible shoaling was also categorized as no visible shoaling, less than 50% shoaling, more than 50% shoaling, and completely shoaled. Figure 3-3A shows Corrotoman River Eastern Branch (#21) which is an example of an open mouth waterbody with no visible shoaling. Cod Creek East (#94),

Figure 3-3B, is an example of a semi-restricted mouth waterbody because of the presence of sand shoals. It is greater than 50% shoaled. Figure 3-3C shows the Little Wicomico River federal channel (#13), an example an inlet that is less than 50% shoaled, and Figure 3-3D shows Bluff Neck Creek Southern Branch (#1) as an example waterbody with a restricted mouth that is completely shoaled.

These assessments were qualitative and based on visual review of the aerial imagery. Because the time of day when the imagery was flown is not known, the tide level could not be determined. Tide level could have impacted how much shoaling could be seen in the imagery. As such, the assessments should only be taken as a guide. Collecting bathymetric data is the only way to truly determine the amount of shoaling in a channel.



Figure 3-2. Example of primary waterbody (#111) includes everything in secondary waterbodies (#131, 136, 138 and 141), as well as the tertiary, and quaternary sub-waterbodies that flow into the secondary waterbodies.

3.1.3 Shoreline and Water Surface

The shoreline for each waterbody identified was digitized manually using ArcMap 10.7.1. Figure 3-1 shows an example digitized shoreline. Once digitized, the **Combined Shoreline Length** was recorded in feet. The **Water Surface Area**, in acres, inside the waterbody was also calculated. Both **Combined Shoreline length** and **Water Surface Area** includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it as shown in Figure 3-2. The tide range (**TideRange ft**) for each waterbody also is listed.

3.2 Remotely-Sensed Waterbody Attributes

3.2.1 Remotely-Sensed Structures

The **REMOTELY SENSED STRUCTURES** data were originally created by VIMS between 2007 and 2015 (Berman et al., 2007; Berman et al., 2014; Berman et al., 2015) and updated using the 2021 VGIN Imagery for this project. These data were visually identified so it could not be determined if



Figure 3-3. VBMP 2021 imagery showing the mouths of A) Corrotoman River, Eastern Branch; B) Cod Creek East; C) Little Wicomico River federal channel; and D) Bluff Neck Creek Southern Branch. Also shown are the mouth type categorization.

the facilities are actively being used or if the structures were categorized correctly. They are listed in the following categories: The **Number of Docks** included any type of pier that appeared to be single property residential. These included any type of residential docks including those with boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis. **Number of Marinas** included any type of structures that appeared to be non-residential and could be used to moor boats. **Number of Public Ramps** includes boat ramps that are listed as public online. These include both publicly-owned ramps as well as some that are private but are available for public use for a fee. The **Number of Other Structures** includes any other type of structure that was present along the shoreline, was not obviously dilapidated, and was not in the previous three categories. This included wharfs (bulkheaded structures on the water), Ferry Piers (piers that a ferry presently leaves from), Private Ramps (any type of boat ramp that can be used by

boaters to access the water that was not listed as public online), and mooring facilities that were larger than single property use but did not appear to be commercial such as those available in residential communities. The other category also includes those structures that are generally too large to be residential. Figure 3-4 shows an example map of remotely sensed structures identified along the shoreline of Little Wicomico River (#13). These maps for each waterbody are found in Appendix C.

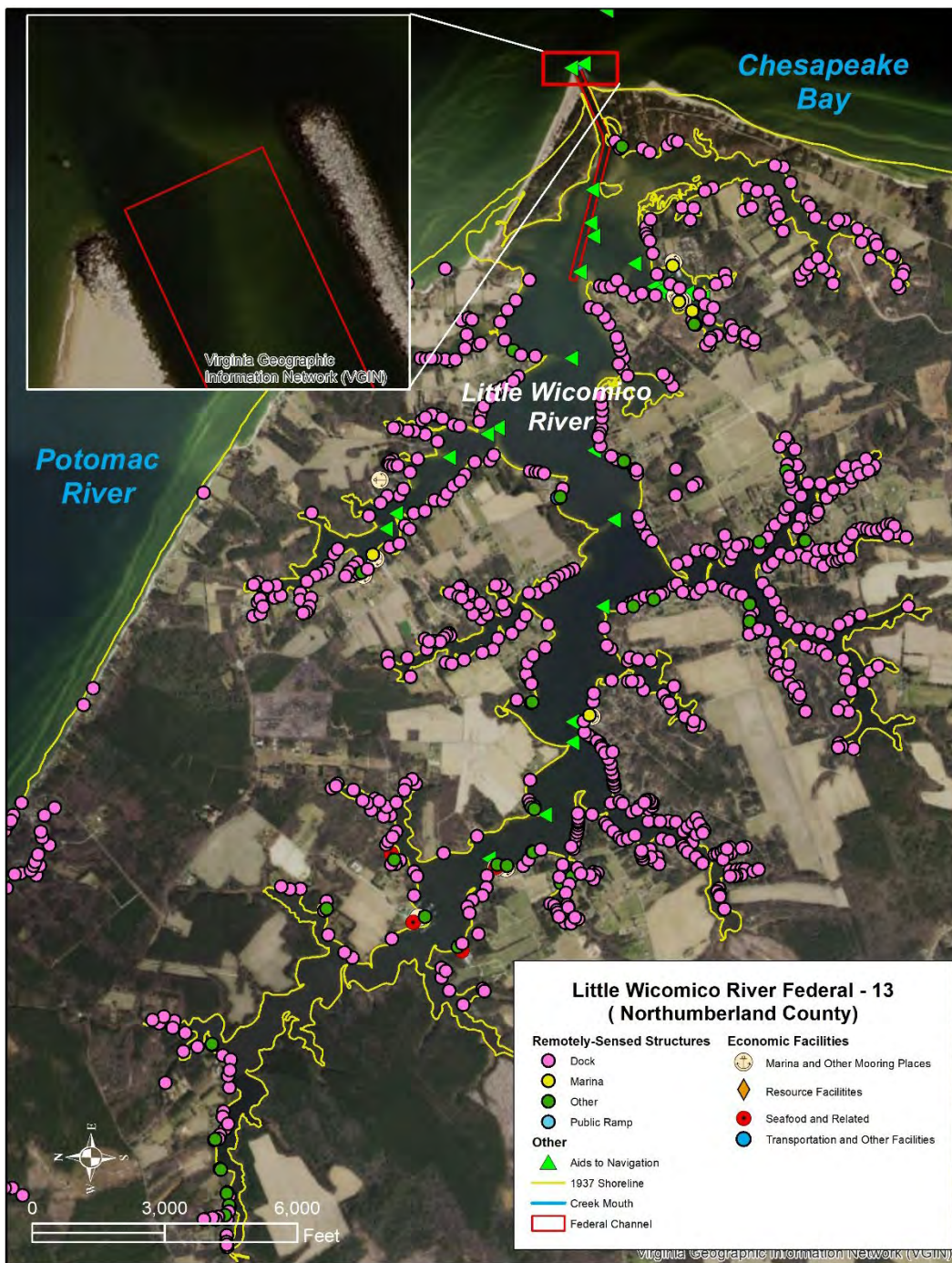


Figure 3-4. Example of remotely-sensed structures in the waterbody database.

To express residential use in the waterbodies, the total number of docks was divided by the linear footage of shoreline within the waterbody and multiplied by 1,000 to get the number of docks per 1,000 ft of shoreline (**#Docks/1,000 linear ft**).

3.2.2 Submerged Aquatic Vegetation & Oyster Grounds

The extent of submerged aquatic vegetation (SAV) was obtained from the VIMS SAV program. If any of the composite footprint occurs in the waterbody, it was listed as occurring in the waterbody. The historic footprint shows anywhere SAV has occurred over the 50 years period of 1971 to 2020. The most recent composite footprint shows where SAV has occurred between 2016 and 2020. The most-recent 5-year footprint is used by the Virginia Marine Resource Commission (VMRC) when permit applications are considered. If SAV is impacted during a project, it is possible that mitigation could be required. A qualitative *yes*, *no*, or *not mapped*, was recorded for each waterbody. Figure 3-5 shows an example of the extent of historic **SAV (1971-2020)**, brown in the figure, and current **SAV (2016-2020)**, green in the figure, within a waterbody.

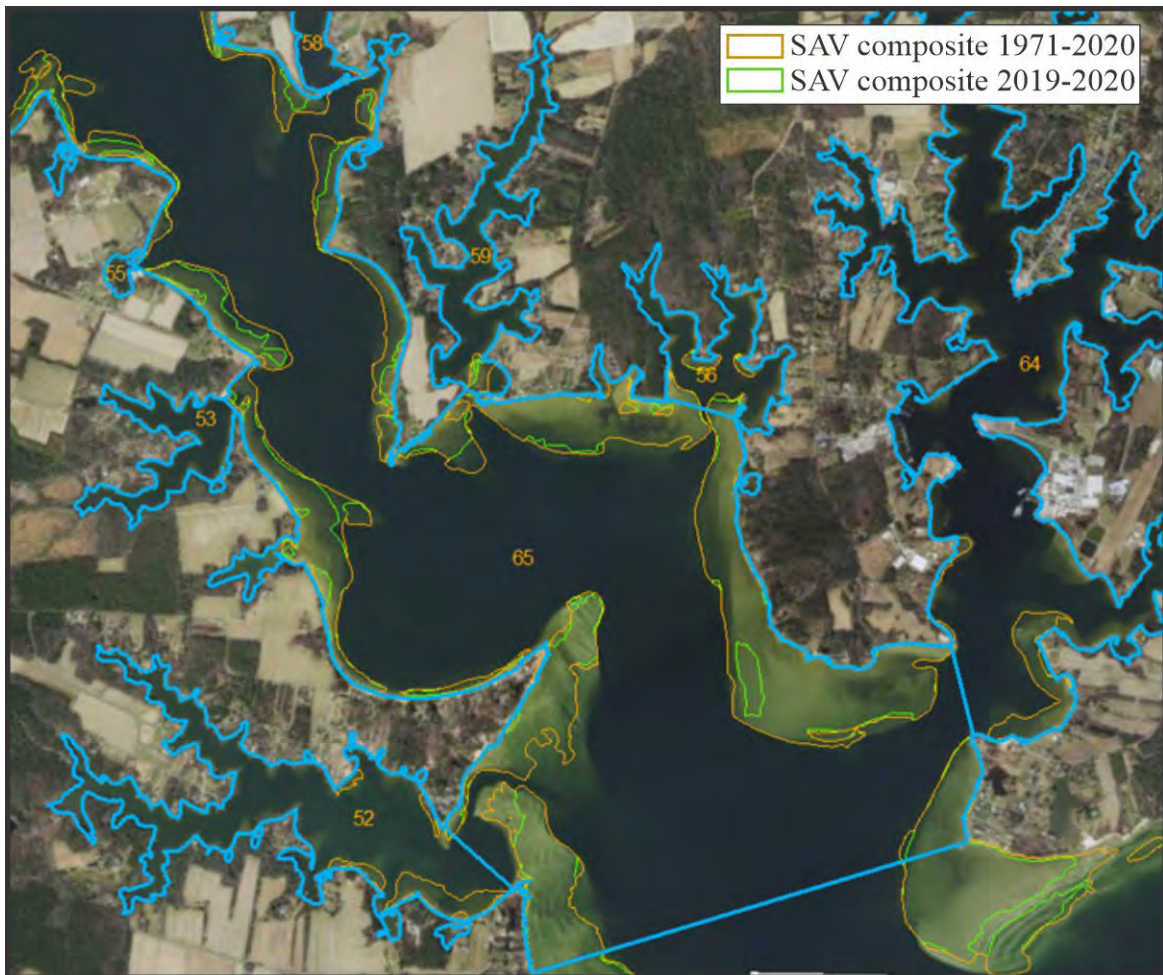


Figure 3-5. Example of the extent of historic SAV (1971-2020, brown) and current SAV (2016-2020, green).

Public oyster grounds and private oyster leases were obtained from the VMRC Chesapeake Bay online map database (<https://mrc.virginia.gov/links.shtm>). Knowing the location and extent of these leases is important as they may affect where dredging can occur. If private leases are impacted during a project, the lease owner could require restitution. They were mapped for each waterbody. The presence of a **Private Oyster Lease** in each waterbody indicates possible economic activity and was identified with a qualitative yes or no. The **Private Oyster Lease Acreage**, in acres, was calculated for each waterbody with the presence of private oyster leases. Figure 3-6 show an example map of the public

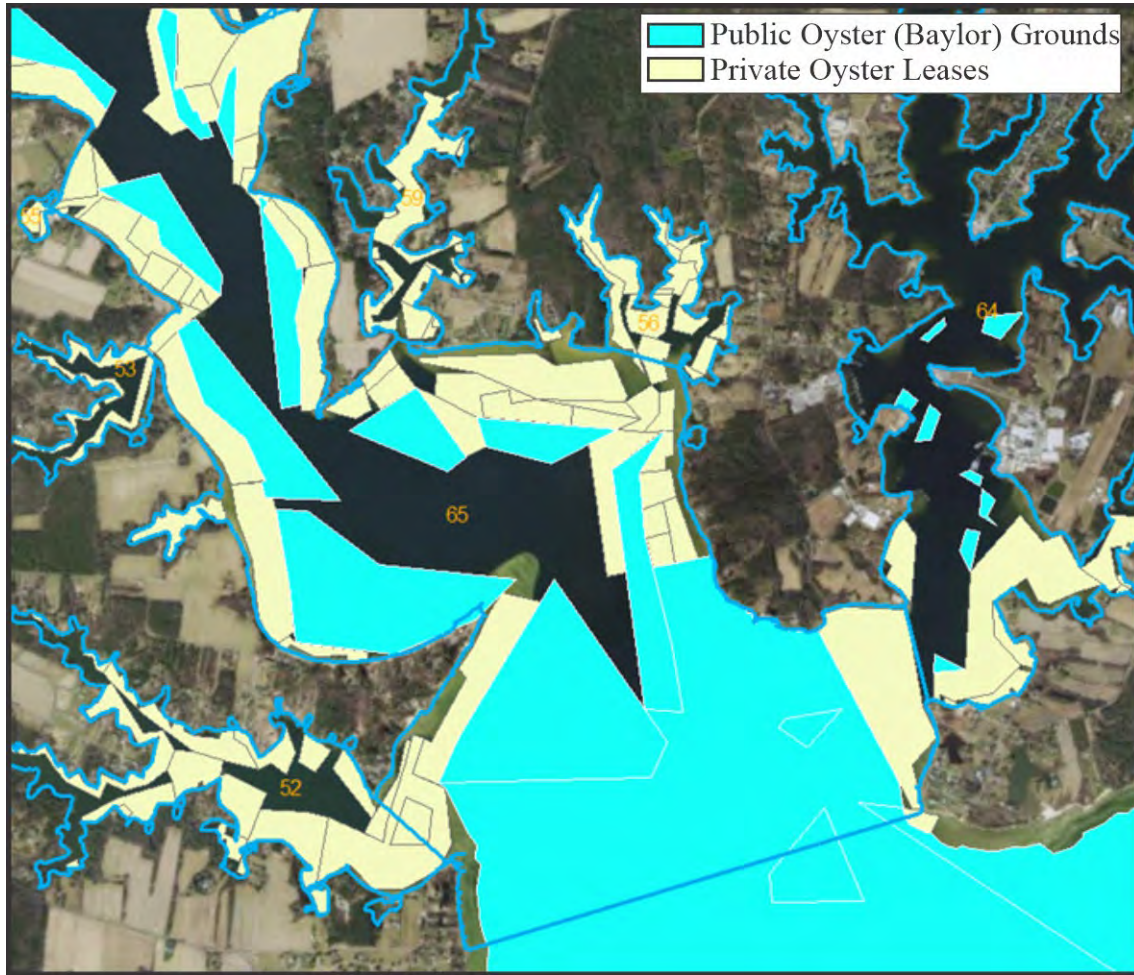


Figure 3-6. Map of the public oyster leases (green) and private oyster leases (yellow). From VMRC online database.

oyster leases (cyan) and private oyster leases (yellow) within waterbody #65, the Great Wicomico River. In addition, the area of the leases was divided by the area of the waterbody to calculate the percent of the waterbody covered by oyster leases (identified as **Lease Area/Area of waterbody** in the database tables).

3.3 Economic Facilities

According to the Virginia Economic Development Partnership, the Northern Neck offers a rich heritage and unparalleled natural resources that have shaped the region’s industrial base, coupled with a

reliable talent pool and a business-friendly climate. Identification of the major industry groups who have facilities in the region was coordinated with the Virginia Departments of Agriculture and Consumer Services (VDACS), Environmental Quality (VDEQ), Health (VDH), Tourism (VTC), and Transportation (VDOT); the Virginia Marine Resources Commission (VMRC); the Virginia Institute of Marine Science (VIMS); the Potomac River Fisheries Commission (PRFC); the National Oceanic and Atmospheric Administration (NOAA); the U.S. Army Corps of Engineers (USACE); the U.S. Coast Guard (USCG); the Federal Reserve Bank (Richmond); regional and local governments as well as private industry, non-governmental organizations, and local entities. Coordination with the above groups was vital in establishing a master list of waterbodies where economic activity occurs and to provide associated geocoding of each facility. The full report of the economic profile of the Northern Neck can be found in Appendix D.

It should be noted that the remotely collected data cannot determine if the marinas or other industrial uses are active. Therefore, a physical review was done. During that review, each economic facility was identified as either active or available for economic activity. Marinas and Other Mooring Places (**Total MOP**) includes commercial marinas and any other location where commercial vessels are moored. **Total Resources** includes resource facilities such as cultural and natural resource facilities that support tourism as well as Transportation and Other Facilities, such as public boat ramps and ferry facilities. Agriculture and Seafood and Related Facilities such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody are identified under **Total Businesses**. **Combined Total** is the total number of verified resource facilities identified along the waterbody. Figure 3-4 is an example of a map showing the economic resource facilities identified along the shoreline of a waterbody (#13, Little Wicomico River). It should also be noted that some of the seafood businesses are not actually located on the water. The waterbody was attributed based on interviews with watermen. Also, because the methodology was different between the remotely-sensed physical data and the economic assessment, the data cannot be compared. Each assessment was used independently in the evaluation of the waterbodies.

3.4 Shoreline and Inlet Protection Structures

Shoreline and inlet protection structures were identified around the mouth of waterbodies where they occur. They were generally assessed for how effective they are at preventing channel shoaling using VBMP aerial imagery. They were not assessed for condition. The revetments and jetties at the federal channel Bonum Creek (#102) were constructed to reduce shoaling into Bonum Creek (Figure 3-5).

3.5 Shore Change and Possible Dredge Material Placement

The VIMS Shoreline Studies Program's long-term shoreline rates of change (1937-2021) were used to identify erosional areas adjacent to the waterbodies to show potentially where dredge material could be placed (Hardaway et al., 2021). Figure 3-5 shows downdrift of Bonum Creek the shoreline is

eroding at -1 to -5 ft/yr. This is an example of a possible location for dredge material placement. It's immediately adjacent to the creek and is eroding. However, the dredge material has to be at least 90% sand for onshore placement. Possible disposal areas will be highlighted in later phases of the project.



Figure 3-5. Structures mapped at Bonum Creek, and shoreline change rates downdrift of the creek identifying potential dredge material placement areas.

4 Description of Waterbodies

To develop a regional dredging program for the localities of the Northern Neck, a database was created of waterbodies for each of the four counties bounded by the Potomac and Rappahannock Rivers and the Chesapeake Bay. Appendix B lists the descriptive parameters for each waterbody including the unique **Creek_ID**, names for waterbodies, identified as **Channel**, the **Main River** the waterbody flows into, as well as the Latitude and Longitude (**LAT mouth** and **LONG mouth**, respectively) location of each waterbody mouth. Appendix B also include documented attributes, by county, of those waterbodies (SAV and Oyster lease presence, remotely sensed structures, and economically verified structures). The maps and data tables for each individual waterbody are displayed in Appendix C. Again, the column title for waterbody parameters in the databases are displayed in bold type.

Of the 142 waterbodies identified, there have been 35 waterbodies identified in Lancaster County, 68 waterbodies in Northumberland County, 3 in Richmond County, and 31 in Westmoreland County -including the Town of Colonial Beach (Table 4-1). An additional 5 waterbodies are located on the boundaries of these counties. For this report, these waterbodies have been grouped within one of their boundary counties bringing the number of waterbodies in Lancaster to 38 and Westmoreland to 33.

TABLE 4-1. Number of Waterbodies by County

	# of Waterbodies	Including boundary waterbodies
Westmoreland	31	33
Northumberland	67	67
Lancaster	35	38
Richmond	4	4
WM/NL Boundary	2	
NL/LN Boundary	1	
LN/RM Boundary	1	
LN/RM/WM Boundary	1	

Generally, these waterbodies have been categorized into three basic types, **Type**, of shallow draft channels: federally-defined with ATONS, non-federal with ATONS and non-federal without ATONS (Table 4-2). Along the Northern Neck, presently identified, are 13 federal channels. Northumberland has 4 federal channels, including the Rappahannock River which is located adjacent to Lancaster, Richmond, and Westmoreland Counties. Westmoreland has 5 federal channel and Northumberland has 4.

Thirty-seven creeks were classified as non-federal channels with ATONS. Ten of the waterbodies are located in Lancaster County, including boundary creeks: Lancaster Creek (boundary between

Lancaster and Richmond counties) and Indian Creek (boundary between Lancaster and Northumberland counties). Twenty are in Northumberland County and two are located in Richmond County. Five are located in Westmoreland County, including the Yeocomico River, the boundary between Northumberland and Westmoreland counties.

The remaining 92 waterbodies were identified as non-federal creeks without defined channels or ATONS. Twenty-four of these waterbodies are located in Lancaster County, 43 are in Northumberland County and one is in Richmond County. Twenty-three are in Westmoreland County, including Hall Branch of the Yeocomico River which is a boundary between Northumberland and Westmoreland counties.

TABLE 4-2. Number of waterbodies for Channel Type (**Type**)

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Federal	13	5	4	4	0
Non-Federal with ATONS	37	5	20	10	2
Non-Federal	92	23	43	24	2

4.1 Geology and Waterbody

Of the 142 waterbodies, 62 were identified with a **Creek Type** of Primary (Figure 4-3). Sixteen are in Westmoreland, 26 in Northumberland and 16 in Lancaster Counties. All 3 waterbodies in Richmond County are Primary. None branch to Secondary, Tertiary or Quaternary Creek Types as are seen in the other counties.

Westmoreland’s Primary waterbodies branch to 13 Secondary and 4 Tertiary waterbodies. No Quaternary were observed. In Northumberland County, the Primary waterbodies branch to 27 Secondary, 13 Tertiary Waterbodies and 1 Quaternary waterbody. The 16 Primary waterbodies in Lancaster County splits to 18 Secondary and 4 Tertiary waterbodies.

TABLE 4-3. Number of Waterbodies for each **Creek Type**

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Primary Waterbody	62	16	26	16	4
Secondary Waterbody	58	13	27	18	0
Tertiary Waterbody	21	4	13	4	0
Quaternary Waterbody	1	0	1	0	0

The average tidal range, **TideRange**, for all waterbodies on the Northern Neck range between 1 foot at the lowest to 1.8 feet at the highest (Table 4-4). In Westmoreland, all the waterbodies experience

tidal ranges between 1.6 and 1.3 ft. The highest tidal range of waterbodies in Northumberland and Lancaster are slightly higher at 1.7 ft, than those found in Westmoreland and the lowest tidal range can be found in this county. All the waterbodies in Richmond County, where the highest tidal range can be found, experience a tidal range between 1.65 and 1.8

TABLE 4-4. **Tide Range** (ft)

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Maximum	1.8	1.6	1.7	1.7	1.8
Minimum	1	1.3	1	1.1	1.65

4.2 Waterbody Mouth Qualitative Assessment

Overall, 7 waterbodies were completely shoaled, and 36 had more than 50% shoaling (Table 4-5). The remaining 106 waterbodies had no visible shoaling or less than 50% shoaling. All of the completely shoaled waterbodies can be found in Northumberland, as well as the majority of the channels that are greater than 50% shoaled (19 of the 36 total).

TABLE 4-5. Number of Waterbodies in each **Shoaling** category.

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
No Visible Shoaling	59	14	24	18	3
<50% of Channel	37	8	17	12	0
>50% of Channel	39	11	19	8	1
Completely Shoaled	7	0	7	0	0

Twenty-eight waterbodies had restricted creek mouth morphology (Table 4-6). Of those 28, Northumberland had the most at 18, Westmoreland had 4 and Lancaster had 6. In Richmond County, 2 waterbodies had open mouths, and 2 were semi-restricted. Of the 42 waterbodies identified as having a semi-restricted mouth type, Northumberland had 18 and Lancaster had 13 and Westmoreland had only 9. Six inlets were identified within the Northern Neck waterbodies, 4 in Northumberland and 2 in Westmoreland.

TABLE 4-6. Number Waterbodies of each **Mouth Type**

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Open	66	18	27	19	2
Semi-Restricted	42	9	18	13	2
Restricted	28	4	18	6	0
Inlet	6	2	4	0	0

4.3 Shoreline and Water Surface

For all waterbody calculations below, the sub-waterbodies are added to the waterbody that it flows into, leaving all resources captured within the Primary waterbody. Therefore, the total **water surface area** of all the tributary waterbodies analyzed in this report is 24,182 acres (Table 4-7). This area does not include the Potomac River, Chesapeake Bay, nor Rappahannock River. It also does not include any tributaries that were not identified in the 142 waterbodies. Northumberland has the largest percentage of the acreage at 36%, and the Great Wicomico River (ID_65) is the primary waterbody with the largest water surface area (3,772 acres). Westmoreland and Lancaster counties have the second and third percentage of water surface area (7930 acres for 33% of total and 5460 acres for 23% of total, respectively). Richmond County contains 2,039 acres, which is less than 8% of the total water surface area in the Northern Neck region. Westmoreland County contains the smallest primary waterbody, Bettys Pond (ID_80) covering only 14 acres.

TABLE 4-7. Primary Creeks **Water Surface Area (acres)**

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	24,182	7,930	8,753	5,460	2,039
Maximum size	3,772	1,657	3,772	1,916	637
Minimum size	14	14	18	26	192

The **combined shoreline length** for all the Northern Neck waterbodies is over 6 million feet in its tributaries (Table 4-8). This analysis does not include the Potomac River, Chesapeake Bay, nor Rappahannock River. It also does not include any tributaries that were not identified in the 142 waterbodies. Northumberland county has the most shoreline at 401 miles (40% of the total). While Lancaster Counties had the third most water surface area with 23% of the total acreage, it has the second most combined shoreline length with 107 miles (31% of the total shoreline length). Westmoreland has 271 miles of combined shoreline length (24% of total) and Richmond County has 113 miles (< 6% of the total).

The Great Wicomico River (ID_65) in Northumberland, in addition to having the most water surface area of any waterbody, also has the most combined shoreline length with 127 miles. This is 11% of the total combined shoreline length in the Northern Neck and 28% of the shoreline length measured in Northumberland County. Bettys Pond (ID_80) is again the smallest with only a little over 1 mile of combined shoreline length.

TABLE 4-8. Primary Creeks Combined Shoreline length (miles)

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	1,064	271	401	279	113
Maximum length	127	76	127	107	41
Minimum length	1	1	1	2	7

*Note: these shorelines lengths only include the tributary waterbodies. It does not include the Potomac River, Chesapeake Bay or Rappahannock River shorelines.

4.4 Remotely Sensed Structures

Again, for all waterbody calculations below, the sub-waterbodies are added to the waterbody that it flows into, leaving all resources captured within the Primary waterbody. Nearly all the waterbodies had at least one pier with a total of 8,048 for all waterbodies (Table 4-9). This works out to almost 80 docks per every one thousand linear feet for all the waterbodies in the Northern Neck (Table 4-10). Other summaries for remotely sensed structures are in Table 4-11.

TABLE 4-9. Number of Docks of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	8,048	1,819	3,197	2,873	159
Max/waterbody	1,044	519	1,044	858	51
Min/waterbody	37	1	0	9	37

TABLE 4-10. Number of Docks/1,000 linear ft of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	78.5	16.6	38.2	21.7	2.0
Maximum	4	3	4	3	1
Minimum	<1	<1	0	0	<1

TABLE 4-11. Number of Structures of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
# Public Ramps	23	7	7	6	3
# Marinas	95	30	30	27	1
# Other Structures	424	110	146	163	5

4.5 Submerged Aquatic Vegetation & Oyster Grounds

When SAV occurs in a channel, it can impact dredge permitting. VMRC used the latest 5-year composite for permitting. Fifty-four waterbodies had SAV during 2016-2020 while 25 did not (Table 4-12). An additional 63 were not mapped, but that generally is an indication that the VIMS SAV program does not think that SAV exists in the area. Westmoreland and Richmond Counties had no mapped SAV during this time period. When the historical SAV composite is mapped (1971-2020), 80 waterbodies had SAV, and though Westmoreland had 16 waterbodies with mapped SAV, Richmond still did not (Table 4-13).

TABLE 4-12. Number of waterbodies with current SAV (2016-2020) mapped

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Yes	54	0	25	29	0
No	25	1	11	9	4
Not Mapped	63	32	31	0	0

TABLE 4-13. Number of waterbodies with historic SAV (1971-2020) mapped

SAV (1971-2020)	# of Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Yes	80	16	31	33	0
No	62	17	36	5	4

Of the 142 waterbodies on the Northern Neck, 106 of them have **private oyster leases** (Table 4-16) covering over 10,600 acres (Table 4-17). Only 36 waterbodies were observed to have no existing private oyster leases at all (Table 4-16).

Northumberland County contains nearly 53% (56) of all the private oyster leases covering only around 43% (4577 acres) of the total lease acreage for the whole Northern Neck. The Great Wicomico River (ID_65) accounts for 1710 acres of leased acreages, covering 90% of the waterbody.

Lancaster County contains nearly 27% (29) of all the private oyster leases covering around 20% (3064 acres) of the total lease acreage for the whole Northern Neck. The largest private oyster lease of any Lancaster waterbody is Little Bay (ID_44) with 74% coverage (1018 acres).

Westmoreland County contains 19% (21) of all the private oyster leases covering around 36% (3,827 acres) of the total lease acreage for the whole Northern Neck – more than Lancaster which has more waterbodies with leases. The largest private oyster lease is Yeocomico River (ID_111), a boundary between Westmoreland and Northumberland, with 72% coverage (1217 acres).

TABLE 4-16. Number of waterbodies with observed **Private Oyster Lease**

	# of Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Yes	106	20	56	29	1
No	36	13	11	9	3

TABLE 4-17. **Private Oyster Lease Acreage (acres)** of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	10,604	3,827	4,577	2,161	38

4.6 Economic Facilities

A complete Economic Facilities report was completed (see appendix D and Appendix E). It shows a total population of over 50,000 people in 2022 with the population of Westmoreland increasing significantly, while the remaining counties saw a decrease in population over several time periods since 2010. The report explores the changes over the same time periods in the number of establishments, employment numbers and wages. The report then looks at the historical perspective of the economy from a waterway perspective. The economy of the region remains dependent upon waterborne transportation of goods and services, and it is noted in Appendix D, that the region is a net exporter of waterborne commerce.

A physical review was conducted because remotely collected data cannot determine if the marinas or other industrial uses are active. Each economic facility was identified as either active or available for economic activity. Appendix D describes the economic facilities further and are listed in Appendix E. In addition to the physical review, direct communication with working watermen in each of the counties to find out what they deem as critical for their business. One important point brought up was meeting the needs of working watermen with the availability of affordable public access to and from the fishing grounds and offloading points located on the Northern Neck. One waterman and business owner indicated that aquaculture has provided significant economic stimulus to Northern Neck, and that native oyster aquaculture has been doing well since adoption of the recommendations of the Virginia Blue Ribbon Oyster Panel (VBROP).

Several watermen with experience ranging from 15 to 40 years were asked what order the priorities for dredging should be among the waterbodies they use. One waterman expressed the need for dredging the Little Wicomico River, Cranes Creek and Cockrell Creek, in that order. Other watermen mentioned the same three waterbodies but in differing order. Another waterman felt Reason Creek, then Whays Creek followed by Cranes Creek was the order that should be dredged. Three additional

watermen observed that the Omega Protein vessels using Cockrell Creek kept the entrance channel deep enough for navigation with their fishing vessels (typically Carolina Skiffs).

In Lancaster County, the mouth of Antipoison Creek is similarly kept open by a fairly deep draft vessel. This keeps the channel deep enough for most of the commercial seafood vessels to operate out of the creek but doesn't allow enough width for pass as pass as they enter and exit the channel simultaneously. It was also indicated that the vessel does not traverse upstream far enough to keep the channel open to navigation.

Agriculture and Seafood and Related Facilities such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody are identified under **Total Businesses** (Table 4-18). There were a total 58 such businesses identified in all the waterbodies. Northumberland had the most with 21. Westmoreland and Lancaster have a very similar number of businesses (17 and 16, respectively). Richmond County had 4. Northumberland had the most in one waterbody, 9 in the Great Wicomico River (ID_65).

Total Resources includes resource facilities such as cultural and natural resource facilities that support tourism as well as Transportation and Other Facilities, such as public boat ramps and ferry facilities. Thirty-eight waterbodies have at least one resource, with Westmoreland, Northumberland and Lancaster having about the same number (Table 4-19).

Marinas and Other Mooring Places (**Total MOP**) includes commercial marinas and any other location where commercial vessels are moored. One hundred twenty-three waterbodies have some type of marina or mooring place (Table 4-20). Northumberland has the most with 48; Westmoreland and Lancaster have about the same amount.

Combined Total is the total sum of verified resource facilities identified within each waterbody. In all, there are 219 economic influences on the Northern Neck (Table 4-21). Of those, 36% are in Northumberland, 29% each in Westmoreland and Lancaster, and 5% in Richmond.

TABLE 4-18. **Total Businesses** of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	58	17	21	16	4
Max/waterbody	9	6	9	3	2
Min/waterbody	0	0	0	0	0

TABLE 4-19. **Total Resources** of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	39	11	12	12	4
Max/waterbody	6	3	6	5	1
Min/waterbody	0	0	0	0	1

TABLE 4-20. **Number of MOP** of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	123	37	46	36	4
Max/waterbody	22	14	22	10	1
Min/waterbody	0	0	0	0	0

TABLE 4-21. **Combined Total** Economic Resources of Primary Waterbodies

	All Waterbodies	Westmoreland	Northumberland	Lancaster	Richmond
Total all Primary	219	65	79	64	12
Max/waterbody	38	18	38	14	4
Min/waterbody	0	0	0	0	2

5 Evaluation of Waterbodies for Inclusion in Feasibility Phase

To develop an object method for determining which creeks should be prioritize for dredging need to move into the second phase of the project, three parameters were used to narrow down the number of creeks: Amount of shoaling, economic use data, and residential use data. For the amount of shoaling, categories ranged from 1-4 (Table 5-1). When analyzing for waterbodies in the 3rd quartile (>50% shoaled) and 4th (completely shoaled), 43 waterbodies selected.

For the economic data, all the different types of economic influences were summed by waterbody (**Combined Total**) and ranged from 0 to 38 total influences (Table 4-21). Because many of the waterbodies had 0 economic influences, this lowered the quartile analysis. For this total economic influence, the 2nd quartile contains those waterbodies that average 1 economic influence. The 3rd and 4th quartiles included 46 waterbodies that had more than 1 economic influence.

The residential data was determined by counting the number of residential docks and boathouses in each waterbody and dividing by the linear footage of that waterbody (**Number of Docks/1,000 linear ft**). This number was multiplied by 1,000 to represent the number of docks per 1,000 linear feet inside the waterbody and ranged from 0 to 5.6. The data listed in Table 4-10 is for the Primary waterbodies only because these include all the sub-watersheds that flow into the primary waterbodies. However, for this analysis, all the waterbodies were used so that all the individual waterbodies could be considered. For this residential influence, the 3rd quartile were waterbodies that had greater than 1.5 residential influences. Quartile 4 contains more than 2.1 docks per 1,000 linear feet. Because the 3rd and 4th quartile included 75 waterbodies, only the 4th quartile was used to narrow down the number of overall waterbodies. This resulted in 40 waterbodies selected.

Note: this evaluation does not address dredging to individual businesses or to homeowner docks, boat houses, piers or other boating facilities. It only considers creek mouths.

Table 5-1. Categorization of the amount of shoaling in the waterbodies.

Amount of Shoaling	# of Waterbodies
No Visible Shoaling (1)	59
<50% of Channel (2)	40
>50% of Channel (3)	36
Completely Shoaled (4)	7

5.1 First Tier identification

The next step was to determine if any waterbodies appeared on all three lists. Two waterbodies: Cod Creek East (ID_94) and Greenvale Creek (ID_117) did so and were added to the first-tier identification list.

Next, it was determined which waterbodies appeared on two of the lists. The shoaling list was as the primary list to consider because if a waterbody does not seem to be shoaled, there is no need to investigate for dredging. Seven waterbodies are found on both the shoaling and economic lists and seven additional were found on both the shoaling and the residential lists (Table 5-2). The seven waterbodies found on both the shoaling and economic lists are: Cranes Creek (ID_52), Nomini Creek (ID_87), Cod Creek_PR (ID_93), Hull Creek (ID_99), Bonum Creek (ID_102), Windmill Point Creek (ID_121), Farnham Creek. (ID_123). The seven waterbodies on both the shoaling and the residential lists are: Owens Pond South (ID_15), Moran Creek (ID_26), Tabbs Creek (ID_45), Whays Creek (ID_59), Cabin Point Creek (ID_82), Rogers Creek (ID_101), Gardner Creek (ID_104).

These 16 waterbodies were individually assessed to determine their suitability to move to Phase 2.

Using the experience of the researchers, the list of 16 creeks (Table 5-2) derived from the upper quartile analysis were individually assessed to determine their suitability for moving into Phase 2 of the project. They were then categorized: Yes – Strong candidate for Phase 2; Maybe – Possible candidate for Phase 2 because of physical, economic, or residential data; or No - Should likely not be included in Phase 2 – reasoning described in notes column. If the waterbodies coded as No in the individual assessment they were removed, except for Cranes Creek. In discussions with the economic consultant and the PDC, it was decided to include Cranes Creek. Though the federal channel is not shoaled, some concern has been raised about the interior of the creek past the federal channel. So, Cranes Creek and the 10 waterbodies coded Yes and Maybe will move into Phase 2.

5.2 Second Tier Identification of Waterbodies

Available funding allows for at least 15 waterbodies to move into Phase 2. To help determine an additional 5 waterbodies for Phase 2, the original list of waterbodies within the 3rd and 4th quartiles for shoaling was reviewed. Five additional waterbodies were selected using the researcher's experience: Bluff Neck Creek Southern Branch, Jackson Creek, Jarvis Creek, Gougher Creek, and Beach Creek (Table 5-3).

Through individual waterbody data analysis, three additional waterbodies were added to the list even though they were not in the 3rd and 4th quartiles for shoaling (Table 5-3). Monroe Bay (ID_108) was added because the federal channel is shoaled inside the creek. Also, the federal channel does not extend farther up the Bay to the additional water-based resources that was added to the waterbody after the federal channel was established. Knowing the state of the rest of the waterbody would be helpful. Lower Machodoc Creek (ID_84) was added because when the USACE last surveyed this waterbody in 2011, one section of channel was shoaling. Including it in Phase 2 would determine how the channel has changed in the last 12 years. Little Wicomico River (ID_13) was the last to be added because the 2022 USACE survey showed shoaling between the channel jetties.

Table 5-2 First assessment for which waterbodies are prioritized for the Phase 2 analysis.

Creek ID	Channel	Type	County	Move to Phase 2?	Notes on the Individual Assessment
87	Nomini Creek	Federal	Westmoreland	Yes	
117	Greenvale Creek	Federal	Lancaster	Yes	
123	Farnham Creek	Non-Federal	Richmond	Yes	
59	Whays Creek	Non-Federal with ATONS	Northumberland	Yes	
45	Tabbs Creek	Non-Federal	Lancaster	Maybe	
82	Cabin Point Creek	Non-Federal	Westmoreland	Maybe	
94	Cod Creek East	Non-Federal	Northumberland	Maybe	
99	Hull Creek	Non-Federal	Northumberland	Maybe	
102	Bonum Creek	Federal	Westmoreland	Maybe	
121	Windmill Point Creek	Non-Federal	Lancaster	Maybe	
15	Owens Pond South	Non-Federal	Northumberland	No	0 economic uses and only 20 docks, shoaling at mouth. On Bay so won't stay open
26	Moran Creek	Non-Federal	Lancaster	No	0 economic uses and still a defined channel, but narrows in one area
52	Cranes Creek	Federal	Northumberland	No	no shoaling found after analyzing USACE 2021 survey.
93	Cod Creek_PR	Non-Federal	Northumberland	No	2 economic uses, shoaling at mouth, only 34 docks.
101	Rogers Creek	Non-Federal	Northumberland	No	0 economic use, shoaling at mouth, but small creek only 29 docks.
104	Gardner Creek	Non-Federal	Westmoreland	No	0 economic use and though shoaling is visible, there is still a defined channel

Table 5-3. Waterbodies added to the list for further analysis in Phase 2 based on individual review by the researchers.

Creek Id	County	Channel	Amount Shoaled	Econ Total	Docks/1,000 linear foot	Notes
1	Northumberland	Bluff Neck Creek Creek Southern Branch	4	0	0.68	This creek is completely blocked with a spit that developed between 2017 & 2021 - may have dunes – if it isn't dredged soon, permitting may become an issue as habitats develop.
106	Westmoreland	Jackson Creek	3	1	1.48	Needs dredging inside channel
12	Northumberland	Jarvis Creek	3	0	2.04	Federal channel is shoaling in from either side outside the creek mouth, SAV present
53	Northumberland	Gougher Creek	3	0	2.03	Can see boat prop tracks on shoal, but only 31 docks
112	Lancaster	Beach Creek	3	0	1.07	Shoaling inside creek
108	Westmoreland	Monroe Bay	2	18	2.26	Some shoaling in federal channel. More water-based influences than when federal channel was built. Extend the channel farther into the Bay.
84	Westmoreland	Lower Machodoc Creek	1	7	2.15	Federal channel with some shoaling when last surveyed in 2011.
13	Northumberland	Little Wicomico River Federal Channel	1	22	2.02	Shoaling at the jetties

5.3 Final List of Waterbodies

Final List of 19 Waterbodies for consideration for phase 2 is shown in Figure 5-4. These waterbodies resulted from the first-tier analysis as well as individual waterbody review in the second-tier analysis.

These include 6 in Westmoreland County: Cabin Point Creek (ID_82), Lower Machodoc Creek (ID_84), Nomini Creek (ID_87), Bonum Creek (ID_102), Jackson Creek (ID_106) and Monroe Bay (ID_108).

Northumberland county has 8 waterbodies on the list: Bluff Neck Creek Southern Branch (ID_1), Jarvis Creek (ID_12), Little Wicomico River Fed Channel (ID_13), Cranes Creek (ID_52), Gougher Creek (ID_53), Whays Creek (ID_59), Cod Creek East (ID_94), and Hull Creek (ID_99).

There are 4 waterbodies in Lancaster County on the final list: Tabbs Creek (ID_45), Beach Creek (ID_112), Greenvale Creek (ID_117), Windmill Point Creek (ID_121).

Farnham Creek (ID_123) in Richmond County is the final waterbody on the list.

Table 5-4. Final list of waterbodies for Phase 2 consideration. Federally-authorized channels denoted with a *.

Consecutive #	Creek_ID	County	Waterbody
1	82	Westmoreland	Cabin Point Creek
2	84	Westmoreland	Lower Machodoc Creek*
3	87	Westmoreland	Nomini Creek*
4	102	Westmoreland	Bonum Creek*
5	106	Westmoreland	Jackson Creek
6	108	Westmoreland	Monroe Bay and Creek*
7	1	Northumberland	Bluff Neck Creek Southern Branch
8	12	Northumberland	Jarvis Creek*
9	13	Northumberland	Little Wicomico River Fed Channel*
10	52	Northumberland	Cranes Creek*
11	53	Northumberland	Gougher Creek
12	59	Northumberland	Whays Creek
13	94	Northumberland	Cod Creek East
14	99	Northumberland	Hull Creek
15	45	Lancaster	Tabbs Creek
16	112	Lancaster	Beach Creek
17	117	Lancaster	Greenvale Creek*
18	121	Lancaster	Windmill Point Creek
19	123	Richmond	Farnham Creek

6 Next Steps

6.1 Phase 2 Data Collection

For an efficient regional program, next steps would be to collect data and develop a management structure. The Feasibility, Phase 2 includes:

- Bathymetric survey
- Sediment sampling of the top 2-3 ft of the channel
- A more detailed shoreline needs assessment adjacent to the waterbody
- For non-federal creeks, a channel will be created in GIS to determine the volume of material needing to be dredged.
- Potential dredge material placement sites will be determined
- Conceptual Dredge plan will be created.

Bathymetric Data

The most important data to collect on a potential dredging site is bathymetry. Knowing the depths is crucial to establishing the need for the project. It also will provide the volume of material that will need to be removed which relates directly to cost. The bathymetry data should be referenced to mean lower low water to define the channel depth. Points should be spaced closely enough accurately represent the bottom depths and cover a large enough area to be able to define all sections of the creek that may need dredged. If ATONs exist in the creek, they should be surveyed in as well.

Because this is a feasibility phase, the bathymetry and sediment sampling will be taken at a scoping level rather than at an engineering level. This scoping analysis will provide additional information on the individual waterbodies that can be used to further refine the list of waterbodies that need dredging but cannot be used for a dredging project design.

Channel creation

For non-federal channels, the dredge channels need to be defined. Channel design must balance safety, economic, and sustainability requirements. Channels also must be wide and deep enough to safely accommodate vessel traffic but not so large as to require excessive dredging or habitat modification. However, if a channel is designed deeper than needed at this time, it could offer less habitat impacts in the future if dredging maintenance cycles are reduced. If ATONs exist, they can be located either through a GIS database or a survey. The ATONs generally mark a channel and shoaled areas and can be used as a guide in determining channel location. If no ATONs occur in the waterbody, locating the natural channel through bathymetric data will help define the channel location. The channel needs to extend far enough into deeper water to match the defined channel depth. Federal channels in the vicinity can be a guide to determining needed channel widths and depths. Once the channel is defined, the volume of material that needs to be dredged can be calculated.

6.2 Dredge Placement

Except for Monroe Bay and Cranes Creek, the final list of channels from the Initial Phase 1 analysis have shoaling at the creek mouth as the primary need for dredging. Monroe Bay and Cranes

Creek will need have the federal channel extended farther into the waterbody and be investigated for general shoaling within. Typically, the mouths of waterbodies are the sandier fraction of the littoral transported sediments and have the potential for beneficial use as beach nourishment on adjacent and/or nearby shorelines. Inevitably, finer silts and clay will be encountered during channel dredging and upland disposal sites will have to be identified. Existing and abandoned upland sites near federal channels can be investigated.

For shallow draft channels in Chesapeake Bay, disposal of dredge material is both a concern and a major component of the dredge planning process. In the past, dredge material was disposed of on the upland, along the shore, or in open-water. However, many previously used upland sites have been filled to capacity, previously-leased shore sites are no longer available, and environmental concerns sometimes limit open-water disposal. As such, new sites must be considered.

Beneficial reuse is the preferred option for dredge disposal. However, material needs to be 90-95% sand with a minimum median grain size (D50) of about 0.25 mm. Smaller, muddier material has to be placed in a contained site. For these sandy materials, sites need to be identified downdrift of the dredge channel. Typically, adjacent sites are the most cost effective. Sites within about 1 mile would be most cost-effective, but with booster pumps, material can be dredged farther to ensure the material is disposed where it can be the best use.

Upland sites typically require a containment berm located nearby on property where a lease has been obtained. Confined disposal facilities (CDF) are discussed in Hardaway et al. (2019). In addition to creating a berm with on-site material, Geotubes® have been recommended to create the berm to hold material (Hardaway et al., 2020). These tubes are filled with dredge material then stacked around the site to create a basin for additional material. This allows for more material to be stored in a smaller area. Once material in a CDF has dried, it can be disposed of in a land fill or used for other purposes, perhaps fill material or some other technology.

Creating a joint upland disposal site for multiple creeks can create a better cost to benefit ratio. Many of the creeks will have dredge projects with only small amounts of material that will need to be disposed. Identifying public lands close to the site that could be used for disposal would be beneficial for a regional dredge program. Also, creating a site that can be used for multiple dredging cycles would be more cost-effective. The dredging could be grouped to reduce mobilization and demobilization costs.

In some areas of Virginia, modified open water disposal is being used. Geotubes® are filled and placed on the bottom and typically extend above mean high water. Additional dredge material is placed within the tubes. Though it is being used, permitting may be an issue as this method would be covering state bottom.

Another option is thin-layer placement (TLP) of material. Coastal wetlands in many areas are deteriorating due, in part, to sediment depletion, subsidence, and sea level rise. Studies of the effects of placing dredged materials on marshes originated with recognition that marshes are adapted to respond to natural processes, such as storms, which deposit wrack and sediments on the marsh surfaces (Ray,

2007). Thin-layering of dredge material has been used in Chesapeake Bay, particularly in Maryland, to recreate marsh habitat. Although the technique is certainly not applicable in all restoration scenarios, it could be targeted toward areas where marsh migration is not possible or where islands are disappearing due to both exterior erosion and internal ponding. It would be a useful tool to help adapt for coastal resiliency. Developing regional thin-layering program would be the cheapest way to dispose of dredge material plus have the additional benefit of helping marshes keep up with sea-level rise. A study by VIMS (2014) looked at the issues and policy considerations of thin-layering. Generally, dredge material disposal will be site-specific and determined during the planning process.

6.3 Phase 3 Final Designs

Continuing to collect data and designing projects on prioritized waterbodies will create a database of information that will be ready as dredge funding becomes available. Of the data that needs to be collected, bathymetry and coring are the most important to determine the need for dredging and what type of disposal site will be needed.

Phase 3 is not included in this project, but it would be necessary to develop a shovel-ready shallow draft dredge project. Phase 3 would include:

- Sub-bottom cores need to be taken in the channel and sampled for grain size to determine the exact type of material that will be dredged.
- To determine the volume of material that will need to be dredged, a bathymetric survey by licensed surveyors is needed for the design phase.
- Sediment in the waterbody also will need to be sampled for possible chemical contamination.
- Disposal areas need to be located for each project.
- Bringing in an engineer experienced with dredging at this stage to verify and approve of the channel design and disposal areas is needed. In addition, the engineer can determine an approximate cost.
- This data can be used to develop a Joint Permit Application (JPA) that can be submitted.

Coring

Long (10-15 ft) sub-bottom sediment cores need to be taken to determine the types of material present in the channel. Because the top layer of material, which will be examined in Phase 2 of this project, often is different from what material lies below the bottom, the cores need to be deep enough to reach the maximum dredge depth. The cores should be photographed and described to show the depths that have different materials. Sediment samples should be taken and analyzed for composition. Using the bottom depth at the core location, the depth to which the channel will be dredged can be determined on the core. The material type to this length on the core should be mean-weighted by depth to determine the type of material that will be removed from the channel. The disposal site(s) can be defined based on sediment composition.

The cost to take, sample, and analyze sub-bottom cores is generally the largest expense when collecting data for a final dredge channel design. Creating a project with several waterbodies would reduce the mobilization and demobilization costs for coring, thereby reducing the overall cost.

Determining Resource Impacts

Impacts to biological resources can be large for dredge projects. When this occurs, permitting may be an issue. Determining the impacts before project design and modifying the project as necessary to minimize them is essential. Dredging impacts benthic and fishery habitat and should be assessed. Generally, motile forms of biota should be able to avoid the dredging operation; as such, most fish will not be impacted. The main potential impact is by entrainment of the species in the hydraulic dredging operation itself. Dredging would result in the temporary destruction of marine habitat and the associated benthos in the channel affecting benthic habitat. For oysters, larval stage impacts have been reported.

Sometimes permitting agencies will invoke a time of year (TOY) restriction on dredging when these species are migrating and/or overwintering. In general, small shallow draft dredge projects will not cause long-term adverse effects on the surrounding ecosystem. The goal is to minimize any effects on the environment, and these should be offset by the project benefits of maintaining safe navigation and commerce.

Private oyster leases were examined in the Phase 1 of this project, but some additional considerations may occur at the design stage. If private oyster leases occur in the channel, the owners of the leases need to be approached for permission. If public oyster leases will be affected, the matter must be considered by VMRC and/or the Virginia General Assembly. SAV may be impacted if it is located in the channel or immediately adjacent to it. After dredging, repopulation of benthic organisms within the dredging will begin quickly (Newell et al., 1998). In estuaries, communities are well adapted to rapid recolonization of deposits because they are typically subject to frequent natural disturbances. Rates of recovery vary from 6-8 months in estuarine muds, possibly 2-3 in sand and gravel habitats.

Although many leases presently exist, a regional dredging program could address issuance of future private oyster leases. When leases cover an entire creek mouth, a dredge channel could be difficult to permit. Many private leases also often extend close to the shoreline. This could impact potential disposal sites of sandy material. If dredge channels and potential disposal areas are identified in a regional program, this could influence the issuance of future private leases in the area thereby reducing a future problem.

Chemical Testing

The Evaluation of Dredged Material Proposed for Discharge in the Waters of the U.S. – Testing Manual was developed as a joint effort by the Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (EPA&USACE, 1998) and is referred to as the “Inland Testing Manual (ITM).” The purpose of the manual was to “establish procedures applicable to the evaluation of potential contaminant-related environmental impacts associated with the discharge of dredged materials

in inland waters, near coastal waters and surrounding environs.” The ITM was primarily developed to establish testing protocols associated with the disposal of dredged material discharges associated with navigation dredging.

The ITM utilizes a tiered approach to determining test requirements for dredged material disposal. There are four tiers: Tier I is an evaluation based on existing information; Tier II includes a chemical evaluation of identified contaminants of concern; Tier III is associated with general toxicity and bioaccumulation tests; and Tier IV provides for project specific toxicity and bioaccumulation tests.

The development of testing requirements always starts with a Tier I evaluation which is an analysis based on existing information. The evaluation can be based on previously collected physical, chemical or biological data; physical sediment characteristics (i.e. is the material comprised of sand, gravel or inert materials); or if the dredged material is associated with known sources of contamination. If there is no available chemical data at the dredging site, but the material is a sandy or inert material or there are no known sources of contamination or contaminant pathways to the dredging site, then there is “no reason to believe” that the disposal of the dredged material would have an adverse impact at the disposal site. Once it has been determined that there is “no reason to believe,” then the dredged material passes the Tier I and no additional evaluation is required. If, however, there is “reason to believe” that there is the potential for contaminants to exist at the dredging site, then a Tier II evaluation would be initiated. The “contaminants of concern” must be identified and a then a sampling plan should be designed to address the concentration of those specific contaminants in the site sediment and water. The results of the Tier II evaluation determine the need for evaluation at higher tiers. If the dredging site passes a Tier I evaluation, the only other time that chemical testing may be required is for disposal of dredged material into a regulated area such as a landfill.

Chemical testing only needs to occur if strong reasoning occurs that a creek might be contaminated or if it is a requirement for dredge material disposal particularly if it will eventually be disposed of in a landfill. It is unlikely that any contaminated creeks occur on the Northern Neck, but some of the waterbodies that have the most commercial usage may be a concern. Overall, testing 2-3 samples per creek would set people’s mind at ease.

7 Summary

This project was undertaken in order to develop a regional dredging program for the localities of the Northern Neck. Phase 1 of this project, which comprises this report, began by creating a database of waterbodies in Lancaster, Northumberland, Richmond, and Westmoreland Counties and the Town of Colonial Beach along the Potomac and Rappahannock Rivers and Chesapeake Bay. Generally, these waterbodies are categorized into three basic types of shallow draft channels: federally-defined with aids to navigation (ATONs), non-federal with ATONs, and non-federal without ATONs. Along the Northern Neck, presently identified, are 13 federal channels, 37 non-federal channels in creeks with ATONs, and 92 in creeks without defined channels or ATONs, for a total of 142 waterbodies. Additional non-federal creeks, coves, branches, and ponds (all are interchangeably identified as waterbodies in this report) occur in these localities, but this project was limited to waterbodies that had some residential or economic usage. These waterbodies occur in Lancaster (38 waterbodies), Northumberland (67 waterbodies), Richmond (4 waterbodies), and Westmoreland (33 waterbodies) counties.

The first step of Phase 1 was to collect or create physical parameter data for each waterbody. These data included creek mouth morphology, amount of shoaling in the waterbody mouth, waterbody type (primary, secondary, etc.), water surface area, combined shoreline length, historical (1971-2020) and current (2016-2020) SAV presence, private and public oyster lease presence and the amount of area they cover, number of remotely-sensed coastal structures such as piers, marinas, boat ramps, and verified economic facilities such as marinas and other mooring places, resource, seafood related, and transportation facilities that impact the locality's economics. This information was analyzed in order to create a list of waterbodies for further study.

Using this information, nineteen creeks were selected as the focus of Phase 2 of the project, which consists of a more detailed analysis of each waterbody, including data such as a bathymetric survey, sediment sampling and analysis, the creation of proposed channels for non-federal waterbodies, potential dredge material volume calculations and disposal strategies, and an overall conceptual dredge plan. The nineteen creeks selected include six in Westmoreland County: Cabin Point Creek (ID_82), Lower Machodoc Creek (ID_84), Nomini Creek (ID_87), Bonum Creek (ID_102), Jackson Creek (ID_106) and Monroe Bay (ID_108); eight in Northumberland County: Bluff Neck Creek Southern Branch (ID_1), Jarvis Creek (ID_12), Little Wicomico River Fed Channel (ID_13), Cranes Creek (ID_52), Gougher Creek (ID_53), Whays Creek (ID_59), Cod Creek East (ID_94), and Hull Creek (ID_99); four in Lancaster County: Tabbs Creek (ID_45), Beach Creek (ID_112), Greenvale Creek (ID_117), Windmill Point Creek (ID_121); and one in Richmond County: Farnham Creek (ID_123).

After the completion of Phase 2, when a comprehensive analysis of each of the prioritized waterbodies is complete, a final analysis phase could be conducted in order to create a shovel-ready dredging plan for each location. This final phase is not included in the scope of this project, but it would include the collection of sub-bottom cores for thorough grain size and chemical analysis of potential dredge material, an additional bathymetric survey conducted by licensed surveyors, the location of potential disposal sites for dredge material, and the approval or creation of proposed channels by a

licensed engineer. Once these steps have been completed, a Joint Permit Application for dredging of the channel may be submitted.

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Appendix A
Key Acronyms, Concepts, and Terms

AGI: American GeoSciences Institute. The AGI was founded in 1948, under a directive of the National Academy of Sciences, as a network of associations representing geoscientists with a diverse array of skills and knowledge of our planet. The Institute provides information services to geoscientists, serves as a voice of shared interests in the profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society's use of resources, resilience to natural hazards, and the health of the environment.

Aids to Navigation (ATON): Lighted and unlighted buoys, lighted and unlighted fixed structures such as day beacons and lights, fog signals, radio beacons, range markers, lighthouses and generally any charted or published information serving the interest of safe navigation.

Authorized Dimensions: Length, width, and depth dimensions of a navigation project as specified in the authorizing document (in the case of federal projects the authorized dimensions are established by the US Army Corps of Engineers (USACE)).

Bathymetry: The study of the "beds" or "floors" of waterbodies, including the ocean, rivers, streams, and lakes. Bathymetry map of East Flower Garden Bank. The term "bathymetry" originally referred to the ocean's depth relative to sea level, although it has come to mean "submarine topography," or the depths and shapes of underwater terrain.

Beneficial Use (Reuse): According to the Virginia Port Authority Policy on Grants to Local Governments for Financial Assistance for Dredging Activities, refers to innovative uses and placement alternatives for dredge materials that produce public, economic, or environmental benefits.

CCRM: Center for Coastal Resources Management. The CCRM has a formal mission to support informed decision-making on resource management issues at all levels of government, including private and corporate citizens in the Commonwealth of Virginia.
https://www.vims.edu/ccrm/docs/annual-report/2022annualreport2022_ccrm.pdf

Certified Shellfish Dealer: The Virginia Department of Health, Division of Shellfish Safety (DSS) has the responsibility to help establish and enforce regulations relating to the sanitary practices for the handling, storing, packing and distribution of shellfish, whelk, scallop and crab meat intended for wholesale distribution and human consumption. Persons, who process shellfish, whelk, scallop or crab must apply for and receive a Certificate of Inspection by the Division of Shellfish Safety. Certifications are issued for a period of no more than one year and are required to be applied for and renewed annually. Shellfish, whelk and scallop Certificates of Inspection are issued from October 1 to September 30, while crab meat processing Certificates of Inspection are issued from April 1 to March 31. Shellfish harvesters in Virginia that harvest bivalve molluscan shellfish (oysters, hard clams, soft clams, mussels, ark clams, whole scallops, and scallops with roe) and sell their catch to anyone other than a certified shellfish dealer must apply for and receive a Certificate of Inspection from DSS. Certified shellfish dealers must comply with the Code of Virginia rules and regulations pertaining to shellfish, the U.S. Food and Drug Administration's "[Fish and Fishery Products Hazards and Controls Guidance](#)", as well as the National Shellfish Sanitation Program (NSSP) Guide for the Control of Molluscan Shellfish Model Ordinance.

Channel: Part of a body of water deep enough to be used for navigation. Channels can be either natural or artificial waterways.

Commercial Craft: Non-recreational vessels used for commercial activity.

Cross-Section: A view of the channel bottom and side slopes normal to the channel alignment.

Crab Picking Plant: The Virginia Department of Health, Division of Shellfish Safety (DSS) has the responsibility to help establish and enforce regulations relating to the sanitary practices for the handling, storing, packing and distribution of shellfish, whelk, scallop and crab meat intended for wholesale distribution and human consumption. Persons, who process shellfish, whelk, scallop or crab must apply for and receive a Certificate of Inspection by the Division of Shellfish Safety. Certifications are issued for a period of no more than one year and are required to be applied for and renewed annually. Shellfish, whelk and scallop Certificates of Inspection are issued from October 1 to September 30, while crab meat processing Certificates of Inspection are issued from April 1 to March 31. Shellfish harvesters in Virginia that harvest bivalve molluscan shellfish (oysters, hard clams, soft clams, mussels, ark clams, whole scallops, and scallops with roe) and sell their catch to anyone other than a certified shellfish dealer must apply for and receive a Certificate of Inspection from DSS.

Cultural Resource Facility: A facility that is owned by the state, a county, a municipality or a qualifying entity that serves the public through preserving, educating and promoting the arts and culture of a particular locale, including theaters, museums, libraries, galleries, cultural compounds, educational organizations, performing arts venues and organizations, fine arts organizations, studios and media laboratories and live-work housing facilities.

Datum: A coordinate system with a reference surface (such as mean lower low water) that serves to provide known locations to begin surveys and create maps. Datums provide reference points requiring accurate coordinates that are consistent with one another. A sample mean lower low water datum conversion chart for Lewisetta, VA, used for surveying and dredging of the Coan River federal navigation channel, is provided as Plate 1.

Disposal Area: An area designated for the placement of dredged material. A disposal area may be either upland, on a beach or shoreline, or for overboard placement.

Draft: The depth of water displaced by a vessel.

Dredging: The practice of excavating and removing material from underwater locations, either by mechanical or hydraulic means.

Dredging Cycle: The period of time (years) between dredging events. Also referred to as dredging frequency.

DOE: Department of Energy.

Dredging Template: A cross-sectional view of the channel showing project depth, width, and side slopes.

eHydro: An automated process used to catalog, report, and disseminate hydrographic survey data for navigation channels through an enterprise system.

<https://www.arcgis.com/apps/dashboards/4b8f2ba307684cf597617bf1b6d2f85d>

Enterprise Zone: Established by the General Assembly in 1982, the Virginia Enterprise Zone Program is a partnership between the state and local governments to stimulate job creation and private investment within designated areas throughout Virginia. Currently, the Northern Neck has over 11,000 acres designated as enterprise zones. Enterprise Zones offer businesses a package of state and local incentives in the form of tax relief and grants, local regulatory flexibility, and local infrastructure development.

<https://www.google.com/maps/d/viewer?mid=1dxcBkdFNjS3UEOdRC4a6fVvpbow&ll=37.97393929276314%2C-76.64245564999999&z=10>

EPA: Environmental Protection Agency.

Federal Reserve System (Richmond Regional Office): The central bank of the United States. It promotes the effective operation of the U.S. economy and the public interest. The Richmond office is one of 12 regional offices and within the context of the implementation plan it provided the producer price indices necessary for updating finfish and shellfish values over the period of analysis.

Geocoding: The process of converting addresses (like "457 Main Street, Warsaw, Virginia 22572-4291") into geographic coordinates (like latitude 37.9649347 and longitude -76.7554363) which can be used to place markers on a map or position the map. Latitude and Longitude are the units that represent the coordinates in a geographic coordinate system.

Maintenance Dredging: The removal of shoal material from a constructed project.

Marinas and Other Places Where Boats are Moored: For purposes of standardization, the definitions contained in Article 1 of Part I of the Department of Health regulations, 12VAC5-570-10 et seq., Sanitary Regulations for Marinas and Boat Moorings, will pertain. "Marina means any installation operating under public or private ownership, which provides dockage or moorage for boats (exclusive of paddle or row boats) and provides, through sale, rental or fee basis, any equipment, supply or service (fuel, electricity or water) for the convenience of the public or its leasee, renters or users of its facilities." "Other places where boats are moored means any installation operating under public or private ownership which provides dockage, moorage or mooring for boats (exclusive of paddle or row boats) either on a free rental or fee basis or for the convenience of the public."

Mean Lower Low Water (MLLW): A tidal datum established by the National Ocean Service. The average height of all lower low waters recorded over a specific 19-year period called the National Tidal Datum Epoch. It is the reference datum used for federal navigation projects.

Elevations on Mean Lower Low Water

Station: 8635750, Lewisetta, VA

Status: Accepted (Oct 7 2011)

Units: Feet

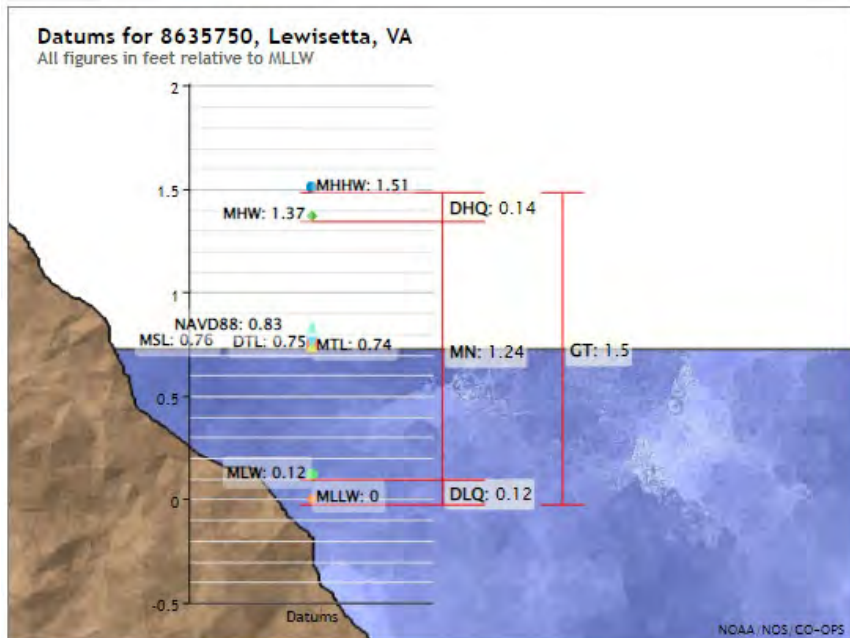
Control Station:

T.M.: 0

Epoch: 1983-2001

Datum: MLLW

Datum	Value	Description
MHHW	1.51	Mean Higher-High Water
MHW	1.37	Mean High Water
MTL	0.74	Mean Tide Level
MSL	0.76	Mean Sea Level
DTL	0.75	Mean Diurnal Tide Level
MLW	0.12	Mean Low Water
MLLW	0.00	Mean Lower-Low Water
NAVD88	0.83	North American Vertical Datum of 1988
STND	-4.77	Station Datum
GT	1.50	Great Diurnal Range
MN	1.24	Mean Range of Tide
DHQ	0.14	Mean Diurnal High Water Inequality
DLQ	0.12	Mean Diurnal Low Water Inequality
HWI	6.17	Greenwich High Water Interval (in hours)
LWI	0.10	Greenwich Low Water Interval (in hours)
Max Tide	5.65	Highest Observed Tide
Max Tide Date & Time	09/01/2006 23:06	Highest Observed Tide Date & Time
Min Tide	-2.85	Lowest Observed Tide
Min Tide Date & Time	04/05/1975 08:36	Lowest Observed Tide Date & Time
HAT	1.96	Highest Astronomical Tide
HAT Date & Time	09/20/2028 19:18	HAT Date and Time
LAT	-0.48	Lowest Astronomical Tide
LAT Date & Time	01/14/2036 12:48	LAT Date and Time



MRIP: Marine Recreational Information Program

MSA: Metropolitan Statistical Area

NAICS: North American Industrial Classification System

Natural Resource Facility: Any **land, structure, building, plant, mine, road, installation, excavation, machinery, equipment, or device**, or any addition to, reconstruction, replacement, or improvement of, land or an existing structure, building, plant, mine, road, installation, excavation, machinery, or device reasonably used, erected, constructed, acquired, or installed by any person, if a substantial purpose of or result of the use, erection, construction, acquisition, rental, lease, or installation is related to industrial development or the development or utilization of natural resources.

Navigation Channel: A project feature with project limits/dimensions which are designed, constructed, and maintained for use by commercial and/or recreational navigation traffic. This definition includes appropriate harbors, canals, turning basins, anchorages/mooring areas and/or waterways.

NOAA: National Oceanic and Atmospheric Administration.

NNPDC: Northern Neck Planning District Commission.

PRFC: Potomac River Fisheries Commission.

Quaternary: The Quaternary Period is the third and last of the three periods of the Cenozoic Era. It began only 2.6 million years ago and extends to today. This is less than 0.1% of all of geologic time. A thin layer of sediments deposited during the Quaternary covers much of the Earth's land surface. The Quaternary Period is divided into two epochs, from youngest to oldest: the Holocene and Pleistocene (from NPS.gov)

Recreational Craft: Non-commercial vessels used for recreation activity.

Recreational Resource Facility: Those features in a setting that define a person's experience, special values attached to an area, facilities, [infrastructure](#), personnel, and management regulations and actions.

River and Harbor Act: Typically, a Congressional authorization for construction of specific federal navigation projects to include shallow-draft channels and turning basins.

Seafood Manufacturer: The Virginia Department of Health, Division of Shellfish Safety (DSS) has the responsibility to help establish and enforce regulations relating to the sanitary practices for the handling, storing, packing and distribution of shellfish, whelk, scallop and crab meat intended for wholesale distribution and human consumption. Persons, who process shellfish, whelk, scallop or crab must apply for and receive a Certificate of Inspection by the Division of Shellfish Safety. Certifications are issued for a period of no more than one year and are required to be applied for and renewed annually. Shellfish, whelk and scallop Certificates of Inspection are issued from October 1 to September 30, while crab meat processing Certificates of Inspection are issued from April 1 to March 31. Shellfish harvesters in Virginia that harvest bivalve molluscan shellfish (oysters, hard clams, soft clams, mussels, ark clams, whole scallops, and scallops with roe) and sell their catch to anyone other than a certified shellfish dealer must apply for and receive a

Certificate of Inspection from DSS. Persons in Virginia that buy shellfish from harvesters, certified Virginia dealers or certified dealers in other states, and then process the shellfish by any means either by shucking, repacking, retagging or labeling, and reshipping and selling wholesale must apply for and receive a Certificate of Inspection from DSS.

Seafood Manufacturer Retail: The Virginia Department of Health, Division of Shellfish Safety (DSS) has the responsibility to help establish and enforce regulations relating to the sanitary practices for the handling, storing, packing and distribution of shellfish, whelk, scallop and crab meat intended for wholesale distribution and human consumption. Persons, who process shellfish, whelk, scallop or crab must apply for and receive a Certificate of Inspection by the Division of Shellfish Safety. Certifications are issued for a period of no more than one year and are required to be applied for and renewed annually. Shellfish, whelk and scallop Certificates of Inspection are issued from October 1 to September 30, while crab meat processing Certificates of Inspection are issued from April 1 to March 31. Shellfish harvesters in Virginia that harvest bivalve molluscan shellfish (oysters, hard clams, soft clams, mussels, ark clams, whole scallops, and scallops with roe) and sell their catch to anyone other than a certified shellfish dealer must apply for and receive a Certificate of Inspection from DSS. Persons in Virginia that buy shellfish from harvesters, certified Virginia dealers or certified dealers in other states, and then process the shellfish by any means either by shucking, repacking, retagging or labeling, and reshipping and selling wholesale must apply for and receive a Certificate of Inspection from DSS.

Shallow Draft Navigation: Those navigation channels and turning basins with a depth of less than 15 feet for navigation and 20 feet for project cost sharing when measured at mean low water (reference: USACE Coastal Engineering Technical Note I-63, page 3, March 1999). Furthermore, according to the Virginia Port Authority Policy on Grants to Local Governments for Financial Assistance for Dredging Activities, refers to rural coastal waterways that have recognized and established navigable channels that are pivotal to the use and enjoyment of docks, marinas, boat yards and working waterfronts. Shallow draft dredging areas can be categorized as primary or secondary (including smaller tributaries and marked and unmarked channels) having a water depth of 14 feet or less.

Shoaling Rate: This is the rate at which sediment fills a navigation channel or feature, usually measured in terms of cubic yards per year.

Study: According to the Virginia Port Authority Policy on Grants to Local Governments for Financial Assistance for Dredging Activities, refers to feasibility and cost evaluations, pre-project engineering studies, and project permitting and contracting costs for a waterway project conducted by a political subdivision of the Commonwealth.

Tertiary: The Tertiary is a system of rocks, above the Cretaceous and below the Quaternary, that defines the Tertiary Period of geologic time. The Tertiary Period began about 66 million years ago with a mass extinction that 'clocked' the dinosaurs and ended when the ice ages of the Quaternary Period began, about 2.6 million years ago. These dates have been adjusted as science advances or when new evidence is found. The current [International Geological Timescale](#) uses two time periods, the Paleogene and Neogene, instead of Tertiary. Instead of just 2 time periods in the Cenozoic Era (Tertiary and Quaternary), the IGT recognizes three periods of geologic time, Paleogene, Neogene, and Quaternary, in the Cenozoic Era. (from USGS.gov)

Turning Basin: A general navigation feature which allows commercial and recreational vessels to make a U-turn and leave a channel the way that they entered. They eliminate the need for long backing-out movements.

USACE: United States Army Corps of Engineers.

USBLS: United States Department of Labor (Bureau of Labor Statistics)

USCG: United States Coast Guard.

USGS: United States Geologic Survey.

VDACS: Virginia Department of Agriculture and Consumer Services.

VDEQ: Virginia Department of Environmental Quality

VDGIF: Virginia Department of Game and Inland Fisheries.

VDH: Virginia Department of Health

VDOT: Virginia Department of Transportation

VDWR: Virginia Department of Wildlife Resources (formerly the Virginia Department of Game and Inland Fisheries)

Vessels: Towboats, barges, and other waterborne craft.

VIMS: Virginia Institute of Marine Science.

VMRC: Virginia Marine Resources Commission.

VPA: Virginia Port Authority.

VTCA: Virginia Transportation Construction Alliance.

Waterbody: Used synonymously to represent any creek, river, bay, cove, etc. discussed in this report.

Waterway: Any body of water wide enough and deep enough to accommodate the passage of watercraft, particularly commercial and recreational vessels.

WCC: Weldon Cooper Center.

Working Waterfronts: They are properties that support commercial and recreational fishing, boat building, shipping and rail yards, aquaculture, national defense, public safety, marine research, offshore energy production, and other water-related commercial and recreational activities.
<https://www.northernneck.us/workingwaterfronts/>

Appendix B
Data Tables for Waterbodies of the Northern Neck

*Note: Data is cumulative of a waterbody
and its sub-tributaries

Waterbody Information

Creek_ID	County	Channel	MainRiver	Type	Shoaling
70	Lancaster	Antipoison Creek	Little Bay	Non-Federal with ATONS	Less than 50% of channel
37	Lancaster	Ashley Cove	Dymer Creek	Non-Federal	Less than 50% of channel
112	Lancaster	Beach Creek	Rappahannock River	Non-Federal	Greater than 50% of channel
113	Lancaster	Belmont Creek	Rappahannock River	Non-Federal	Greater than 50% of channel
2	Lancaster	Carter Cove	Carter Creek	Non-Federal	No Visible Shoaling
114	Lancaster	Carter Creek	Rappahannock River	Federal	No Visible Shoaling
3	Lancaster	Carter Creek East Branch	Carter Creek	Non-Federal with ATONS	No Visible Shoaling
38	Lancaster	Chases Cove North	Dymer Creek	Non-Federal	Greater than 50% of channel
39	Lancaster	Chases Cove South	Dymer Creek	Non-Federal	Less than 50% of channel
115	Lancaster	Corrotoman River	Rappahannock River	Non-Federal with ATONS	No Visible Shoaling
21	Lancaster	Corrotoman River Eastern Branch	Corrotoman River	Non-Federal	No Visible Shoaling
22	Lancaster	Corrotoman River Western Branch	Corrotoman River	Non-Federal with ATONS	No Visible Shoaling
23	Lancaster	Davis Creek	Corrotoman River	Non-Federal	Less than 50% of channel
116	Lancaster	Deep Creek	Rappahannock River	Non-Federal with ATONS	Less than 50% of channel
43	Lancaster	Dymer Creek	Fleets Bay	Federal	No Visible Shoaling
128	Lancaster	Ewells Prong	Whitehouse Creek	Non-Federal	Less than 50% of channel
40	Lancaster	Georges Cove	Dymer Creek	Non-Federal	Less than 50% of channel
117	Lancaster	Greenvale Creek	Rappahannock River	Federal	Greater than 50% of channel
41	Lancaster	Hunts Cove	Dymer Creek	Non-Federal	No Visible Shoaling
24	Lancaster	John Creek	Corrotoman River	Non-Federal	Less than 50% of channel
42	Lancaster	Johnson Cove	Dymer Creek	Non-Federal with ATONS	No Visible Shoaling
44	Lancaster	Little Bay	Fleets Bay	Non-Federal with ATONS	No Visible Shoaling
118	Lancaster	Little Oyster Creek	Rappahannock River	Non-Federal	Greater than 50% of channel
60	Lancaster	Long Creek	Indian Creek	Non-Federal	No Visible Shoaling
25	Lancaster	Lowrey Creek	Corrotoman River	Non-Federal	Less than 50% of channel
26	Lancaster	Moran Creek	Corrotoman River	Non-Federal	Greater than 50% of channel
119	Lancaster	Mosquito Creek	Rappahannock River	Non-Federal	Less than 50% of channel
120	Lancaster	Mulberry Creek	Rappahannock River	Non-Federal	No Visible Shoaling
27	Lancaster	Myer Creek	Corrotoman River	Non-Federal with ATONS	No Visible Shoaling
61	Lancaster	Pitman's Cove	Indian Creek	Non-Federal	No Visible Shoaling
28	Lancaster	Senior Creek	Corrotoman River	Non-Federal	No Visible Shoaling
45	Lancaster	Tabbs Creek	Fleets Bay	Non-Federal	Greater than 50% of channel
29	Lancaster	Taylor Creek	Corrotoman River	Non-Federal	Less than 50% of channel
30	Lancaster	Whitehouse Creek	Corrotoman River	Non-Federal	Less than 50% of channel
121	Lancaster	Windmill Point Creek	Rappahannock River	Non-Federal	Greater than 50% of channel
122	LN/RM	Lancaster Creek	Rappahannock River	Non-Federal with ATONS	No Visible Shoaling
4	LN/RM/WM	Rappahannock River	Chesapeake Bay	Federal	No Visible Shoaling
18	NL/LN	Indian Creek	Chesapeake Bay	Non-Federal with ATONS	No Visible Shoaling

Waterbody Information					Waterbody Information			
Creek_ID	County	Channel	Mouth Type	Creek_Type	Water Surface Area (Acres)	Combined Shoreline Length (Ft)	SAV (2016-2020)	SAV (1971-2020)
70	Lancaster	Antipoison Creek	Semi-Restricted	Secondary Waterbody	305.5	67,595	Yes	Yes
37	Lancaster	Ashley Cove	Semi-Restricted	Secondary Waterbody	38.6	11,208	Yes	Yes
112	Lancaster	Beach Creek	Restricted	Primary Waterbody	59.8	25,239	Yes	Yes
113	Lancaster	Belmont Creek	Restricted	Primary Waterbody	25.9	10,815	Yes	Yes
2	Lancaster	Carter Cove	Open	Secondary Waterbody	72.5	16,294	No	No
114	Lancaster	Carter Creek	Open	Primary Waterbody	323.5	143,770	Yes	Yes
3	Lancaster	Carter Creek East Branch	Open	Secondary Waterbody	237.7	56,837	No	Yes
38	Lancaster	Chases Cove North	Restricted	Secondary Waterbody	13.9	6,089	Yes	Yes
39	Lancaster	Chases Cove South	Semi-Restricted	Secondary Waterbody	11.9	7,229	Yes	Yes
115	Lancaster	Corrotoman River	Open	Primary Waterbody	1,916.0	563,252	Yes	Yes
21	Lancaster	Corrotoman River Eastern Branch	Open	Secondary Waterbody	906.0	157,355	Yes	Yes
22	Lancaster	Corrotoman River Western Branch	Open	Secondary Waterbody	1,227.4	211,662	Yes	Yes
23	Lancaster	Davis Creek	Semi-Restricted	Tertiary Waterbody	30.4	10,602	No	Yes
116	Lancaster	Deep Creek	Semi-Restricted	Primary Waterbody	153.9	40,742	No	No
43	Lancaster	Dymer Creek	Open	Primary Waterbody	562.0	122,831	Yes	Yes
128	Lancaster	Ewells Prong	Semi-Restricted	Secondary Waterbody	72.8	25,993	No	Yes
40	Lancaster	Georges Cove	Semi-Restricted	Secondary Waterbody	36.9	10,499	Yes	Yes
117	Lancaster	Greenvale Creek	Restricted	Primary Waterbody	62.0	20,556	Yes	Yes
41	Lancaster	Hunts Cove	Open	Secondary Waterbody	34.7	9,981	Yes	Yes
24	Lancaster	John Creek	Semi-Restricted	Tertiary Waterbody	26.8	9,755	Yes	Yes
42	Lancaster	Johnson Cove	Open	Secondary Waterbody	13.4	5,481	Yes	Yes
44	Lancaster	Little Bay	Open	Primary Waterbody	418.4	55,174	Yes	Yes
118	Lancaster	Little Oyster Creek	Semi-Restricted	Secondary Waterbody	141.5	24,454	Yes	Yes
60	Lancaster	Long Creek	Open	Secondary Waterbody	12.6	5,706	Yes	Yes
25	Lancaster	Lowrey Creek	Open	Tertiary Waterbody	15.9	6,023	Yes	Yes
26	Lancaster	Moran Creek	Semi-Restricted	Secondary Waterbody	85.1	23,929	Yes	Yes
119	Lancaster	Mosquito Creek	Semi-Restricted	Primary Waterbody	65.8	17,060	Yes	Yes
120	Lancaster	Mulberry Creek	Open	Primary Waterbody	165.7	47,057	No	No
27	Lancaster	Myer Creek	Open	Secondary Waterbody	233.6	56,851	Yes	Yes
61	Lancaster	Pitman's Cove	Open	Secondary Waterbody	49.5	17,726	Yes	Yes
28	Lancaster	Senior Creek	Open	Tertiary Waterbody	46.7	16,811	No	Yes
45	Lancaster	Tabbs Creek	Restricted	Primary Waterbody	191.6	50,946	Yes	Yes
29	Lancaster	Taylor Creek	Semi-Restricted	Secondary Waterbody	180.2	47,789	Yes	Yes
30	Lancaster	Whitehouse Creek	Semi-Restricted	Primary Waterbody	164.8	55,290	Yes	Yes
121	Lancaster	Windmill Point Creek	Restricted	Primary Waterbody	171.9	35,109	Yes	Yes
122	LN/RM	Lancaster Creek	Open	Primary Waterbody	476.3	111,442	No	No
4	LN/RM/WM	Rappahannock River	Open	Primary Waterbody	N/A	409,236	No	No
18	NL/LN	Indian Creek	Open	Primary Waterbody	702.5	175,137	Yes	Yes

Creek_ID	County	Channel	Waterbody Information				Remotely-Se	
			Private Oyster Lease	TideRange (Ft)	LAT mouth	LONG mouth	Number of Docks	Number of Public Ramps
70	Lancaster	Antipoison Creek	Yes	1.13	37.631300	-76.332900	127	0
37	Lancaster	Ashley Cove	Yes	1.30	37.664800	-76.343200	22	0
112	Lancaster	Beach Creek	Yes	1.44	37.664800	-76.535400	27	0
113	Lancaster	Belmont Creek	Yes	1.50	37.708700	-76.542100	9	0
2	Lancaster	Carter Cove	No	1.35	37.656000	-76.439200	33	0
114	Lancaster	Carter Creek	Yes	1.35	37.653300	-76.441200	381	0
3	Lancaster	Carter Creek East Branch	Yes	1.35	37.653400	-76.431700	186	0
38	Lancaster	Chases Cove North	No	1.30	37.672700	-76.358200	12	0
39	Lancaster	Chases Cove South	No	1.30	37.671900	-76.356100	23	1
115	Lancaster	Corrotoman River	Yes	1.40	37.667700	-76.479300	858	0
21	Lancaster	Corrotoman River Eastern Branch	Yes	1.40	37.701500	-76.467000	241	0
22	Lancaster	Corrotoman River Western Branch	Yes	1.40	37.704300	-76.482500	274	0
23	Lancaster	Davis Creek	Yes	1.40	37.728600	-76.507600	11	0
116	Lancaster	Deep Creek	Yes	1.58	37.770700	-76.585600	29	1
43	Lancaster	Dymer Creek	Yes	1.30	37.666200	-76.331900	199	1
128	Lancaster	Ewells Prong	Yes	1.40	37.657700	-76.501500	46	0
40	Lancaster	Georges Cove	Yes	1.30	37.667700	-76.350500	27	0
117	Lancaster	Greenvale Creek	Yes	1.50	37.710600	-76.543800	44	1
41	Lancaster	Hunts Cove	No	1.30	37.672200	-76.342100	7	0
24	Lancaster	John Creek	No	1.40	37.716800	-76.492000	11	0
42	Lancaster	Johnson Cove	Yes	1.30	37.674200	-76.350600	15	0
44	Lancaster	Little Bay	Yes	1.13	37.635100	-76.323800	21	0
118	Lancaster	Little Oyster Creek	Yes	1.20	37.626200	-76.306300	22	0
60	Lancaster	Long Creek	Yes	1.30	37.688800	-76.346000	15	0
25	Lancaster	Lowrey Creek	No	1.40	37.713300	-76.499900	8	0
26	Lancaster	Moran Creek	Yes	1.40	37.692500	-76.462700	63	0
119	Lancaster	Mosquito Creek	No	1.25	37.618300	-76.358200	28	0
120	Lancaster	Mulberry Creek	No	1.62	37.785900	-76.618700	26	0
27	Lancaster	Myer Creek	Yes	1.40	37.687100	-76.484700	118	0
61	Lancaster	Pitman's Cove	Yes	1.30	37.693400	-76.350200	29	0
28	Lancaster	Senior Creek	Yes	1.40	37.726500	-76.513200	39	0
45	Lancaster	Tabbs Creek	Yes	1.30	37.655000	-76.339700	116	0
29	Lancaster	Taylor Creek	Yes	1.40	37.683100	-76.458000	75	0
30	Lancaster	Whitehouse Creek	Yes	1.40	37.655600	-76.497200	72	0
121	Lancaster	Windmill Point Creek	Yes	1.20	37.623500	-76.307600	33	0
122	LN/RM	Lancaster Creek	Yes	1.65	37.801700	-76.630100	74	0
4	LN/RM/WM	Rappahannock River	No	varies	37.584500	-76.292100	619	3
18	NL/LN	Indian Creek	Yes	1.30	37.681100	-76.321900	337	0

Creek_ID	County	Channel	Remote Sensed Structures		Economic Data				#Docks/1,000 linear ft
			Number of Marina	Number of Other Structures	Combined Total	Total Business	Total Resources	Total MOP	
70	Lancaster	Antipoison Creek	4	10	10	5	0	5	1.9
37	Lancaster	Ashley Cove	0	2	0	0	0	0	2.0
112	Lancaster	Beach Creek	0	0	0	0	0	0	1.1
113	Lancaster	Belmont Creek	0	0	0	0	0	0	0.8
2	Lancaster	Carter Cove	1	6	4	2	1	1	2.0
114	Lancaster	Carter Creek	8	14	14	3	1	10	2.7
3	Lancaster	Carter Creek East Branch	1	5	2	1	0	1	3.3
38	Lancaster	Chases Cove North	0	0	0	0	0	0	2.0
39	Lancaster	Chases Cove South	0	1	1	0	0	1	3.2
115	Lancaster	Corrotoman River	4	28	9	1	2	6	1.5
21	Lancaster	Corrotoman River Eastern Branch	0	6	1	0	0	1	1.5
22	Lancaster	Corrotoman River Western Branch	2	8	4	0	2	2	1.3
23	Lancaster	Davis Creek	0	0	0	0	0	0	1.0
116	Lancaster	Deep Creek	1	0	1	0	1	0	0.7
43	Lancaster	Dymer Creek	0	13	1	1	0	0	1.6
128	Lancaster	Ewells Prong	0	2	0	0	0	0	1.8
40	Lancaster	Georges Cove	0	4	1	1	0	0	2.6
117	Lancaster	Greenvale Creek	1	2	4	1	1	2	2.1
41	Lancaster	Hunts Cove	0	0	0	0	0	0	0.7
24	Lancaster	John Creek	0	0	0	0	0	0	1.1
42	Lancaster	Johnson Cove	0	1	0	0	0	0	2.7
44	Lancaster	Little Bay	0	1	1	1	0	0	0.4
118	Lancaster	Little Oyster Creek	0	3	0	0	0	0	0.9
60	Lancaster	Long Creek	0	0	0	0	0	0	2.6
25	Lancaster	Lowrey Creek	0	0	0	0	0	0	1.3
26	Lancaster	Moran Creek	0	1	0	0	0	0	2.6
119	Lancaster	Mosquito Creek	1	1	1	0	0	1	1.6
120	Lancaster	Mulberry Creek	3	6	3	0	1	2	0.6
27	Lancaster	Myer Creek	2	3	1	0	0	1	2.1
61	Lancaster	Pitman's Cove	0	1	1	0	0	1	1.6
28	Lancaster	Senior Creek	1	1	1	0	0	1	2.3
45	Lancaster	Tabbs Creek	0	8	0	0	0	0	2.3
29	Lancaster	Taylor Creek	0	5	0	0	0	0	1.6
30	Lancaster	Whitehouse Creek	0	5	1	0	0	1	1.3
121	Lancaster	Windmill Point Creek	0	5	2	1	0	1	0.9
122	LN/RM	Lancaster Creek	0	4	1	1	0	0	0.7
4	LN/RM/WM	Rappahannock River	3	57	12	2	4	6	1.5
18	NL/LN	Indian Creek	6	19	5	1	0	4	1.9

Oyster Leases

Creek_ID	County	Channel	Private Oyster Lease Acreage (Acres)	Lease Area/Area of waterbody
70	Lancaster	Antipoison Creek	66.2	22%
37	Lancaster	Ashley Cove	19.2	50%
112	Lancaster	Beach Creek	27.8	47%
113	Lancaster	Belmont Creek	8.6	33%
2	Lancaster	Carter Cove		
114	Lancaster	Carter Creek	202.2	32%
3	Lancaster	Carter Creek East Branch	97.1	41%
38	Lancaster	Chases Cove North		
39	Lancaster	Chases Cove South		
115	Lancaster	Corrotoman River	1017.5	22%
21	Lancaster	Corrotoman River Eastern Branch	120.5	13%
22	Lancaster	Corrotoman River Western Branch	234.9	17%
23	Lancaster	Davis Creek	22.3	73%
116	Lancaster	Deep Creek	16.5	11%
43	Lancaster	Dymer Creek	178.2	25%
128	Lancaster	Ewells Prong	32.4	44%
40	Lancaster	Georges Cove	21.1	57%
117	Lancaster	Greenvale Creek	3.2	5%
41	Lancaster	Hunts Cove		
24	Lancaster	John Creek		
42	Lancaster	Johnson Cove	2.0	15%
44	Lancaster	Little Bay	307.9	74%
118	Lancaster	Little Oyster Creek	74.3	52%
60	Lancaster	Long Creek	3.0	33%
25	Lancaster	Lowrey Creek		
26	Lancaster	Moran Creek	25.2	30%
119	Lancaster	Mosquito Creek		
120	Lancaster	Mulberry Creek		
27	Lancaster	Myer Creek	98.9	42%
61	Lancaster	Pitman's Cove	3.6	7%
28	Lancaster	Senior Creek	0.5	1%
45	Lancaster	Tabbs Creek	30.2	16%
29	Lancaster	Taylor Creek	80.6	45%
30	Lancaster	Whitehouse Creek	103.4	44%
121	Lancaster	Windmill Point Creek	67.2	39%
122	LN/RM	Lancaster Creek	30.9	6%
4	LN/RM/WM	Rappahannock River		
18	NL/LN	Indian Creek	167.7	18%

Waterbody Information

Creek_ID	County	Channel	MainRiver	Type	Shoaling
71	Northumberland	Back Creek	Little Wicomico River	Non-Federal	Less than 50% of channel
5	Northumberland	Ball Creek	Chesapeake Bay	Non-Federal with ATONS	Greater than 50% of channel
46	Northumberland	Balls Creek	Great Wicomico River	Non-Federal	No Visible Shoaling
6	Northumberland	Barnes Creek_NL	Chesapeake Bay	Non-Federal	Greater than 50% of channel
47	Northumberland	Barrett Creek	Great Wicomico River	Non-Federal	No Visible Shoaling
62	Northumberland	Bells Creek	Indian Creek	Non-Federal	No Visible Shoaling
48	Northumberland	Betts Mill Creek	Great Wicomico River	Non-Federal	Less than 50% of channel
49	Northumberland	Blackwells Creek	Great Wicomico River	Non-Federal	No Visible Shoaling
7	Northumberland	Bluff Neck Creek	Chesapeake Bay	Non-Federal	Greater than 50% of channel
1	Northumberland	Bluff Neck Creek Southern Branch	Bluff Neck Creek	Non-Federal with ATONS	Completely Shoaled
72	Northumberland	Bridge Creek	Little Wicomico River	Non-Federal	Less than 50% of channel
73	Northumberland	Bridgemans Back Creek	Little Wicomico River	Non-Federal	Less than 50% of channel
50	Northumberland	Bush Mill Stream	Great Wicomico River	Non-Federal	No Visible Shoaling
8	Northumberland	Cloverdale Creek	Chesapeake Bay	Non-Federal with ATONS	Greater than 50% of channel
125	Northumberland	Coan River	Potomac River	Federal	Less than 50% of channel
64	Northumberland	Cockrell Creek	Ingram Bay	Non-Federal with ATONS	No Visible Shoaling
94	Northumberland	Cod Creek East	Potomac River	Non-Federal	Greater than 50% of channel
74	Northumberland	Cod Creek_LWR	Little Wicomico River	Non-Federal	Less than 50% of channel
93	Northumberland	Cod Creek_PR	Potomac River	Non-Federal	Greater than 50% of channel
51	Northumberland	Coles Creek	Great Wicomico River	Non-Federal	Less than 50% of channel
95	Northumberland	Corbin Pond	Potomac River	Non-Federal	Greater than 50% of channel
131	Northumberland	Cornish Creek	Yeocomico River	Non-Federal	No Visible Shoaling
52	Northumberland	Cranes Creek	Great Wicomico River	Federal	Greater than 50% of channel
96	Northumberland	Cubitt Creek	Potomac River	Non-Federal	Completely Shoaled
9	Northumberland	Dividing Creek	Chesapeake Bay	Non-Federal with ATONS	No Visible Shoaling
132	Northumberland	Dungan Cove	South Yeocomico River	Non-Federal	No Visible Shoaling
75	Northumberland	Ellyson Creek	Little Wicomico River	Non-Federal with ATONS	Less than 50% of channel
97	Northumberland	Flag Pond	Potomac River	Non-Federal	Greater than 50% of channel
53	Northumberland	Gougher Creek	Great Wicomico River	Non-Federal	Greater than 50% of channel
65	Northumberland	Great Wicomico River	Ingram Bay	Non-Federal with ATONS	No Visible Shoaling
98	Northumberland	Hack Creek	Potomac River	Non-Federal	Greater than 50% of channel
66	Northumberland	Harveys Creek	Ingram Bay	Non-Federal	Greater than 50% of channel
63	Northumberland	Henrys Creek	Indian Creek	Non-Federal	No Visible Shoaling
34	Northumberland	Highland Landing Cove	Dividing Creek	Non-Federal with ATONS	Less than 50% of channel
54	Northumberland	Horn Harbor	Great Wicomico River	Non-Federal	Greater than 50% of channel
99	Northumberland	Hull Creek	Potomac River	Non-Federal	Completely Shoaled
11	Northumberland	Ingram Cove	Chesapeake Bay	Non-Federal	Less than 50% of channel
12	Northumberland	Jarvis Creek	Chesapeake Bay	Federal	Greater than 50% of channel
126	Northumberland	Kingscote Creek	Coan River	Non-Federal	No Visible Shoaling
35	Northumberland	Lawrence Cove	Dividing Creek	Non-Federal with ATONS	Less than 50% of channel
129	Northumberland	Little Wicomico River	Wicomico River	Non-Federal with ATONS	Less than 50% of channel
13	Northumberland	Little Wicomico River Federal	Chesapeake Bay	Federal	Less than 50% of channel
133	Northumberland	Lodge Creek	South Yeocomico River	Non-Federal	No Visible Shoaling
67	Northumberland	Mill Creek	Ingram Bay	Non-Federal with ATONS	Less than 50% of channel
134	Northumberland	Mill Creek-Yeocomico	South Yeocomico River	Non-Federal with ATONS	No Visible Shoaling
36	Northumberland	Natty Point Creek	Dividing Creek	Non-Federal with ATONS	Less than 50% of channel
14	Northumberland	Owens Pond North	Chesapeake Bay	Non-Federal	Completely Shoaled
15	Northumberland	Owens Pond South	Chesapeake Bay	Non-Federal	Completely Shoaled
135	Northumberland	Palmer Cove	South Yeocomico River	Non-Federal with ATONS	No Visible Shoaling
55	Northumberland	Penny Creek	Great Wicomico River	Non-Federal	Less than 50% of channel
16	Northumberland	Prentice Creek	Chesapeake Bay	Non-Federal with ATONS	No Visible Shoaling
100	Northumberland	Presley Creek	Potomac River	Non-Federal	Greater than 50% of channel
56	Northumberland	Reason Creek	Great Wicomico River	Non-Federal	Greater than 50% of channel
101	Northumberland	Rogers Creek	Potomac River	Non-Federal	Greater than 50% of channel
76	Northumberland	Sharps Creek	Little Wicomico River	Non-Federal	Greater than 50% of channel
77	Northumberland	Sloop Creek	Little Wicomico River	Non-Federal	No Visible Shoaling
78	Northumberland	Slough Creek	Little Wicomico River	Non-Federal with ATONS	Less than 50% of channel
136	Northumberland	South Yeocomico River	Yeocomico River	Non-Federal with ATONS	No Visible Shoaling
79	Northumberland	Spences Creek	Little Wicomico River	Non-Federal	No Visible Shoaling
17	Northumberland	Taskmakers Creek	Chesapeake Bay	Non-Federal	Completely Shoaled
19	Northumberland	The Glebe	Coan River	Non-Federal	No Visible Shoaling
57	Northumberland	Tipers Creek	Great Wicomico River	Non-Federal	No Visible Shoaling
68	Northumberland	Towles Creek	Ingram Bay	Non-Federal	No Visible Shoaling
58	Northumberland	Warehouse Creek	Great Wicomico River	Non-Federal with ATONS	Greater than 50% of channel
59	Northumberland	Whays Creek	Great Wicomico River	Non-Federal with ATONS	Completely Shoaled
137	Northumberland	Wilkins Creek	West Yeocomico River	Non-Federal	No Visible Shoaling
20	Northumberland	Wrights Cove	Coan River	Non-Federal with ATONS	No Visible Shoaling

Creek_ID	County	Waterbody Information				Waterbody Information			
		Channel	Mouth Type	Creek_Type	Water Surface Area (Acres)	Combined Shoreline Length (Ft)	SAV (2016-2020)	SAV (1971-2020)	
71	Northumberland	Back Creek	Semi-Restricted	Tertiary Waterbody	25.2	9,065	Not Mapped	No	
5	Northumberland	Ball Creek	Restricted	Primary Waterbody	130.7	34,266	Yes	Yes	
46	Northumberland	Balls Creek	Open	Secondary Waterbody	132.3	33,372	No	No	
6	Northumberland	Barnes Creek_NL	Semi-Restricted	Primary Waterbody	213.7	41,006	Yes	Yes	
47	Northumberland	Barrett Creek	Open	Secondary Waterbody	109.3	23,305	Yes	Yes	
62	Northumberland	Bells Creek	Open	Secondary Waterbody	33.3	11,033	Yes	Yes	
48	Northumberland	Betts Mill Creek	Semi-Restricted	Secondary Waterbody	60.9	17,663	No	No	
49	Northumberland	Blackwells Creek	Open	Secondary Waterbody	38.9	11,913	No	No	
7	Northumberland	Bluff Neck Creek	Semi-Restricted	Primary Waterbody	40.2	19,706	Yes	Yes	
1	Northumberland	Bluff Neck Creek Southern Branch	Restricted	Secondary Waterbody	20.9	7,370	Yes	Yes	
72	Northumberland	Bridge Creek	Semi-Restricted	Tertiary Waterbody	192.3	56,534	Not Mapped	No	
73	Northumberland	Bridgemans Back Creek	Restricted	Tertiary Waterbody	47.0	15,550	Not Mapped	No	
50	Northumberland	Bush Mill Stream	Open	Secondary Waterbody	85.6	33,357	No	No	
8	Northumberland	Cloverdale Creek	Restricted	Primary Waterbody	48.7	11,874	Yes	Yes	
125	Northumberland	Coan River	Semi-Restricted	Primary Waterbody	1,370.0	301,496	Not Mapped	No	
64	Northumberland	Cockrell Creek	Open	Secondary Waterbody	753.5	130,058	Yes	Yes	
94	Northumberland	Cod Creek East	Semi-Restricted	Primary Waterbody	81.5	21,998	Not Mapped	No	
74	Northumberland	Cod Creek_LWR	Semi-Restricted	Tertiary Waterbody	57.3	19,613	Not Mapped	No	
93	Northumberland	Cod Creek_PR	Semi-Restricted	Primary Waterbody	88.3	23,928	Not Mapped	No	
51	Northumberland	Coles Creek	Semi-Restricted	Secondary Waterbody	28.9	10,388	No	No	
95	Northumberland	Corbin Pond	Restricted	Primary Waterbody	24.8	10,609	Not Mapped	No	
131	Northumberland	Cornish Creek	Open	Secondary Waterbody	73.9	11,537	Not Mapped	Yes	
52	Northumberland	Cranes Creek	Restricted	Secondary Waterbody	239.8	50,646	Yes	Yes	
96	Northumberland	Cubitt Creek	Inlet	Primary Waterbody	171.3	56,298	Not Mapped	No	
9	Northumberland	Dividing Creek	Open	Primary Waterbody	455.8	113,087	Yes	Yes	
132	Northumberland	Dungan Cove	Open	Quaternary Waterbody	76.9	15,577	Not Mapped	No	
75	Northumberland	Ellyson Creek	Semi-Restricted	Tertiary Waterbody	134.4	34,697	Not Mapped	No	
97	Northumberland	Flag Pond	Restricted	Primary Waterbody	20.0	11,718	Not Mapped	No	
53	Northumberland	Gougher Creek	Restricted	Secondary Waterbody	51.8	15,245	Yes	Yes	
65	Northumberland	Great Wicomico River	Open	Primary Waterbody	3,771.9	671,264	Yes	Yes	
98	Northumberland	Hack Creek	Inlet	Primary Waterbody	160.9	54,480	Not Mapped	No	
66	Northumberland	Harveys Creek	Restricted	Primary Waterbody	86.1	19,494	Yes	Yes	
63	Northumberland	Henrys Creek	Open	Secondary Waterbody	108.8	28,132	Yes	Yes	
34	Northumberland	Highland Landing Cove	Semi-Restricted	Secondary Waterbody	20.2	8,788	No	No	
54	Northumberland	Horn Harbor	Restricted	Secondary Waterbody	49.0	13,882	Yes	Yes	
99	Northumberland	Hull Creek	Restricted	Primary Waterbody	513.5	111,946	Not Mapped	No	
11	Northumberland	Ingram Cove	Open	Primary Waterbody	88.1	18,023	Yes	Yes	
12	Northumberland	Jarvis Creek	Semi-Restricted	Primary Waterbody	17.8	7,365	Yes	Yes	
126	Northumberland	Kingscote Creek	Open	Secondary Waterbody	246.7	34,115	Not Mapped	No	
35	Northumberland	Lawrence Cove	Semi-Restricted	Secondary Waterbody	73.2	24,436	Yes	Yes	
129	Northumberland	Little Wicomico River	Open	Secondary Waterbody	955.9	298,248	Not Mapped	No	
13	Northumberland	Little Wicomico River Federal	Inlet	Primary Waterbody	313.1	363,470	Not Mapped	No	
133	Northumberland	Lodge Creek	Open	Tertiary Waterbody	311.1	72,753	Not Mapped	Yes	
67	Northumberland	Mill Creek	Open	Primary Waterbody	637.9	92,511	Yes	Yes	
134	Northumberland	Mill Creek-Yeocomico	Open	Tertiary Waterbody	245.6	45,486	Not Mapped	No	
36	Northumberland	Natty Point Creek	Semi-Restricted	Secondary Waterbody	12.0	6,152	No	No	
14	Northumberland	Owens Pond North	Restricted	Primary Waterbody	50.3	15,741	No	No	
15	Northumberland	Owens Pond South	Restricted	Primary Waterbody	25.3	8,366	No	No	
135	Northumberland	Palmer Cove	Open	Tertiary Waterbody	71.2	9,827	Not Mapped	Yes	
55	Northumberland	Penny Creek	Semi-Restricted	Secondary Waterbody	5.8	2,680	Yes	Yes	
16	Northumberland	Prentice Creek	Open	Primary Waterbody	121.8	28,399	Yes	Yes	
100	Northumberland	Presley Creek	Inlet	Primary Waterbody	229.4	50,292	Not Mapped	No	
56	Northumberland	Reason Creek	Restricted	Secondary Waterbody	75.0	18,185	Yes	Yes	
101	Northumberland	Rogers Creek	Open	Primary Waterbody	37.3	12,195	Not Mapped	No	
76	Northumberland	Sharps Creek	Restricted	Tertiary Waterbody	20.8	6,972	Not Mapped	No	
77	Northumberland	Sloop Creek	Open	Tertiary Waterbody	13.8	6,020	Not Mapped	No	
78	Northumberland	Slough Creek	Semi-Restricted	Secondary Waterbody	35.5	12,179	Not Mapped	No	
136	Northumberland	South Yeocomico River	Open	Secondary Waterbody	276.2	148,470	Not Mapped	Yes	
79	Northumberland	Spences Creek	Open	Tertiary Waterbody	25.2	10,688	Not Mapped	No	
17	Northumberland	Taskmakers Creek	Restricted	Primary Waterbody	35.1	9,532	No	Yes	
19	Northumberland	The Glebe	Open	Secondary Waterbody	540.3	100,307	Not Mapped	No	
57	Northumberland	Tipers Creek	Open	Secondary Waterbody	100.1	26,666	No	Yes	
68	Northumberland	Towles Creek	Semi-Restricted	Primary Waterbody	19.1	8,289	Yes	Yes	
58	Northumberland	Warehouse Creek	Restricted	Secondary Waterbody	55.4	15,535	Yes	No	
59	Northumberland	Whays Creek	Restricted	Secondary Waterbody	96.6	26,477	Yes	Yes	
137	Northumberland	Wilkins Creek	Open	Tertiary Waterbody	84.4	17,609	Not Mapped	Yes	
20	Northumberland	Wrights Cove	Open	Tertiary Waterbody	94.9	19,818	Not Mapped	No	

Creek_ID	County	Channel	Waterbody Information				Remotely-Se	
			Private Oyster Lease	TideRange (Ft)	LAT mouth	LONG mouth	Number of Docks	Number of Public Ramps
71	Northumberland	Back Creek	Yes	1.00	37.886300	-76.283100	17	0
5	Northumberland	Ball Creek	Yes	1.13	37.760000	-76.310900	1	0
46	Northumberland	Balls Creek	Yes	1.20	37.848800	-76.372600	30	0
6	Northumberland	Barnes Creek_NL	Yes	1.30	37.687200	-76.308300	26	0
47	Northumberland	Barrett Creek	Yes	1.20	37.842900	-76.350900	40	0
62	Northumberland	Bells Creek	Yes	1.30	37.689400	-76.336100	29	0
48	Northumberland	Betts Mill Creek	Yes	1.20	37.861900	-76.368400	24	0
49	Northumberland	Blackwells Creek	Yes	1.20	37.868900	-76.389300	9	0
7	Northumberland	Bluff Neck Creek	Yes	1.13	37.717900	-76.316000	17	0
1	Northumberland	Bluff Neck Creek Southern Branch	Yes	1.13	37.715900	-76.319200	5	0
72	Northumberland	Bridge Creek	Yes	1.00	37.883200	-76.276100	165	0
73	Northumberland	Bridgemans Back Creek	Yes	1.00	37.893100	-76.278000	42	0
50	Northumberland	Bush Mill Stream	No	1.20	37.873400	-76.431100	34	0
8	Northumberland	Cloverdale Creek	Yes	1.13	37.774400	-76.307600	3	0
125	Northumberland	Coan River	Yes	1.20	37.991300	-76.463100	468	2
64	Northumberland	Cockrell Creek	Yes	1.20	37.819900	-76.282600	275	1
94	Northumberland	Cod Creek East	No	1.20	37.978100	-76.433500	78	0
74	Northumberland	Cod Creek_LWR	Yes	1.00	37.887500	-76.294300	84	0
93	Northumberland	Cod Creek_PR	Yes	1.20	37.979100	-76.438200	34	0
51	Northumberland	Coles Creek	Yes	1.20	37.854200	-76.360000	14	0
95	Northumberland	Corbin Pond	No	1.20	37.960800	-76.401200	14	0
131	Northumberland	Cornish Creek	Yes	1.30	38.023300	-76.535900	19	0
52	Northumberland	Cranes Creek	Yes	1.20	37.812600	-76.310100	94	1
96	Northumberland	Cubitt Creek	Yes	1.17	37.948000	-76.349300	60	0
9	Northumberland	Dividing Creek	Yes	1.13	37.732900	-76.316200	153	0
132	Northumberland	Dungan Cove	Yes	1.30	38.002900	-76.537600	35	0
75	Northumberland	Ellyson Creek	Yes	1.00	37.895300	-76.265200	75	0
97	Northumberland	Flag Pond	No	1.13	37.926900	-76.300400	14	0
53	Northumberland	Gougher Creek	Yes	1.20	37.833000	-76.324300	31	0
65	Northumberland	Great Wicomico River	Yes	1.20	37.810300	-76.294800	1044	5
98	Northumberland	Hack Creek	No	1.14	37.933700	-76.314900	29	0
66	Northumberland	Harveys Creek	Yes	1.16	37.796400	-76.310600	38	0
63	Northumberland	Henrys Creek	Yes	1.30	37.687200	-76.321800	55	0
34	Northumberland	Highland Landing Cove	Yes	1.13	37.747400	-76.339900	10	0
54	Northumberland	Horn Harbor	Yes	1.20	37.852400	-76.343100	14	0
99	Northumberland	Hull Creek	Yes	1.20	37.955000	-76.385700	166	0
11	Northumberland	Ingram Cove	No	1.13	37.746700	-76.311900	0	0
12	Northumberland	Jarvis Creek	No	1.13	37.722600	-76.320600	15	0
126	Northumberland	Kingscote Creek	Yes	1.20	37.995300	-76.468100	70	0
35	Northumberland	Lawrence Cove	Yes	1.13	37.742100	-76.336500	33	0
129	Northumberland	Little Wicomico River	Yes	1.00	37.890600	-76.252800	643	0
13	Northumberland	Little Wicomico River Federal	Yes	1.00	37.889900	-76.236000	736	0
133	Northumberland	Lodge Creek	Yes	1.30	38.006600	-76.538800	132	1
67	Northumberland	Mill Creek	Yes	1.16	37.789500	-76.309300	68	0
134	Northumberland	Mill Creek-Yeocomico	Yes	1.30	38.010400	-76.543600	45	0
36	Northumberland	Natty Point Creek	Yes	1.13	37.751900	-76.337600	18	0
14	Northumberland	Owens Pond North	No	1.13	37.852500	-76.248900	21	0
15	Northumberland	Owens Pond South	No	1.13	37.848600	-76.250700	20	0
135	Northumberland	Palmer Cove	Yes	1.30	38.010100	-76.536100	17	0
55	Northumberland	Penny Creek	Yes	1.20	37.839200	-76.329600	11	0
16	Northumberland	Prentice Creek	Yes	1.13	37.729000	-76.322700	52	0
100	Northumberland	Presley Creek	Yes	1.20	37.967200	-76.417400	66	0
56	Northumberland	Reason Creek	Yes	1.20	37.832800	-76.297300	16	0
101	Northumberland	Rogers Creek	Yes	1.20	37.955300	-76.380600	29	0
76	Northumberland	Sharps Creek	No	1.00	37.887100	-76.260600	4	0
77	Northumberland	Sloop Creek	Yes	1.00	37.889900	-76.298200	24	0
78	Northumberland	Slough Creek	Yes	1.00	37.884900	-76.252800	27	0
136	Northumberland	South Yeocomico River	Yes	1.30	38.021400	-76.539800	218	1
79	Northumberland	Spences Creek	Yes	1.00	37.899400	-76.298500	25	0
17	Northumberland	Taskmakers Creek	Yes	1.14	37.826400	-76.260500	12	0
19	Northumberland	The Glebe	Yes	1.20	37.991900	-76.472400	219	0
57	Northumberland	Tipers Creek	Yes	1.20	37.846000	-76.358900	54	0
68	Northumberland	Towles Creek	No	1.16	37.803000	-76.307000	34	0
58	Northumberland	Warehouse Creek	Yes	1.20	37.847700	-76.317000	29	0
59	Northumberland	Whays Creek	Yes	1.20	37.833600	-76.310600	91	0
137	Northumberland	Wilkins Creek	Yes	1.30	38.023500	-76.552800	22	0
20	Northumberland	Wrights Cove	Yes	1.20	37.991000	-76.500200	51	0

Creek_ID	County	Channel	Remote Sensed Structures		Economic Data				#Docks/1,000 linear ft
			Number of Marina	Number of Other Structures	Combined Total	Total Business	Total Resources	Total MOP	
71	Northumberland	Back Creek	0	0	0	0	0	0	1.9
5	Northumberland	Ball Creek	0	0	0	0	0	0	0.0
46	Northumberland	Balls Creek	1	2	0	0	0	0	0.9
6	Northumberland	Barnes Creek_NL	0	3	0	0	0	0	0.6
47	Northumberland	Barrett Creek	1	2	2	1	0	1	1.7
62	Northumberland	Bells Creek	0	4	1	0	0	1	2.6
48	Northumberland	Betts Mill Creek	0	0	0	0	0	0	1.4
49	Northumberland	Blackwells Creek	1	0	1	0	0	1	0.8
7	Northumberland	Bluff Neck Creek	0	1	0	0	0	0	0.9
1	Northumberland	Bluff Neck Creek Southern Branch	0	1	0	0	0	0	0.7
72	Northumberland	Bridge Creek	0	5	0	0	0	0	2.9
73	Northumberland	Bridgemans Back Creek	0	0	0	0	0	0	2.7
50	Northumberland	Bush Mill Stream	0	0	0	0	0	0	1.0
8	Northumberland	Cloverdale Creek	0	1	1	0	1	0	0.3
125	Northumberland	Coan River	5	24	8	2	1	5	1.6
64	Northumberland	Cockrell Creek	7	17	19	6	2	11	2.1
94	Northumberland	Cod Creek East	0	5	2	0	0	2	3.5
74	Northumberland	Cod Creek_LWR	0	0	0	0	0	0	4.3
93	Northumberland	Cod Creek_PR	1	2	2	0	0	2	1.4
51	Northumberland	Coles Creek	1	1	2	0	0	2	1.3
95	Northumberland	Corbin Pond	0	0	0	0	0	0	1.3
131	Northumberland	Cornish Creek	0	1	0	0	0	0	1.6
52	Northumberland	Cranes Creek	1	3	2	0	1	1	1.9
96	Northumberland	Cubitt Creek	0	1	0	0	0	0	1.1
9	Northumberland	Dividing Creek	0	8	1	0	1	0	1.4
132	Northumberland	Dungan Cove	0	1	0	0	0	0	2.2
75	Northumberland	Ellyson Creek	1	1	3	0	0	3	2.2
97	Northumberland	Flag Pond	0	1	0	0	0	0	1.2
53	Northumberland	Gougher Creek	0	0	0	0	0	0	2.0
65	Northumberland	Great Wicomico River	17	43	38	10	7	21	1.6
98	Northumberland	Hack Creek	0	1	1	0	0	1	0.5
66	Northumberland	Harveys Creek	0	0	0	0	0	0	1.9
63	Northumberland	Henrys Creek	1	2	1	0	0	1	2.0
34	Northumberland	Highland Landing Cove	0	1	0	0	0	0	1.1
54	Northumberland	Horn Harbor	0	0	0	0	0	0	1.0
99	Northumberland	Hull Creek	0	9	2	1	0	1	1.5
11	Northumberland	Ingram Cove	0	0	0	0	0	0	0.0
12	Northumberland	Jarvis Creek	0	5	0	0	0	0	2.0
126	Northumberland	Kingscote Creek	1	8	1	0	0	1	2.1
35	Northumberland	Lawrence Cove	0	1	0	0	0	0	1.4
129	Northumberland	Little Wicomico River	2	33	18	8	2	8	2.2
13	Northumberland	Little Wicomico River Federal	5	35	22	8	2	12	2.0
133	Northumberland	Lodge Creek	3	2	4	0	1	3	1.8
67	Northumberland	Mill Creek	0	1	0	0	0	0	0.7
134	Northumberland	Mill Creek-Yeocomico	0	2	0	0	0	0	1.0
36	Northumberland	Natty Point Creek	0	1	0	0	0	0	2.9
14	Northumberland	Owens Pond North	0	0	0	0	0	0	1.3
15	Northumberland	Owens Pond South	0	0	0	0	0	0	2.4
135	Northumberland	Palmer Cove	0	0	0	0	0	0	1.7
55	Northumberland	Penny Creek	0	1	0	0	0	0	4.1
16	Northumberland	Prentice Creek	1	1	1	0	0	1	1.8
100	Northumberland	Presley Creek	0	0	0	0	0	0	1.3
56	Northumberland	Reason Creek	0	0	0	0	0	0	0.9
101	Northumberland	Rogers Creek	0	1	0	0	0	0	2.4
76	Northumberland	Sharps Creek	0	0	0	0	0	0	0.6
77	Northumberland	Sloop Creek	0	2	0	0	0	0	4.0
78	Northumberland	Slough Creek	3	1	4	0	0	4	2.2
136	Northumberland	South Yeocomico River	3	5	4	0	1	3	1.5
79	Northumberland	Spences Creek	0	1	1	1	0	0	2.3
17	Northumberland	Taskmakers Creek	0	0	0	0	0	0	1.3
19	Northumberland	The Glebe	0	3	2	2	0	0	2.2
57	Northumberland	Tipers Creek	1	3	1	1	0	0	2.0
68	Northumberland	Towles Creek	1	1	2	0	0	2	4.1
58	Northumberland	Warehouse Creek	0	0	0	0	0	0	1.9
59	Northumberland	Whays Creek	0	1	0	0	0	0	3.4
137	Northumberland	Wilkins Creek	0	0	0	0	0	0	1.2
20	Northumberland	Wrights Cove	0	0	0	0	0	0	2.6

Oyster Leases				
Creek_ID	County	Channel	Private Oyster Lease Acreage (Acres)	Lease Area/Area of waterbody
71	Northumberland	Back Creek	17.4	69%
5	Northumberland	Ball Creek	36.2	28%
46	Northumberland	Balls Creek	7.3	6%
6	Northumberland	Barnes Creek_NL	32.9	15%
47	Northumberland	Barrett Creek	98.6	90%
62	Northumberland	Bells Creek	20.3	61%
48	Northumberland	Betts Mill Creek	18.1	30%
49	Northumberland	Blackwells Creek	19.5	50%
7	Northumberland	Bluff Neck Creek	21.5	35%
1	Northumberland	Bluff Neck Creek Southern Branch	9.9	47%
72	Northumberland	Bridge Creek	88.2	46%
73	Northumberland	Bridgemans Back Creek	26.6	57%
50	Northumberland	Bush Mill Stream		
8	Northumberland	Cloverdale Creek	25.2	52%
125	Northumberland	Coan River	1049.1	47%
64	Northumberland	Cockrell Creek	93.4	12%
94	Northumberland	Cod Creek East	0.5	1%
74	Northumberland	Cod Creek_LWR	15.8	28%
93	Northumberland	Cod Creek_PR	1.5	2%
51	Northumberland	Coles Creek	12.2	42%
95	Northumberland	Corbin Pond		
131	Northumberland	Cornish Creek	62.2	84%
52	Northumberland	Cranes Creek	129.3	54%
96	Northumberland	Cubitt Creek	14.7	9%
9	Northumberland	Dividing Creek	240.9	43%
132	Northumberland	Dungan Cove	14.9	19%
75	Northumberland	Ellyson Creek	76.7	57%
97	Northumberland	Flag Pond		
53	Northumberland	Gougher Creek	19.0	37%
65	Northumberland	Great Wicomico River	1710.1	30%
98	Northumberland	Hack Creek		
66	Northumberland	Harveys Creek	46.6	54%
63	Northumberland	Henrys Creek	33.1	30%
34	Northumberland	Highland Landing Cove	6.0	30%
54	Northumberland	Horn Harbor	21.1	43%
99	Northumberland	Hull Creek	156.2	30%
11	Northumberland	Ingram Cove		
12	Northumberland	Jarvis Creek		
126	Northumberland	Kingscote Creek	15.0	6%
35	Northumberland	Lawrence Cove	12.5	17%
129	Northumberland	Little Wicomico River	743.0	50%
13	Northumberland	Little Wicomico River Federal	978.8	52%
133	Northumberland	Lodge Creek	69.9	18%
67	Northumberland	Mill Creek	182.5	29%
134	Northumberland	Mill Creek-Yeocomico	70.4	29%
36	Northumberland	Natty Point Creek	2.7	23%
14	Northumberland	Owens Pond North		
15	Northumberland	Owens Pond South		
135	Northumberland	Palmer Cove	24.6	35%
55	Northumberland	Penny Creek	2.7	46%
16	Northumberland	Prentice Creek	38.7	32%
100	Northumberland	Presley Creek	35.2	15%
56	Northumberland	Reason Creek	52.8	70%
101	Northumberland	Rogers Creek	5.5	15%
76	Northumberland	Sharps Creek		
77	Northumberland	Sloop Creek	3.0	22%
78	Northumberland	Slough Creek	3.5	10%
136	Northumberland	South Yeocomico River	242.1	25%
79	Northumberland	Spences Creek	6.9	28%
17	Northumberland	Taskmakers Creek	0.6	2%
19	Northumberland	The Glebe	193.7	30%
57	Northumberland	Tipers Creek	42.3	42%
68	Northumberland	Towles Creek		
58	Northumberland	Warehouse Creek	5.8	10%
59	Northumberland	Whays Creek	44.7	46%
137	Northumberland	Wilkins Creek	16.1	19%
20	Northumberland	Wrights Cove	40.2	42%

Waterbody Information

Creek_ID	County	Channel	MainRiver	Type	Shoaling
10	Richmond	Cat Point Creek	Rappahannock River	Non-Federal	No Visible Shoaling
123	Richmond	Farnham Creek	Rappahannock River	Non-Federal	Greater than 50% of channel
69	Richmond	Morattico Creek	Lancaster Creek	Non-Federal with ATONS	No Visible Shoaling
124	Richmond	Totuskey Creek	Rappahannock River	Non-Federal with ATONS	No Visible Shoaling

Waterbody Information					Waterbody Information			
Creek_ID	County	Channel	Mouth Type	Creek_Type	Water Surface Area (Acres)	Combined Shoreline Length (Ft)	SAV (2016-2020)	SAV (1971-2020)
10	Richmond	Cat Point Creek	Semi-Restricted	Primary Waterbody	927.7	254,274	No	No
123	Richmond	Farnham Creek	Semi-Restricted	Primary Waterbody	282.5	86,882	No	No
69	Richmond	Morattico Creek	Open	Primary Waterbody	192.0	35,589	No	No
124	Richmond	Totuskey Creek	Open	Primary Waterbody	636.9	218,924	No	No

Creek_ID	County	Channel	Waterbody Information				Remotely-Se	
			Private Oyster Lease	TideRange (Ft)	LAT mouth	LONG mouth	Number of Docks	Number of Public Ramps
10	Richmond	Cat Point Creek	No	1.70	37.972963	-76.854632	25	0
123	Richmond	Farnham Creek	No	1.70	37.825400	-76.680200	37	1
69	Richmond	Morattico Creek	Yes	1.65	37.804500	-76.637300	46	1
124	Richmond	Totuskey Creek	No	1.80	37.874600	-76.746800	51	1

Creek_ID	County	Channel	Remote Sensed Structures		Economic Data				#Docks/1,000 linear ft
			Number of Marina	Number of Other Structures	Combined Total	Total Business	Total Resources	Total MOP	
10	Richmond	Cat Point Creek	0	3	3	0	1	2	0.1
123	Richmond	Farnham Creek	0	2	3	2	1	0	0.4
69	Richmond	Morattico Creek	0	1	4	2	1	1	1.3
124	Richmond	Totuskey Creek	1	2	2	0	1	1	0.2

Oyster Leases

Creek_ID	County	Channel	Private Oyster Lease Acreage (Acres)	Lease Area/Area of waterbody
10	Richmond	Cat Point Creek		
123	Richmond	Farnham Creek		
69	Richmond	Morattico Creek	37.5	20%
124	Richmond	Totuskey Creek	0.5	0%

Waterbody Information

Creek_ID	County	Channel	MainRiver	Type	Shoaling
89	Westmoreland	Barnes Creek_WM	Nomini Creek	Non-Federal	No Visible Shoaling
80	Westmoreland	Bettys Pond	Lower Machodoc Creek	Non-Federal	Less than 50% of channel
102	Westmoreland	Bonum Creek	Potomac River	Federal	Greater than 50% of channel
81	Westmoreland	Branson Creek	Lower Machodoc Creek	Federal	Less than 50% of channel
90	Westmoreland	Buckner Creek	Nomini Creek	Non-Federal	Less than 50% of channel
82	Westmoreland	Cabin Point Creek	Lower Machodoc Creek	Non-Federal	Greater than 50% of channel
31	Westmoreland	Cold Harbor Creek	Currioman Bay	Non-Federal	No Visible Shoaling
103	Westmoreland	Currioman Bay	Potomac River	Non-Federal with ATONS	Less than 50% of channel
32	Westmoreland	Currioman Creek	Currioman Bay	Non-Federal	No Visible Shoaling
104	Westmoreland	Gardner Creek	Potomac River	Non-Federal	Less than 50% of channel
83	Westmoreland	Glebe Creek	Lower Machodoc Creek	Non-Federal	Less than 50% of channel
105	Westmoreland	Herring Pond	Potomac River	Non-Federal	Greater than 50% of channel
106	Westmoreland	Jackson Creek	Potomac River	Non-Federal	Greater than 50% of channel
91	Westmoreland	Jules Creek	Nomini Creek	Non-Federal	Less than 50% of channel
127	Westmoreland	Kinsale Branch	West Yeocomico River	Non-Federal	No Visible Shoaling
84	Westmoreland	Lower Machodoc Creek	Lower Machodoc Creek	Federal	No Visible Shoaling
107	Westmoreland	Mattox Creek	Potomac River	Non-Federal with ATONS	No Visible Shoaling
108	Westmoreland	Monroe Bay	Potomac River	Federal	Less than 50% of channel
87	Westmoreland	Nomini Creek	Nomini Bay	Federal	Greater than 50% of channel
138	Westmoreland	NW Yeocomico River	Yeocomico River	Non-Federal	No Visible Shoaling
139	Westmoreland	Parkers Creek	Yeocomico River	Non-Federal	Greater than 50% of channel
92	Westmoreland	Peirce Creek	Nomini Creek	Non-Federal	No Visible Shoaling
140	Westmoreland	Point Creek	Northwest Yeocomico River	Non-Federal	No Visible Shoaling
33	Westmoreland	Poor Jack Creek	Currioman Bay	Non-Federal	Less than 50% of channel
109	Westmoreland	Popes Creek	Potomac River	Non-Federal	Greater than 50% of channel
110	Westmoreland	Rosier Creek	Potomac River	Non-Federal	Less than 50% of channel
130	Westmoreland	Shannon Branch	NorthWest Yeocomico River	Non-Federal	No Visible Shoaling
88	Westmoreland	Smarts Creek	Nomini Bay	Non-Federal	Greater than 50% of channel
86	Westmoreland	Upper Monroe Creek	Monroe Bay	Non-Federal	No Visible Shoaling
85	Westmoreland	Weatherall Creek	Lower Machodoc Creek	Non-Federal with ATONS	Less than 50% of channel
141	Westmoreland	West Yeocomico River	Yeocomico River	Non-Federal with ATONS	No Visible Shoaling
142	WM/NL	Hall Branch	West Yeocomico River	Non-Federal	No Visible Shoaling
111	WM/NL	Yeocomico River	Potomac River	Non-Federal with ATONS	No Visible Shoaling

Waterbody Information					Waterbody Information			
Creek_ID	County	Channel	Mouth Type	Creek_Type	Water Surface Area (Acres)	Combined Shoreline Length (Ft)	SAV (2016-2020)	SAV (1971-2020)
89	Westmoreland	Barnes Creek_WM	Open	Secondary Waterbody	44.6	13,032	Not Mapped	No
80	Westmoreland	Bettys Pond	Semi-Restricted	Primary Waterbody	13.5	6,111	Not Mapped	Yes
102	Westmoreland	Bonum Creek	Restricted	Primary Waterbody	139.5	42,171	Not Mapped	No
81	Westmoreland	Branson Creek	Semi-Restricted	Secondary Waterbody	13.8	5,097	Not Mapped	Yes
90	Westmoreland	Buckner Creek	Semi-Restricted	Secondary Waterbody	429.1	67,455	Not Mapped	Yes
82	Westmoreland	Cabin Point Creek	Inlet	Secondary Waterbody	87.0	28,436	Not Mapped	Yes
31	Westmoreland	Cold Harbor Creek	Open	Primary Waterbody	50.1	23,311	Not Mapped	Yes
103	Westmoreland	Currioman Bay	Open	Primary Waterbody	1,018.1	41,979	No	No
32	Westmoreland	Currioman Creek	Open	Secondary Waterbody	35.6	11,905	Not Mapped	Yes
104	Westmoreland	Gardner Creek	Open	Primary Waterbody	128.9	34,220	Not Mapped	No
83	Westmoreland	Glebe Creek	Open	Secondary Waterbody	120.8	31,230	Not Mapped	No
105	Westmoreland	Herring Pond	Restricted	Primary Waterbody	27.1	8,544	Not Mapped	No
106	Westmoreland	Jackson Creek	Semi-Restricted	Primary Waterbody	92.7	33,783	Not Mapped	No
91	Westmoreland	Jules Creek	Semi-Restricted	Secondary Waterbody	32.4	9,343	Not Mapped	Yes
127	Westmoreland	Kinsale Branch	Open	Tertiary Waterbody	76.2	20,989	Not Mapped	No
84	Westmoreland	Lower Machodoc Creek	Open	Primary Waterbody	1,657.0	211,703	Not Mapped	Yes
107	Westmoreland	Mattox Creek	Open	Primary Waterbody	789.3	124,790	Not Mapped	No
108	Westmoreland	Monroe Bay	Inlet	Primary Waterbody	364.9	77,330	Not Mapped	No
87	Westmoreland	Nomini Creek	Semi-Restricted	Primary Waterbody	1,391.7	272,283	Not Mapped	Yes
138	Westmoreland	NW Yeocomico River	Open	Secondary Waterbody	112.3	77,578	Not Mapped	Yes
139	Westmoreland	Parkers Creek	Open	Secondary Waterbody	28.8	10,039	Not Mapped	Yes
92	Westmoreland	Peirce Creek	Open	Secondary Waterbody	140.4	27,047	Not Mapped	No
140	Westmoreland	Point Creek	Open	Tertiary Waterbody	94.0	28,873	Not Mapped	No
33	Westmoreland	Poor Jack Creek	Semi-Restricted	Primary Waterbody	103.9	26,037	Not Mapped	Yes
109	Westmoreland	Popes Creek	Restricted	Primary Waterbody	421.4	59,905	Not Mapped	No
110	Westmoreland	Rosier Creek	Semi-Restricted	Primary Waterbody	321.7	50,149	Not Mapped	Yes
130	Westmoreland	Shannon Branch	Open	Tertiary Waterbody	181.8	31,449	Not Mapped	No
88	Westmoreland	Smarts Creek	Restricted	Primary Waterbody	33.4	12,899	Not Mapped	Yes
86	Westmoreland	Upper Monroe Creek	Open	Secondary Waterbody	83.6	38,613	Not Mapped	No
85	Westmoreland	Weatherall Creek	Semi-Restricted	Secondary Waterbody	37.4	11,789	Not Mapped	No
141	Westmoreland	West Yeocomico River	Open	Secondary Waterbody	319.5	111,986	Not Mapped	Yes
142	WM/NL	Hall Branch	Open	Tertiary Waterbody	205.4	44,315	Not Mapped	No
111	WM/NL	Yeocomico River	Open	Primary Waterbody	1,376.8	403,505	Not Mapped	Yes

Creek_ID	County	Channel	Waterbody Information				Remotely-Se	
			Private Oyster Lease	TideRange (Ft)	LAT mouth	LONG mouth	Number of Docks	Number of Public Ramps
89	Westmoreland	Barnes Creek_WM	No	1.50	38.112400	-76.718100	12	0
80	Westmoreland	Bettys Pond	No	1.50	38.151700	-76.673500	9	0
102	Westmoreland	Bonum Creek	Yes	1.40	38.095800	-76.581500	20	1
81	Westmoreland	Branson Creek	No	1.50	38.141600	-76.637400	13	1
90	Westmoreland	Buckner Creek	Yes	1.50	38.133300	-76.718200	47	0
82	Westmoreland	Cabin Point Creek	No	1.50	38.141400	-76.661200	83	1
31	Westmoreland	Cold Harbor Creek	No	1.60	38.158200	-76.771400	12	0
103	Westmoreland	Currioman Bay	Yes	1.50	38.165200	-76.764600	37	1
32	Westmoreland	Currioman Creek	No	1.60	38.148500	-76.760700	2	0
104	Westmoreland	Gardner Creek	Yes	1.40	38.113100	-76.602900	99	0
83	Westmoreland	Glebe Creek	Yes	1.50	38.130400	-76.649600	66	0
105	Westmoreland	Herring Pond	No	1.50	38.159700	-76.690600	1	0
106	Westmoreland	Jackson Creek	Yes	1.40	38.106700	-76.597100	50	0
91	Westmoreland	Jules Creek	No	1.50	38.114000	-76.708700	6	0
127	Westmoreland	Kinsale Branch	Yes	1.30	38.029000	-76.573500	42	1
84	Westmoreland	Lower Machodoc Creek	Yes	1.50	38.147200	-76.654000	456	2
107	Westmoreland	Mattox Creek	Yes	1.60	38.210600	-76.958300	163	0
108	Westmoreland	Monroe Bay	Yes	1.60	38.230500	-76.965500	175	1
87	Westmoreland	Nomini Creek	Yes	1.50	38.135000	-76.723700	239	0
138	Westmoreland	NW Yeocomico River	Yes	1.30	38.037500	-76.548700	103	0
139	Westmoreland	Parkers Creek	Yes	1.30	38.040300	-76.538300	13	0
92	Westmoreland	Peirce Creek	Yes	1.50	38.102300	-76.735900	18	0
140	Westmoreland	Point Creek	Yes	1.30	38.043100	-76.556500	60	0
33	Westmoreland	Poor Jack Creek	No	1.60	38.136300	-76.745300	4	0
109	Westmoreland	Popes Creek	No	1.60	38.192200	-76.905600	3	0
110	Westmoreland	Rosier Creek	Yes	1.60	38.277000	-77.000900	31	0
130	Westmoreland	Shannon Branch	Yes	1.30	38.044000	-76.553100	36	0
88	Westmoreland	Smarts Creek	No	1.60	38.132500	-76.737500	1	0
86	Westmoreland	Upper Monroe Creek	No	1.60	38.248500	-76.971200	60	0
85	Westmoreland	Weatherall Creek	No	1.50	38.131800	-76.650900	66	0
141	Westmoreland	West Yeocomico River	Yes	1.30	38.026600	-76.548800	139	1
142	WM/NL	Hall Branch	Yes	1.30	38.025900	-76.573300	42	0
111	WM/NL	Yeocomico River	Yes	1.30	38.035200	-76.519100	519	2

Creek_ID	County	Channel	Remote Sensed Structures		Economic Data				#Docks/1,000 linear ft
			Number of Marina	Number of Other Structures	Combined Total	Total Business	Total Resources	Total MOP	
89	Westmoreland	Barnes Creek_WM	0	0	0	0	0	0	0.9
80	Westmoreland	Bettys Pond	0	0	0	0	0	0	1.5
102	Westmoreland	Bonum Creek	0	1	2	1	1	0	0.5
81	Westmoreland	Branson Creek	3	5	3	0	1	2	2.6
90	Westmoreland	Buckner Creek	0	7	0	0	0	0	0.7
82	Westmoreland	Cabin Point Creek	0	0	0	0	0	0	2.9
31	Westmoreland	Cold Harbor Creek	1	1	1	0	0	1	0.5
103	Westmoreland	Currioman Bay	0	0	2	0	1	1	0.9
32	Westmoreland	Currioman Creek	0	0	0	0	0	0	0.2
104	Westmoreland	Gardner Creek	0	16	0	0	0	0	2.9
83	Westmoreland	Glebe Creek	0	4	0	0	0	0	2.1
105	Westmoreland	Herring Pond	0	0	0	0	0	0	0.1
106	Westmoreland	Jackson Creek	0	4	1	1	0	0	1.5
91	Westmoreland	Jules Creek	0	0	0	0	0	0	0.6
127	Westmoreland	Kinsale Branch	1	1	3	0	2	1	2.0
84	Westmoreland	Lower Machodoc Creek	4	20	7	3	0	4	2.2
107	Westmoreland	Mattox Creek	1	8	5	0	0	5	1.3
108	Westmoreland	Monroe Bay	10	14	18	1	3	14	2.3
87	Westmoreland	Nomini Creek	2	24	9	4	0	5	0.9
138	Westmoreland	NW Yeocomico River	5	6	2	0	0	2	1.3
139	Westmoreland	Parkers Creek	0	0	0	0	0	0	1.3
92	Westmoreland	Peirce Creek	0	2	1	0	0	1	0.7
140	Westmoreland	Point Creek	1	5	1	0	0	1	2.1
33	Westmoreland	Poor Jack Creek	0	1	0	0	0	0	0.2
109	Westmoreland	Popes Creek	0	0	1	0	1	0	0.1
110	Westmoreland	Rosier Creek	0	2	1	1	0	0	0.6
130	Westmoreland	Shannon Branch	4	0	1	0	0	1	1.1
88	Westmoreland	Smarts Creek	0	0	0	0	0	0	0.1
86	Westmoreland	Upper Monroe Creek	0	3	0	0	0	0	1.6
85	Westmoreland	Weatherall Creek	0	1	0	0	0	0	5.6
141	Westmoreland	West Yeocomico River	4	2	7	4	2	1	1.2
142	WM/NL	Hall Branch	0	1	0	0	0	0	0.9
111	WM/NL	Yeocomico River	12	16	14	5	3	6	1.3

Oyster Leases

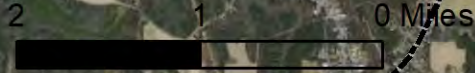
Creek_ID	County	Channel	Private Oyster Lease Acreage (Acres)	Lease Area/Area of waterbody
89	Westmoreland	Barnes Creek_WM		
80	Westmoreland	Bettys Pond		
102	Westmoreland	Bonum Creek	78.8	56%
81	Westmoreland	Branson Creek		
90	Westmoreland	Buckner Creek	153.9	36%
82	Westmoreland	Cabin Point Creek		
31	Westmoreland	Cold Harbor Creek		
103	Westmoreland	Currioman Bay	324.9	32%
32	Westmoreland	Currioman Creek		
104	Westmoreland	Gardner Creek	64.3	50%
83	Westmoreland	Glebe Creek	51.8	43%
105	Westmoreland	Herring Pond		
106	Westmoreland	Jackson Creek	26.7	29%
91	Westmoreland	Jules Creek		
127	Westmoreland	Kinsale Branch	1.3	2%
84	Westmoreland	Lower Machodoc Creek	1073.3	56%
107	Westmoreland	Mattox Creek	209.1	26%
108	Westmoreland	Monroe Bay	0.9	0%
87	Westmoreland	Nomini Creek	709.0	35%
138	Westmoreland	NW Yeocomico River	278.2	72%
139	Westmoreland	Parkers Creek	19.7	68%
92	Westmoreland	Peirce Creek	19.3	14%
140	Westmoreland	Point Creek	21.2	23%
33	Westmoreland	Poor Jack Creek		
109	Westmoreland	Popes Creek		
110	Westmoreland	Rosier Creek	123.3	38%
130	Westmoreland	Shannon Branch	95.5	52%
88	Westmoreland	Smarts Creek		
86	Westmoreland	Upper Monroe Creek		
85	Westmoreland	Weatherall Creek		
141	Westmoreland	West Yeocomico River	136.9	20%
142	WM/NL	Hall Branch	50.8	25%
111	WM/NL	Yeocomico River	1216.5	34%

Appendix C

Waterbody Maps and Data

*Note: Resource Facility Data is
cumulative of a waterbody and
its
sub-tributaries

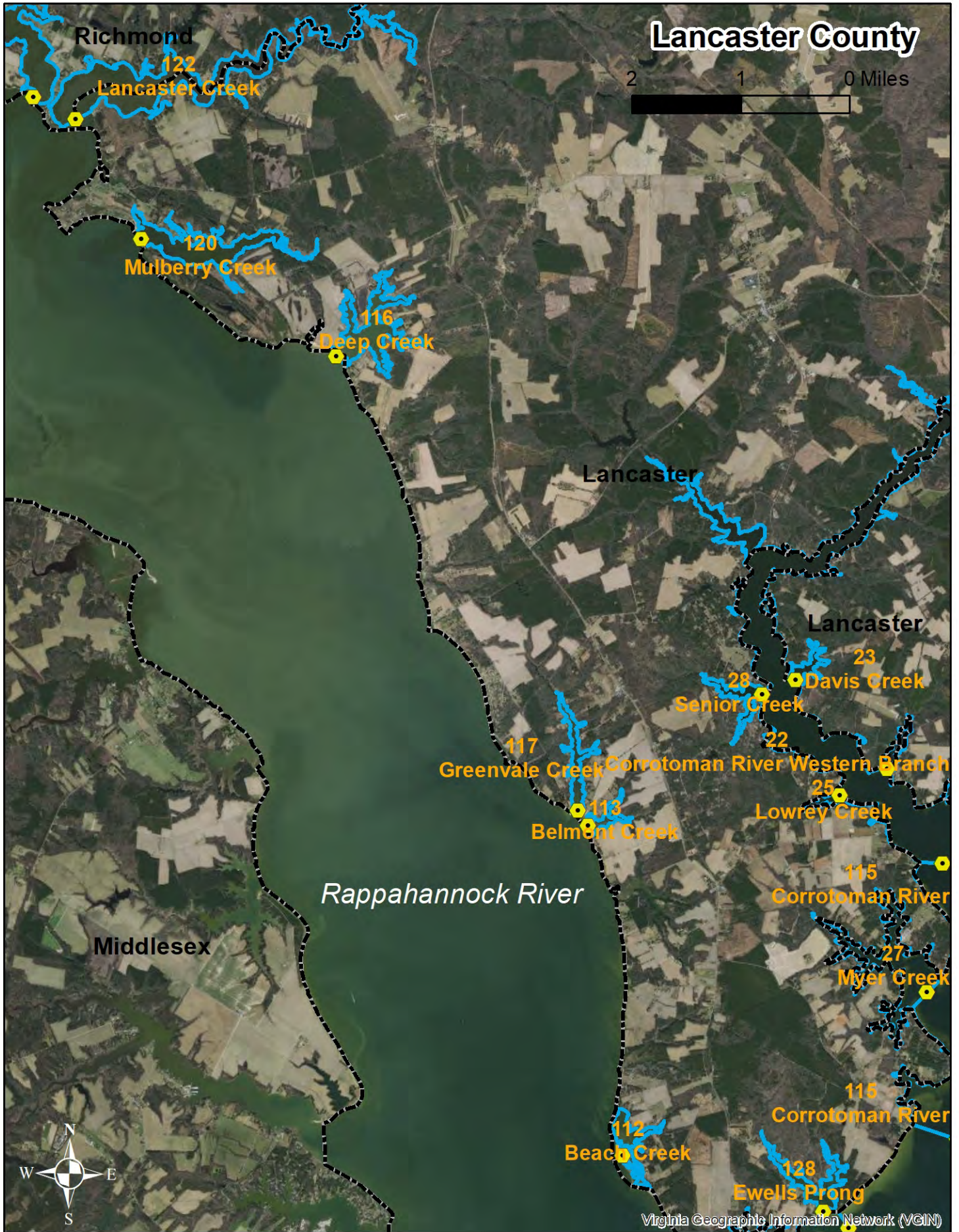
Lancaster County



Lancaster County

2 1 0 Miles





Lancaster County

2 1 0 Miles

Richmond

Lancaster Creek

Mulberry Creek

Deep Creek

Lancaster

Lancaster

Davis Creek

Senior Creek

Greenvale Creek Corrotoman River Western Branch

Belmont Creek

Lowrey Creek

Corrotoman River

Middlesex

Rappahannock River








Myer Creek

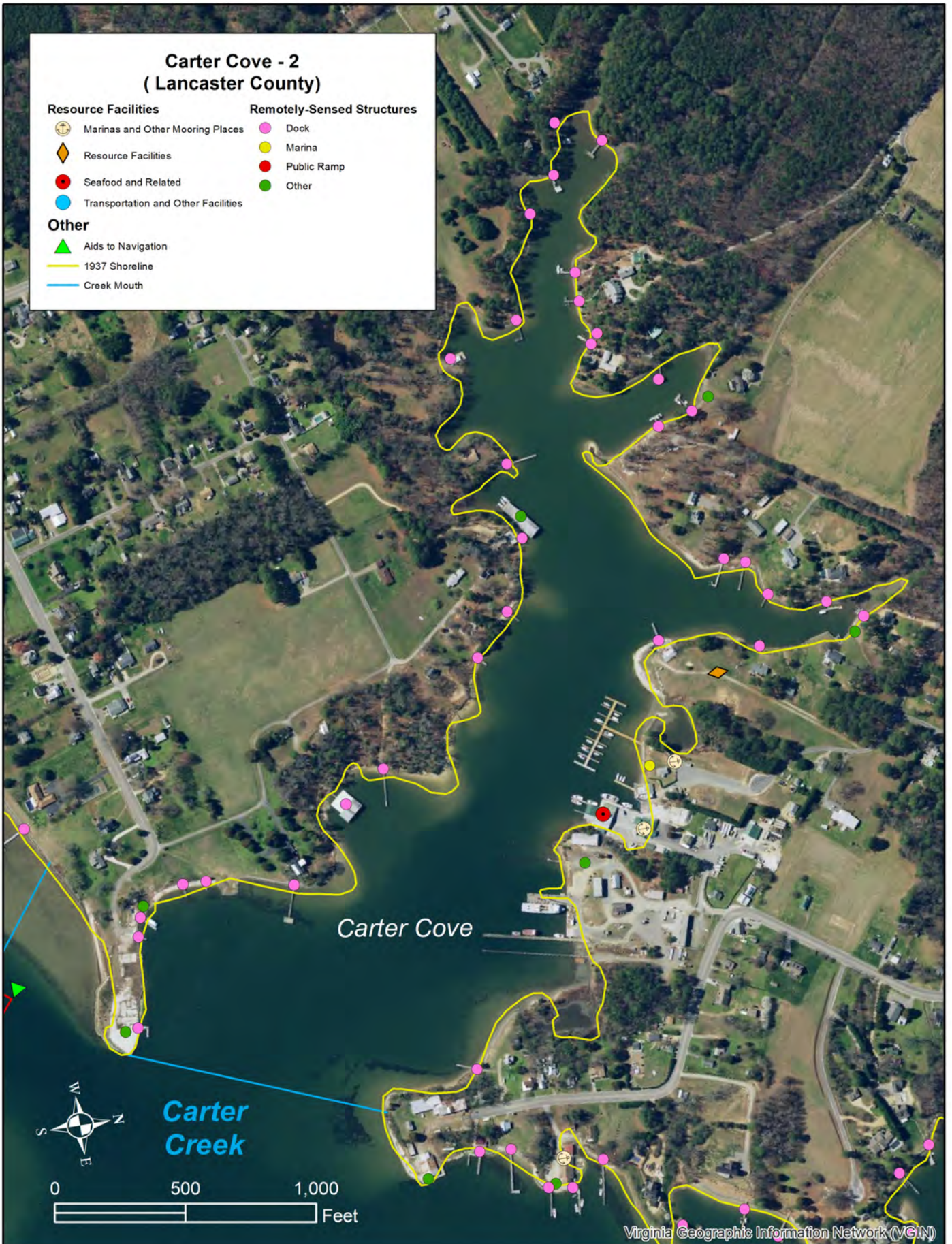
Corrotoman River

Beach Creek

Ewells Prong

Carter Cove - 2 (Lancaster County)

- | | | | |
|---|-------------------------------------|---|-------------|
| Resource Facilities | | Remotely-Sensed Structures | |
|  | Marinas and Other Mooring Places |  | Dock |
|  | Resource Facilities |  | Marina |
|  | Seafood and Related |  | Public Ramp |
|  | Transportation and Other Facilities |  | Other |
| Other | | | |
|  | Aids to Navigation | | |
|  | 1937 Shoreline | | |
|  | Creek Mouth | | |



Data Sheet for **Carter Cove**

Waterbody ID Number	2	Main Waterbody	Carter Creek
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.656000	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.439200	Tide Range (ft)	1.35
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	16,294
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	72.5	Number of Docks/1000 linear ft	2.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	33
Total Businesses	2	Number of Marinas	1
Total Resources	1	Number of Public Ramps	0
Combined Total	4	Number of Other Structures	6

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

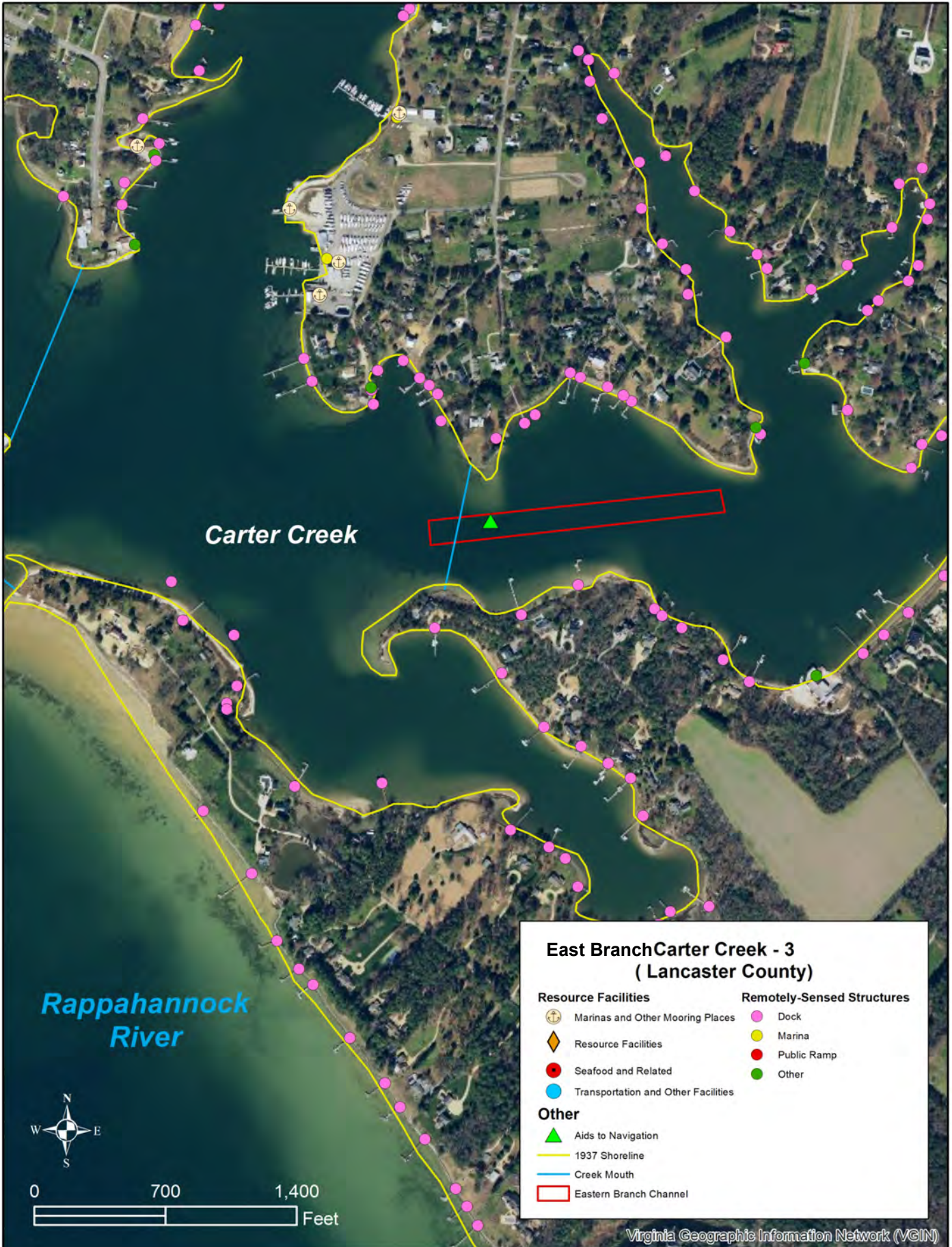
REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Carter Creek East Branch**

Waterbody ID Number	3	Main Waterbody	Carter Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	97.1
Mouth Latitude	37.653400	Percent Lease Area/Waterbody Area	41%
Mouth Longitude	-76.431700	Tide Range (ft)	1.35
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	56,837
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	237.7	Number of Docks/1000 linear ft	3.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	186
Total Businesses	1	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

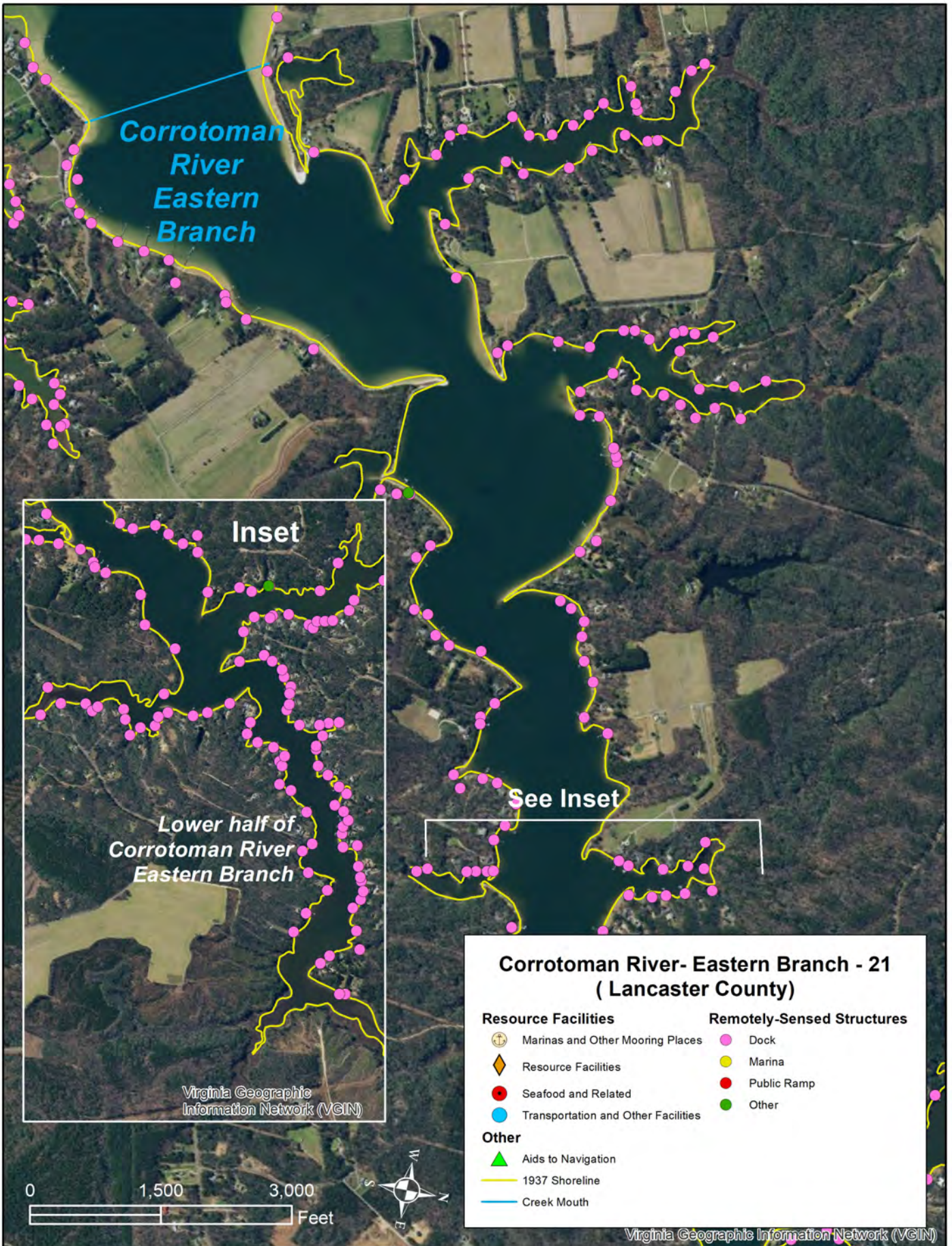
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Corrotoman River Eastern Branch**

Waterbody ID Number	21	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	120.5
Mouth Latitude	37.701500	Percent Lease Area/Waterbody Area	13%
Mouth Longitude	-76.467000	Tide Range (ft)	1.40
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	157,355
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	906.0	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	241
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	6

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

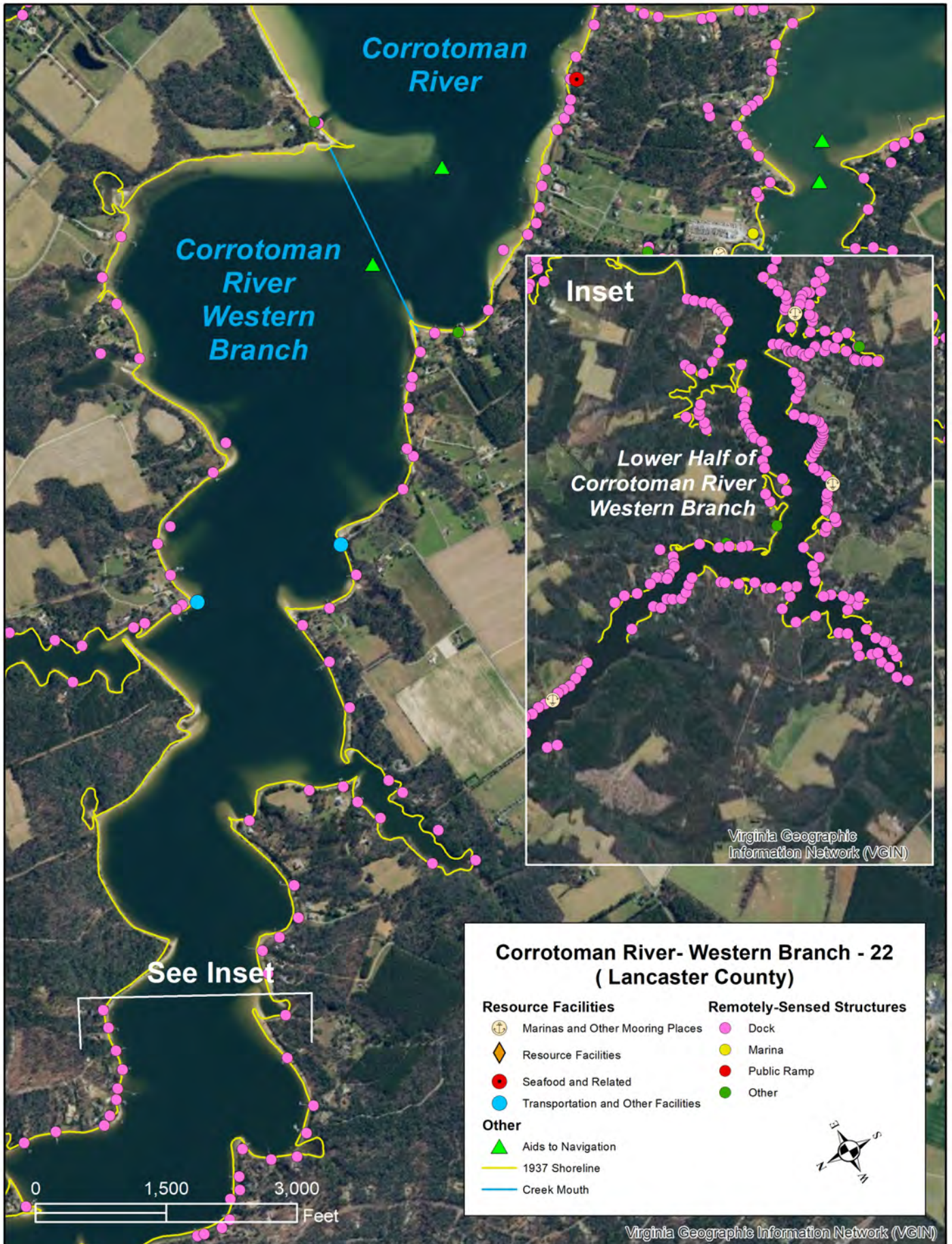
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Data Sheet for **Corrotoman River Western Branch**

Waterbody ID Number	22	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	234.9
Mouth Latitude	37.704300	Percent Lease Area/Waterbody Area	17%
Mouth Longitude	-76.482500	Tide Range (ft)	1.40
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	211,662
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	1,227.4	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	274
Total Businesses	0	Number of Marinas	2
Total Resources	2	Number of Public Ramps	0
Combined Total	4	Number of Other Structures	8

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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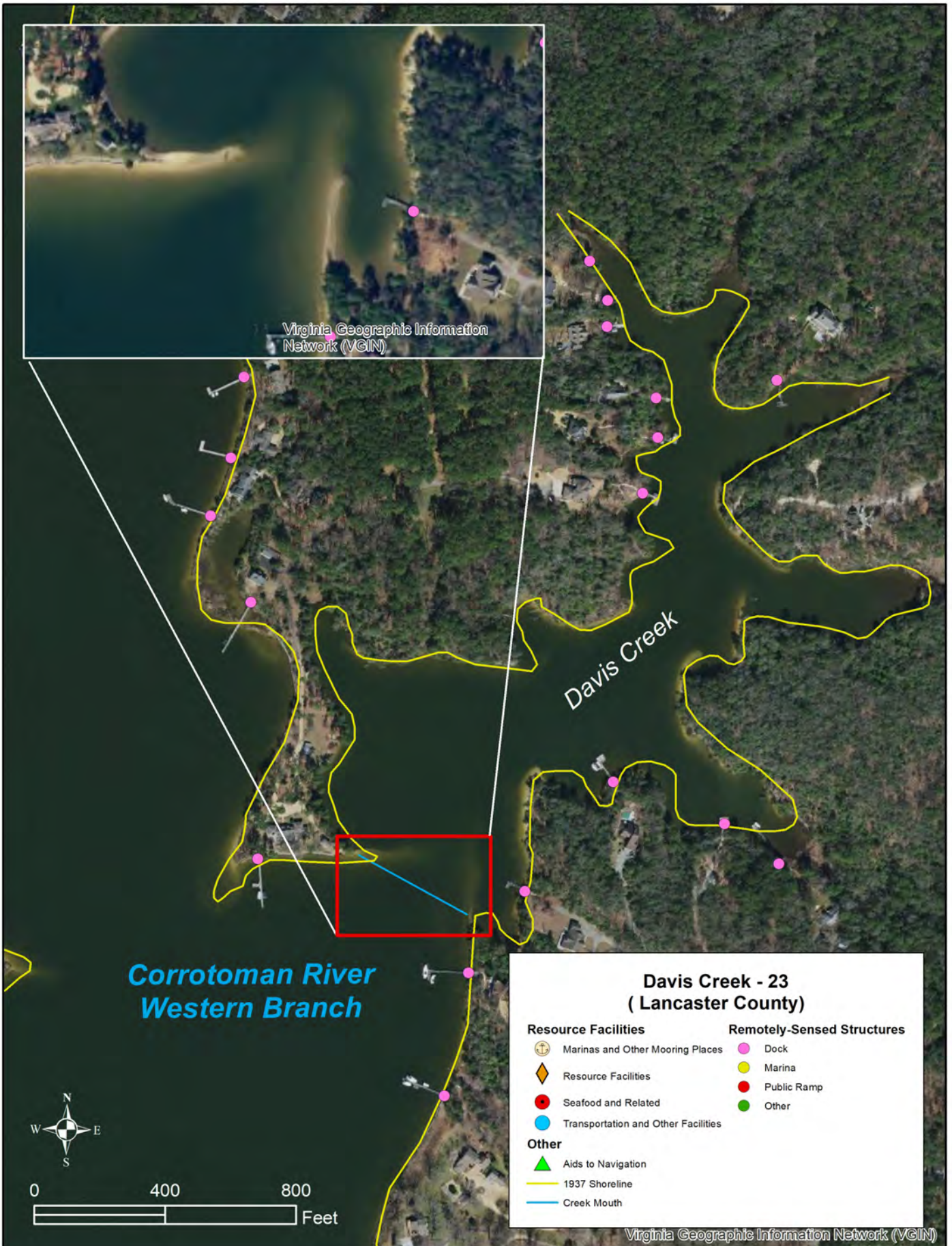
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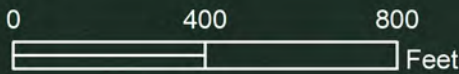


Virginia Geographic Information Network (VGIN)



**Corrotoman River
Western Branch**

Davis Creek



**Davis Creek - 23
(Lancaster County)**

Resource Facilities		Remotely-Sensed Structures	
	Marinas and Other Mooring Places		Dock
	Resource Facilities		Marina
	Seafood and Related		Public Ramp
	Transportation and Other Facilities		Other
Other			
	Aids to Navigation		1937 Shoreline
	Creek Mouth		

Virginia Geographic Information Network (VGIN)

Data Sheet for **Davis Creek**

Waterbody ID Number	23	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	22.3
Mouth Latitude	37.728600	Percent Lease Area/Waterbody Area	73%
Mouth Longitude	-76.507600	Tide Range (ft)	1.40
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	10,602
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	30.4	Number of Docks/1000 linear ft	1.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	11
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

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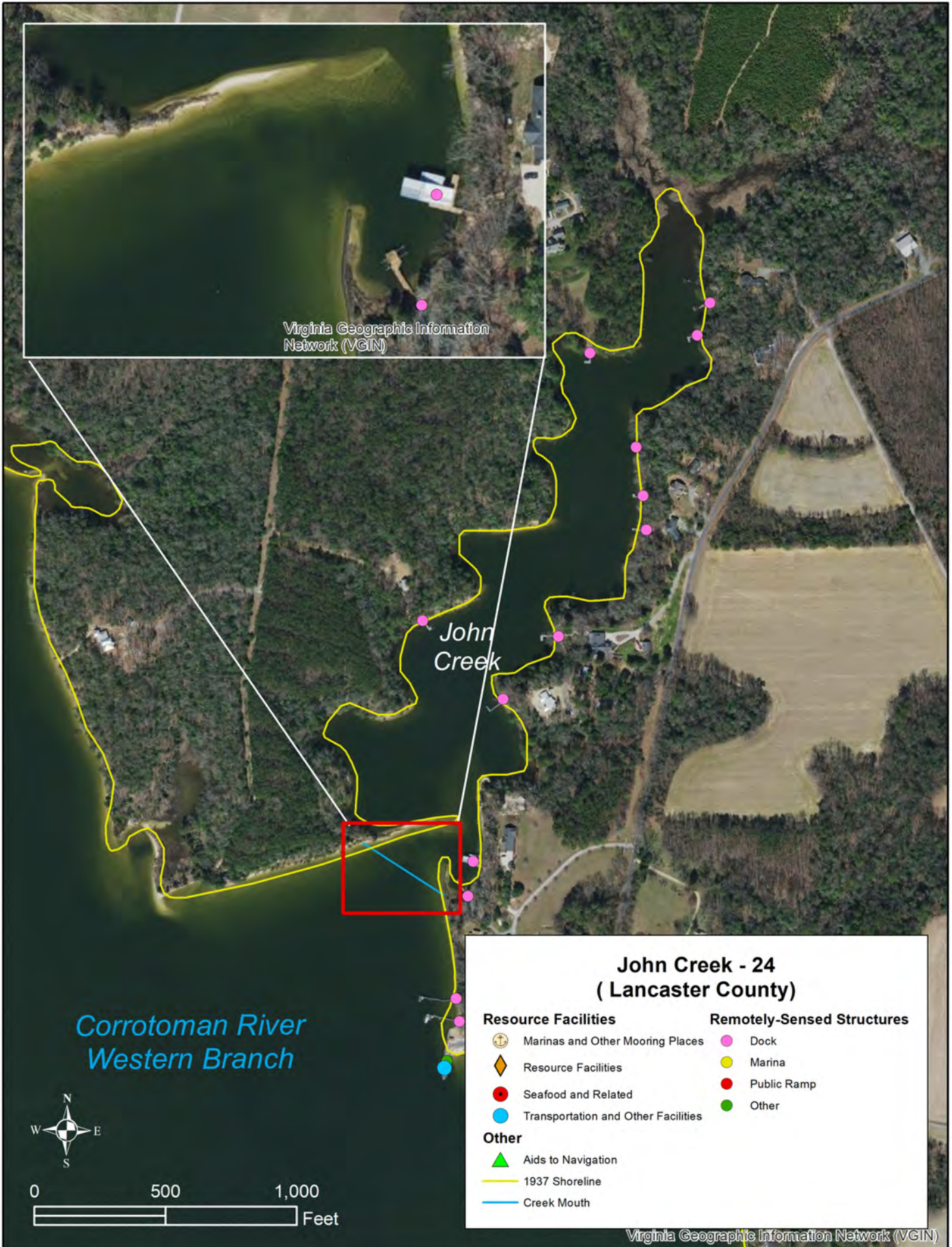
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Data Sheet for **John Creek**

Waterbody ID Number	24	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.716800	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.492000	Tide Range (ft)	1.40
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	9,755
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	26.8	Number of Docks/1000 linear ft	1.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	11
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

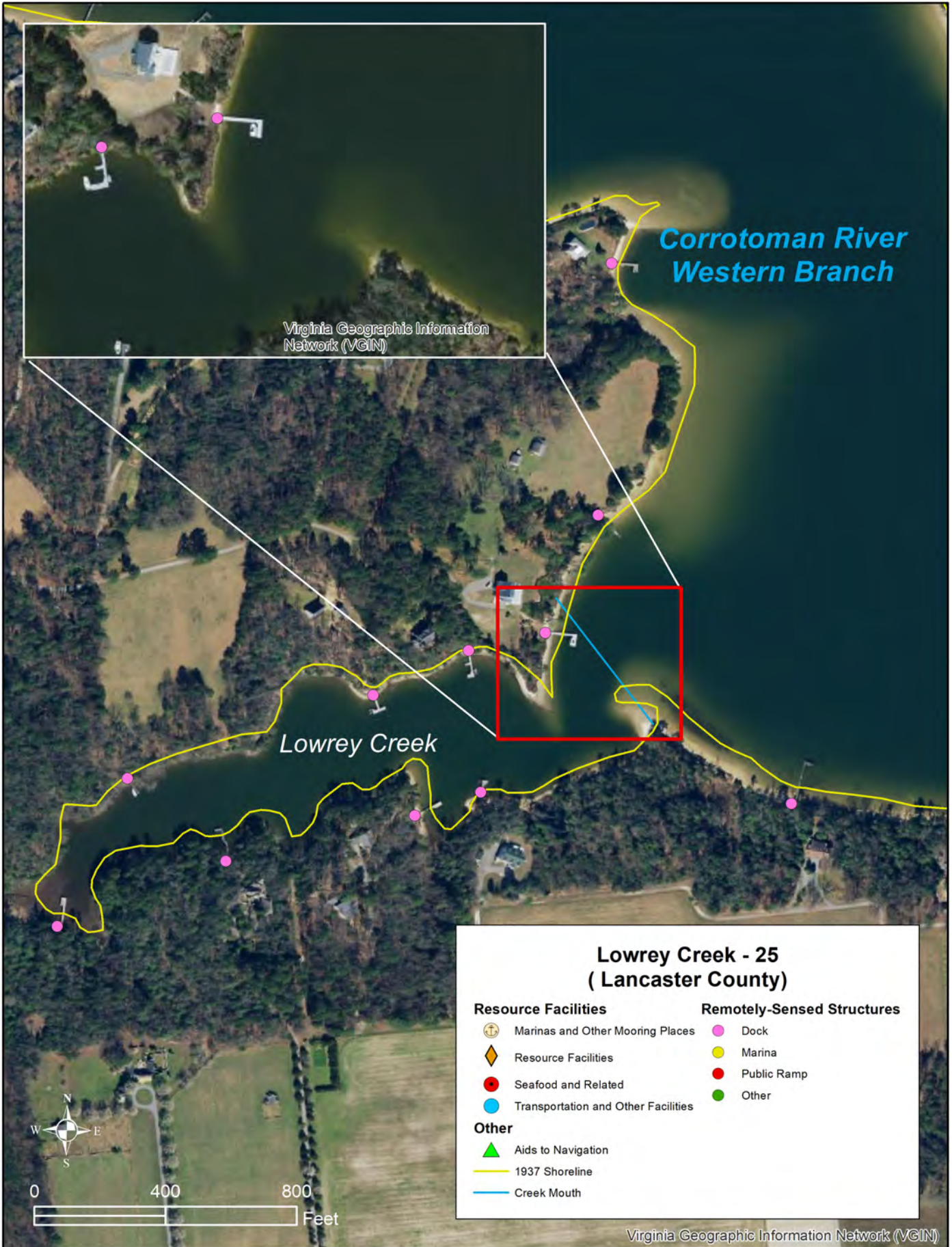
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Data Sheet for **Lowrey Creek**

Waterbody ID Number	25	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.713300	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.499900	Tide Range (ft)	1.40
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	6,023
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	15.9	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	8
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

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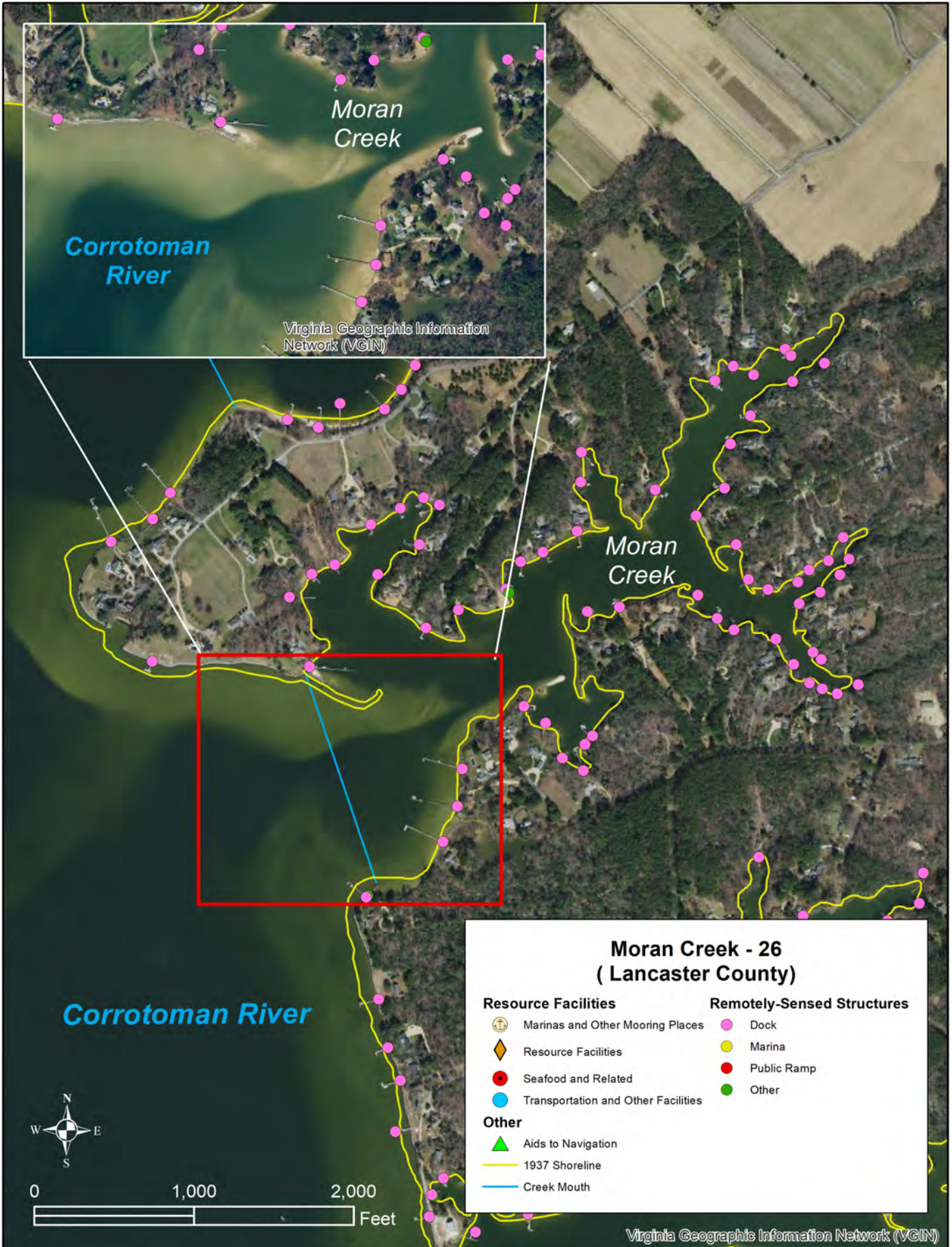
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Data Sheet for Moran Creek

Waterbody ID Number	26	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	25.2
Mouth Latitude	37.692500	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.462700	Tide Range (ft)	1.40
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	23,929
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	85.1	Number of Docks/1000 linear ft	2.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	63
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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
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Myer Creek - 27 (Lancaster County)




Resource Facilities

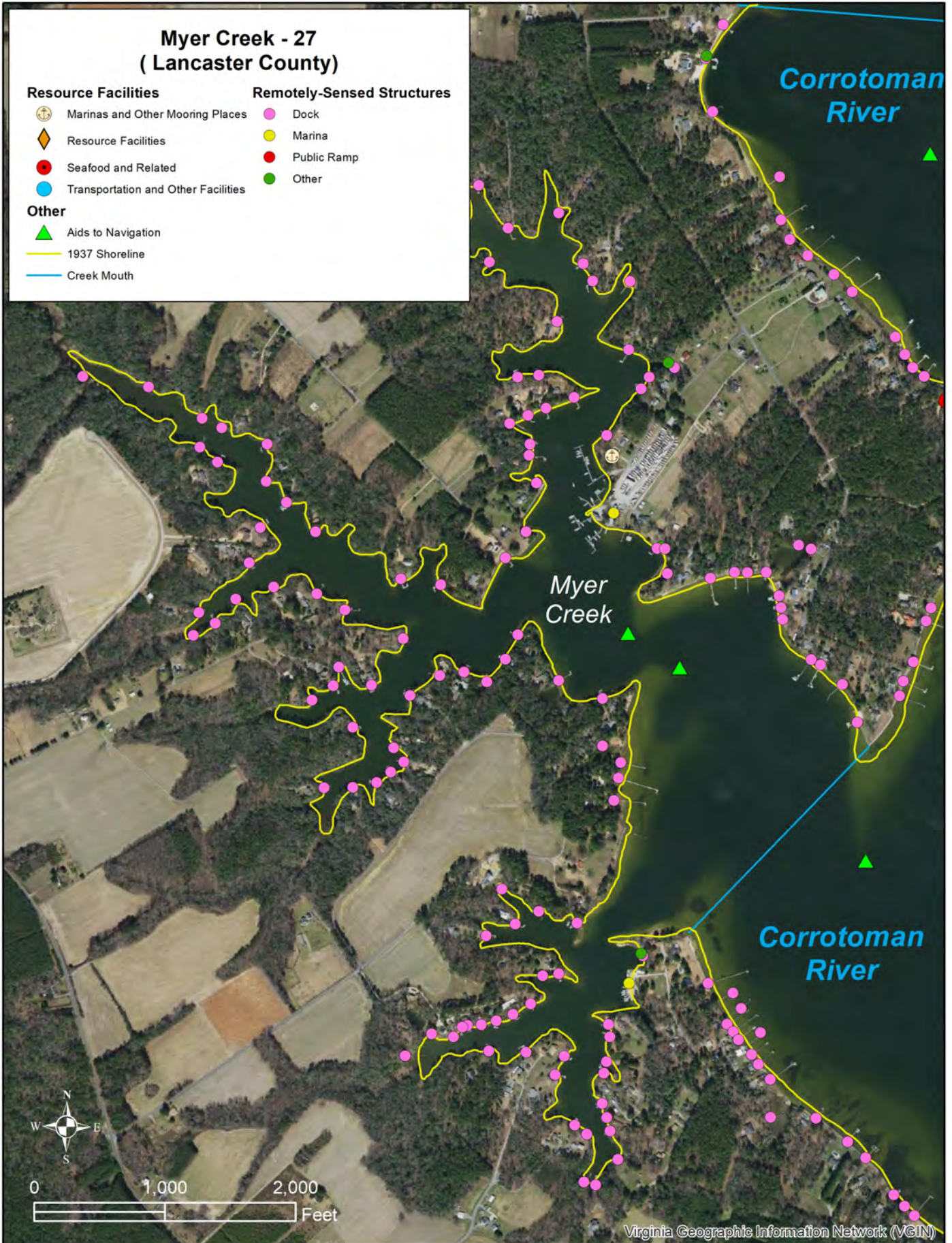
-  Marinas and Other Mooring Places
-  Resource Facilities
-  Seafood and Related
-  Transportation and Other Facilities

Remotely-Sensed Structures

-  Dock
-  Marina
-  Public Ramp
-  Other

Other

-  Aids to Navigation
-  1937 Shoreline
-  Creek Mouth



Data Sheet for **Myer Creek**

Waterbody ID Number	27	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	98.9
Mouth Latitude	37.687100	Percent Lease Area/Waterbody Area	42%
Mouth Longitude	-76.484700	Tide Range (ft)	1.40
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	56,851
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	233.6	Number of Docks/1000 linear ft	2.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	118
Total Businesses	0	Number of Marinas	2
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Corrotoman River Western Branch

Senior Creek

Senior Creek -28 (Lancaster County)

Resource Facilities

- ⊕ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Public Ramp
- Other

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

0 400 800 Feet



Data Sheet for Senior Creek

Waterbody ID Number	28	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	0.5
Mouth Latitude	37.726500	Percent Lease Area/Waterbody Area	1%
Mouth Longitude	-76.513200	Tide Range (ft)	1.40
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	16,811
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	46.7	Number of Docks/1000 linear ft	2.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	39
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

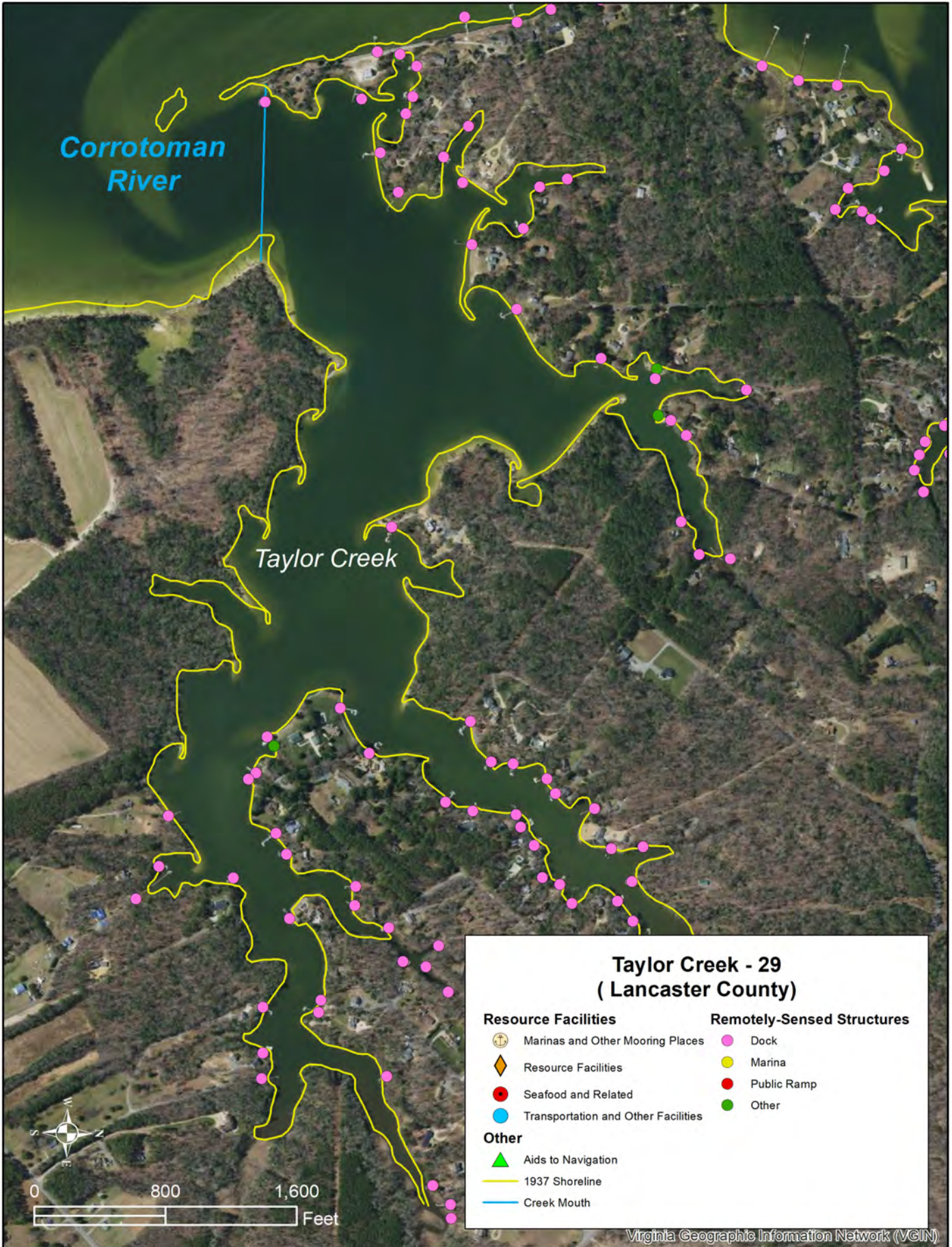
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Taylor Creek

Waterbody ID Number	29	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	80.6
Mouth Latitude	37.683100	Percent Lease Area/Waterbody Area	45%
Mouth Longitude	-76.458000	Tide Range (ft)	1.40
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	47,789
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	180.2	Number of Docks/1000 linear ft	1.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	75
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

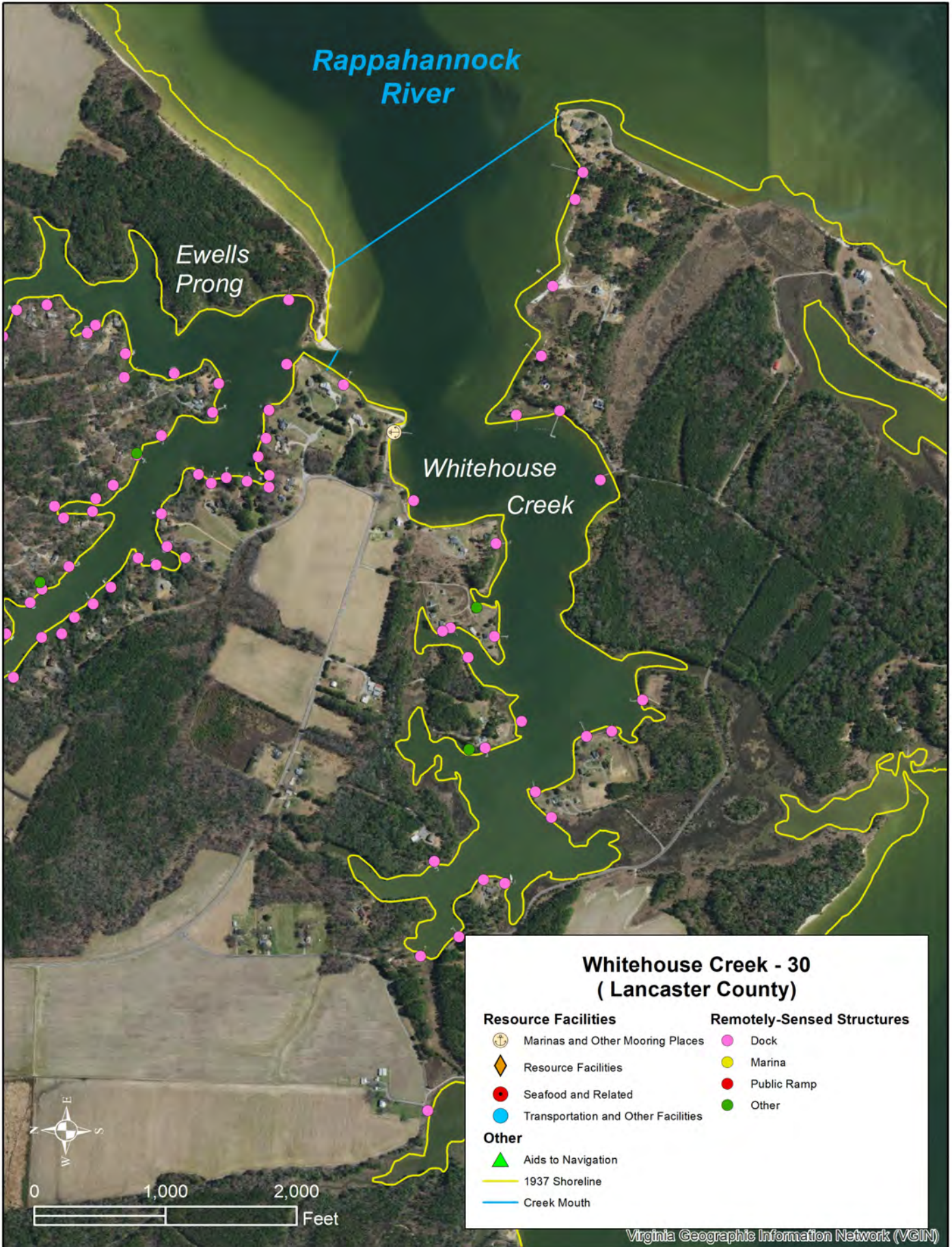
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Rappahannock River

Ewells Prong

Whitehouse Creek

**Whitehouse Creek - 30
(Lancaster County)**

Resource Facilities

- ⊕ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Public Ramp
- Other

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Whitehouse Creek**

Waterbody ID Number	30	Main Waterbody	Corrotoman River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	103.4
Mouth Latitude	37.655600	Percent Lease Area/Waterbody Area	44%
Mouth Longitude	-76.497200	Tide Range (ft)	1.40
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	55,290
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	164.8	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	72
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

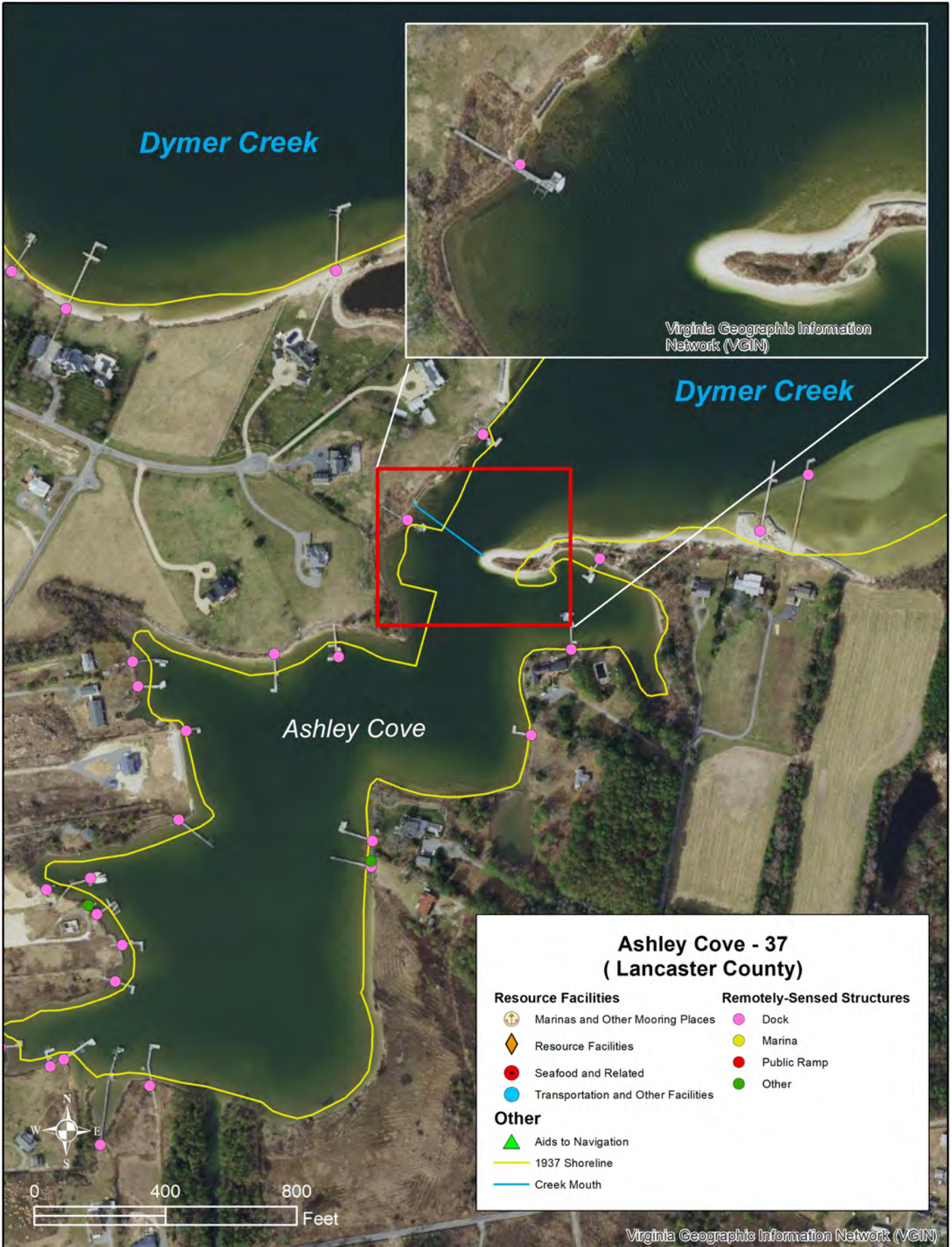
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Ashley Cove**

Waterbody ID Number	37	Main Waterbody	Dymer Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	19.2
Mouth Latitude	37.664800	Percent Lease Area/Waterbody Area	50%
Mouth Longitude	-76.343200	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	11,208
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	38.6	Number of Docks/1000 linear ft	2.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	22
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

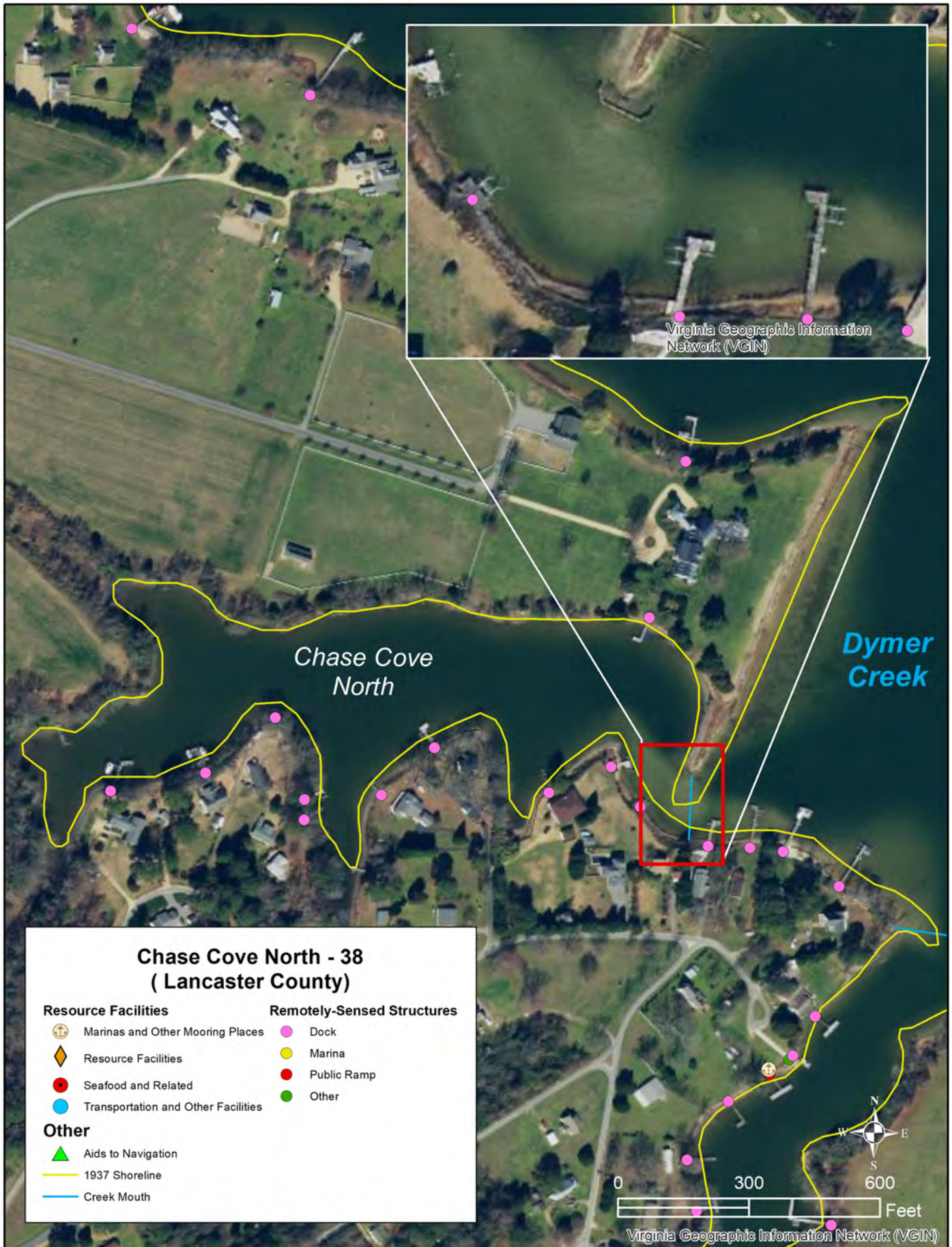
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Chases Cove North**

Waterbody ID Number	38	Main Waterbody	Dymer Creek
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.672700	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.358200	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	6,089
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	13.9	Number of Docks/1000 linear ft	2.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	12
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Chases Cove South**

Waterbody ID Number	39	Main Waterbody	Dymer Creek
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.671900	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.356100	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	7,229
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	11.9	Number of Docks/1000 linear ft	3.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	23
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	1
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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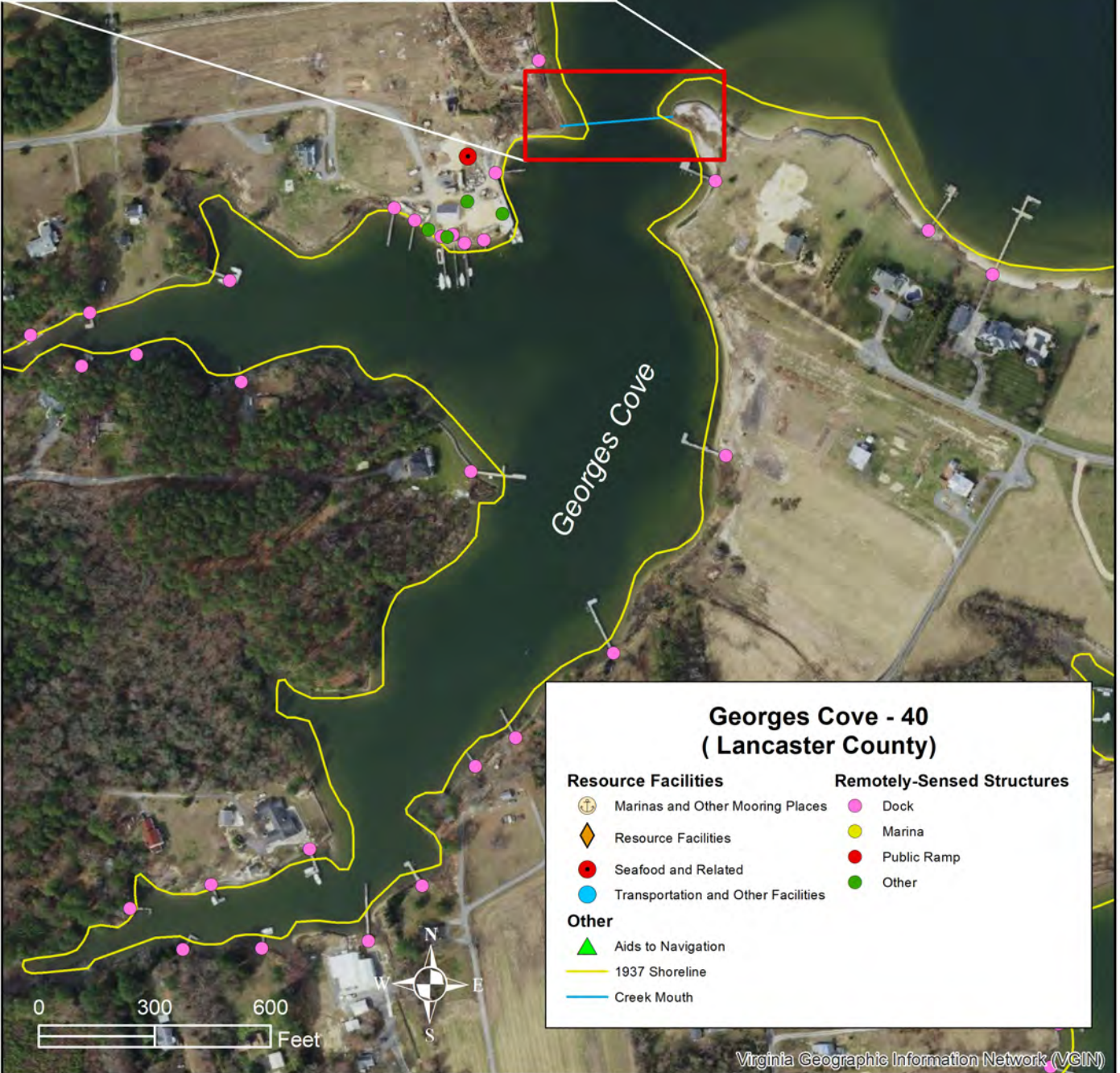
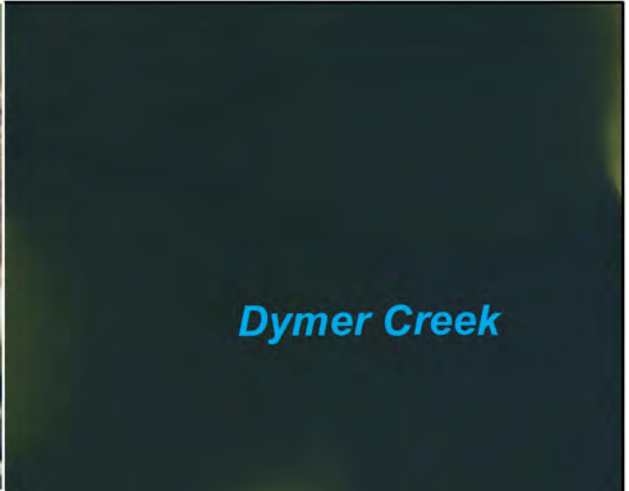
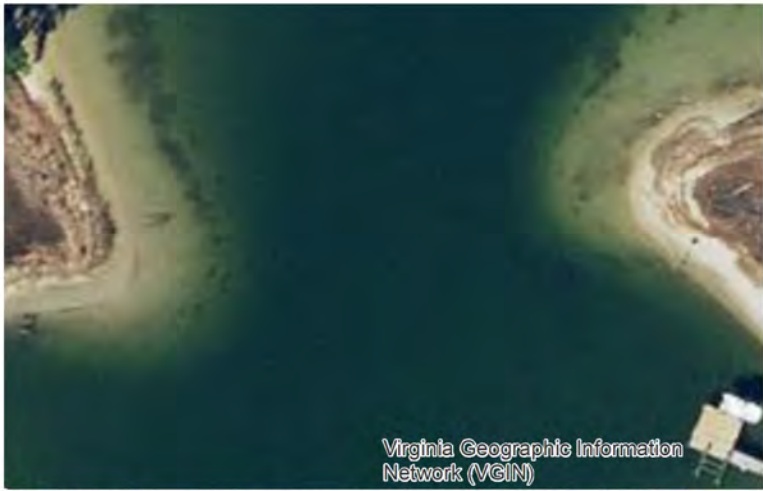
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Georges Cove**

Waterbody ID Number	40	Main Waterbody	Dymer Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	21.1
Mouth Latitude	37.667700	Percent Lease Area/Waterbody Area	57%
Mouth Longitude	-76.350500	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	10,499
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	36.9	Number of Docks/1000 linear ft	2.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	27
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	4

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Hunts Cove - 41 (Lancaster County)

Resource Facilities

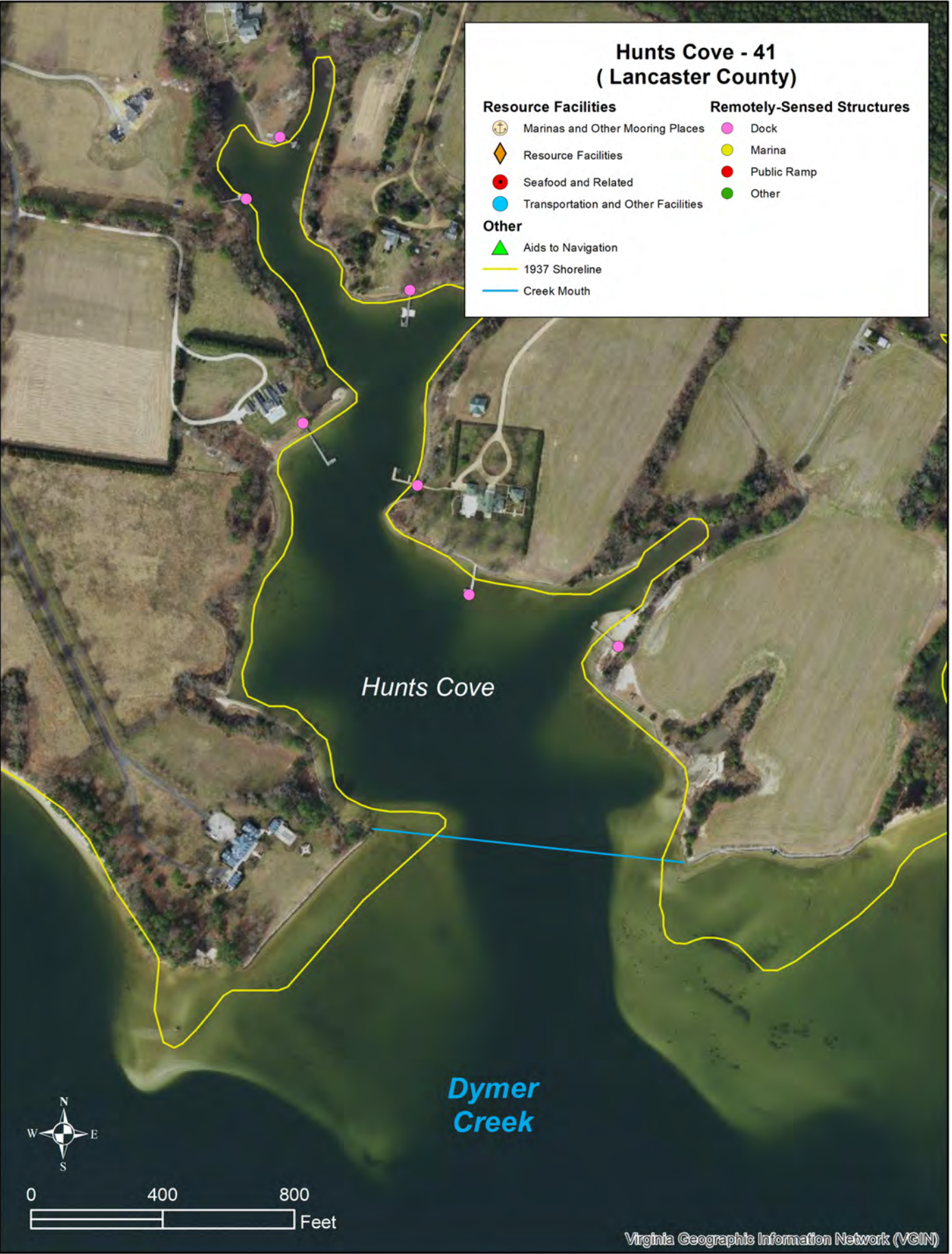
- ⚓ Marinas and Other Mooring Places
- 📍 Resource Facilities
- 🔴 Seafood and Related
- 🟡 Transportation and Other Facilities

Remotely-Sensed Structures

- 🟡 Dock
- 🟡 Marina
- 🔴 Public Ramp
- 🟢 Other

Other

- 🟢 Aids to Navigation
- 🟡 1937 Shoreline
- 🔵 Creek Mouth



Data Sheet for **Hunts Cove**

Waterbody ID Number	41	Main Waterbody	Dymer Creek
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.672200	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.342100	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	9,981
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	34.7	Number of Docks/1000 linear ft	0.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	7
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

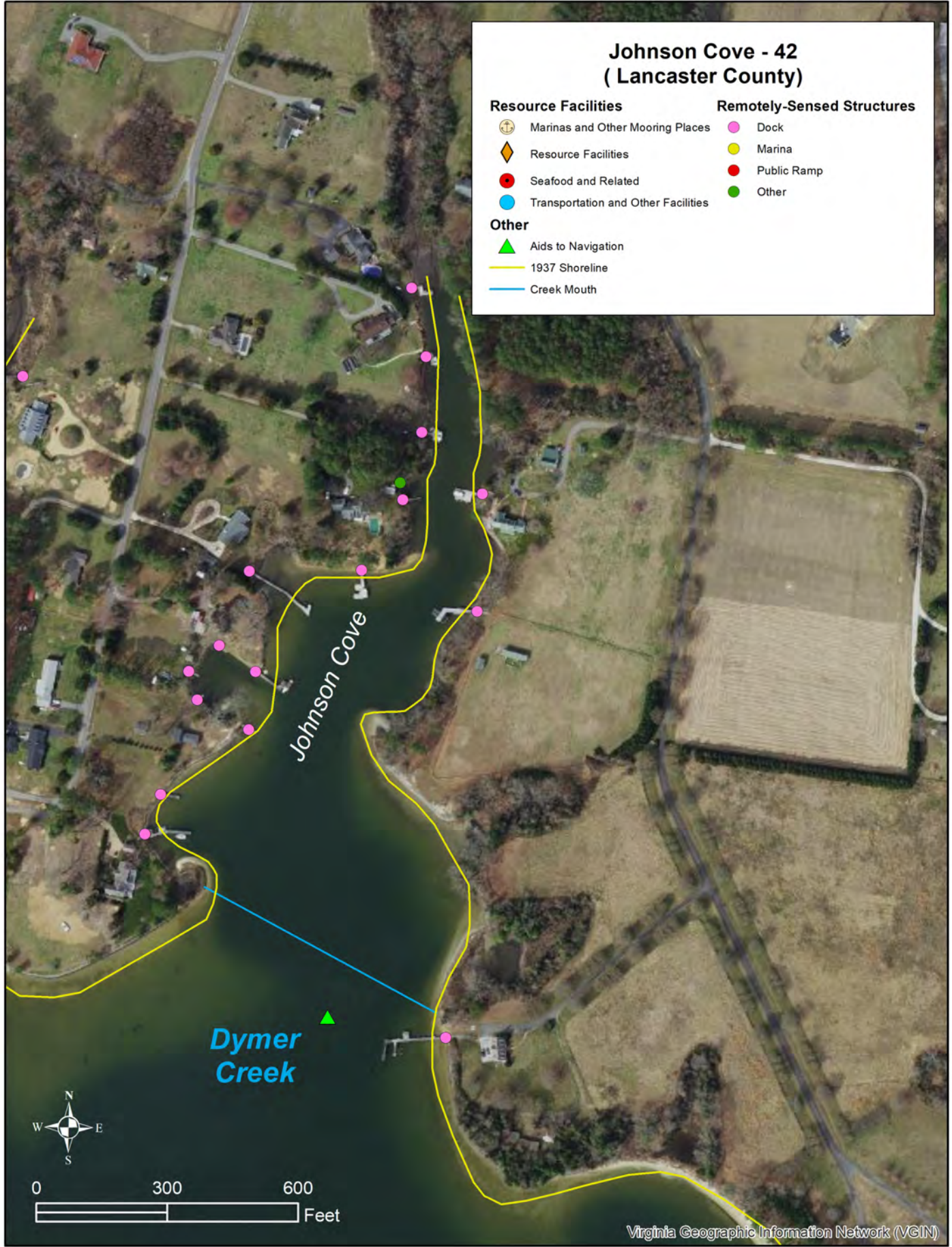
Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Johnson Cove - 42 (Lancaster County)

- | Resource Facilities | Remotely-Sensed Structures |
|---|---|
|  Marinas and Other Mooring Places |  Dock |
|  Resource Facilities |  Marina |
|  Seafood and Related |  Public Ramp |
|  Transportation and Other Facilities |  Other |
| Other | |
|  Aids to Navigation | |
|  1937 Shoreline | |
|  Creek Mouth | |



Data Sheet for **Johnson Cove**

Waterbody ID Number	42	Main Waterbody	Dymer Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	2.0
Mouth Latitude	37.674200	Percent Lease Area/Waterbody Area	15%
Mouth Longitude	-76.350600	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	5,481
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	13.4	Number of Docks/1000 linear ft	2.7
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	15
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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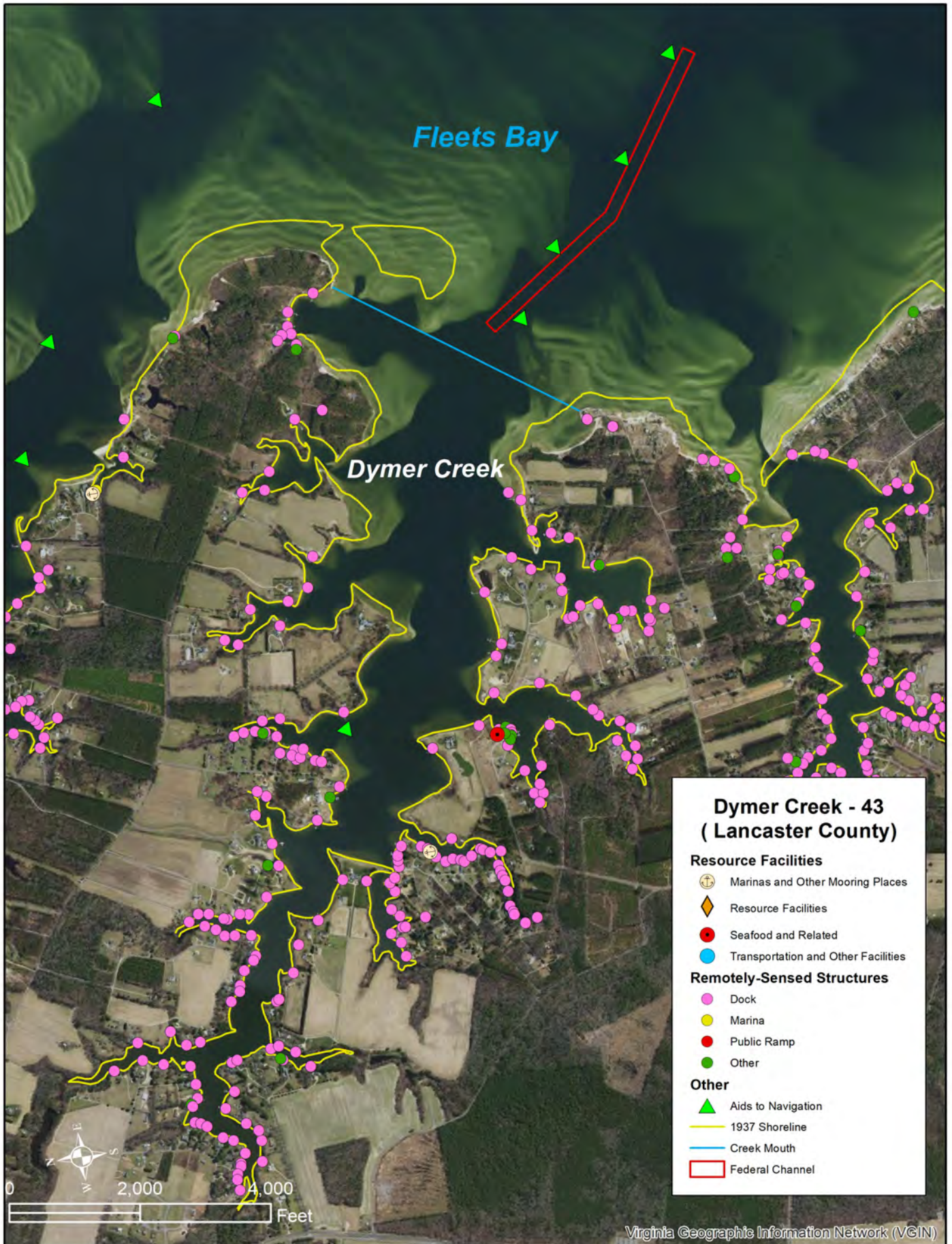
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Dymer Creek**

Waterbody ID Number	43	Main Waterbody	Fleets Bay
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	178.2
Mouth Latitude	37.666200	Percent Lease Area/Waterbody Area	25%
Mouth Longitude	-76.331900	Tide Range (ft)	1.30
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	122,831
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	562.0	Number of Docks/1000 linear ft	1.6
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	199
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	1
Combined Total	1	Number of Other Structures	13

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

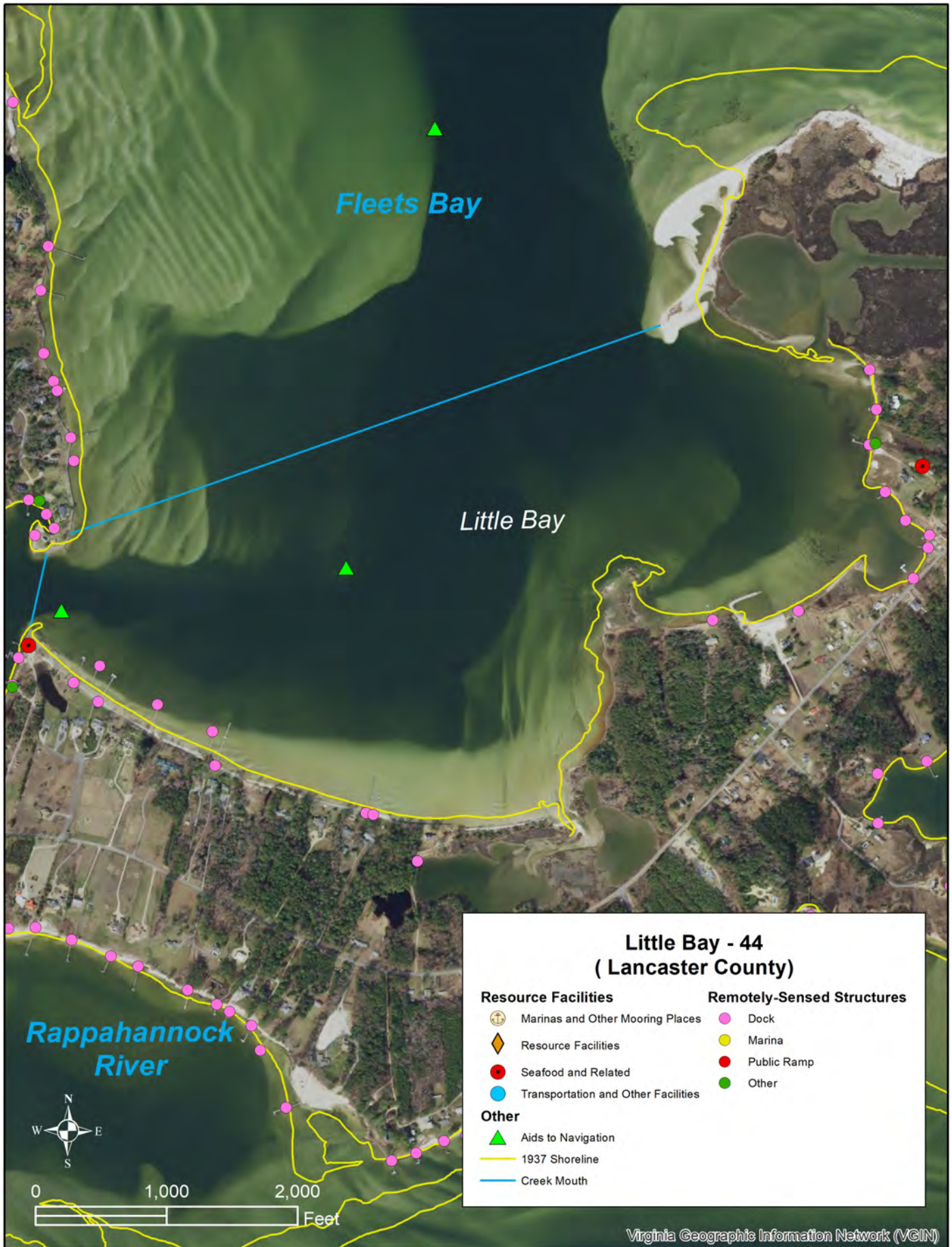
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Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Little Bay**

Waterbody ID Number	44	Main Waterbody	Fleets Bay
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	307.9
Mouth Latitude	37.635100	Percent Lease Area/Waterbody Area	74%
Mouth Longitude	-76.323800	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	55,174
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	418.4	Number of Docks/1000 linear ft	0.4

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	21
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

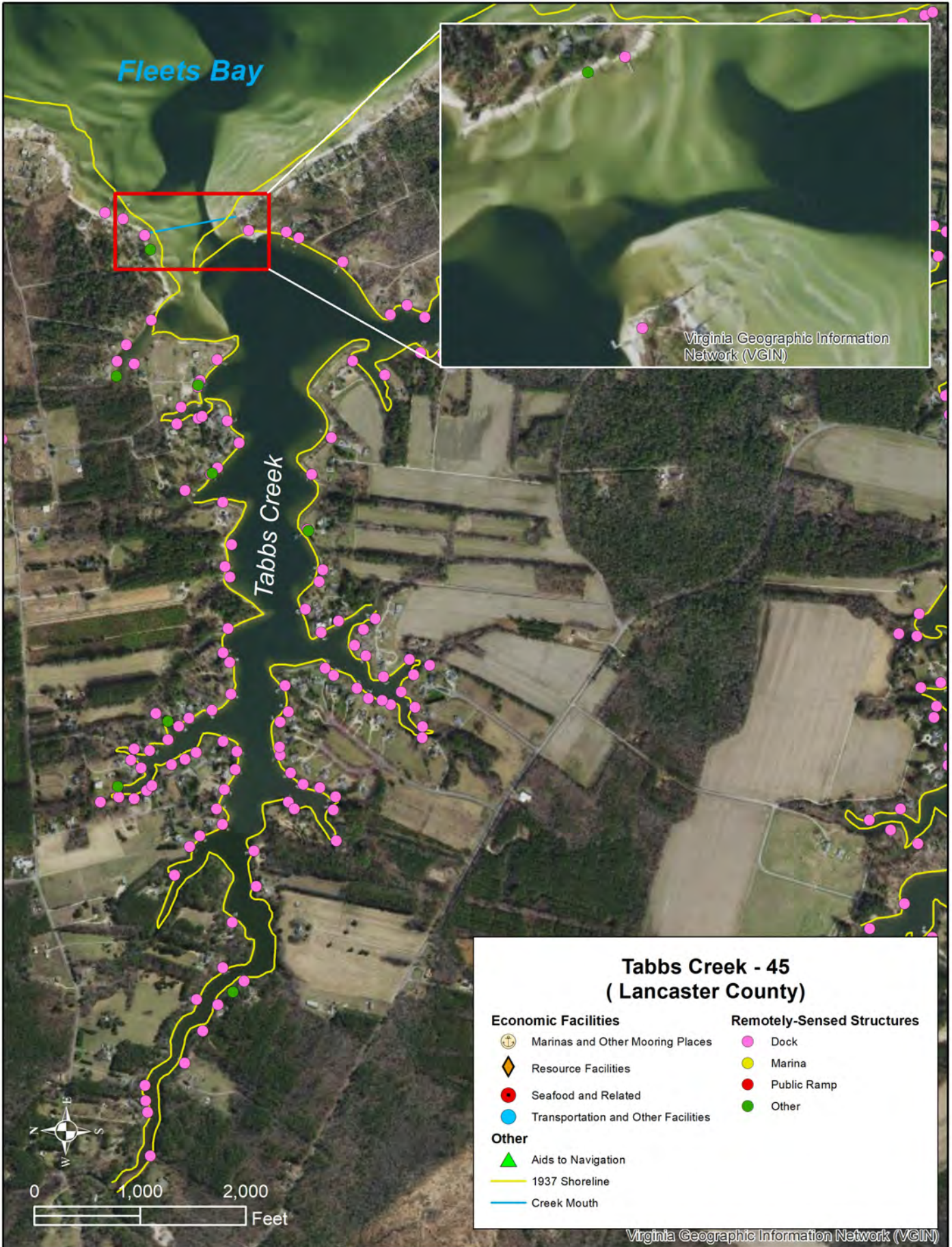
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

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Fleets Bay

Tabbs Creek

Virginia Geographic Information Network (VGIN)

**Tabbs Creek - 45
(Lancaster County)**

Economic Facilities

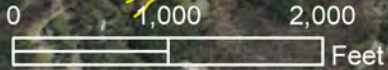
- ⊕ Marinas and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Public Ramp
- Other

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Virginia Geographic Information Network (VGIN)

Data Sheet for **Tabbs Creek**

Waterbody ID Number	45	Main Waterbody	Fleets Bay
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	30.2
Mouth Latitude	37.655000	Percent Lease Area/Waterbody Area	16%
Mouth Longitude	-76.339700	Tide Range (ft)	1.30
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	50,946
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	191.6	Number of Docks/1000 linear ft	2.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	116
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	8

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

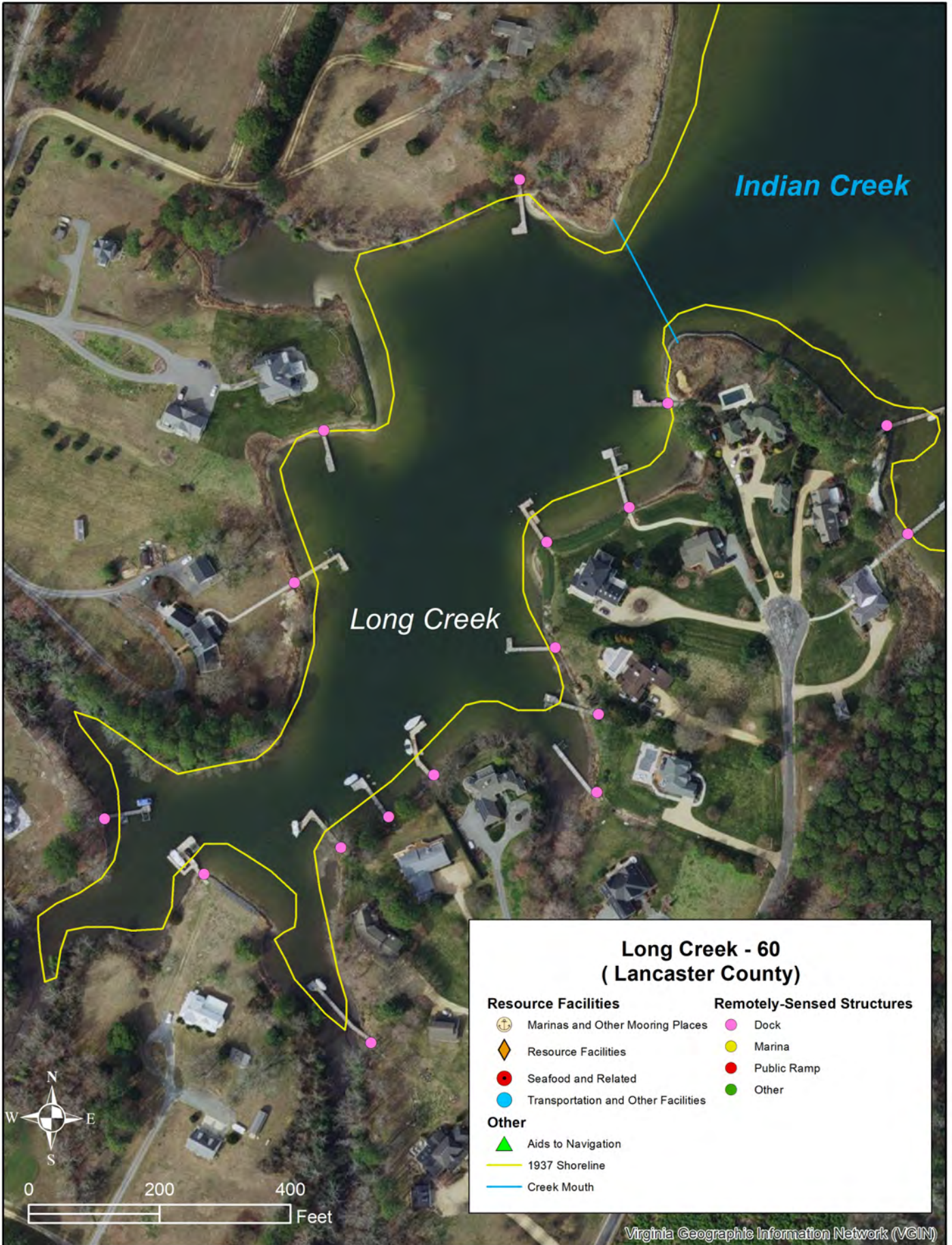
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Long Creek

Waterbody ID Number	60	Main Waterbody	Indian Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	3.0
Mouth Latitude	37.688800	Percent Lease Area/Waterbody Area	33%
Mouth Longitude	-76.346000	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	5,706
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	12.6	Number of Docks/1000 linear ft	2.6
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	15
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

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Combined Total is the total number of verified resource facilities identified along the waterbody.

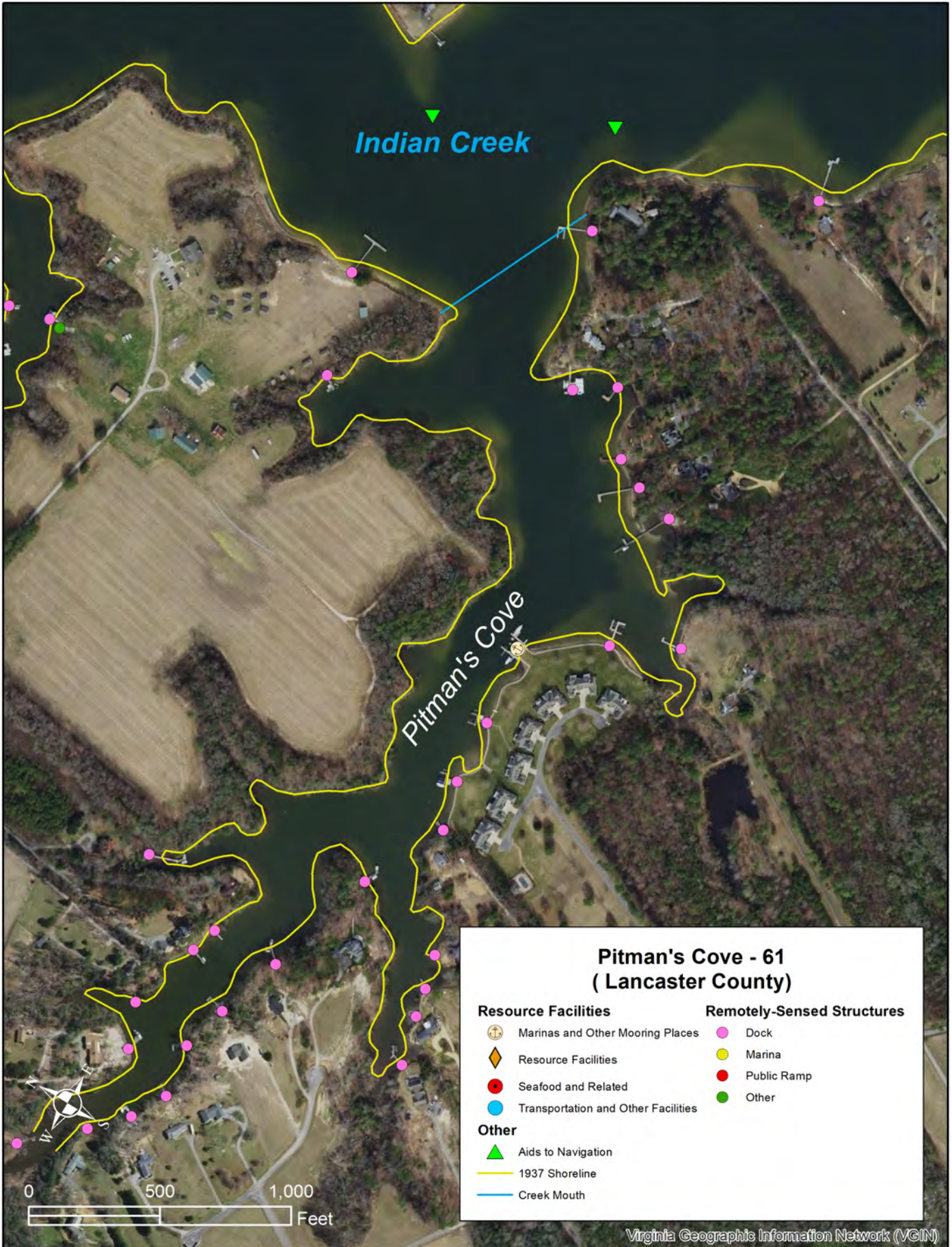
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Data Sheet for Pitman's Cove

Waterbody ID Number	61	Main Waterbody	Indian Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	3.6
Mouth Latitude	37.693400	Percent Lease Area/Waterbody Area	7%
Mouth Longitude	-76.350200	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	17,726
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	49.5	Number of Docks/1000 linear ft	1.6
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	29
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

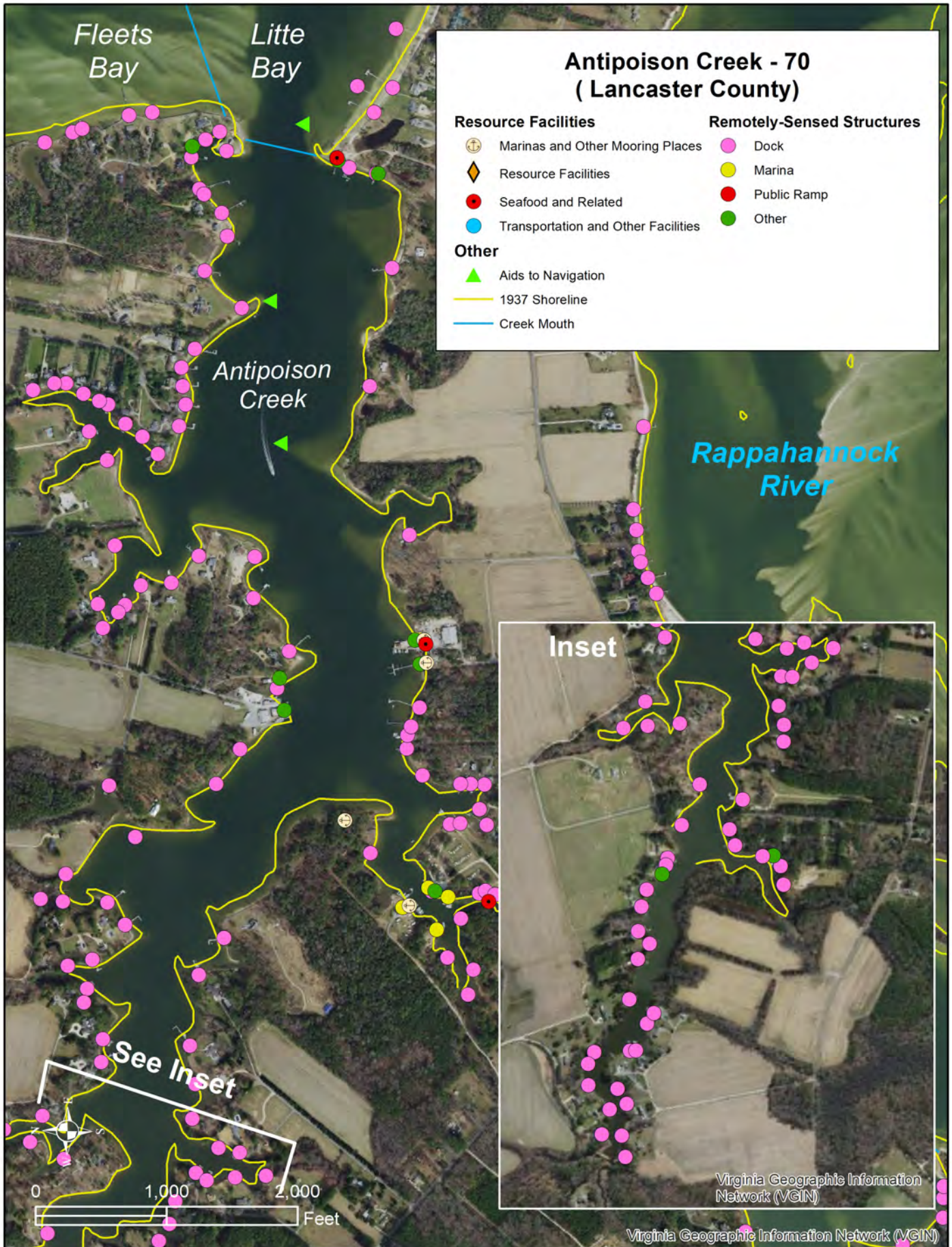
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Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Antipoison Creek**

Waterbody ID Number	70	Main Waterbody	Little Bay
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	66.2
Mouth Latitude	37.631300	Percent Lease Area/Waterbody Area	22%
Mouth Longitude	-76.332900	Tide Range (ft)	1.13
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	67,595
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	305.5	Number of Docks/1000 linear ft	1.9
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	5	Number of Docks	127
Total Businesses	5	Number of Marinas	4
Total Resources	0	Number of Public Ramps	0
Combined Total	10	Number of Other Structures	10

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

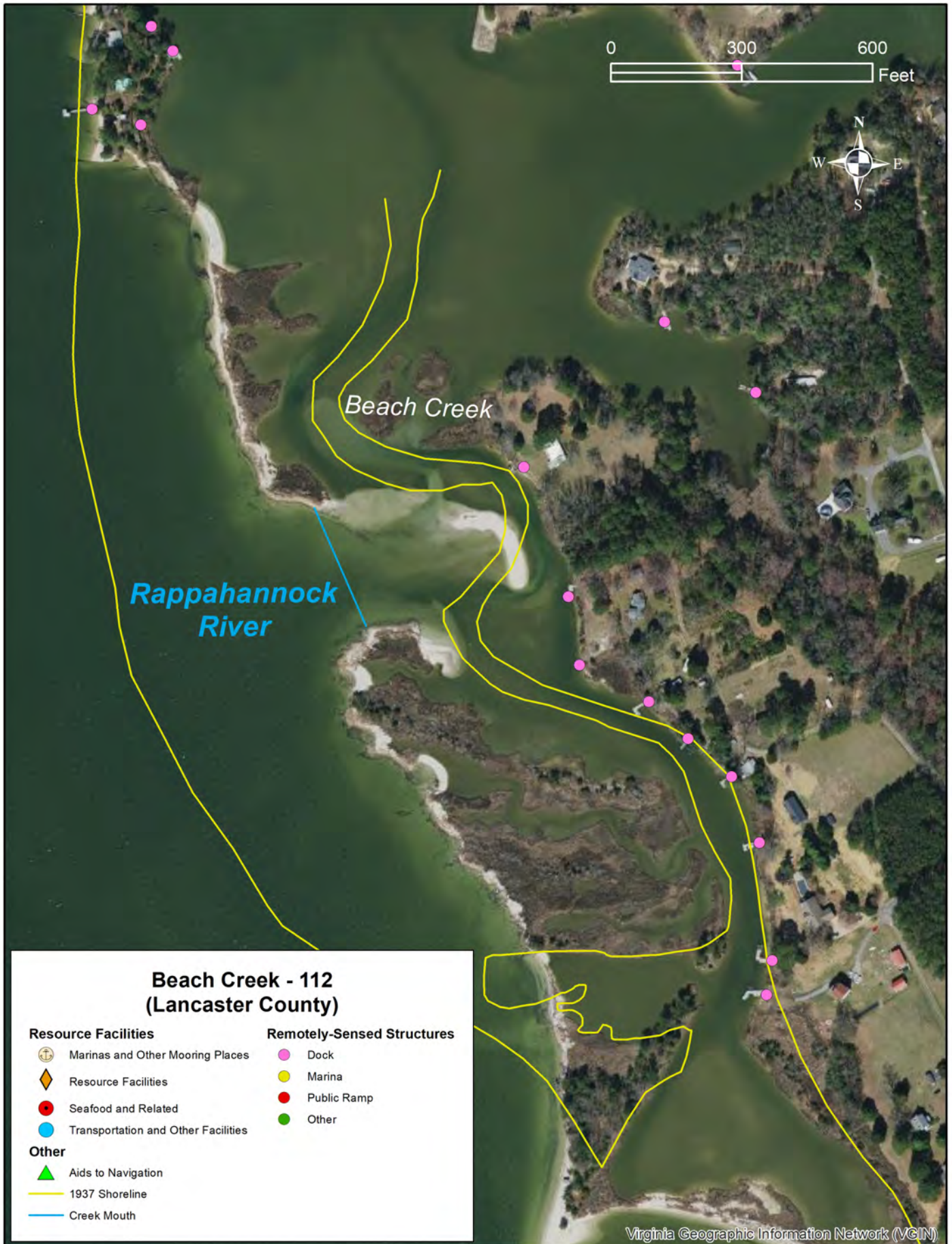
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Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Beach Creek**

Waterbody ID Number	112	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	27.8
Mouth Latitude	37.664800	Percent Lease Area/Waterbody Area	47%
Mouth Longitude	-76.535400	Tide Range (ft)	1.44
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	25,239
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	59.8	Number of Docks/1000 linear ft	1.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	27
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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Rappahannock River

Belmont Creek - 113 (Lancaster County)

Resource Facilities

- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Public Ramp
- Other

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Belmont Creek



Data Sheet for **Belmont Creek**

Waterbody ID Number	113	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	8.6
Mouth Latitude	37.708700	Percent Lease Area/Waterbody Area	33%
Mouth Longitude	-76.542100	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	10,815
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	25.9	Number of Docks/1000 linear ft	0.8

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	9
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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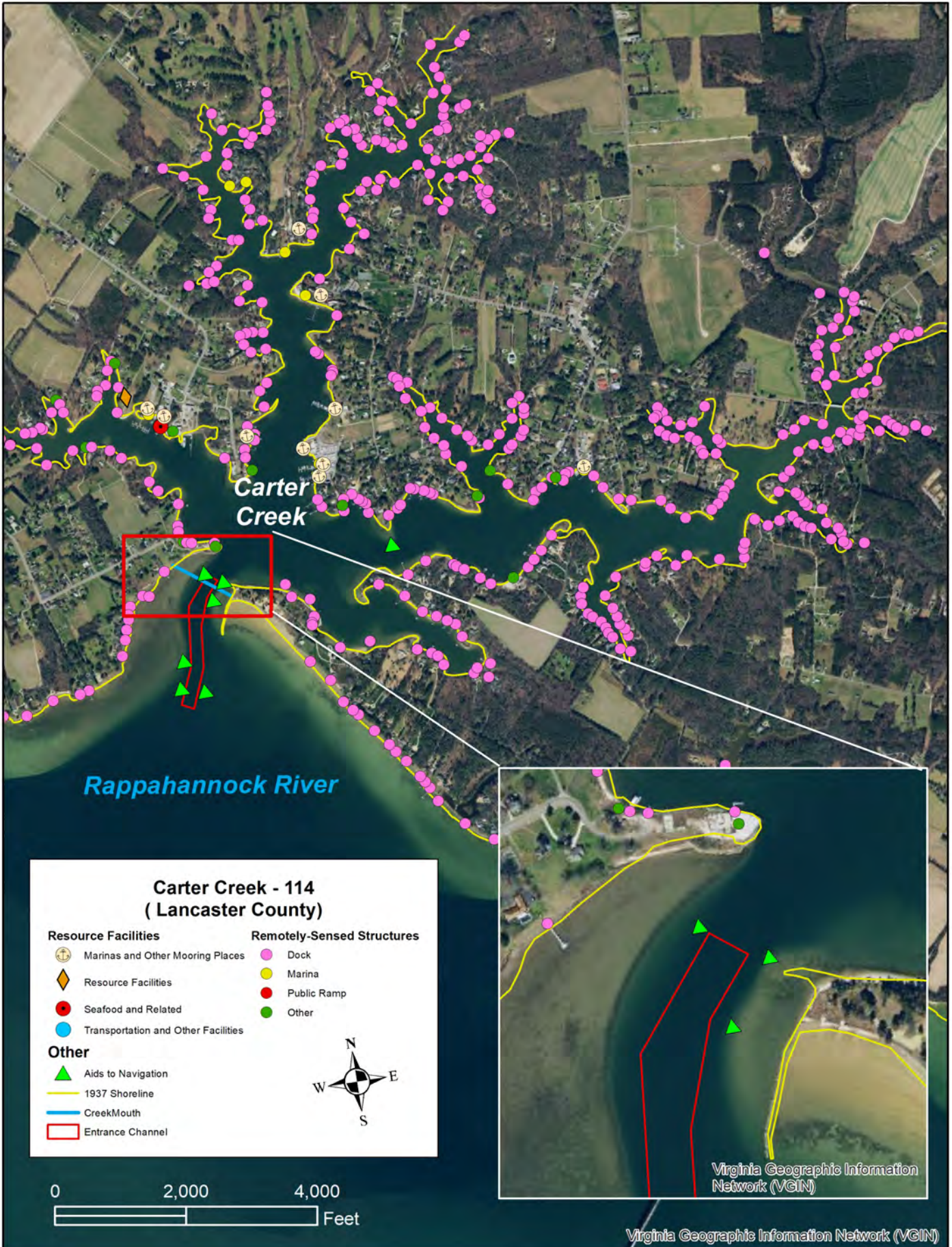
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Data Sheet for **Carter Creek**

Waterbody ID Number	114	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	202.2
Mouth Latitude	37.653300	Percent Lease Area/Waterbody Area	32%
Mouth Longitude	-76.441200	Tide Range (ft)	1.35
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	143,770
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	323.5	Number of Docks/1000 linear ft	2.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	10	Number of Docks	381
Total Businesses	3	Number of Marinas	8
Total Resources	1	Number of Public Ramps	0
Combined Total	14	Number of Other Structures	14

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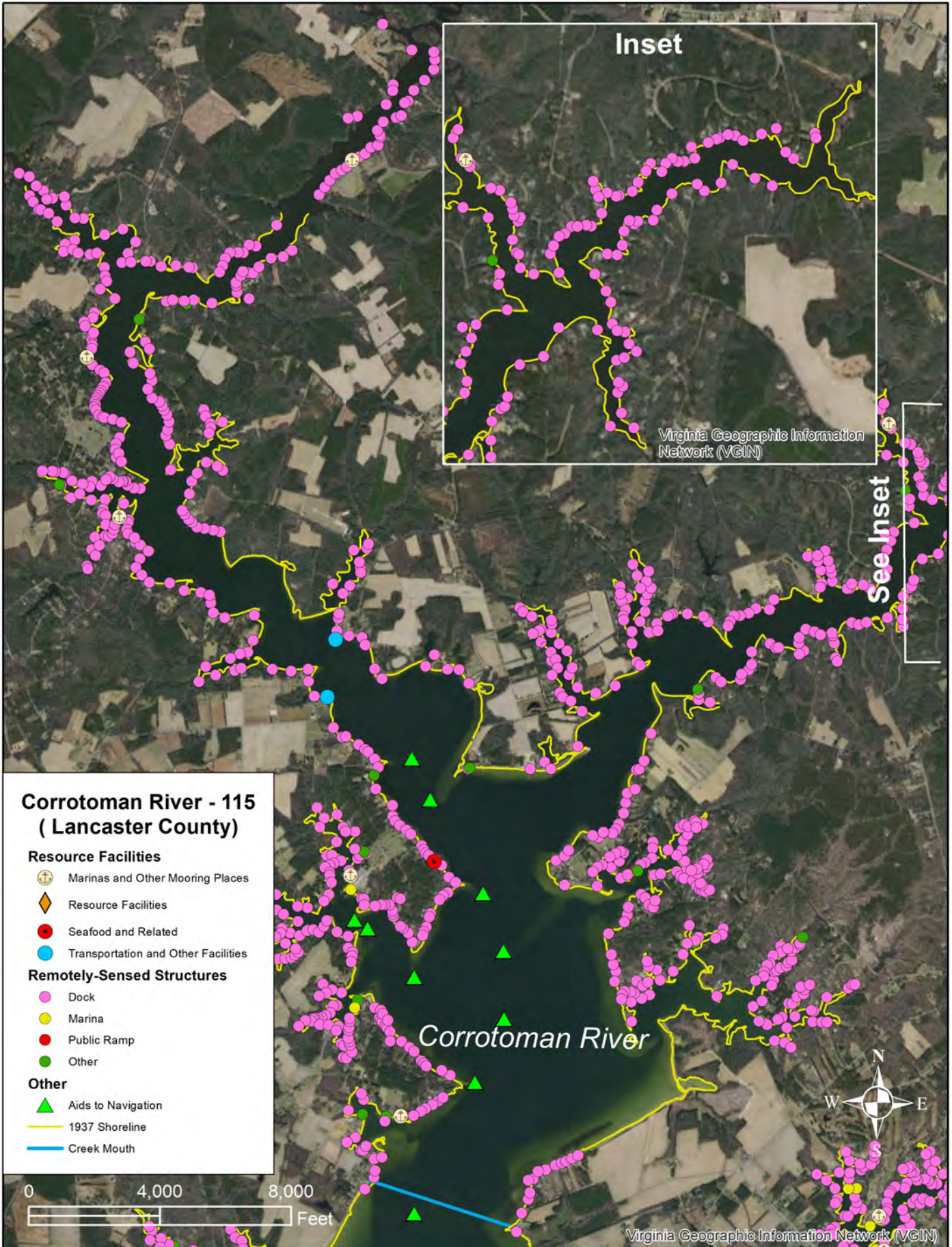
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Corrotoman River**

Waterbody ID Number	115	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	1017.5
Mouth Latitude	37.667700	Percent Lease Area/Waterbody Area	22%
Mouth Longitude	-76.479300	Tide Range (ft)	1.40
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	563,252
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	1,916.0	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	6	Number of Docks	858
Total Businesses	1	Number of Marinas	4
Total Resources	2	Number of Public Ramps	0
Combined Total	9	Number of Other Structures	28

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Deep Creek- 116 (Lancaster County)

Remotely-Sensed Structures

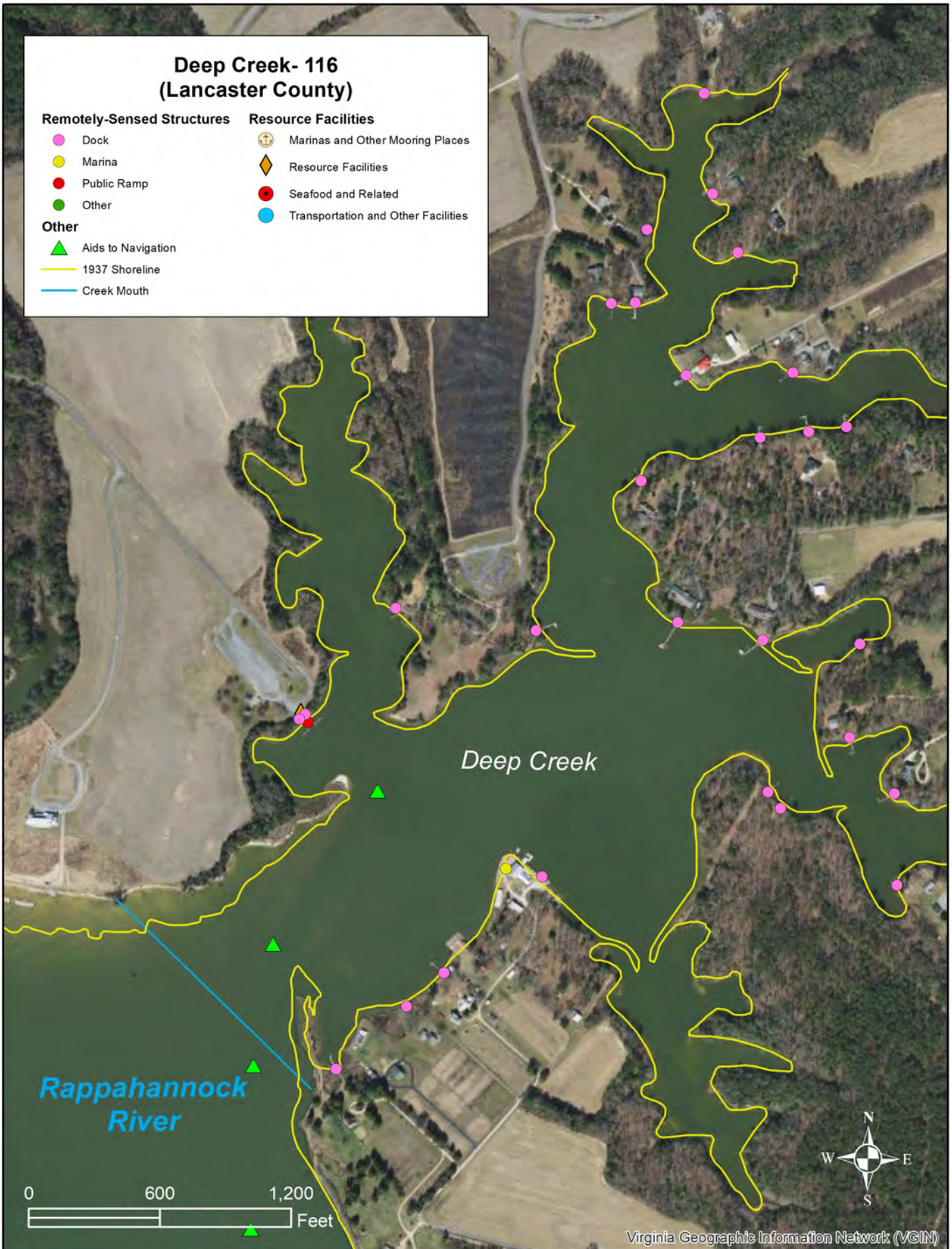
- Dock
- Marina
- Public Ramp
- Other

Other

- Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Resource Facilities

- Marinas and Other Mooring Places
- Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for **Deep Creek**

Waterbody ID Number	116	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	16.5
Mouth Latitude	37.770700	Percent Lease Area/Waterbody Area	11%
Mouth Longitude	-76.585600	Tide Range (ft)	1.58
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	40,742
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	153.9	Number of Docks/1000 linear ft	0.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	29
Total Businesses	0	Number of Marinas	1
Total Resources	1	Number of Public Ramps	1
Combined Total	1	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

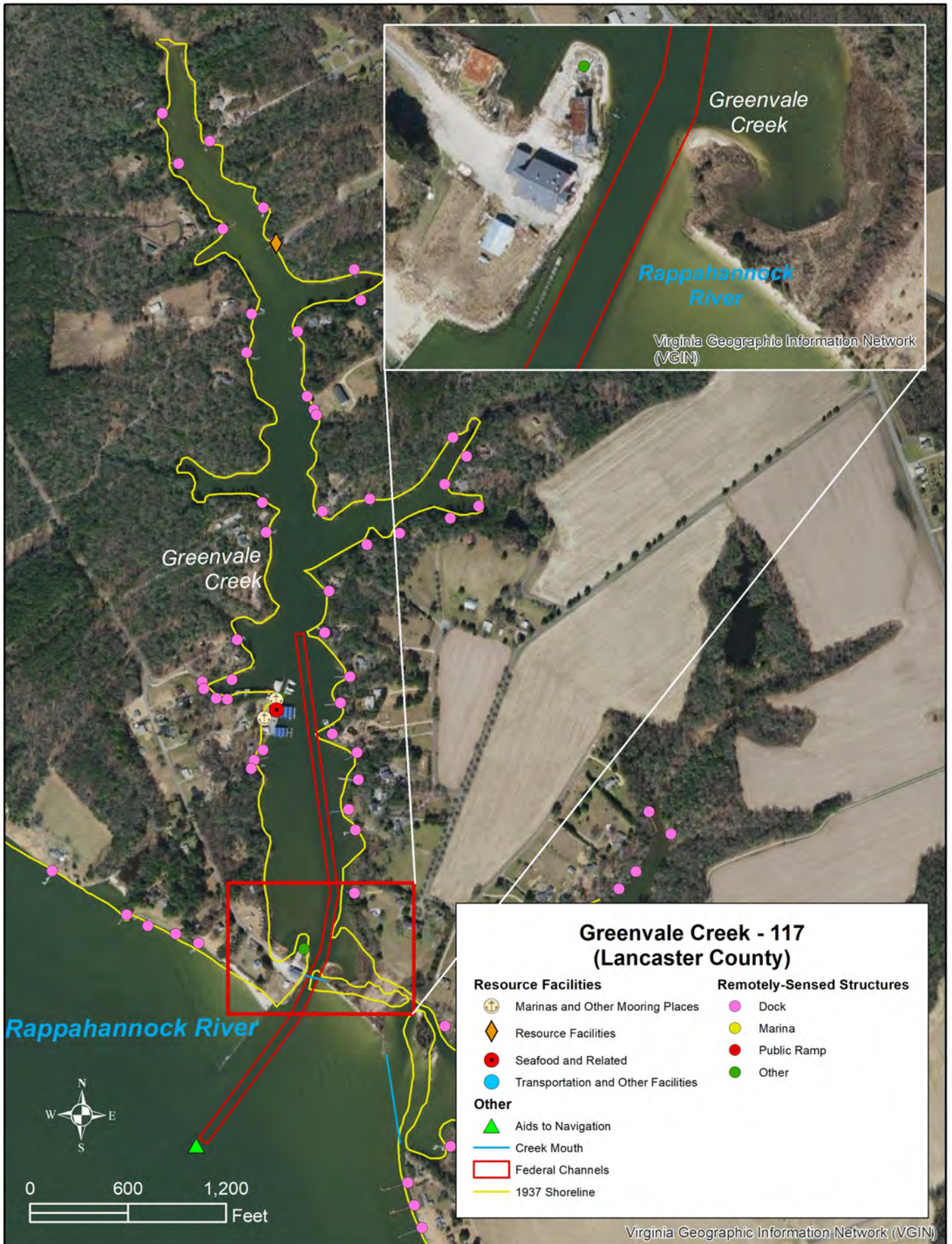
REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Greenvale Creek**

Waterbody ID Number	117	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Federal	Private Lease Acreage (acres)	3.2
Mouth Latitude	37.710600	Percent Lease Area/Waterbody Area	5%
Mouth Longitude	-76.543800	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	20,556
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	62.0	Number of Docks/1000 linear ft	2.1
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	44
Total Businesses	1	Number of Marinas	1
Total Resources	1	Number of Public Ramps	1
Combined Total	4	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Little Oyster Creek-118 (Lancaster County)

Resource Facilities

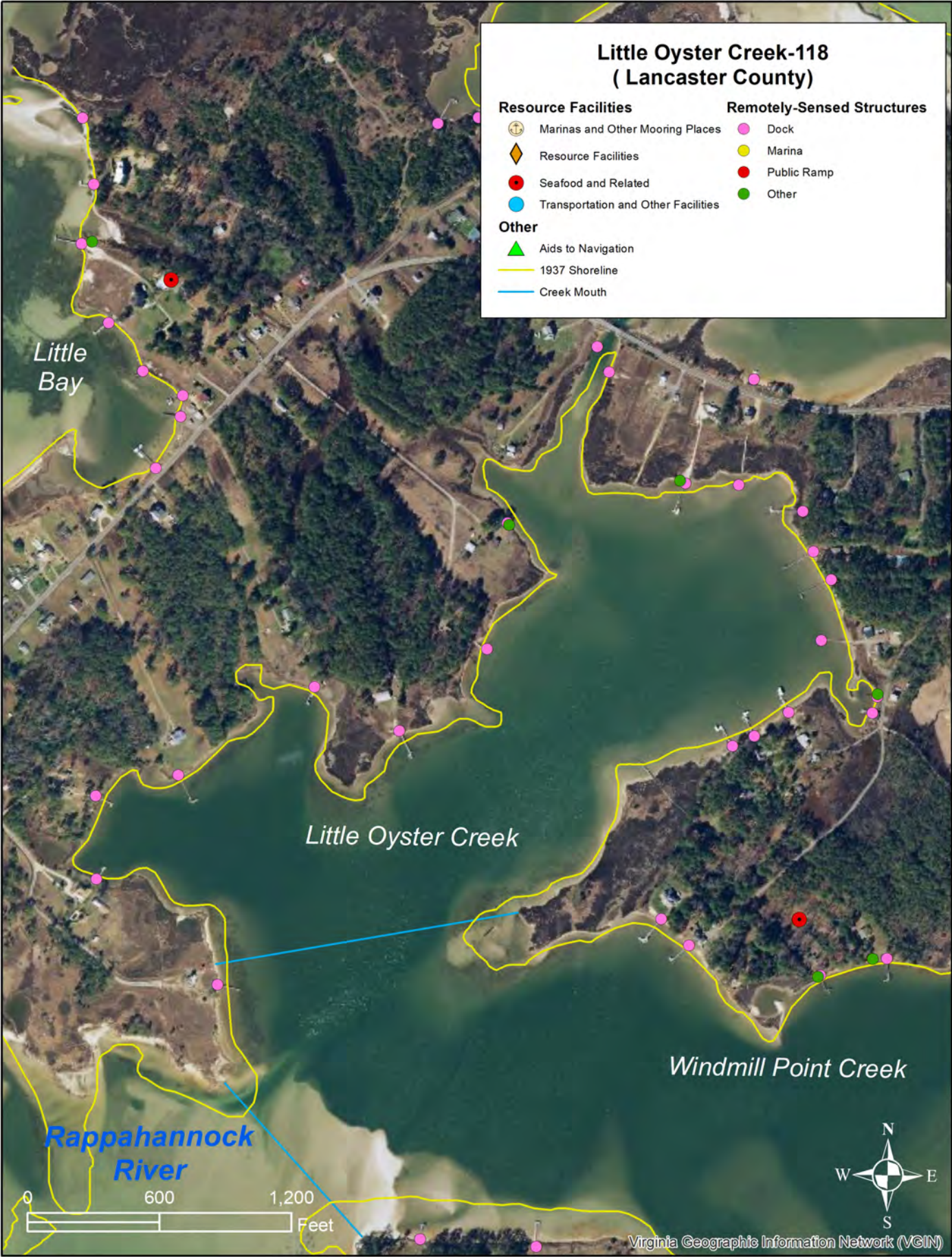
- Ⓜ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Public Ramp
- Other

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for Little Oyster Creek

Waterbody ID Number	118	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	74.3
Mouth Latitude	37.626200	Percent Lease Area/Waterbody Area	52%
Mouth Longitude	-76.306300	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	24,454
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	141.5	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	22
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Mosquito Creek - 119 (Lancaster County)

Resource Facilities

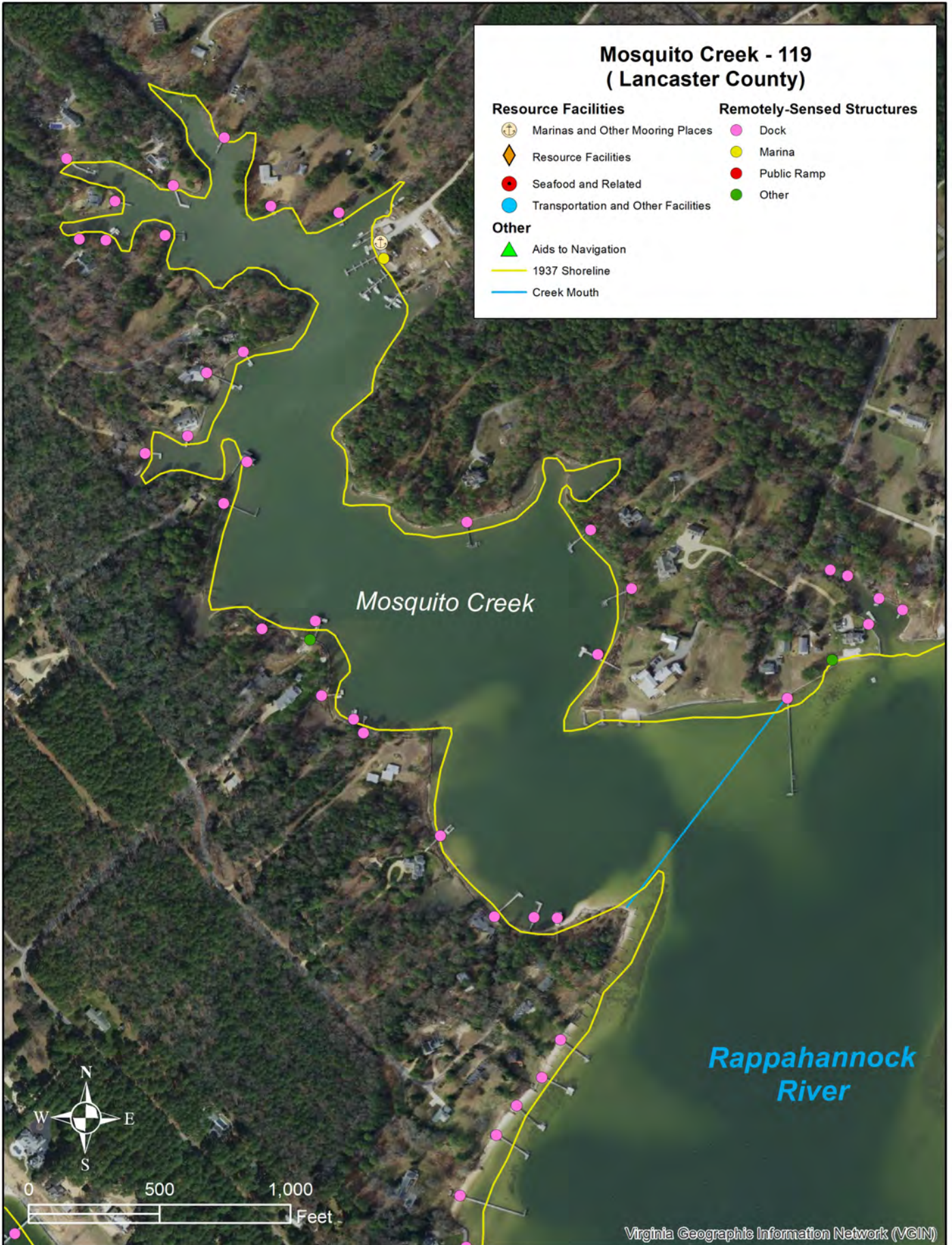
- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Public Ramp
- Other

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Mosquito Creek**

Waterbody ID Number	119	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.618300	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.358200	Tide Range (ft)	1.25
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	17,060
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	65.8	Number of Docks/1000 linear ft	1.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	28
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

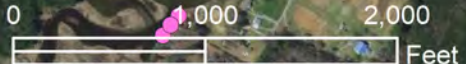


Rappahannock River

Mulberry Creek

**Mulberry Creek - 120
(Lancaster County)**

Resource Facilities	Remotely-Sensed Structures
⊕ Marinas and Other Mooring Places	● Dock
◆ Resource Facilities	● Marina
● Seafood and Related	● Public Ramp
● Transportation and Other Facilities	● Other
Other	
▲ Aids to Navigation	
— 1937 Shoreline	
— Creek Mouth	



Virginia Geographic Information Network (VGIN)

Data Sheet for **Mulberry Creek**

Waterbody ID Number	120	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.785900	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.618700	Tide Range (ft)	1.62
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	47,057
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	165.7	Number of Docks/1000 linear ft	0.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	26
Total Businesses	0	Number of Marinas	3
Total Resources	1	Number of Public Ramps	0
Combined Total	3	Number of Other Structures	6

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Windmill Point Creek - 121 Lancaster County

Remotely-Sensed Structures

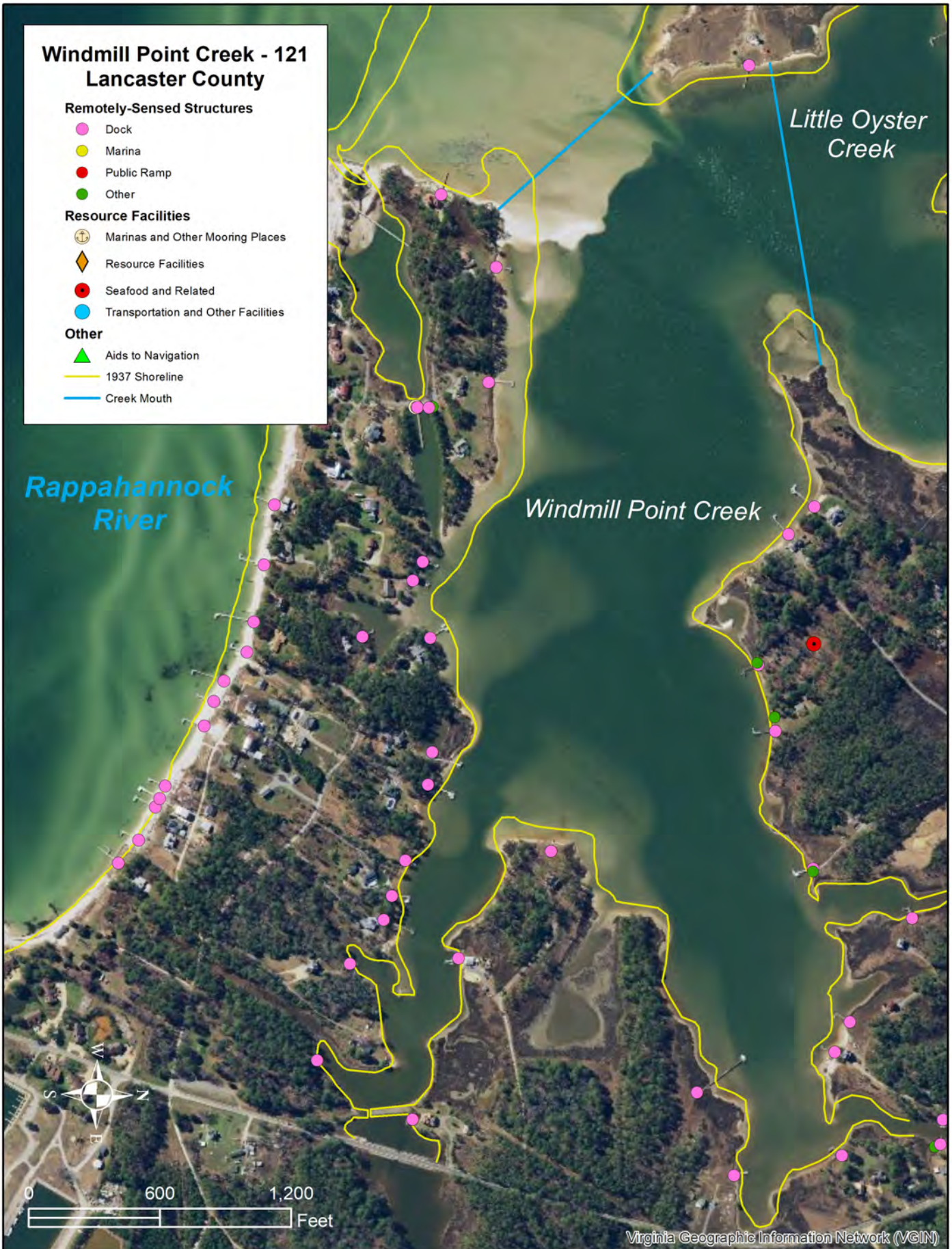
- Dock
- Marina
- Public Ramp
- Other

Resource Facilities

- ⊕ Marinas and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for Windmill Point Creek

Waterbody ID Number	121	Main Waterbody	Rappahannock River
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	67.2
Mouth Latitude	37.623500	Percent Lease Area/Waterbody Area	39%
Mouth Longitude	-76.307600	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	35,109
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	171.9	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	33
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

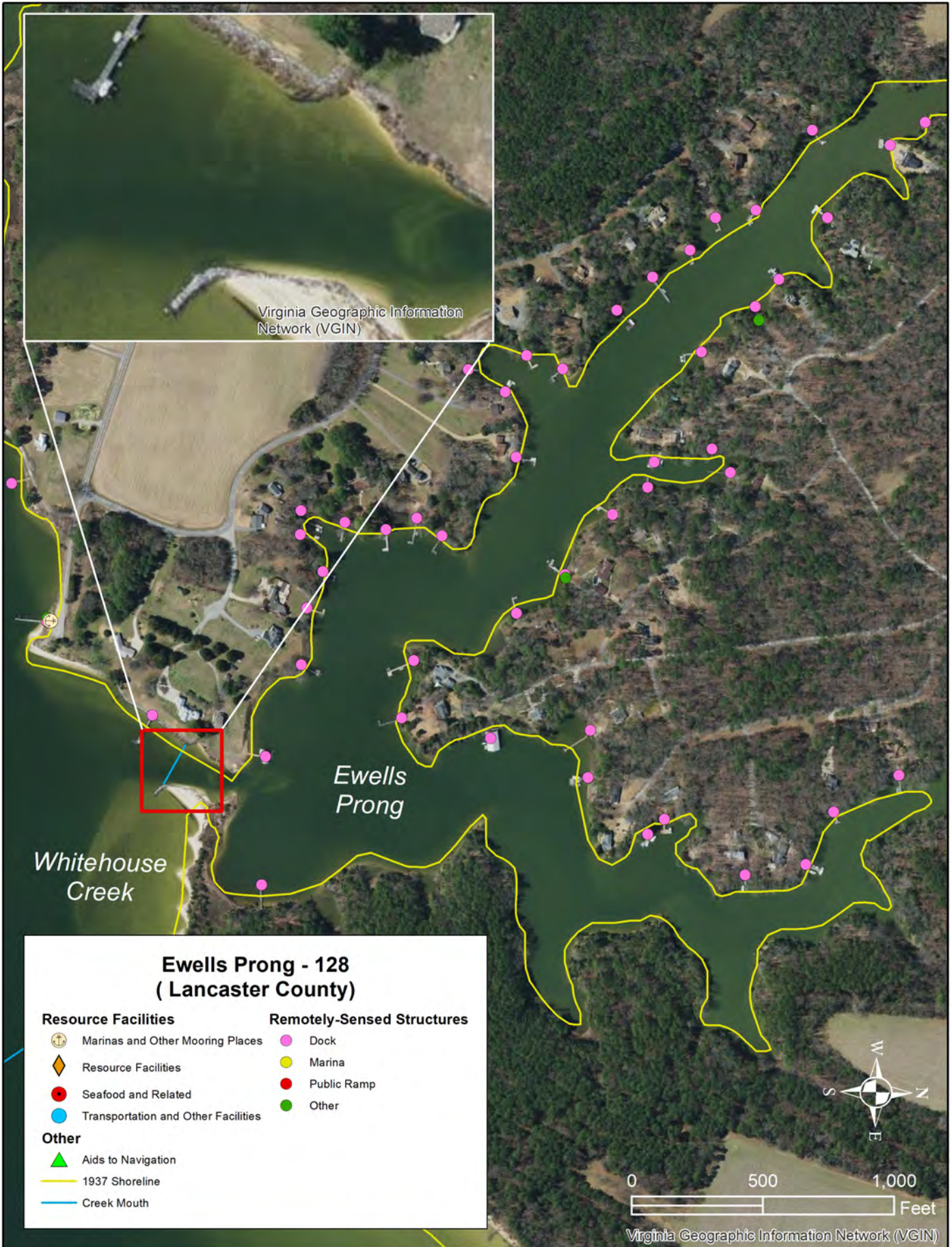
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Data Sheet for **Ewells Prong**

Waterbody ID Number	128	Main Waterbody	Whitehouse Creek
County	Lancaster	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	32.4
Mouth Latitude	37.657700	Percent Lease Area/Waterbody Area	44%
Mouth Longitude	-76.501500	Tide Range (ft)	1.40
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	25,993
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	72.8	Number of Docks/1000 linear ft	1.8

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	46
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

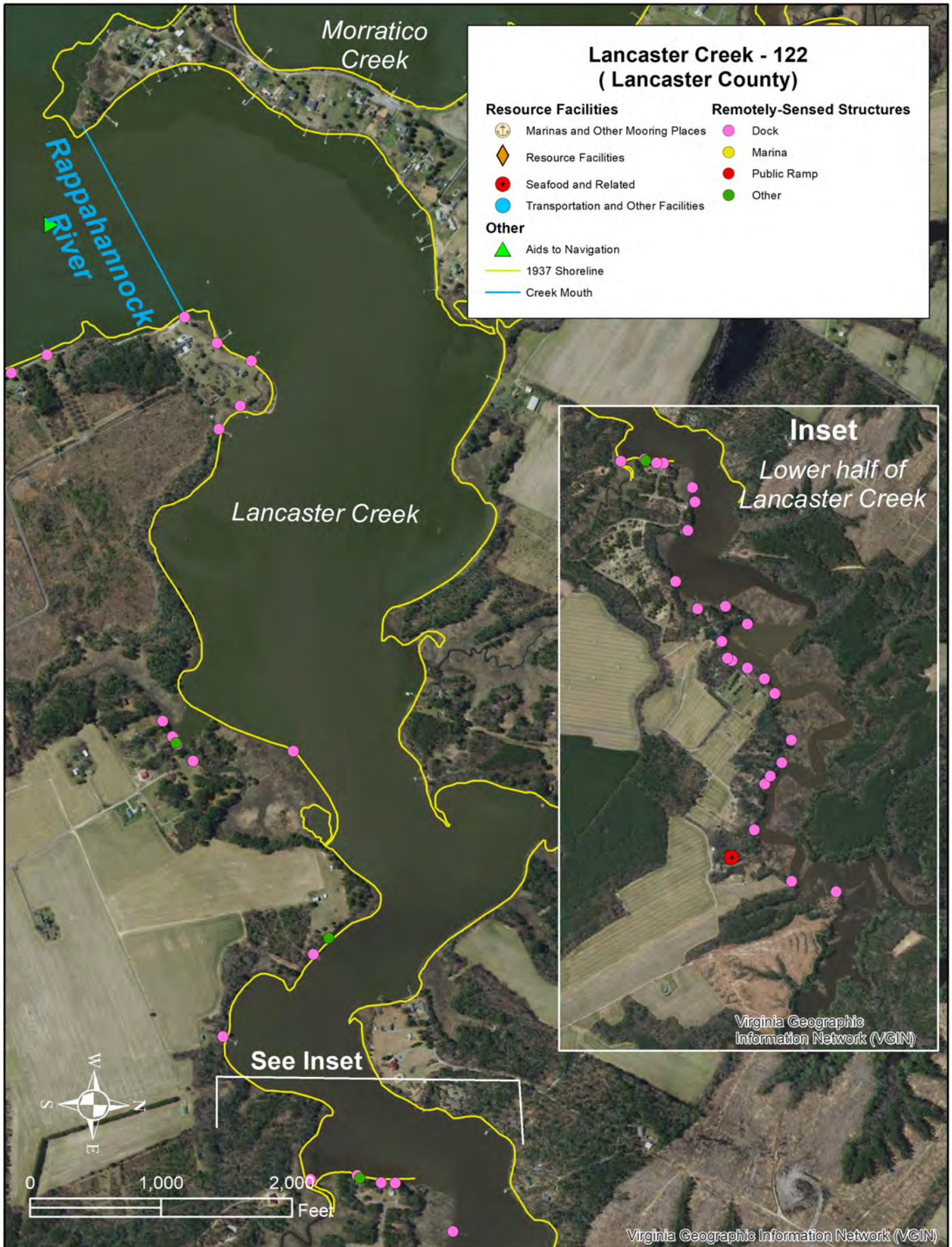
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Data Sheet for **Lancaster Creek**

Waterbody ID Number	122	Main Waterbody	Rappahannock River
County	LN/RM	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	30.9
Mouth Latitude	37.801700	Percent Lease Area/Waterbody Area	6%
Mouth Longitude	-76.630100	Tide Range (ft)	1.65
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	111,442
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	476.3	Number of Docks/1000 linear ft	0.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	74
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	4

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Data Sheet for **Rappahannock River**
No Map Created

Waterbody ID Number	4	Main Waterbody	Chesapeake Bay
County	LN/RM/WM	Private Oyster Leases Present	No
Channel Type	Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.584500	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.292100	Tide Range (ft)	varies
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	409,236
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	N/A	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	6	Number of Docks	619
Total Businesses	2	Number of Marinas	3
Total Resources	4	Number of Public Ramps	3
Combined Total	12	Number of Other Structures	57

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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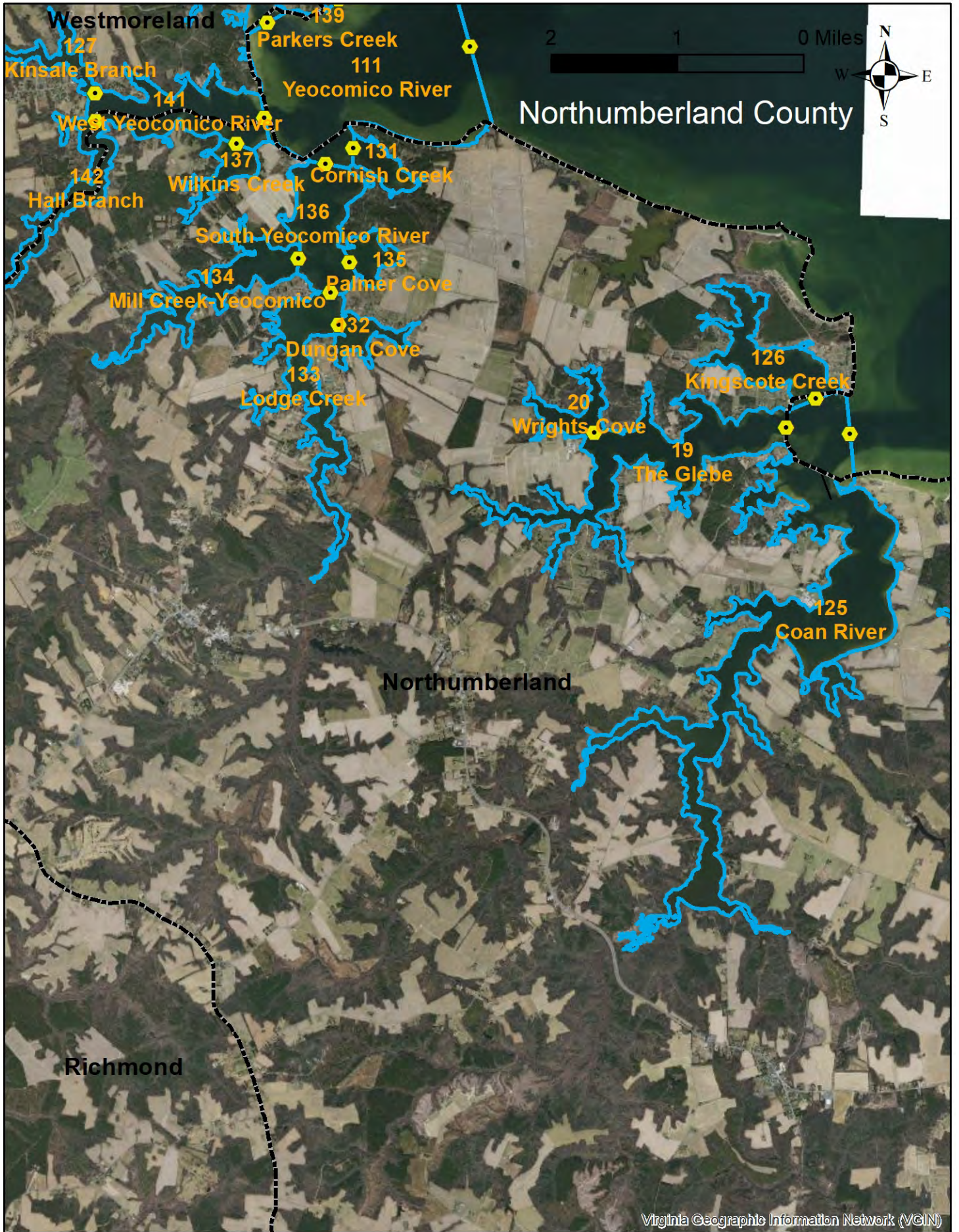
Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

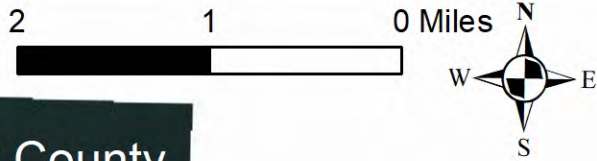
Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Appendix C-2

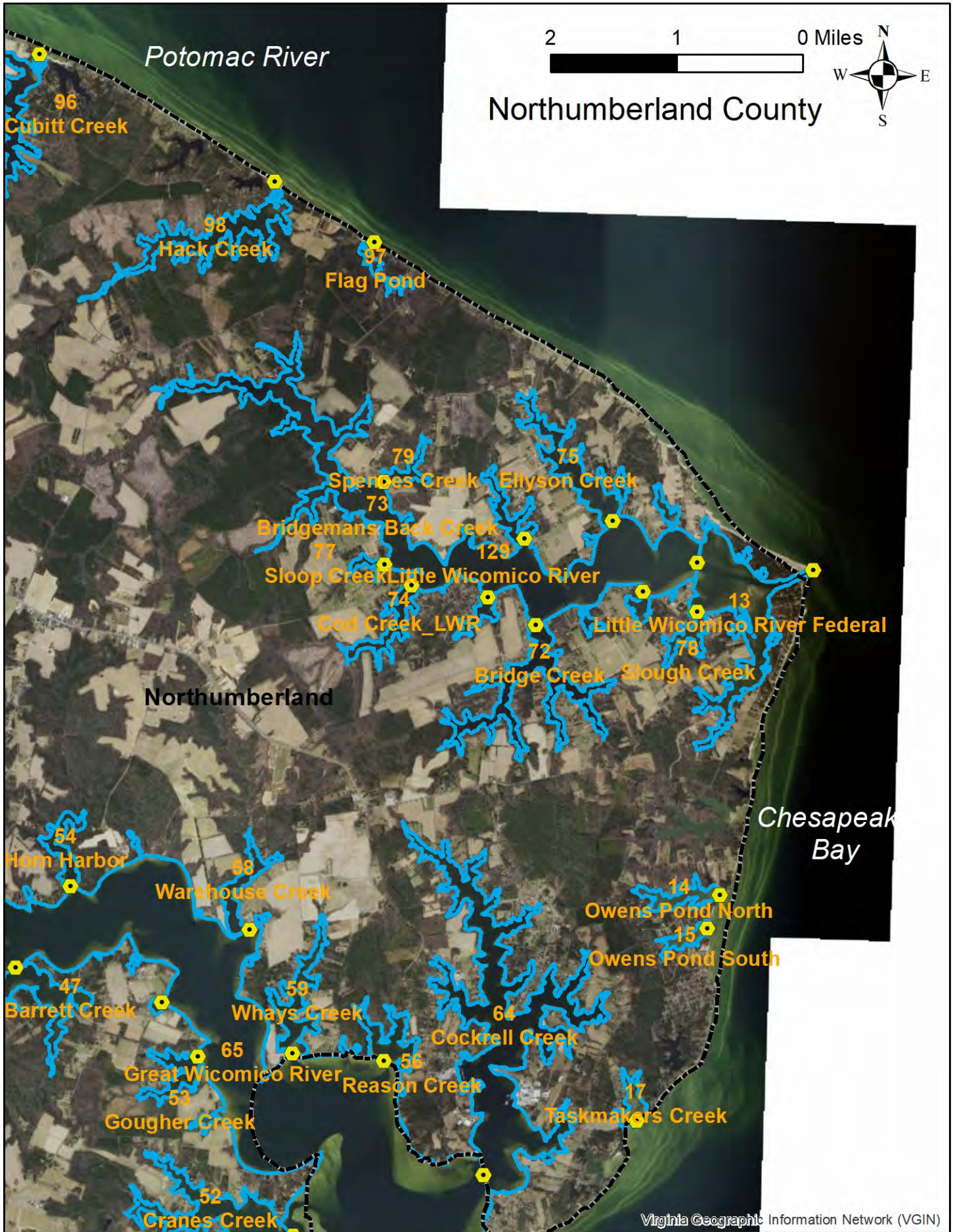
Northumberland County Data and Maps



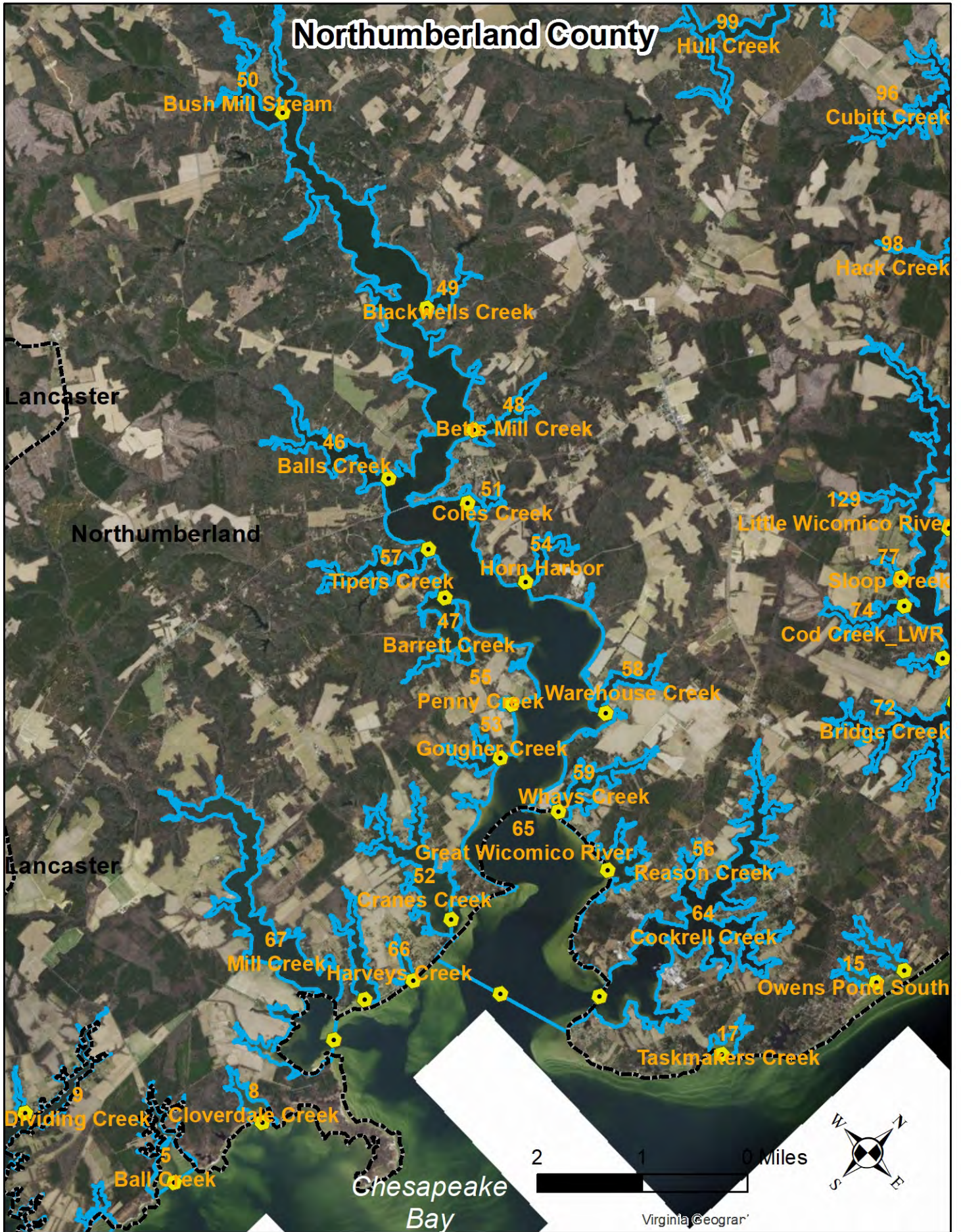


Northumberland County



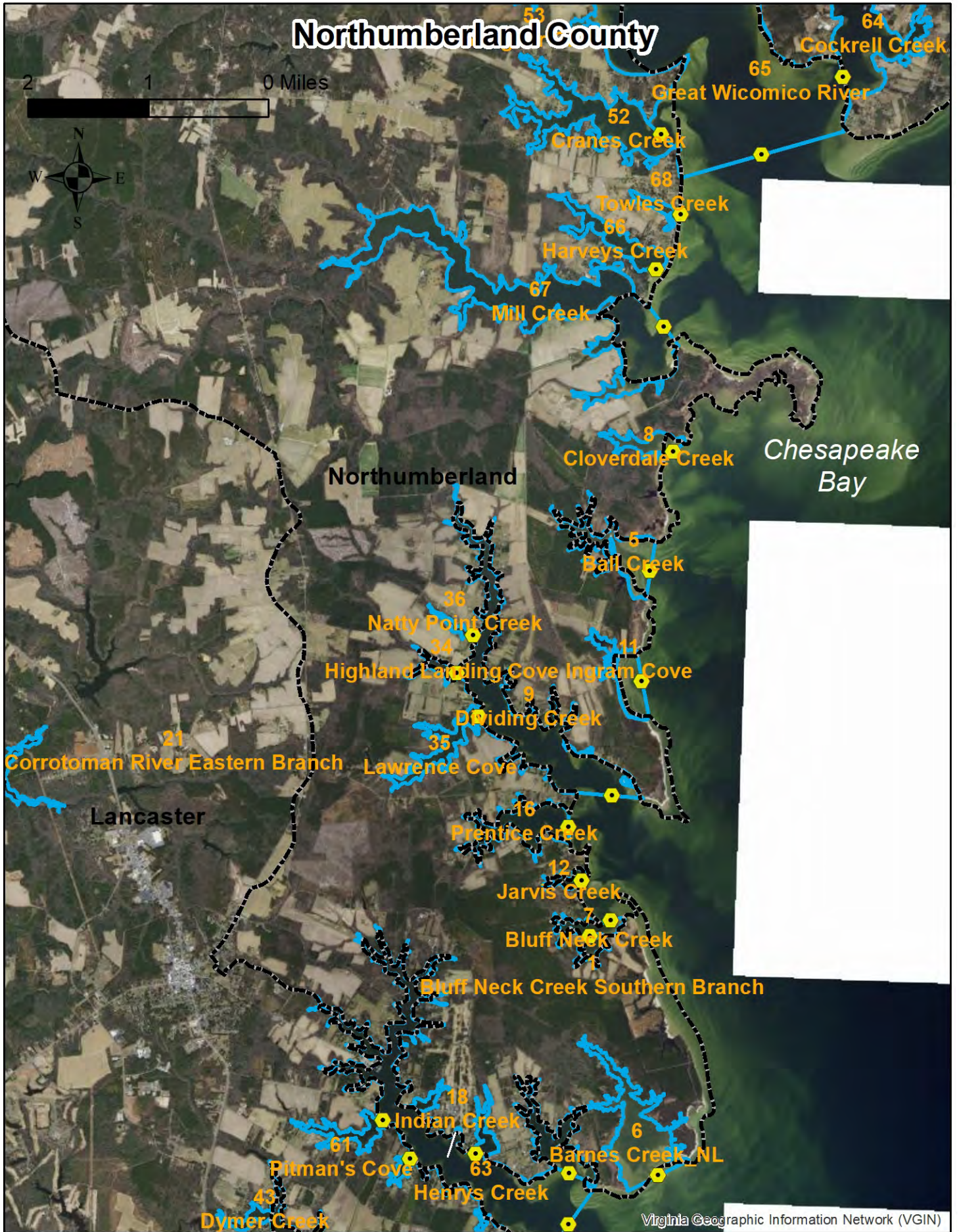


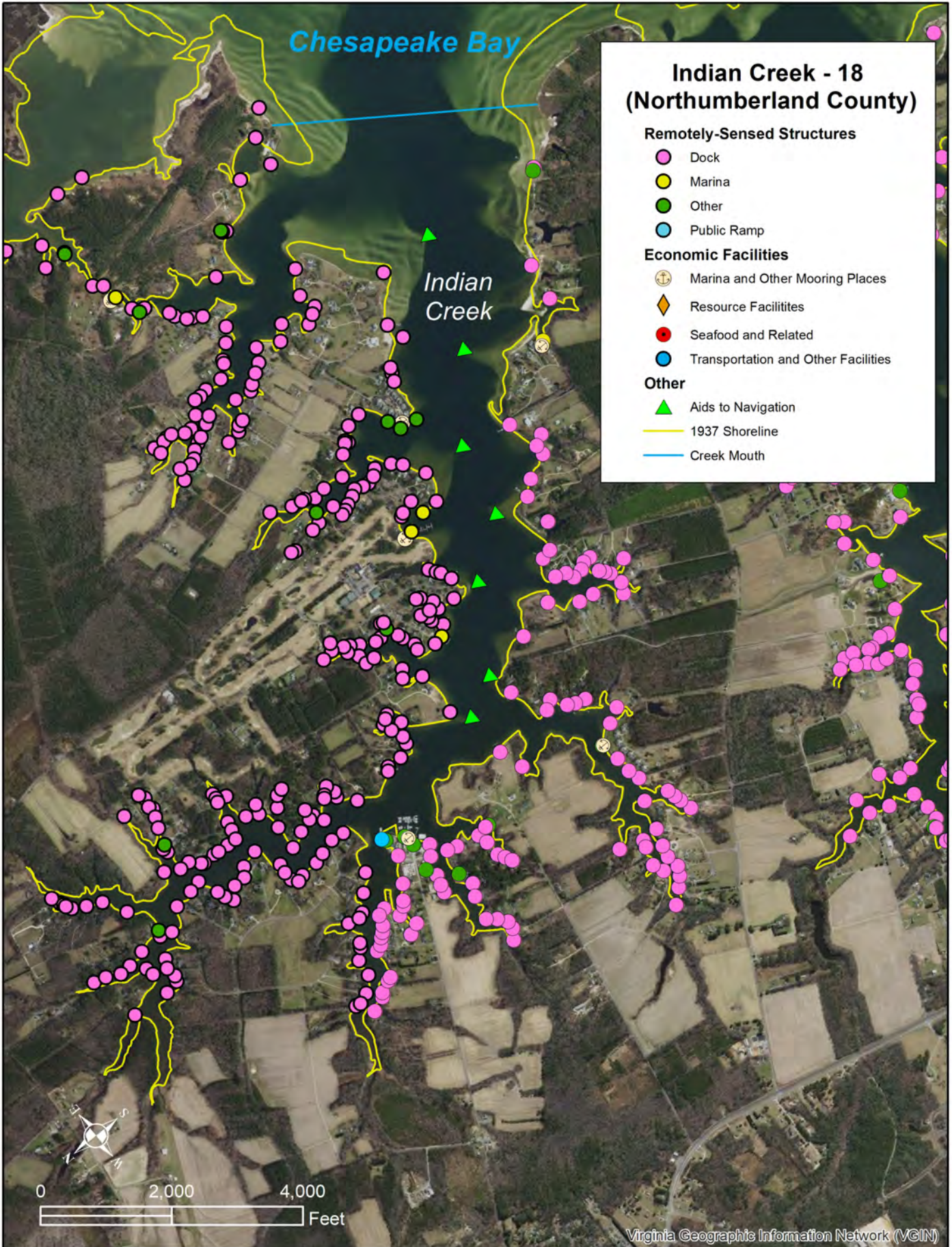
Northumberland County



Northumberland County

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Data Sheet for **Indian Creek**

Waterbody ID Number	18	Main Waterbody	Chesapeake Bay
County	NL/LN	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	167.7
Mouth Latitude	37.681100	Percent Lease Area/Waterbody Area	18%
Mouth Longitude	-76.321900	Tide Range (ft)	1.30
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	175,137
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	702.5	Number of Docks/1000 linear ft	1.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	4	Number of Docks	337
Total Businesses	1	Number of Marinas	6
Total Resources	0	Number of Public Ramps	0
Combined Total	5	Number of Other Structures	19

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

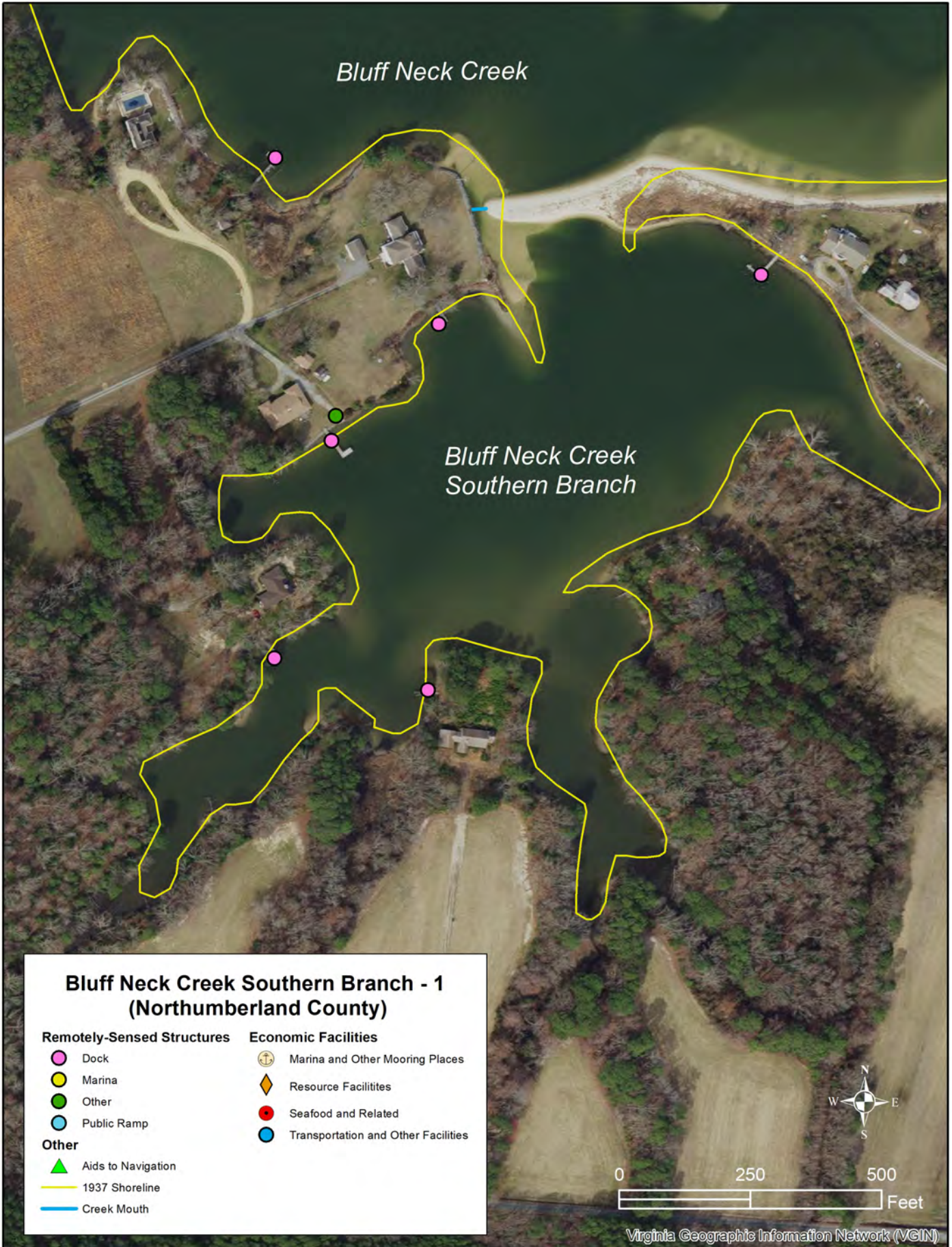
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Bluff Neck Creek Southern Branch**

Waterbody ID Number	1	Main Waterbody	Bluff Neck Creek
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	9.9
Mouth Latitude	37.715900	Percent Lease Area/Waterbody Area	47%
Mouth Longitude	-76.319200	Tide Range (ft)	1.13
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	7,370
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	20.9	Number of Docks/1000 linear ft	0.7
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	5
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

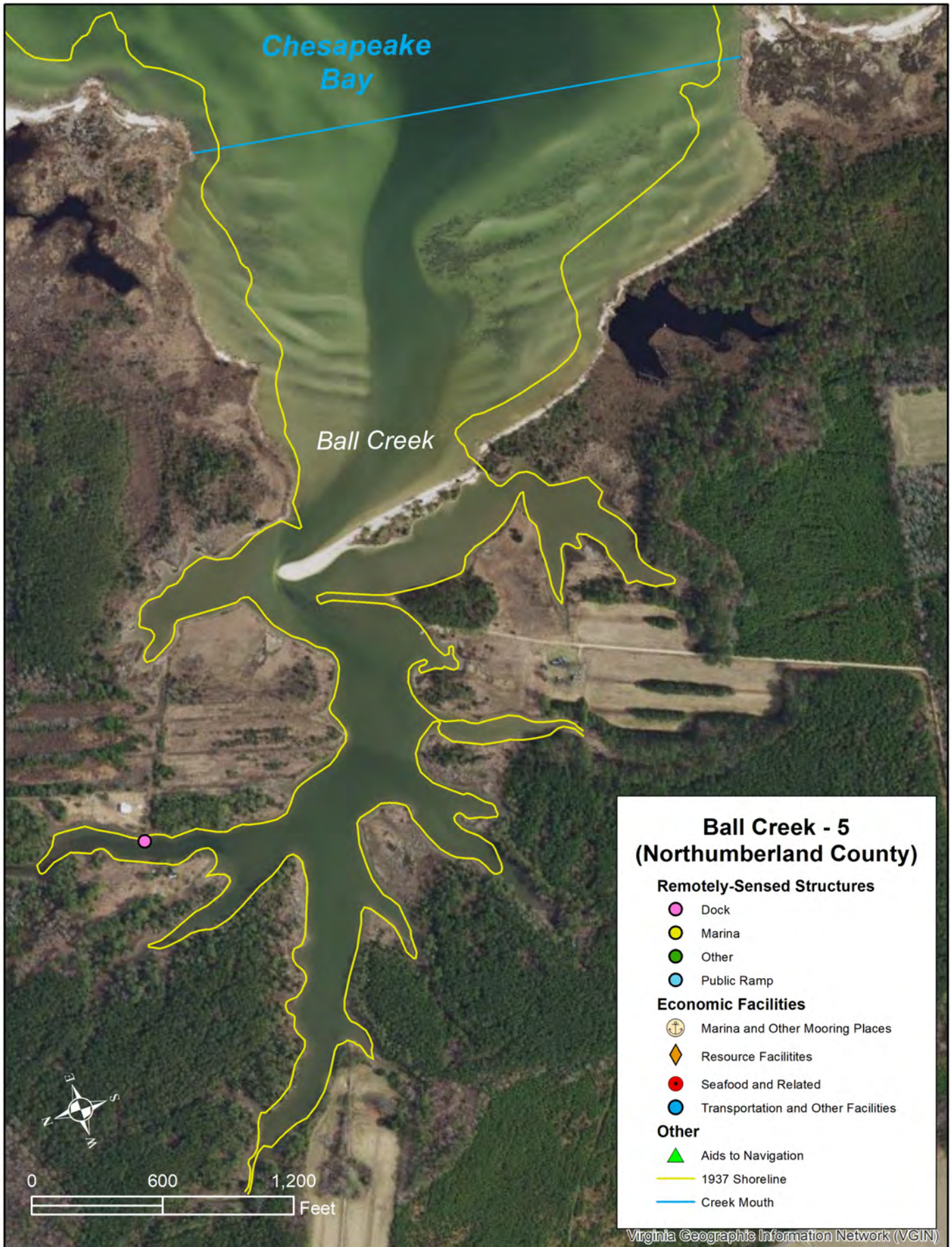
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Ball Creek**

Waterbody ID Number	5	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	36.2
Mouth Latitude	37.760000	Percent Lease Area/Waterbody Area	28%
Mouth Longitude	-76.310900	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	34,266
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	130.7	Number of Docks/1000 linear ft	0.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	1
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

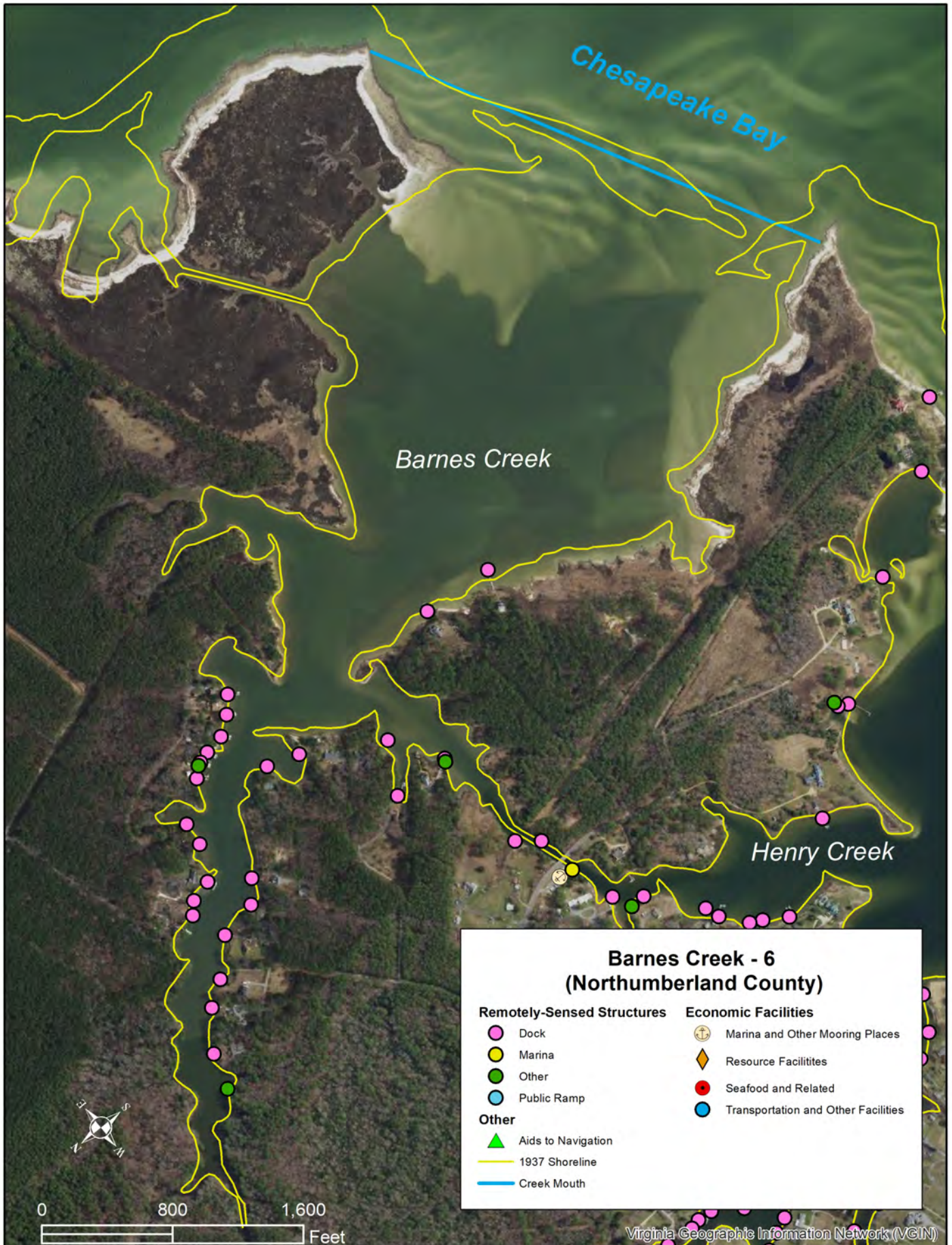
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Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for Barnes Creek_NL

Waterbody ID Number	6	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	32.9
Mouth Latitude	37.687200	Percent Lease Area/Waterbody Area	15%
Mouth Longitude	-76.308300	Tide Range (ft)	1.30
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	41,006
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	213.7	Number of Docks/1000 linear ft	0.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	26
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	3

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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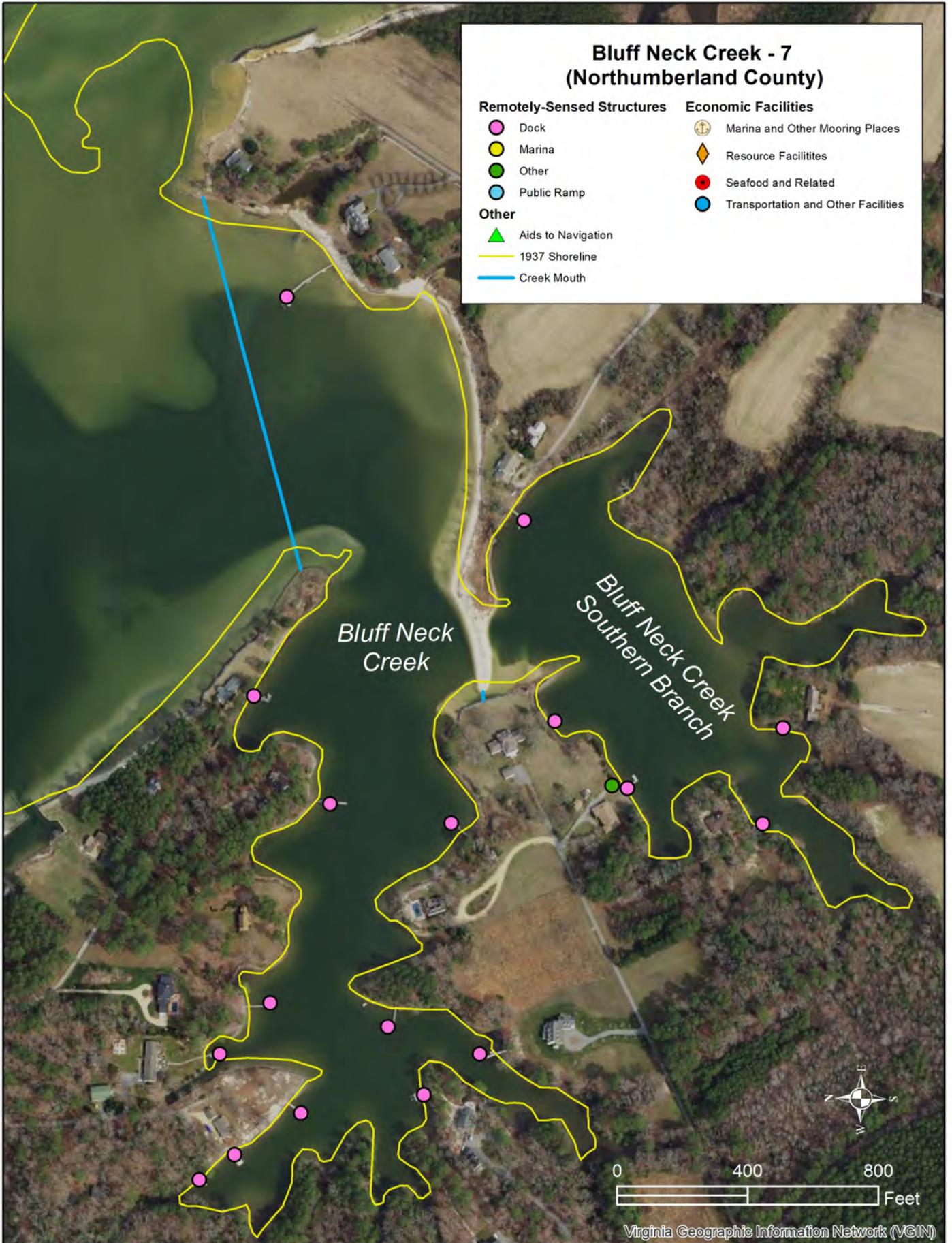
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Bluff Neck Creek - 7 (Northumberland County)

- | Remotely-Sensed Structures | Economic Facilities |
|---|---|
| ● Dock | ⚓ Marina and Other Mooring Places |
| ● Marina | ◆ Resource Facilities |
| ● Other | ● Seafood and Related |
| ● Public Ramp | ● Transportation and Other Facilities |
| Other | |
| ▲ Aids to Navigation | |
| — 1937 Shoreline | |
| — Creek Mouth | |



Data Sheet for **Bluff Neck Creek**

Waterbody ID Number	7	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	21.5
Mouth Latitude	37.717900	Percent Lease Area/Waterbody Area	35%
Mouth Longitude	-76.316000	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	19,706
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	40.2	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	17
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

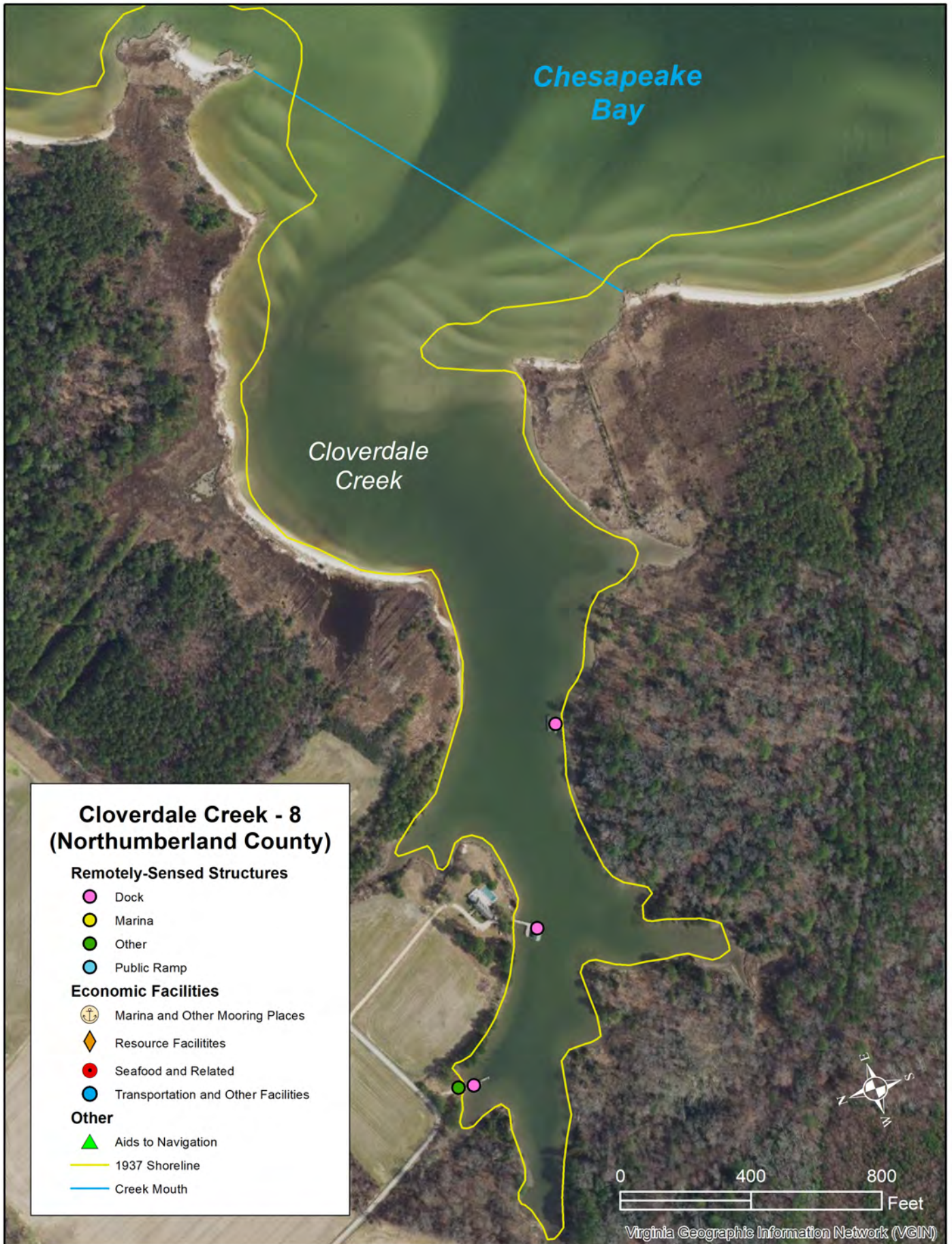
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Data Sheet for **Cloverdale Creek**

Waterbody ID Number	8	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	25.2
Mouth Latitude	37.774400	Percent Lease Area/Waterbody Area	52%
Mouth Longitude	-76.307600	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	11,874
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	48.7	Number of Docks/1000 linear ft	0.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	3
Total Businesses	0	Number of Marinas	0
Total Resources	1	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Dividing Creek - 9 (Northumberland County)

Remotely-Sensed Structures

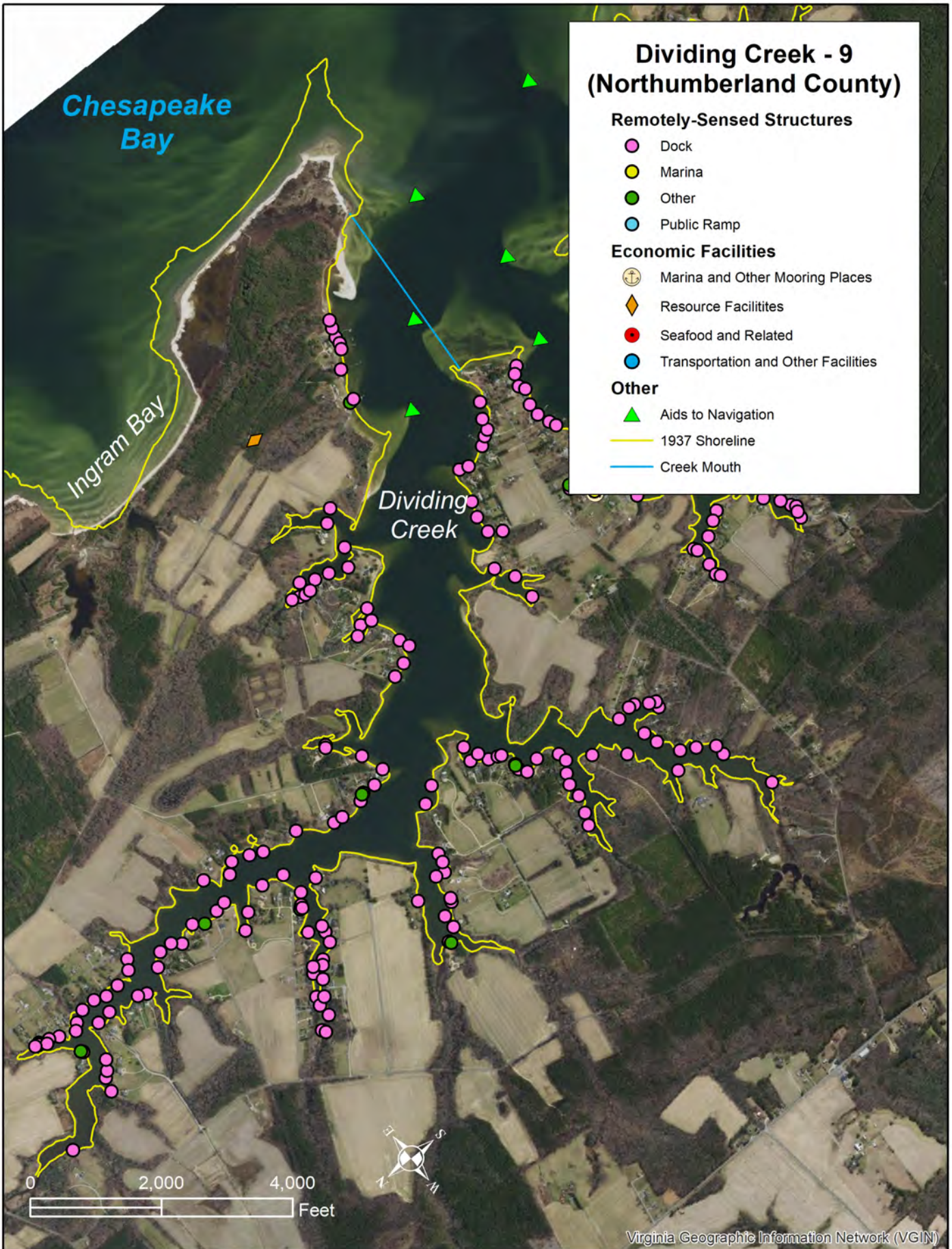
- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Dividing Creek**

Waterbody ID Number	9	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	240.9
Mouth Latitude	37.732900	Percent Lease Area/Waterbody Area	43%
Mouth Longitude	-76.316200	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	113,087
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	455.8	Number of Docks/1000 linear ft	1.4

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	153
Total Businesses	0	Number of Marinas	0
Total Resources	1	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	8

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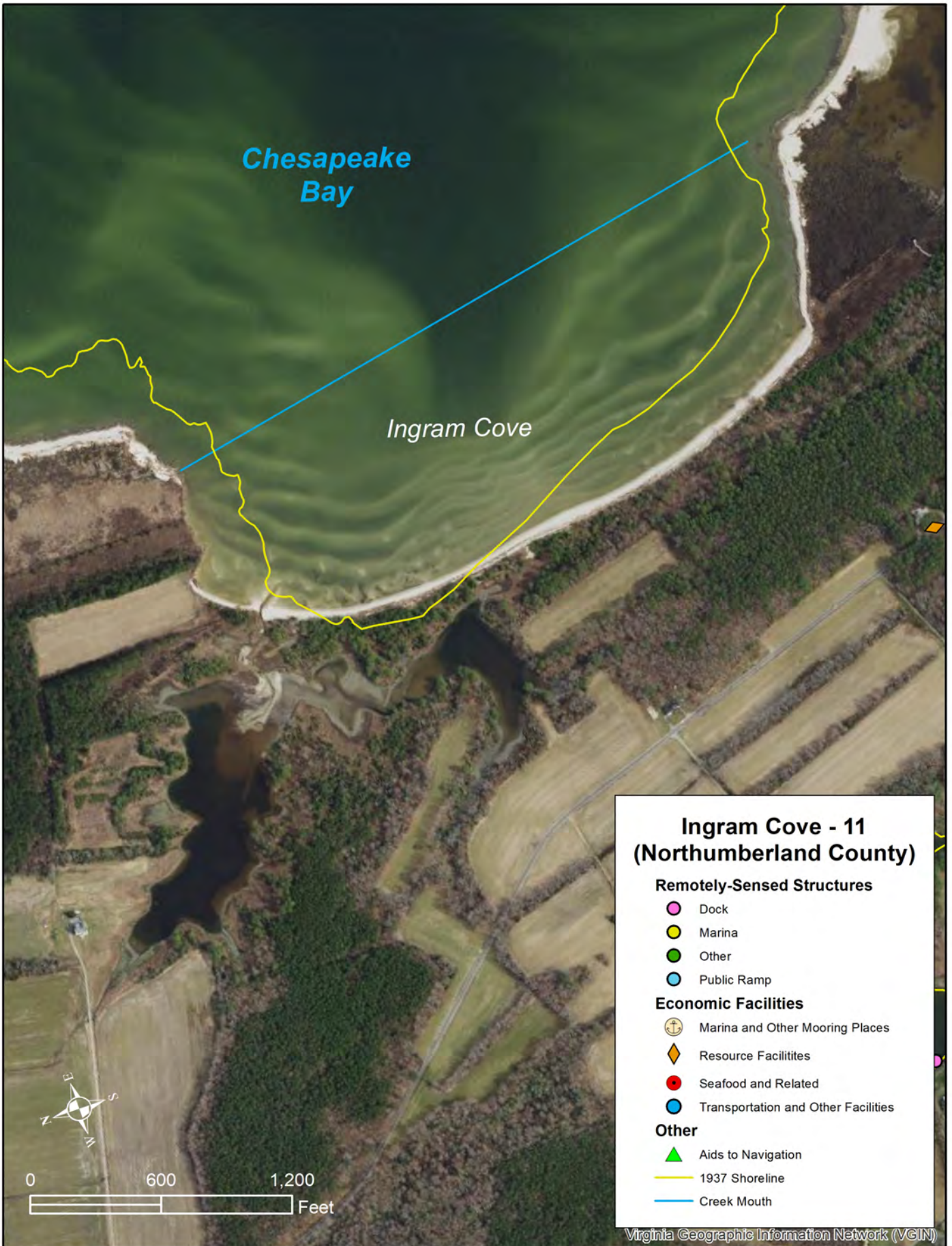
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Ingram Cove**

Waterbody ID Number	11	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.746700	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.311900	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	18,023
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	88.1	Number of Docks/1000 linear ft	0.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	0
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Great Wicomico River

Jarvis Creek

Jarvis Creek - 12 (Northumberland County)

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth
- ▭ Federal Channel

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for **Jarvis Creek**

Waterbody ID Number	12	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.722600	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.320600	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	7,365
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	17.8	Number of Docks/1000 linear ft	2.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	15
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

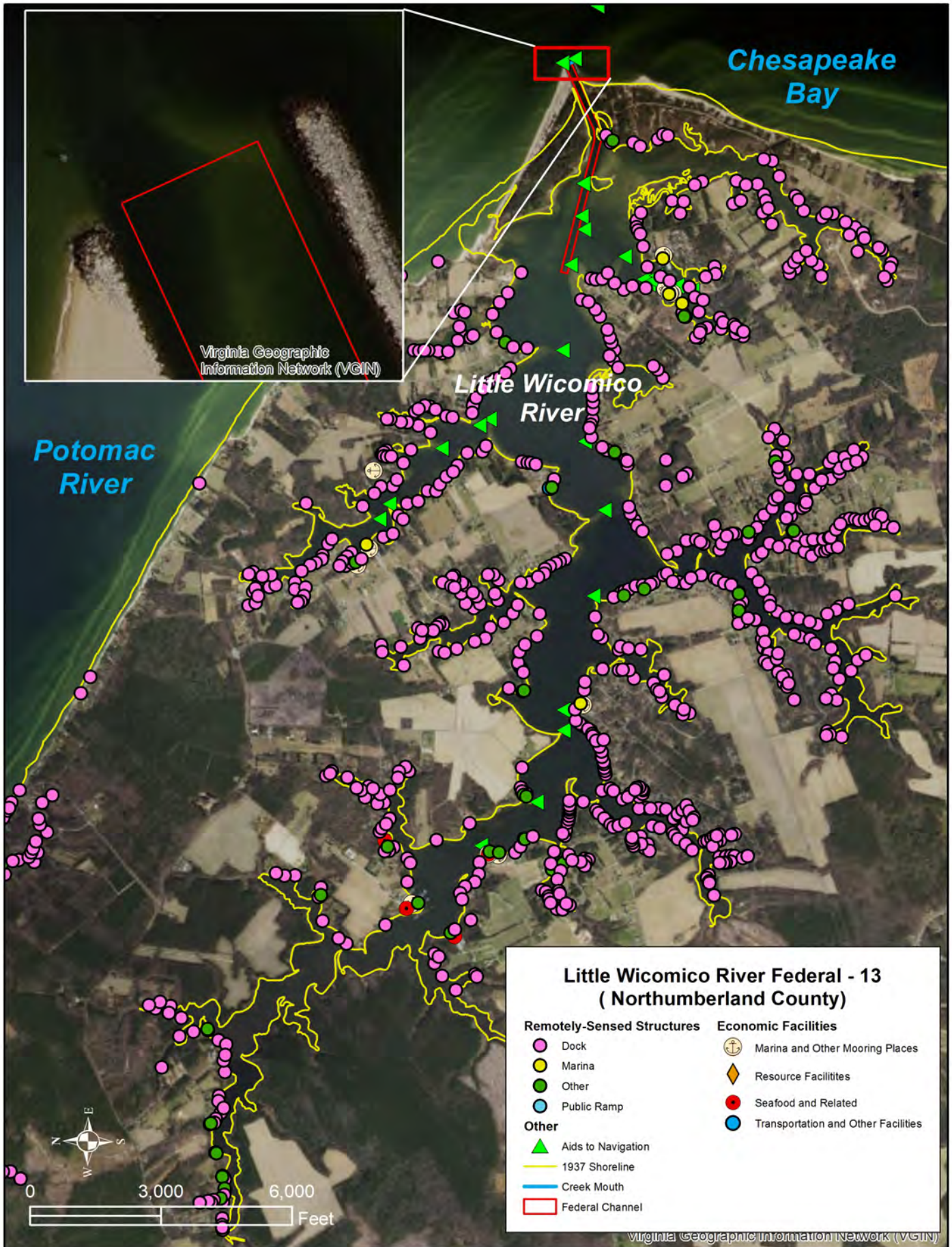
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Little Wicomico River Federal

Waterbody ID Number	13	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	978.8
Mouth Latitude	37.889900	Percent Lease Area/Waterbody Area	52%
Mouth Longitude	-76.236000	Tide Range (ft)	1.00
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	363,470
Waterbody Mouth Morphology	Inlet	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	313.1	Number of Docks/1000 linear ft	2.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	12	Number of Docks	736
Total Businesses	8	Number of Marinas	5
Total Resources	2	Number of Public Ramps	0
Combined Total	22	Number of Other Structures	35

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

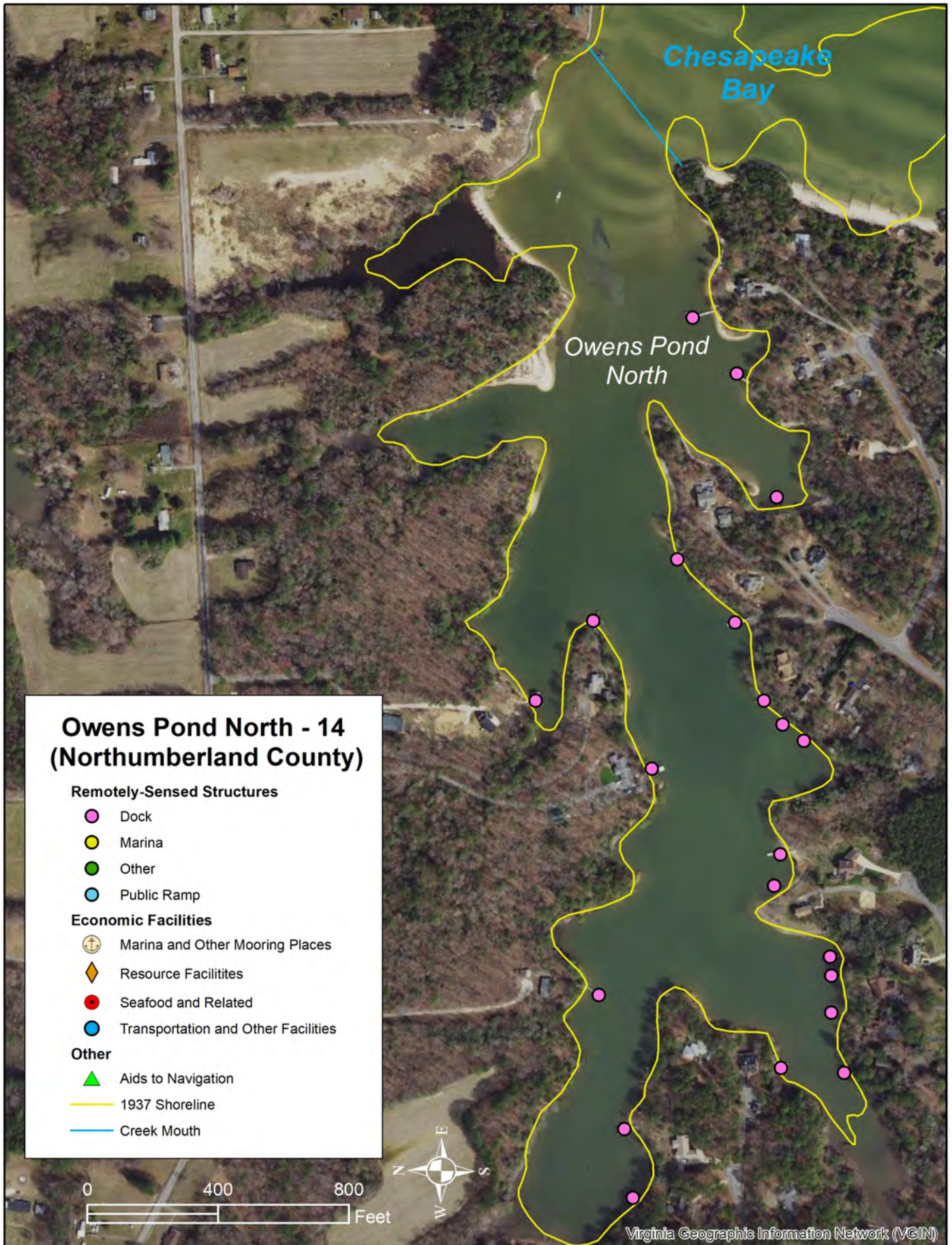
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Owens Pond North

Waterbody ID Number	14	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.852500	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.248900	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	15,741
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	No
Waterbody Area (acres)	50.3	Number of Docks/1000 linear ft	1.3
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	21
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Chesapeake Bay

Owens Pond South - 15 (Northumberland County)

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

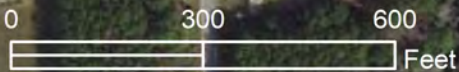
Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Owens Pond South



Data Sheet for Owens Pond South

Waterbody ID Number	15	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.848600	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.250700	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	8,366
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	No
Waterbody Area (acres)	25.3	Number of Docks/1000 linear ft	2.4
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	20
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Prentice Creek - 16 (Northumberland County)

Remotely-Sensed Structures

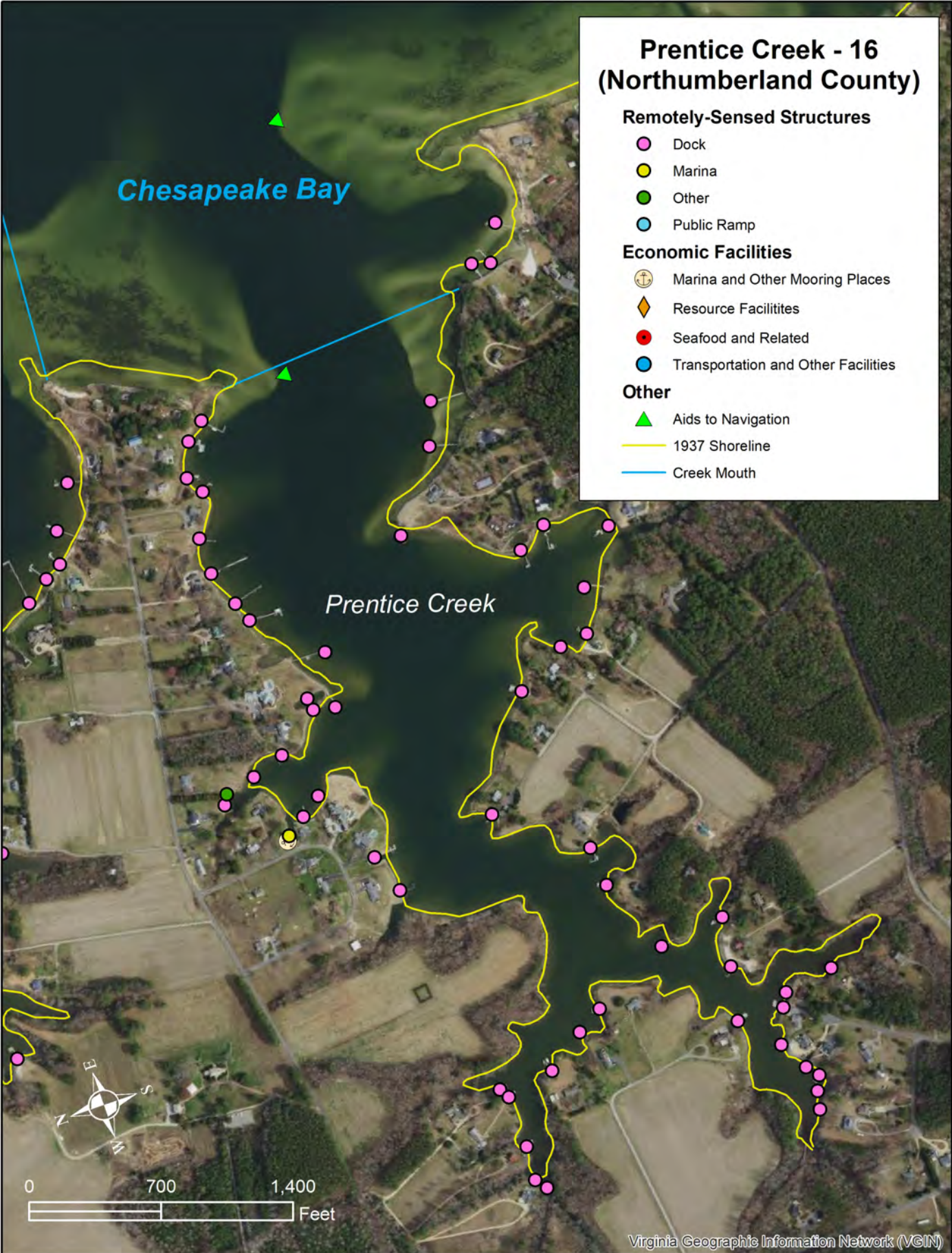
- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for Prentice Creek

Waterbody ID Number	16	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	38.7
Mouth Latitude	37.729000	Percent Lease Area/Waterbody Area	32%
Mouth Longitude	-76.322700	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	28,399
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	121.8	Number of Docks/1000 linear ft	1.8

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	52
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Chesapeake Bay

Taskmakers Creek

Taskmakers Creek - 17 (Northumberland County)

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Taskmakers Creek**

Waterbody ID Number	17	Main Waterbody	Chesapeake Bay
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	0.6
Mouth Latitude	37.826400	Percent Lease Area/Waterbody Area	2%
Mouth Longitude	-76.260500	Tide Range (ft)	1.14
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	9,532
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	No
Waterbody Area (acres)	35.1	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	12
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

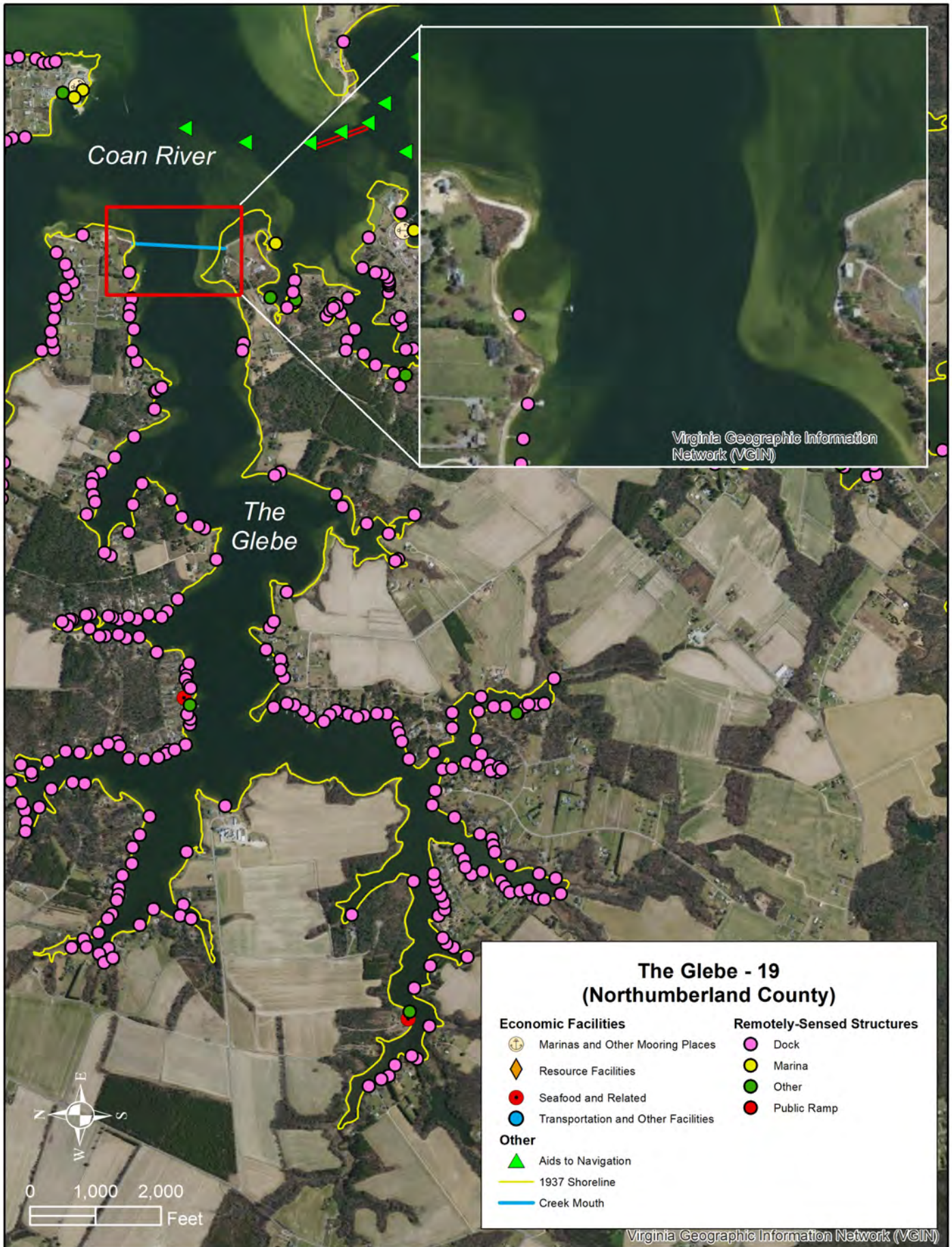
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **The Glebe**

Waterbody ID Number	19	Main Waterbody	Coan River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	193.7
Mouth Latitude	37.991900	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.472400	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	100,307
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	540.3	Number of Docks/1000 linear ft	2.2
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	219
Total Businesses	2	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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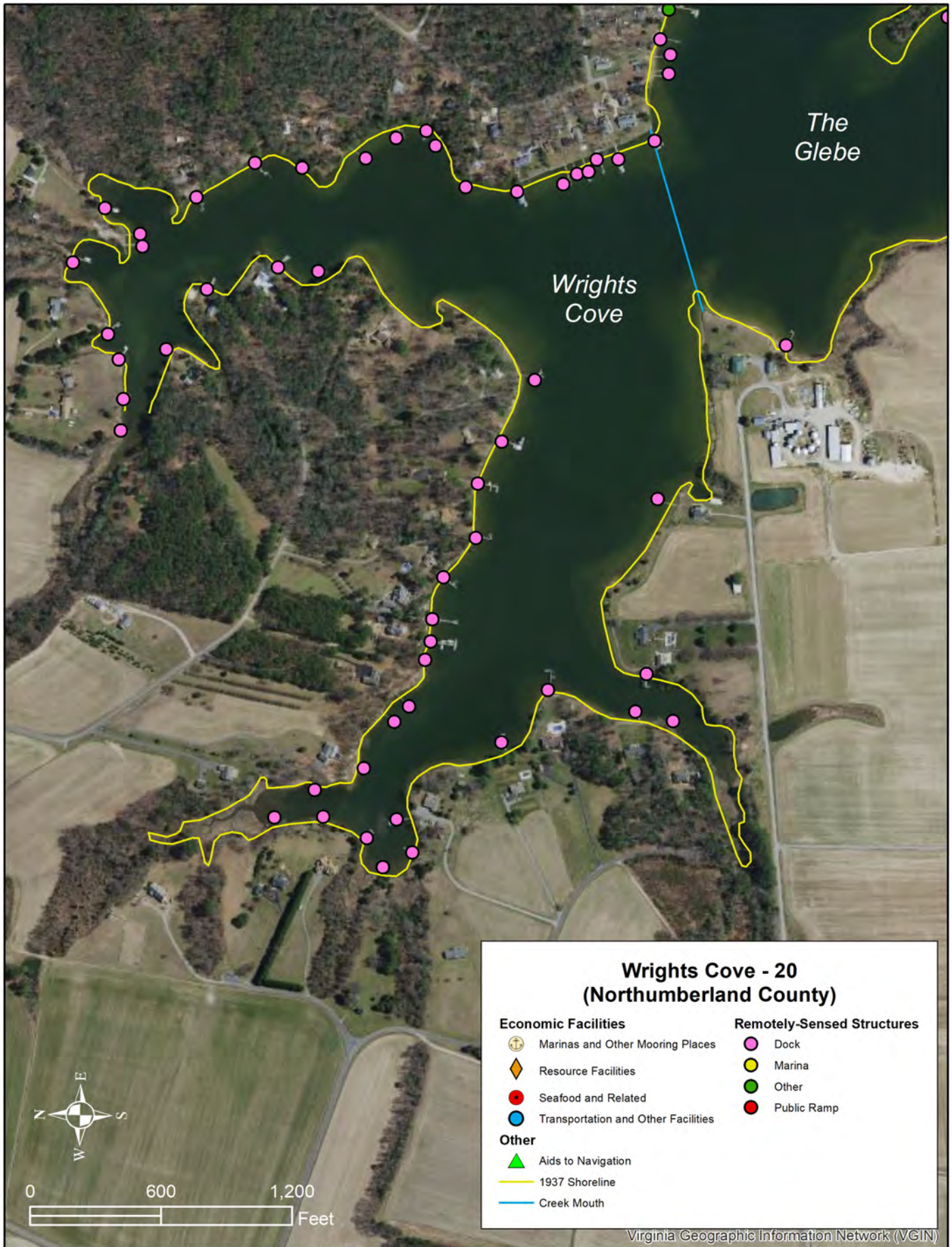
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Data Sheet for **Wrights Cove**

Waterbody ID Number	20	Main Waterbody	Coan River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	40.2
Mouth Latitude	37.991000	Percent Lease Area/Waterbody Area	42%
Mouth Longitude	-76.500200	Tide Range (ft)	1.20
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	19,818
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	94.9	Number of Docks/1000 linear ft	2.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	51
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.





Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Highland Landing Cove - 34 (Northumberland County)




Remotely-Sensed Structures

-  Dock
-  Marina
-  Other
-  Public Ramp

Economic Facilities

-  Marina and Other Mooring Places
-  Resource Facilities
-  Seafood and Related
-  Transportation and Other Facilities

Other

-  Aids to Navigation
-  1937 Shoreline
-  Creek Mouth

Dividing
Creek

Highland Landing
Cove



Data Sheet for **Highland Landing Cove**

Waterbody ID Number	34	Main Waterbody	Dividing Creek
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	6.0
Mouth Latitude	37.747400	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.339900	Tide Range (ft)	1.13
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	8,788
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	20.2	Number of Docks/1000 linear ft	1.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	10
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

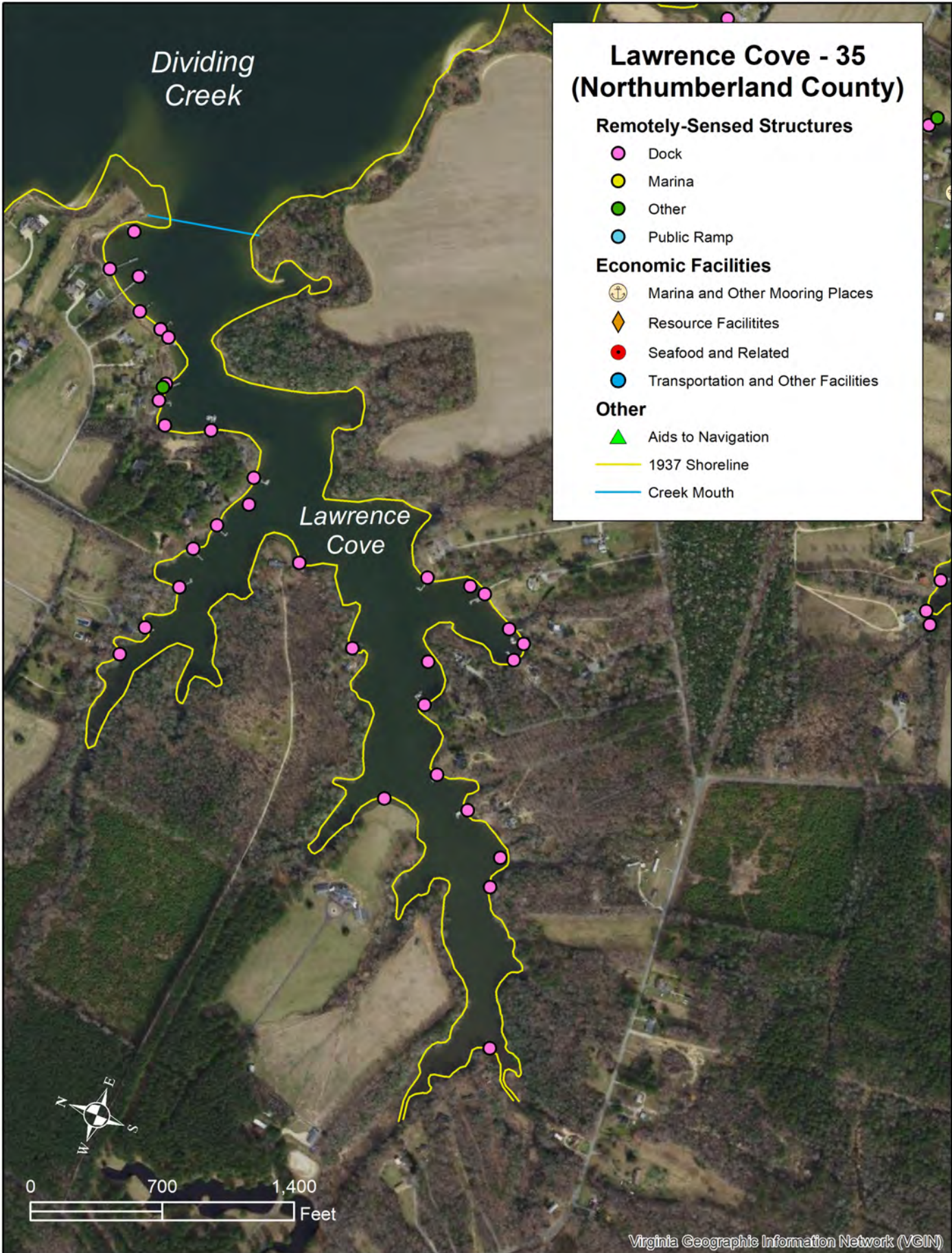
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Lawrence Cove**

Waterbody ID Number	35	Main Waterbody	Dividing Creek
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	12.5
Mouth Latitude	37.742100	Percent Lease Area/Waterbody Area	17%
Mouth Longitude	-76.336500	Tide Range (ft)	1.13
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	24,436
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	73.2	Number of Docks/1000 linear ft	1.4
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	33
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Natty Point Creek - 36 (Northumberland County)

Remotely-Sensed Structures

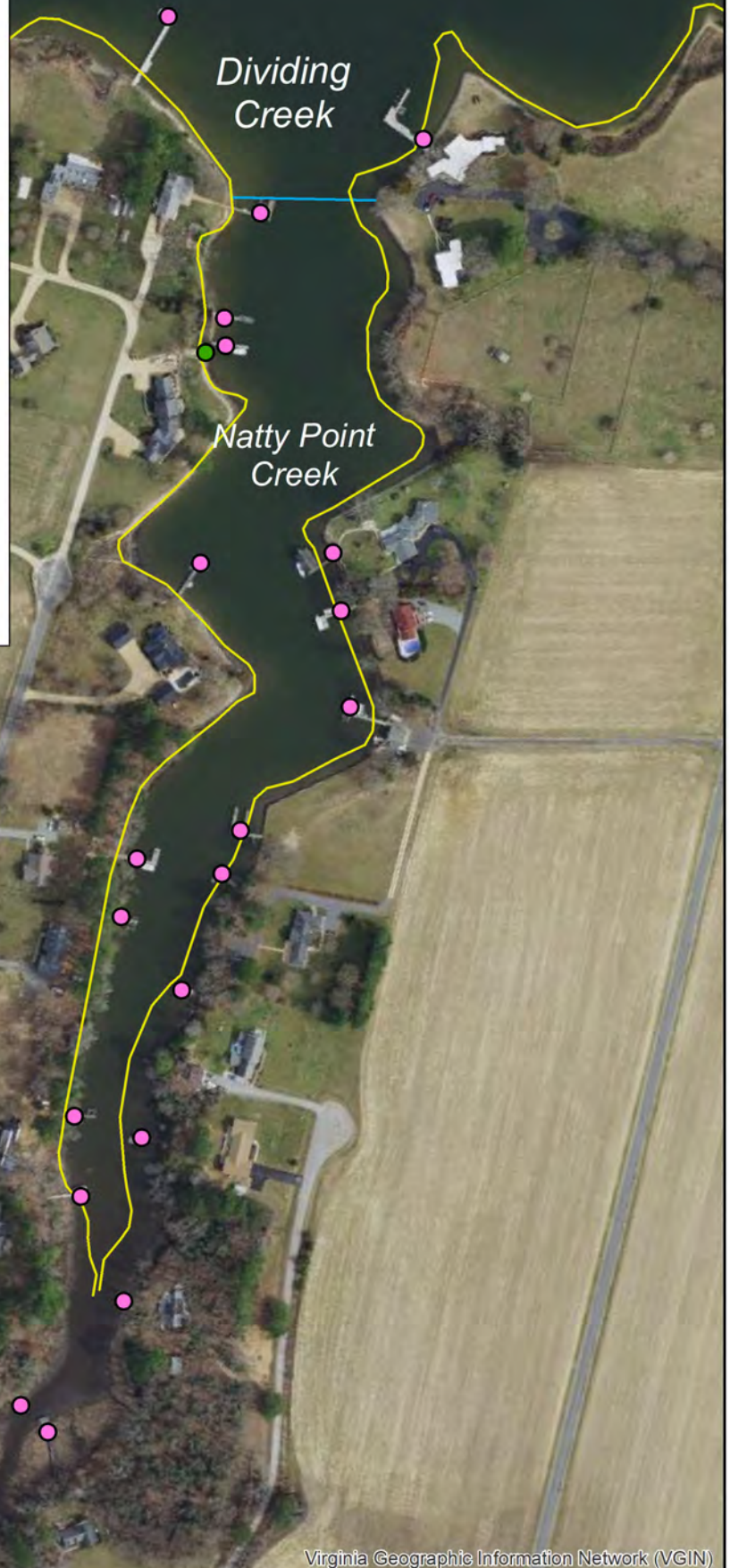
- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Natty Point Creek**

Waterbody ID Number	36	Main Waterbody	Dividing Creek
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	2.7
Mouth Latitude	37.751900	Percent Lease Area/Waterbody Area	23%
Mouth Longitude	-76.337600	Tide Range (ft)	1.13
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	6,152
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	12.0	Number of Docks/1000 linear ft	2.9
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	18
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

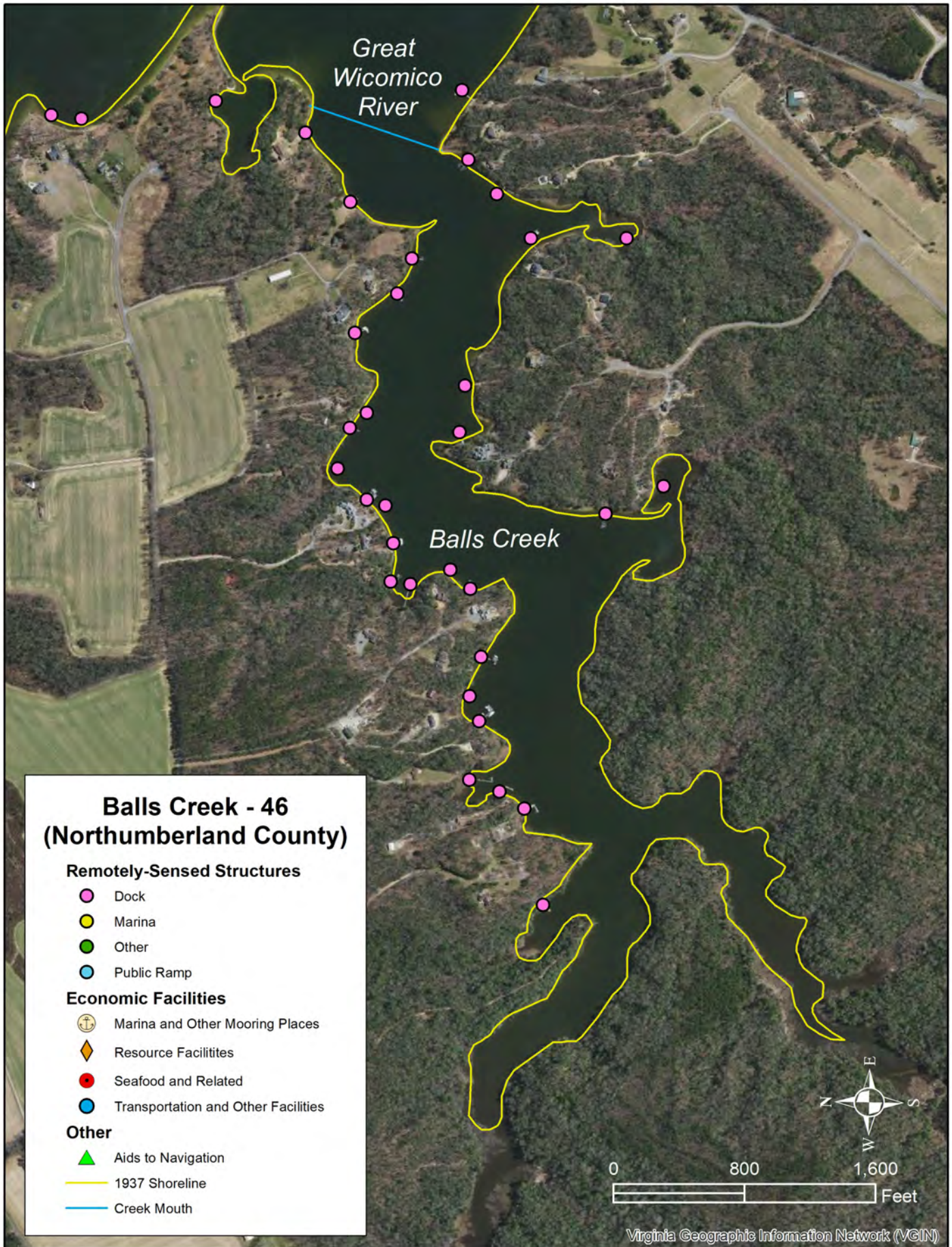
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Balls Creek**

Waterbody ID Number	46	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	7.3
Mouth Latitude	37.848800	Percent Lease Area/Waterbody Area	6%
Mouth Longitude	-76.372600	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	33,372
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	132.3	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	30
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

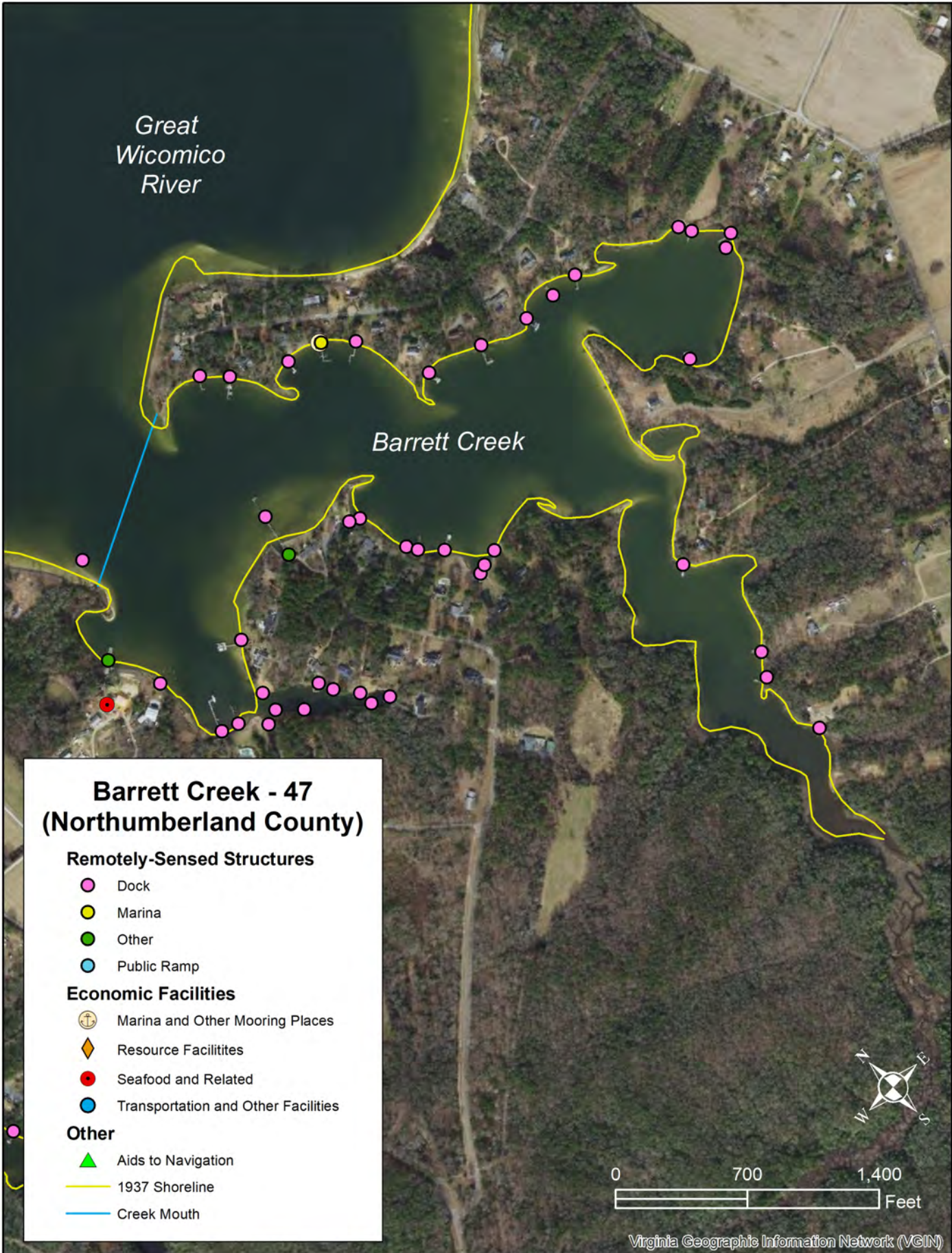
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Barrett Creek**

Waterbody ID Number	47	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	98.6
Mouth Latitude	37.842900	Percent Lease Area/Waterbody Area	90%
Mouth Longitude	-76.350900	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	23,305
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	109.3	Number of Docks/1000 linear ft	1.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	40
Total Businesses	1	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

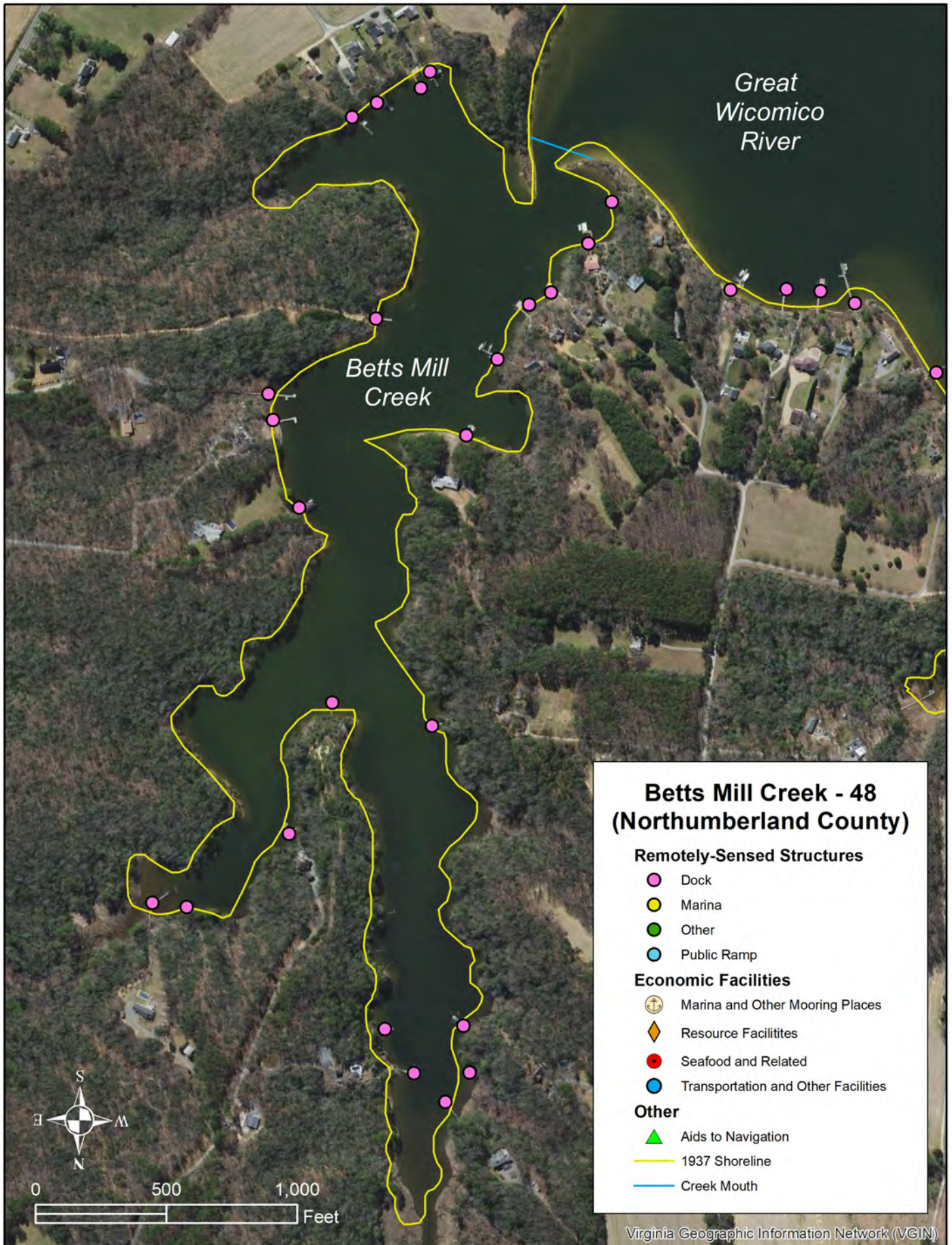
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Betts Mill Creek**

Waterbody ID Number	48	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	18.1
Mouth Latitude	37.861900	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.368400	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	17,663
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	60.9	Number of Docks/1000 linear ft	1.4
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	24
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

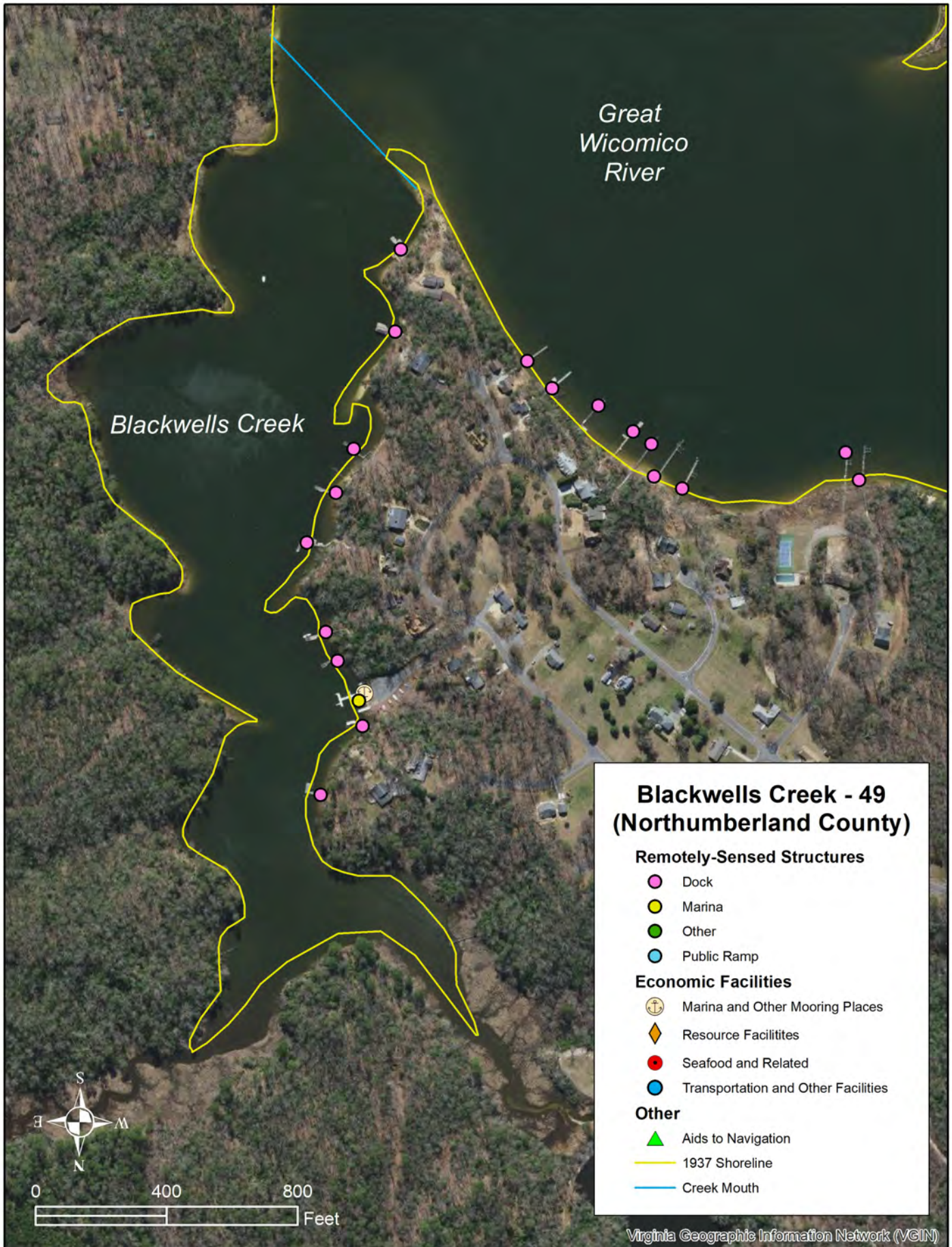
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Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Blackwells Creek**

Waterbody ID Number	49	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	19.5
Mouth Latitude	37.868900	Percent Lease Area/Waterbody Area	50%
Mouth Longitude	-76.389300	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	11,913
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	38.9	Number of Docks/1000 linear ft	0.8
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	9
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	0

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

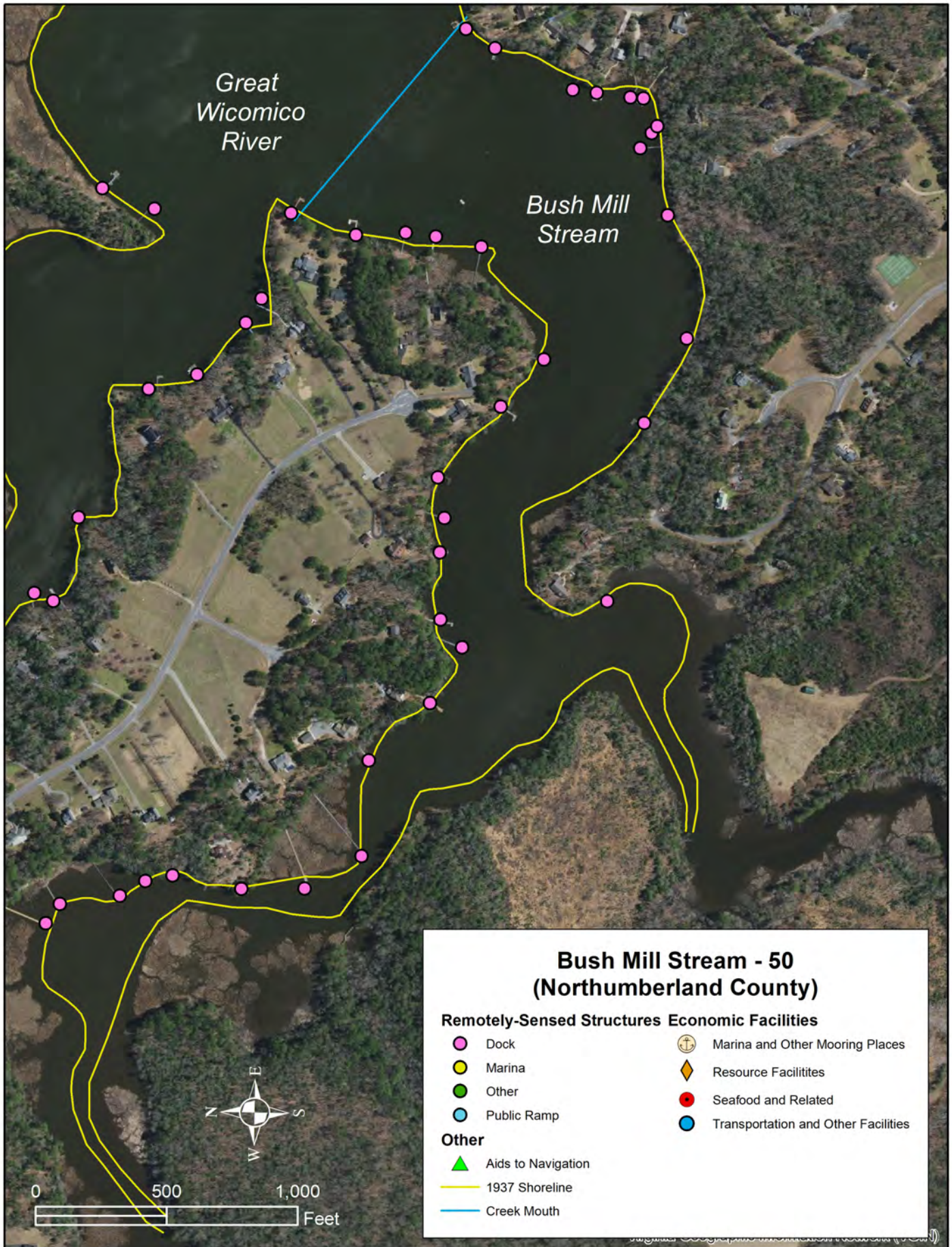
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Data Sheet for **Bush Mill Stream**

Waterbody ID Number	50	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.873400	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.431100	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	33,357
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	85.6	Number of Docks/1000 linear ft	1.0
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	34
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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**Coles Creek - 51
(Northumberland County)**

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Data Sheet for **Coles Creek**

Waterbody ID Number	51	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	12.2
Mouth Latitude	37.854200	Percent Lease Area/Waterbody Area	42%
Mouth Longitude	-76.360000	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	10,388
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	28.9	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	14
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

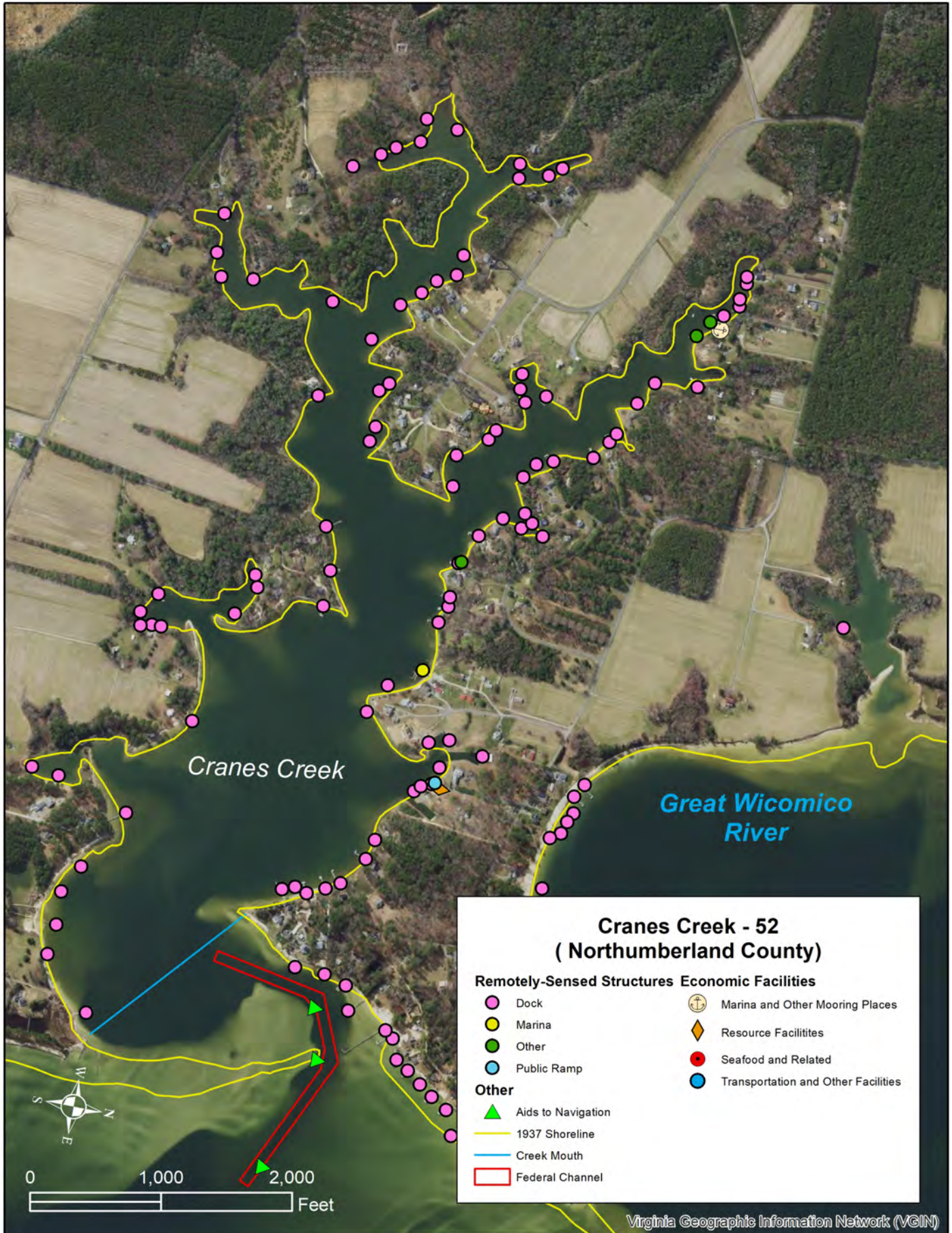
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Cranes Creek**

Waterbody ID Number	52	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	129.3
Mouth Latitude	37.812600	Percent Lease Area/Waterbody Area	54%
Mouth Longitude	-76.310100	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	50,646
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	239.8	Number of Docks/1000 linear ft	1.9
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	94
Total Businesses	0	Number of Marinas	1
Total Resources	1	Number of Public Ramps	1
Combined Total	2	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

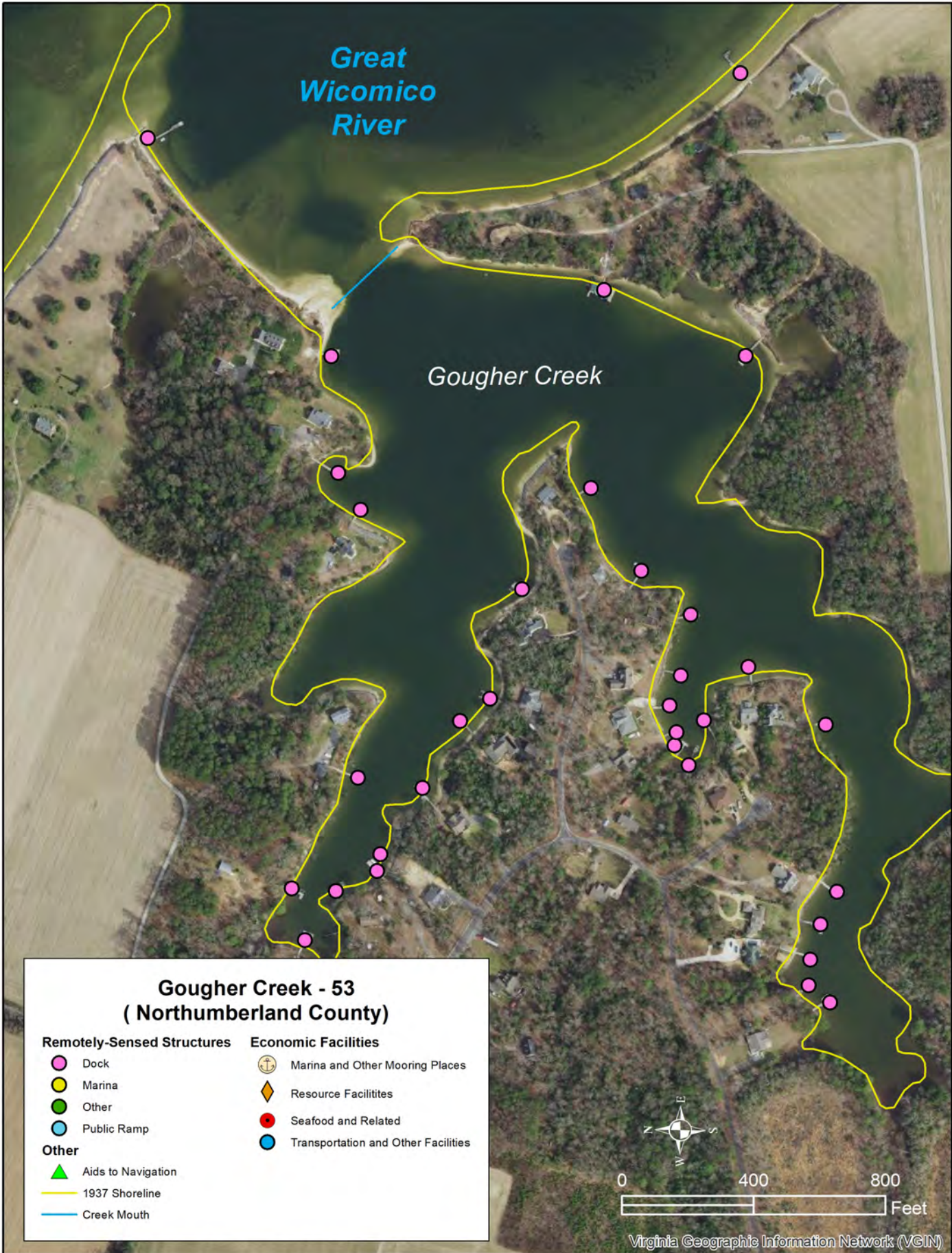
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Gougher Creek**

Waterbody ID Number	53	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	19.0
Mouth Latitude	37.833000	Percent Lease Area/Waterbody Area	37%
Mouth Longitude	-76.324300	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	15,245
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	51.8	Number of Docks/1000 linear ft	2.0
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	31
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Great
Wicomico
River

Horn Harbor

Virginia Geographic Information
Network (VGIN)

Horn Harbor - 54 (Northumberland County)

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

0 500 1,000 Feet



Virginia Geographic Information Network (VGIN)

Data Sheet for **Horn Harbor**

Waterbody ID Number	54	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	21.1
Mouth Latitude	37.852400	Percent Lease Area/Waterbody Area	43%
Mouth Longitude	-76.343100	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	13,882
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	49.0	Number of Docks/1000 linear ft	1.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	14
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

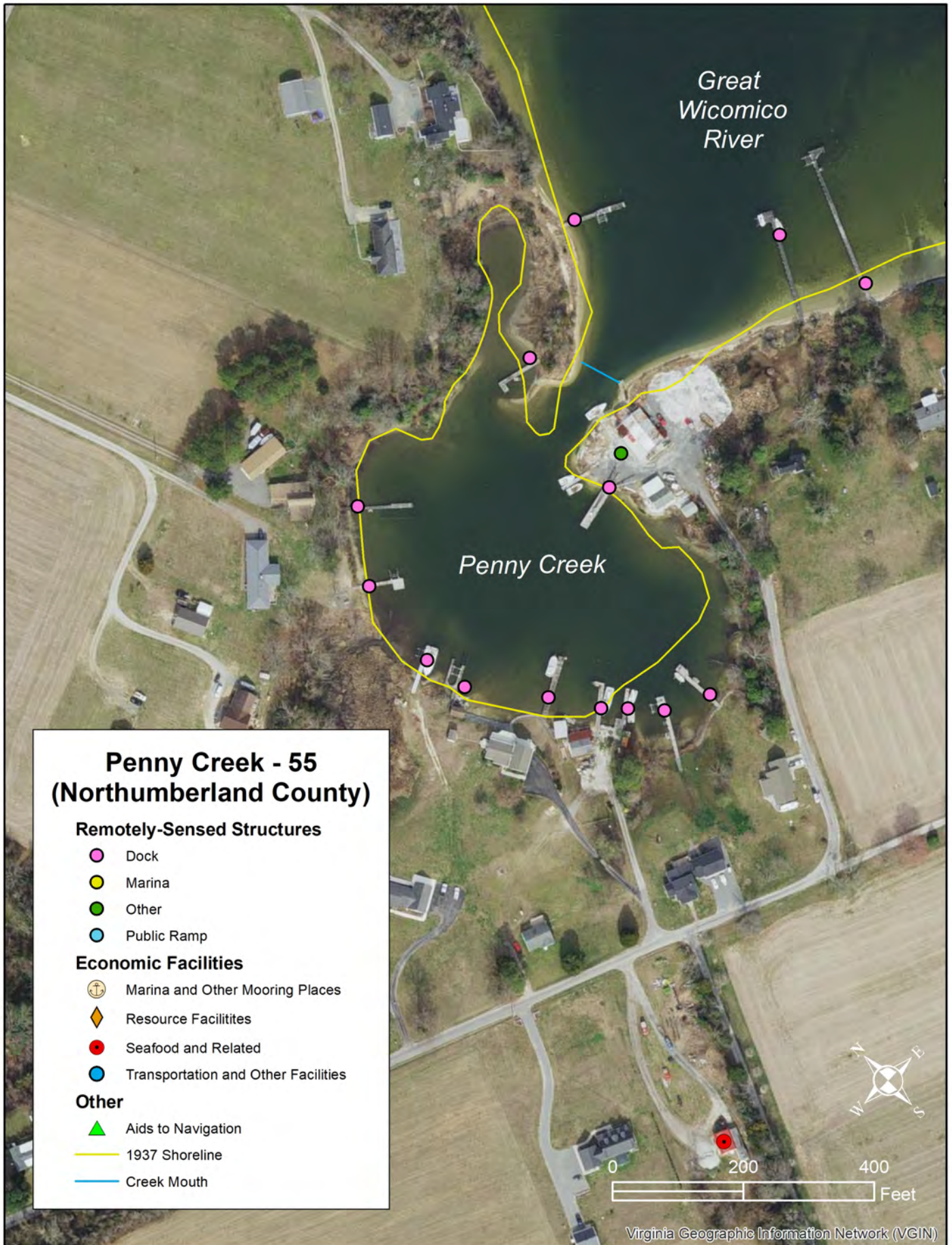
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Penny Creek

Waterbody ID Number	55	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	2.7
Mouth Latitude	37.839200	Percent Lease Area/Waterbody Area	46%
Mouth Longitude	-76.329600	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	2,680
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	5.8	Number of Docks/1000 linear ft	4.1
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	11
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Chesapeake Bay

Reason Creek - 56 (Northumberland County)

- | Remotely-Sensed Structures | Economic Facilities |
|---|---|
|  Dock |  Marina and Other Mooring Places |
|  Marina |  Resource Facilities |
|  Other |  Seafood and Related |
|  Public Ramp |  Transportation and Other Facilities |
- Other**
-  Aids to Navigation
 -  1937 Shoreline
 -  Creek Mouth

Great Wicomico River

Reason Creek



Data Sheet for Reason Creek

Waterbody ID Number	56	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	52.8
Mouth Latitude	37.832800	Percent Lease Area/Waterbody Area	70%
Mouth Longitude	-76.297300	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	18,185
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	75.0	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	16
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

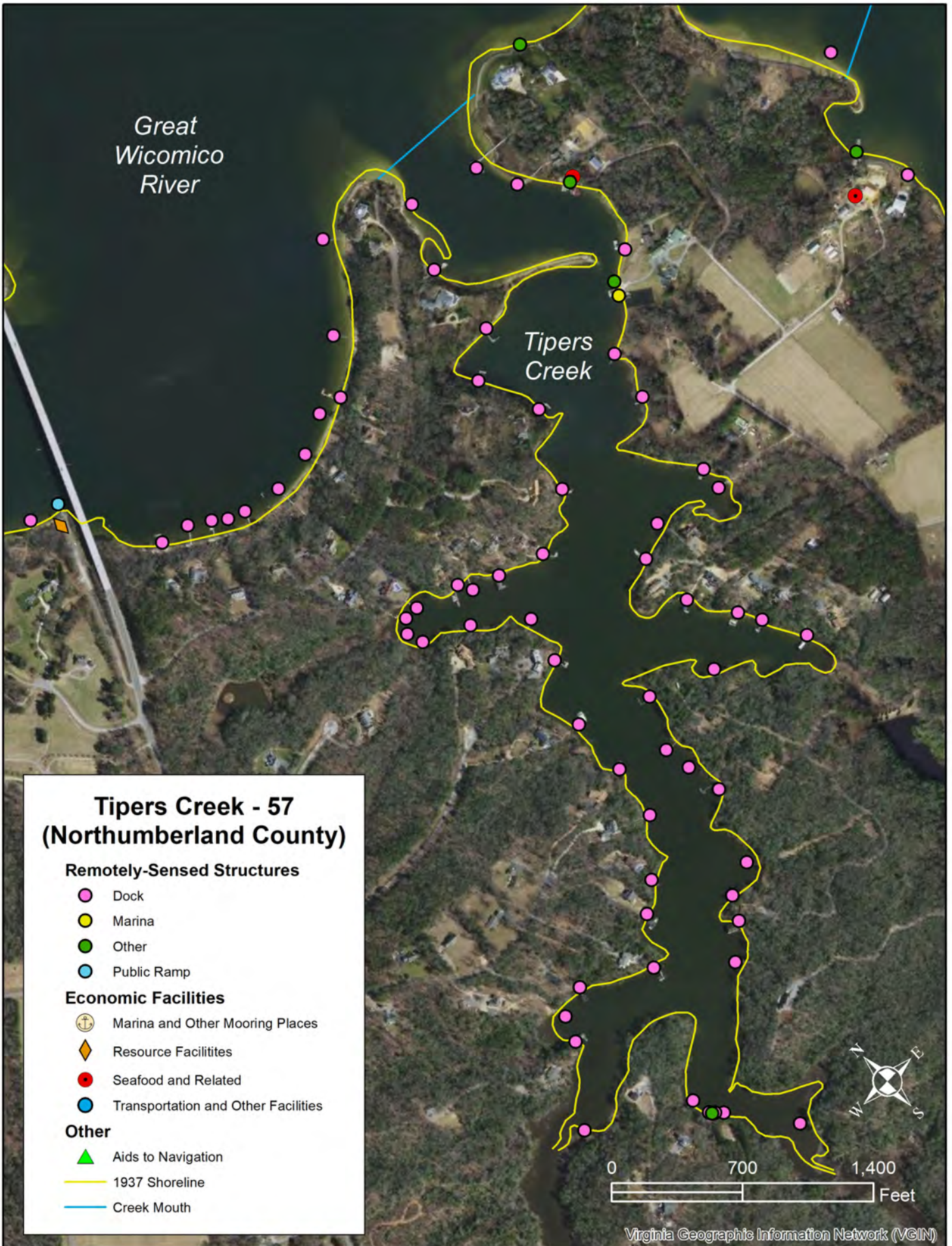
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Tipers Creek**

Waterbody ID Number	57	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	42.3
Mouth Latitude	37.846000	Percent Lease Area/Waterbody Area	42%
Mouth Longitude	-76.358900	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	26,666
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	100.1	Number of Docks/1000 linear ft	2.0
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	54
Total Businesses	1	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

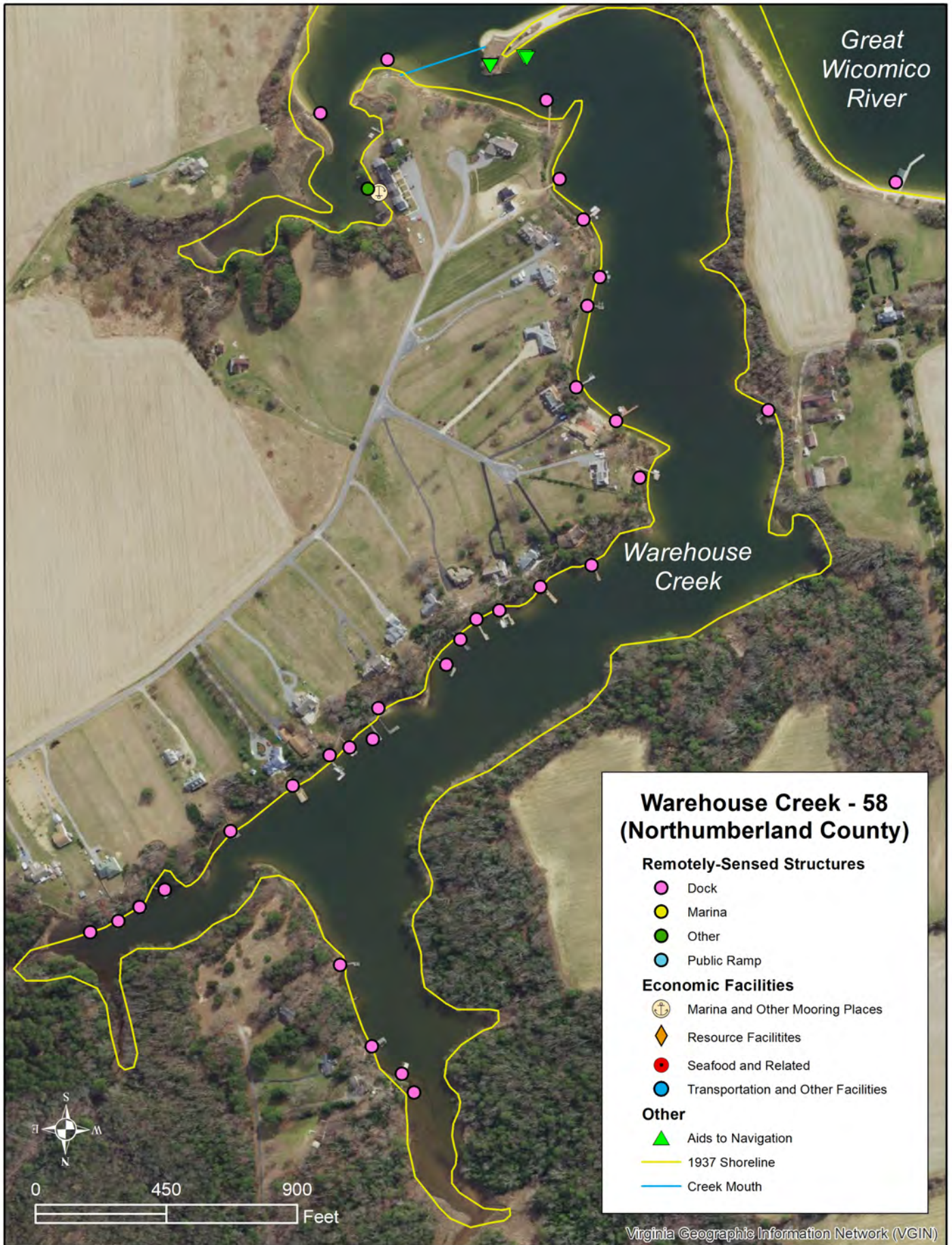
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Warehouse Creek

Waterbody ID Number	58	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	5.8
Mouth Latitude	37.847700	Percent Lease Area/Waterbody Area	10%
Mouth Longitude	-76.317000	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	15,535
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	55.4	Number of Docks/1000 linear ft	1.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	29
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

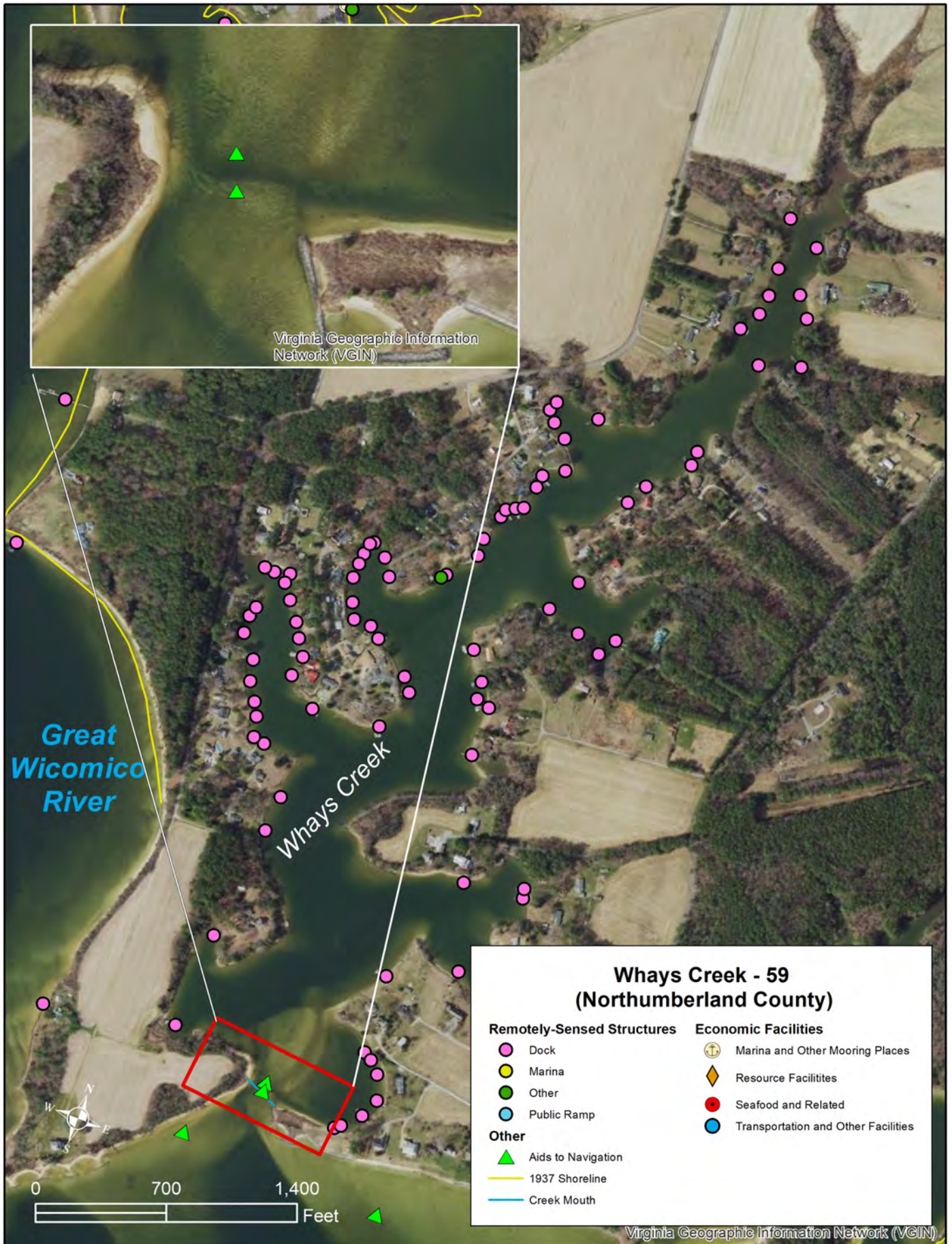
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Whays Creek

Waterbody ID Number	59	Main Waterbody	Great Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	44.7
Mouth Latitude	37.833600	Percent Lease Area/Waterbody Area	46%
Mouth Longitude	-76.310600	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	26,477
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	96.6	Number of Docks/1000 linear ft	3.4

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	91
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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**Bells Creek - 62
(Northumberland County)**

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Data Sheet for **Bells Creek**

Waterbody ID Number	62	Main Waterbody	Indian Creek
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	20.3
Mouth Latitude	37.689400	Percent Lease Area/Waterbody Area	61%
Mouth Longitude	-76.336100	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	11,033
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	33.3	Number of Docks/1000 linear ft	2.6
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	29
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	4

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

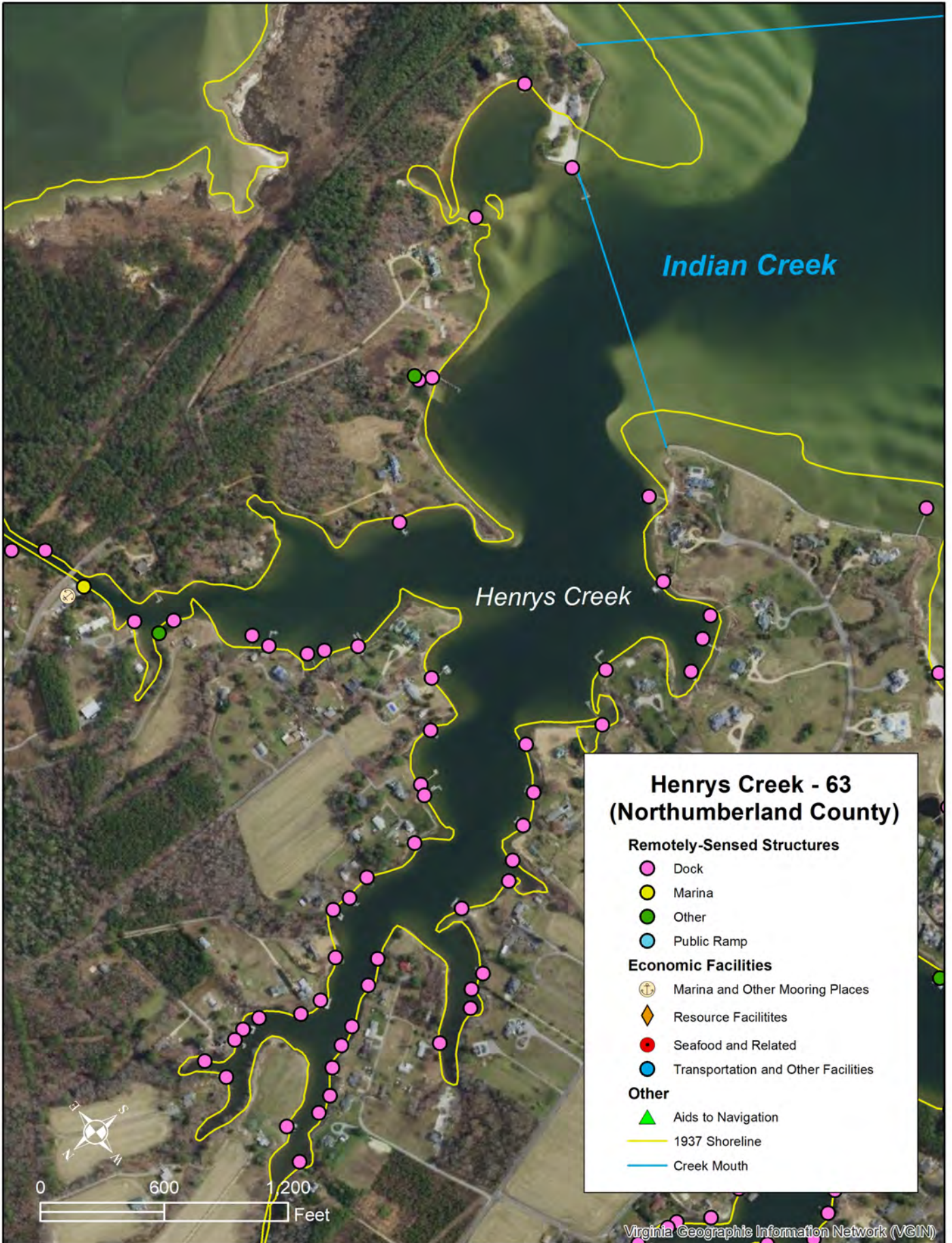
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Henrys Creek**

Waterbody ID Number	63	Main Waterbody	Indian Creek
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	33.1
Mouth Latitude	37.687200	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.321800	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	28,132
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	108.8	Number of Docks/1000 linear ft	2.0
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	55
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Chesapeake Bay

Cockrell Creek - 64 (Northumberland County)

- | Remotely-Sensed Structures | | Economic Facilities | |
|----------------------------|----------------|---------------------------------|-------------------------------------|
| Dock | Marina | Marina and Other Mooring Places | Resource Facilities |
| Other | Public Ramp | Seafood and Related | Transportation and Other Facilities |
| Other | | | |
| Aids to Navigation | 1937 Shoreline | | |
| Creek Mouth | | | |

Cockrell Creek

Great Wicomico River



0 2,000 4,000 Feet

Data Sheet for **Cockrell Creek**

Waterbody ID Number	64	Main Waterbody	Ingram Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	93.4
Mouth Latitude	37.819900	Percent Lease Area/Waterbody Area	12%
Mouth Longitude	-76.282600	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	130,058
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	753.5	Number of Docks/1000 linear ft	2.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	11	Number of Docks	275
Total Businesses	6	Number of Marinas	7
Total Resources	2	Number of Public Ramps	1
Combined Total	19	Number of Other Structures	17

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Great Wicomico River - 65 (Northumberland County)

- | Remotely-Sensed Structures | | Economic Facilities | |
|----------------------------|--------------------|---------------------|-------------------------------------|
| | Dock | | Marina and Other Mooring Places |
| | Marina | | Resource Facilities |
| | Other | | Seafood and Related |
| | Public Ramp | | Transportation and Other Facilities |
| Other | | | |
| | Aids to Navigation | | |
| | 1937 Shoreline | | |
| | Creek Mouth | | |

Chesapeake Bay

Great Wicomico River



0 6,000 12,000 Feet



Virginia Geographic Information Network (VGIN)

Virginia Geographic Information Network (VGIN)

Data Sheet for **Great Wicomico River**

Waterbody ID Number	65	Main Waterbody	Ingram Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	1710.1
Mouth Latitude	37.810300	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.294800	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	671,264
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	3,771.9	Number of Docks/1000 linear ft	1.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	21	Number of Docks	1044
Total Businesses	9	Number of Marinas	17
Total Resources	7	Number of Public Ramps	5
Combined Total	37	Number of Other Structures	43

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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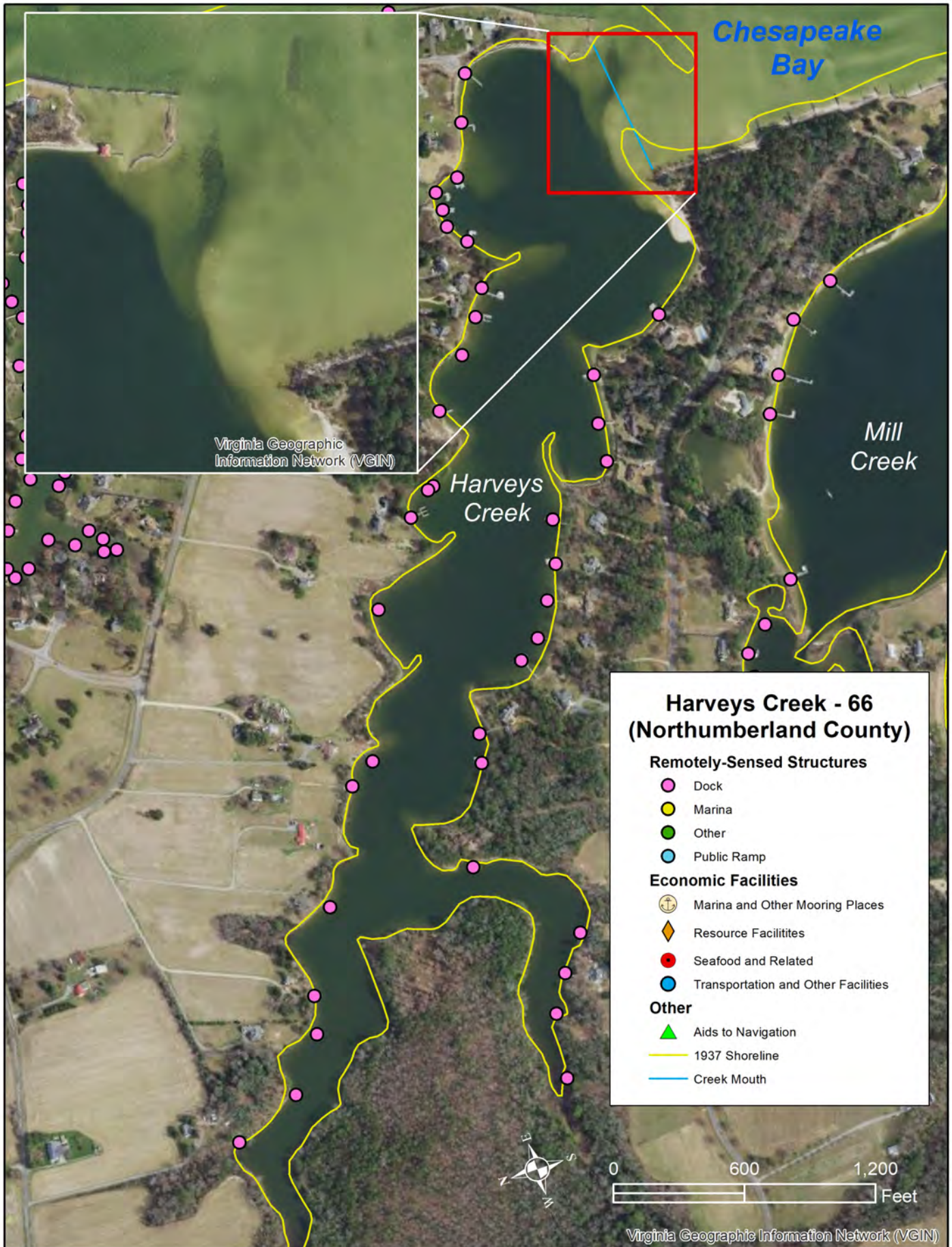
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Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Harveys Creek**

Waterbody ID Number	66	Main Waterbody	Ingram Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	46.6
Mouth Latitude	37.796400	Percent Lease Area/Waterbody Area	54%
Mouth Longitude	-76.310600	Tide Range (ft)	1.16
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	19,494
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	86.1	Number of Docks/1000 linear ft	1.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	38
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Mill Creek - 67 (Northumberland County)

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

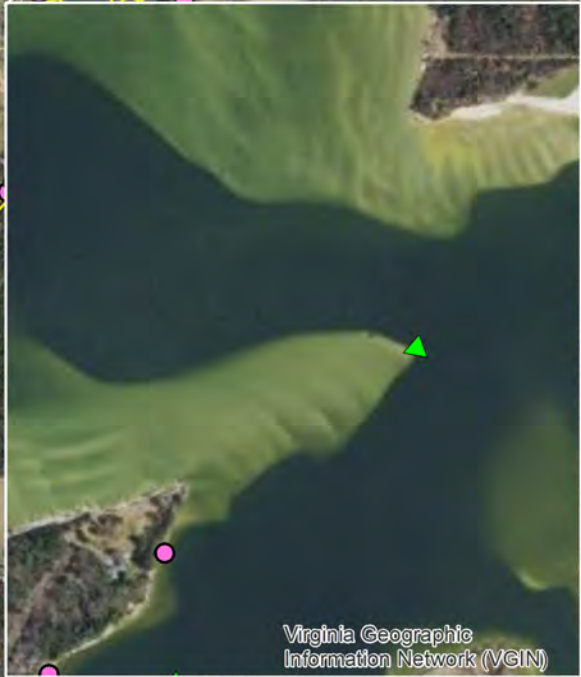
- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Chesapeake Bay

Mill Creek



Virginia Geographic Information Network (VGIN)



Virginia Geographic Information Network (VGIN)

Data Sheet for **Mill Creek**

Waterbody ID Number	67	Main Waterbody	Ingram Bay
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	182.5
Mouth Latitude	37.789500	Percent Lease Area/Waterbody Area	29%
Mouth Longitude	-76.309300	Tide Range (ft)	1.16
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	92,511
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	637.9	Number of Docks/1000 linear ft	0.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	68
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Towles Creek**

Waterbody ID Number	68	Main Waterbody	Ingram Bay
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.803000	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.307000	Tide Range (ft)	1.16
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	8,289
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Yes
Waterbody Area (acres)	19.1	Number of Docks/1000 linear ft	4.1
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	34
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	1

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

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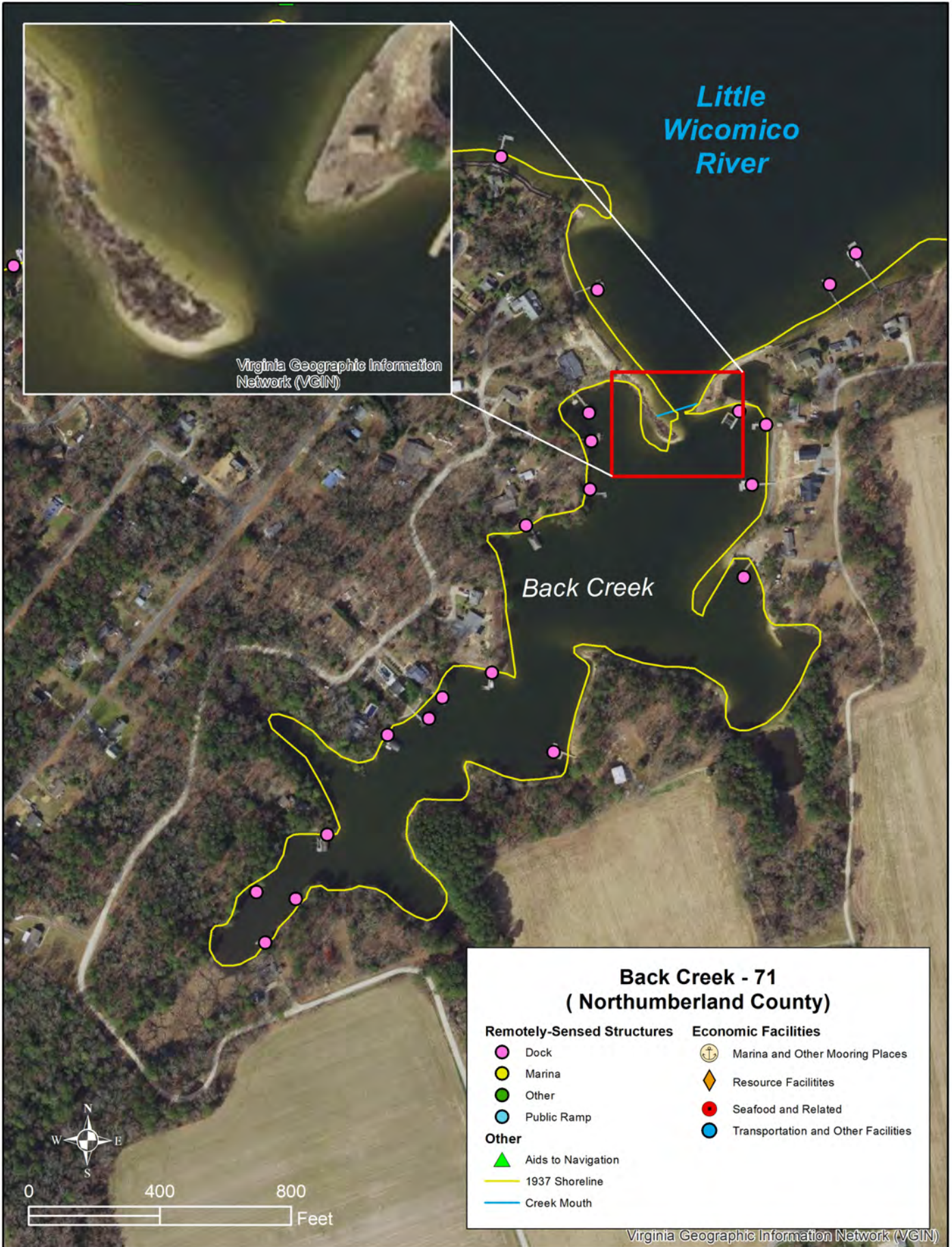
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Data Sheet for **Back Creek**

Waterbody ID Number	71	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	17.4
Mouth Latitude	37.886300	Percent Lease Area/Waterbody Area	69%
Mouth Longitude	-76.283100	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	9,065
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	25.2	Number of Docks/1000 linear ft	1.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	17
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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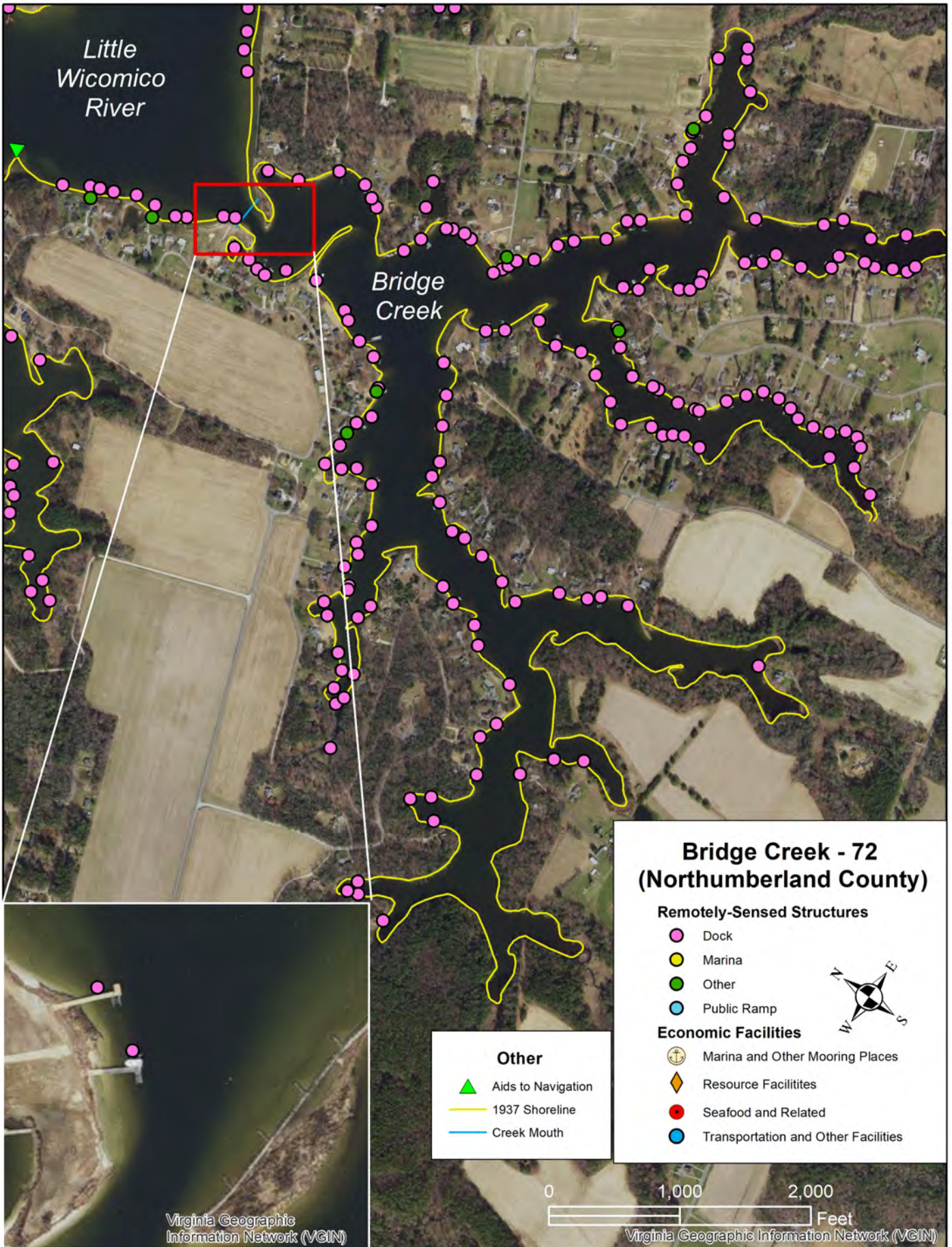
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Data Sheet for **Bridge Creek**

Waterbody ID Number	72	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	88.2
Mouth Latitude	37.883200	Percent Lease Area/Waterbody Area	46%
Mouth Longitude	-76.276100	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	56,534
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	192.3	Number of Docks/1000 linear ft	2.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	165
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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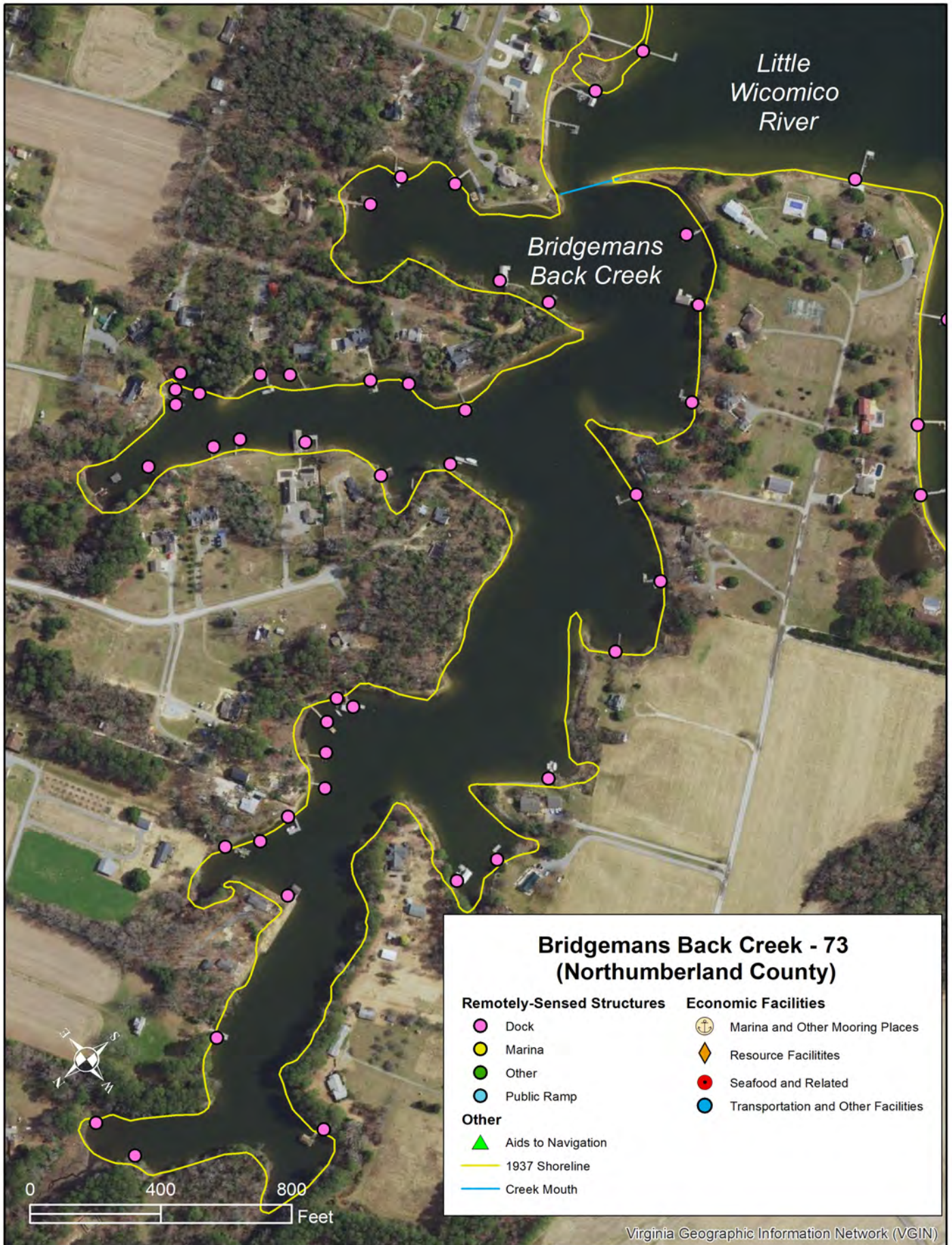
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Data Sheet for **Bridgemans Back Creek**

Waterbody ID Number	73	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	26.6
Mouth Latitude	37.893100	Percent Lease Area/Waterbody Area	57%
Mouth Longitude	-76.278000	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	15,550
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	47.0	Number of Docks/1000 linear ft	2.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	42
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

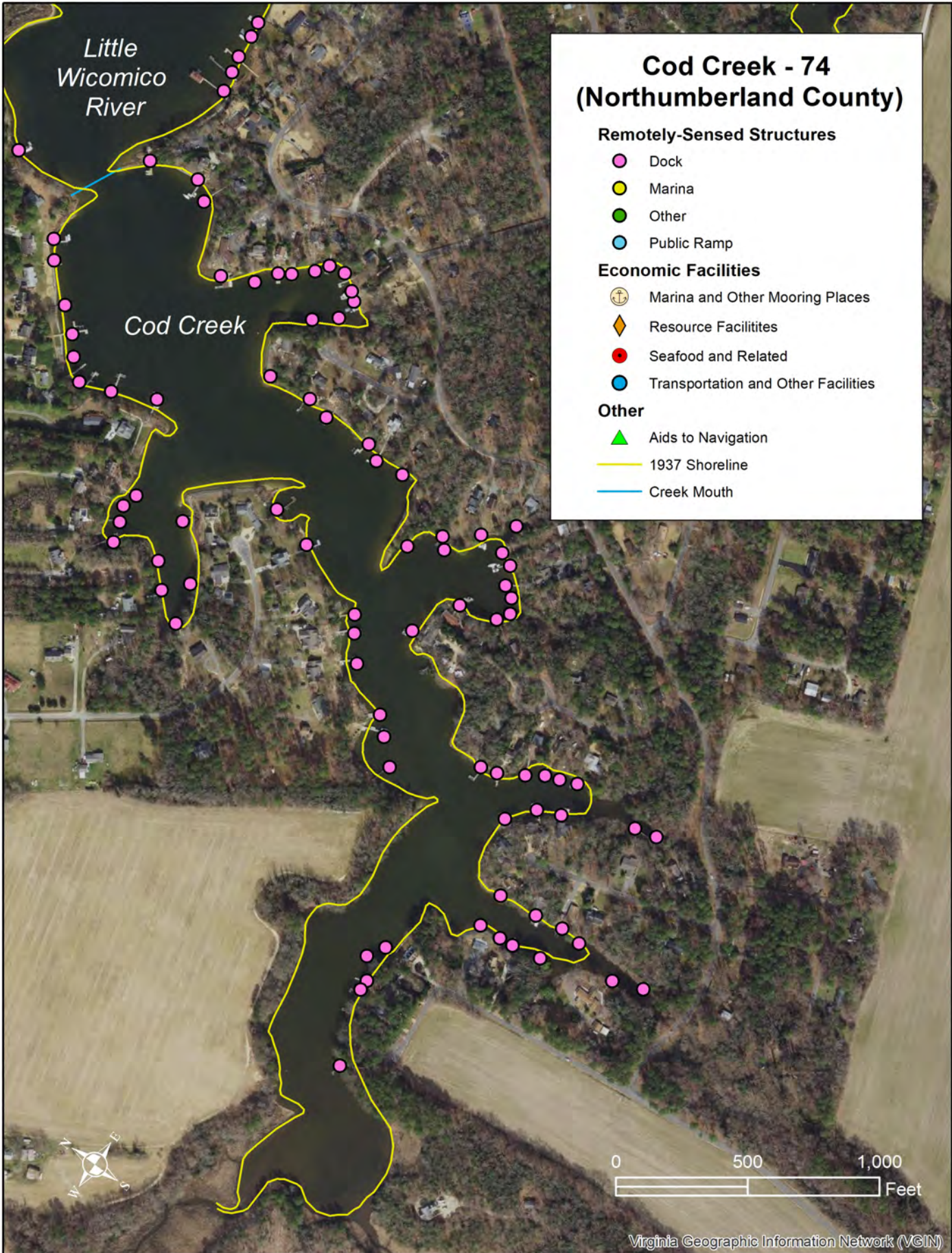
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Cod Creek_LWR

Waterbody ID Number	74	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	15.8
Mouth Latitude	37.887500	Percent Lease Area/Waterbody Area	28%
Mouth Longitude	-76.294300	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	19,613
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	57.3	Number of Docks/1000 linear ft	4.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	84
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

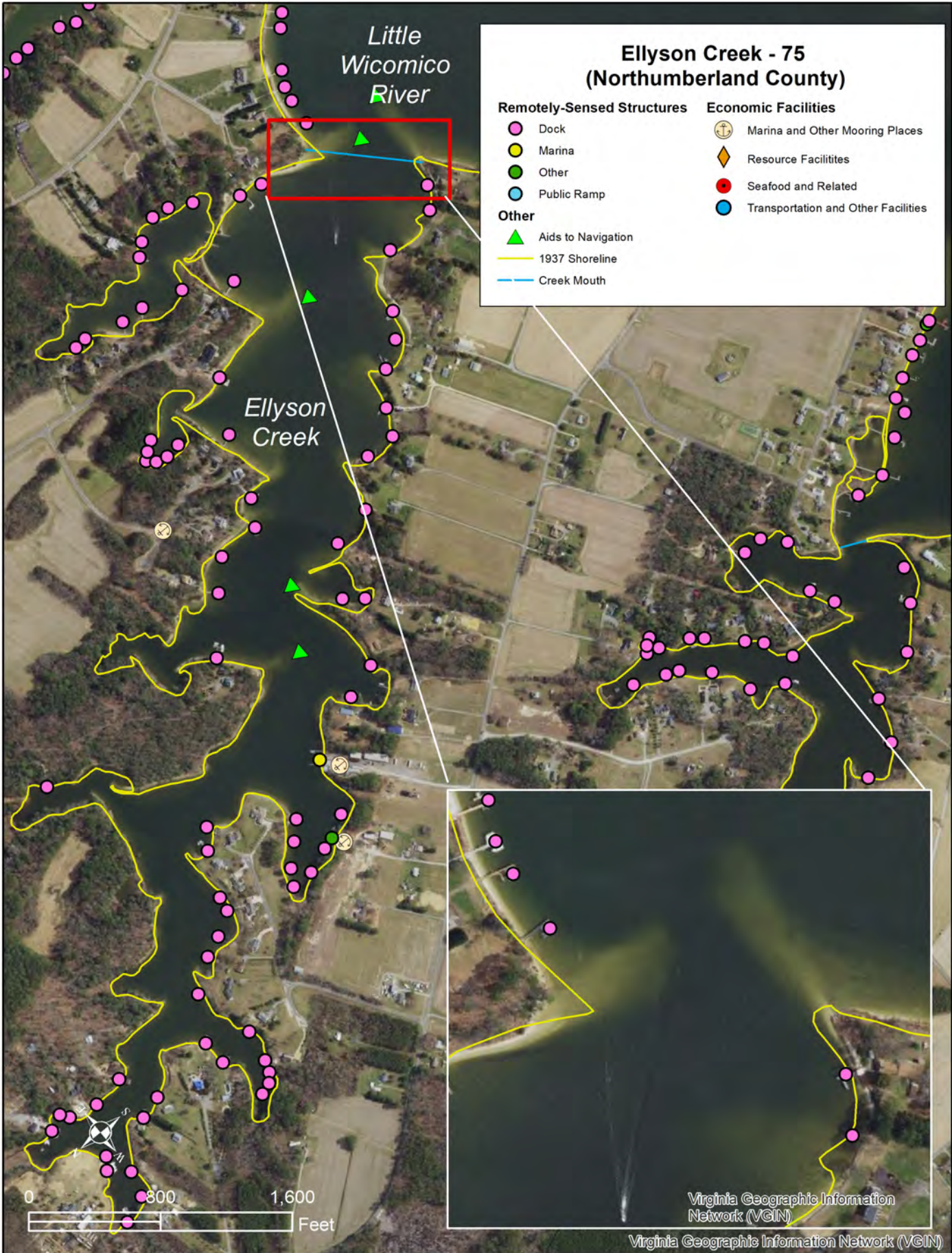
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Ellyson Creek

Waterbody ID Number	75	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	76.7
Mouth Latitude	37.895300	Percent Lease Area/Waterbody Area	57%
Mouth Longitude	-76.265200	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	34,697
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	134.4	Number of Docks/1000 linear ft	2.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	3	Number of Docks	75
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	3	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

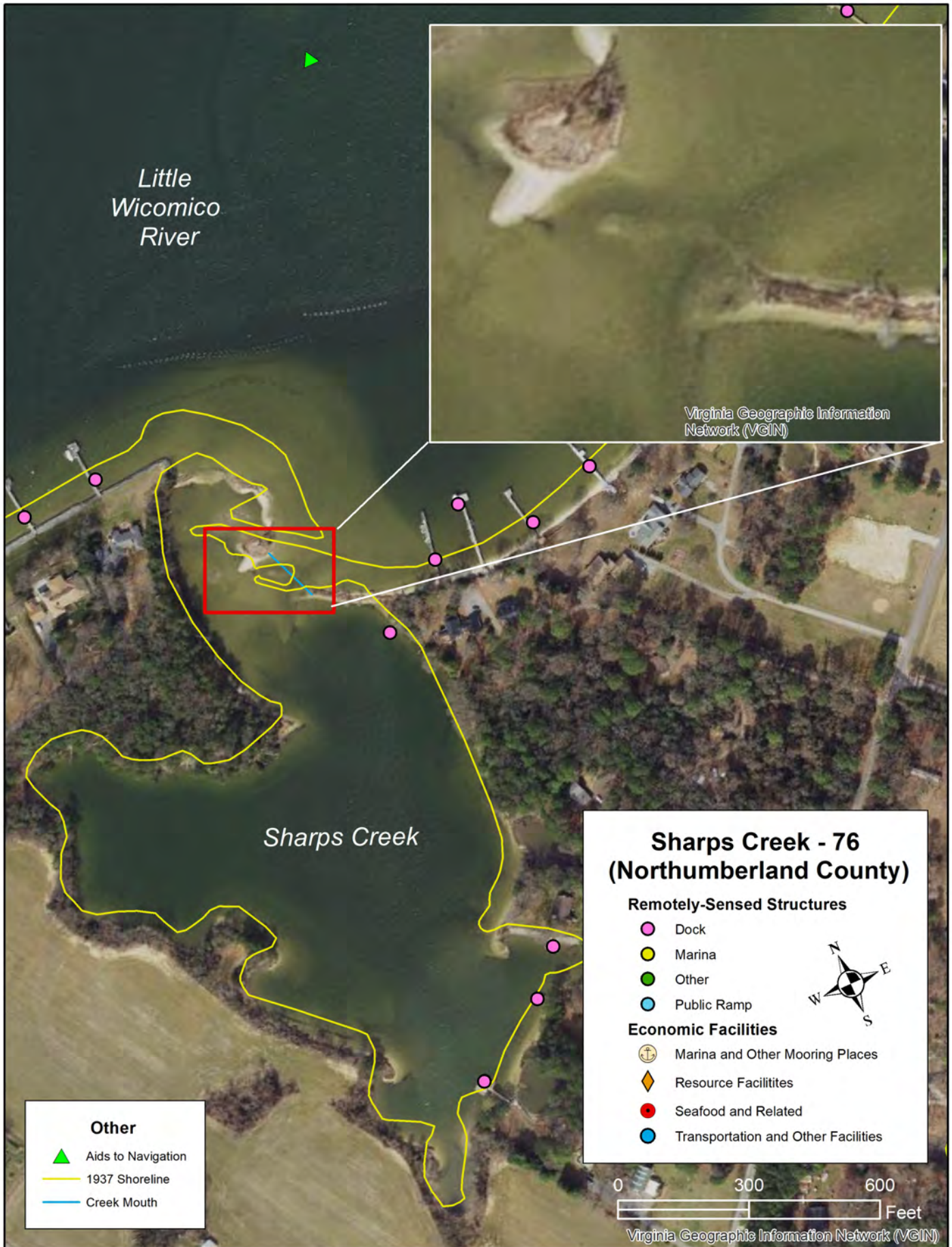
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



**Sharps Creek - 76
(Northumberland County)**

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for **Sharps Creek**

Waterbody ID Number	76	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.887100	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.260600	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	6,972
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	20.8	Number of Docks/1000 linear ft	0.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	4
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

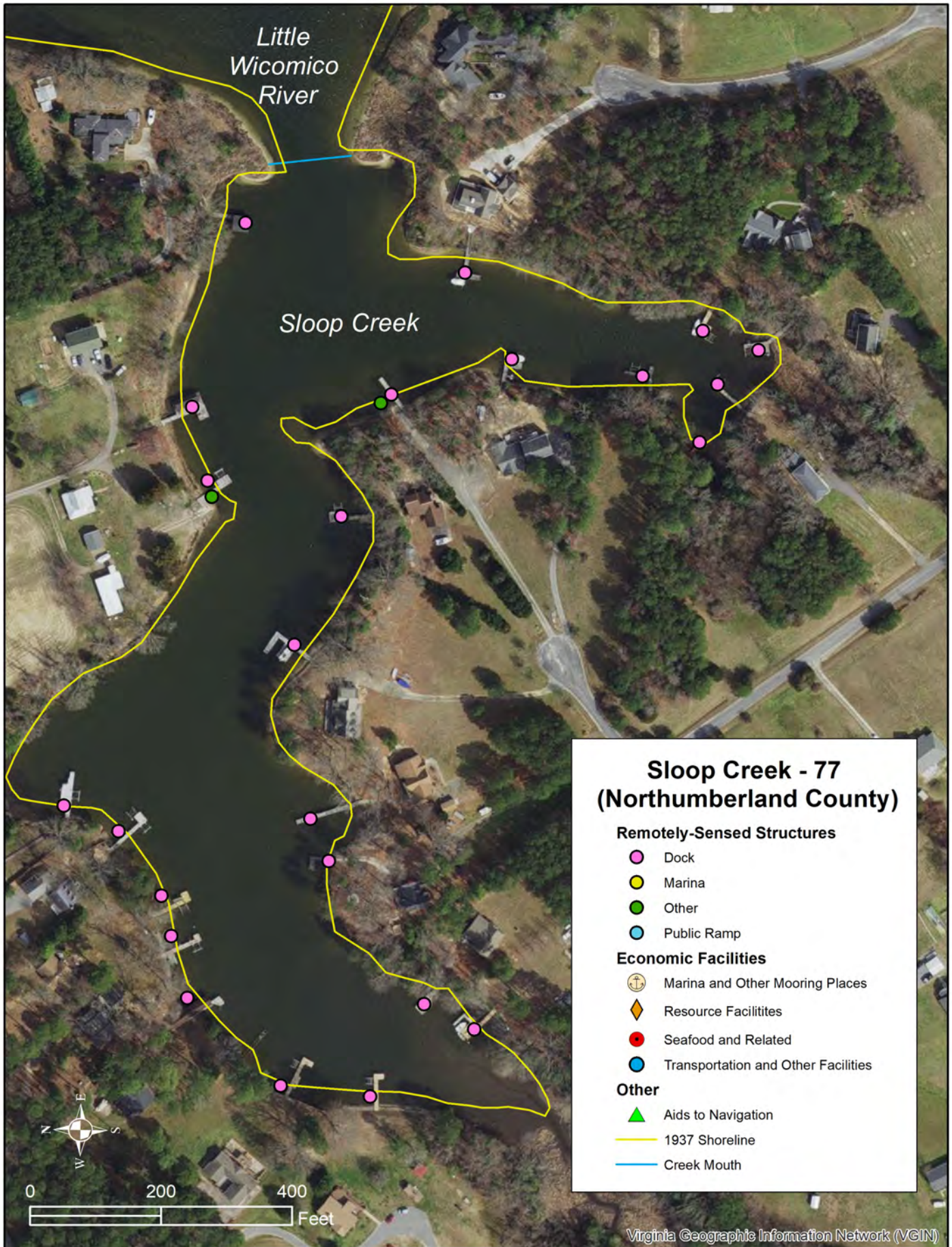
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Sloop Creek

Waterbody ID Number	77	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	3.0
Mouth Latitude	37.889900	Percent Lease Area/Waterbody Area	22%
Mouth Longitude	-76.298200	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	6,020
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	13.8	Number of Docks/1000 linear ft	4.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	24
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Slough Creek - 78 (Northumberland County)

- | Remotely-Sensed Structures | Economic Facilities |
|----------------------------|-------------------------------------|
| Dock | Marina and Other Mooring Places |
| Marina | Resource Facilities |
| Other | Seafood and Related |
| Public Ramp | Transportation and Other Facilities |
- Other**
- Aids to Navigation
 - 1937 Shoreline
 - Creek Mouth



Data Sheet for **Slough Creek**

Waterbody ID Number	78	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	3.5
Mouth Latitude	37.884900	Percent Lease Area/Waterbody Area	10%
Mouth Longitude	-76.252800	Tide Range (ft)	1.00
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	12,179
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	35.5	Number of Docks/1000 linear ft	2.2
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	4	Number of Docks	27
Total Businesses	0	Number of Marinas	3
Total Resources	0	Number of Public Ramps	0
Combined Total	4	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Spences Creek - 79 (Northumberland County)

Remotely-Sensed Structures

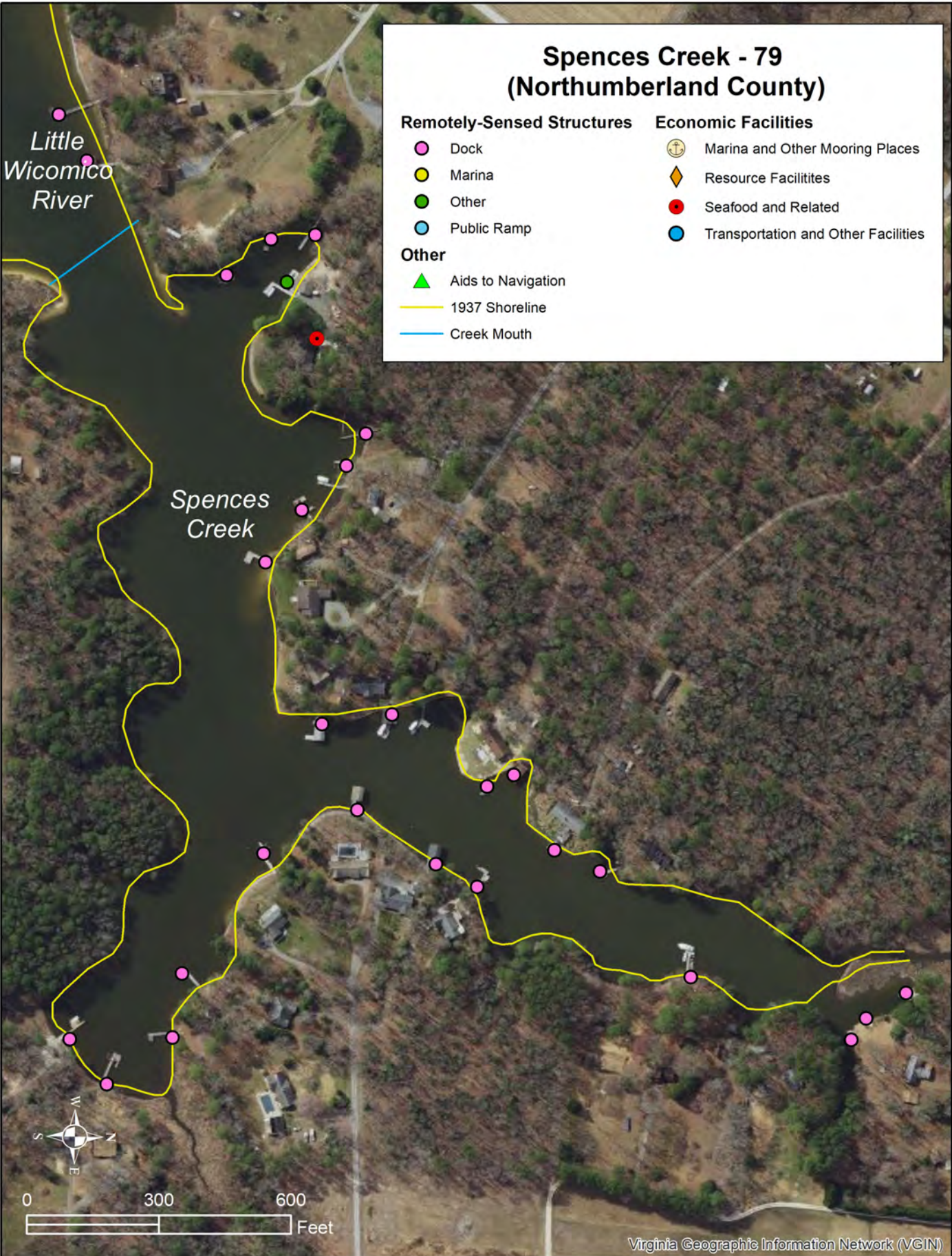
- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Economic Facilities

- Ⓜ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for Spences Creek

Waterbody ID Number	79	Main Waterbody	Little Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	6.9
Mouth Latitude	37.899400	Percent Lease Area/Waterbody Area	28%
Mouth Longitude	-76.298500	Tide Range (ft)	1.00
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	10,688
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	25.2	Number of Docks/1000 linear ft	2.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	25
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Cod Creek Primary - 93 (Northumberland County)

Remotely-Sensed Structures

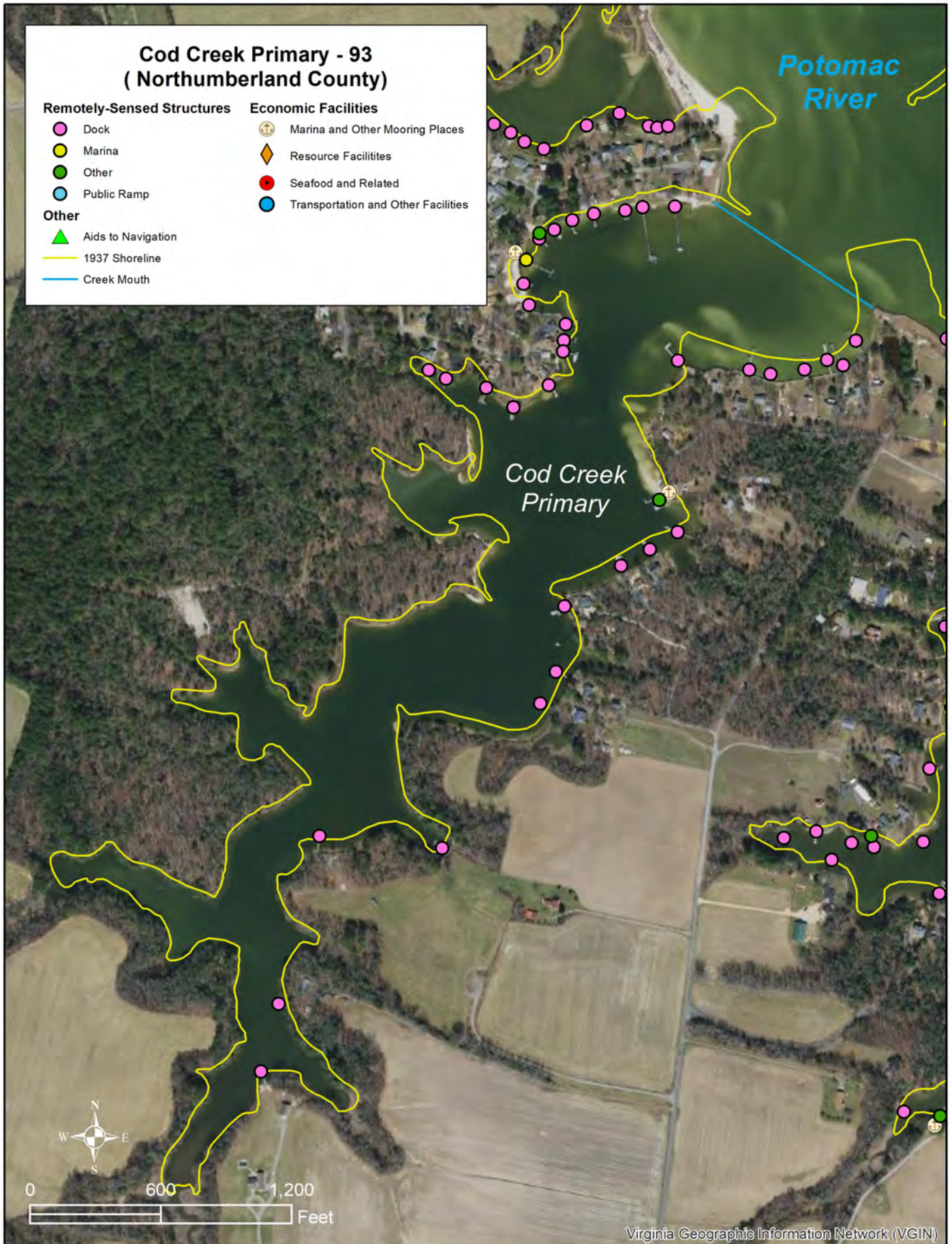
- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for Cod Creek_PR

Waterbody ID Number	93	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	1.5
Mouth Latitude	37.979100	Percent Lease Area/Waterbody Area	2%
Mouth Longitude	-76.438200	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	23,928
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	88.3	Number of Docks/1000 linear ft	1.4

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	34
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Cod Creek East - 94 (Northumberland County)

Remotely-Sensed Structures

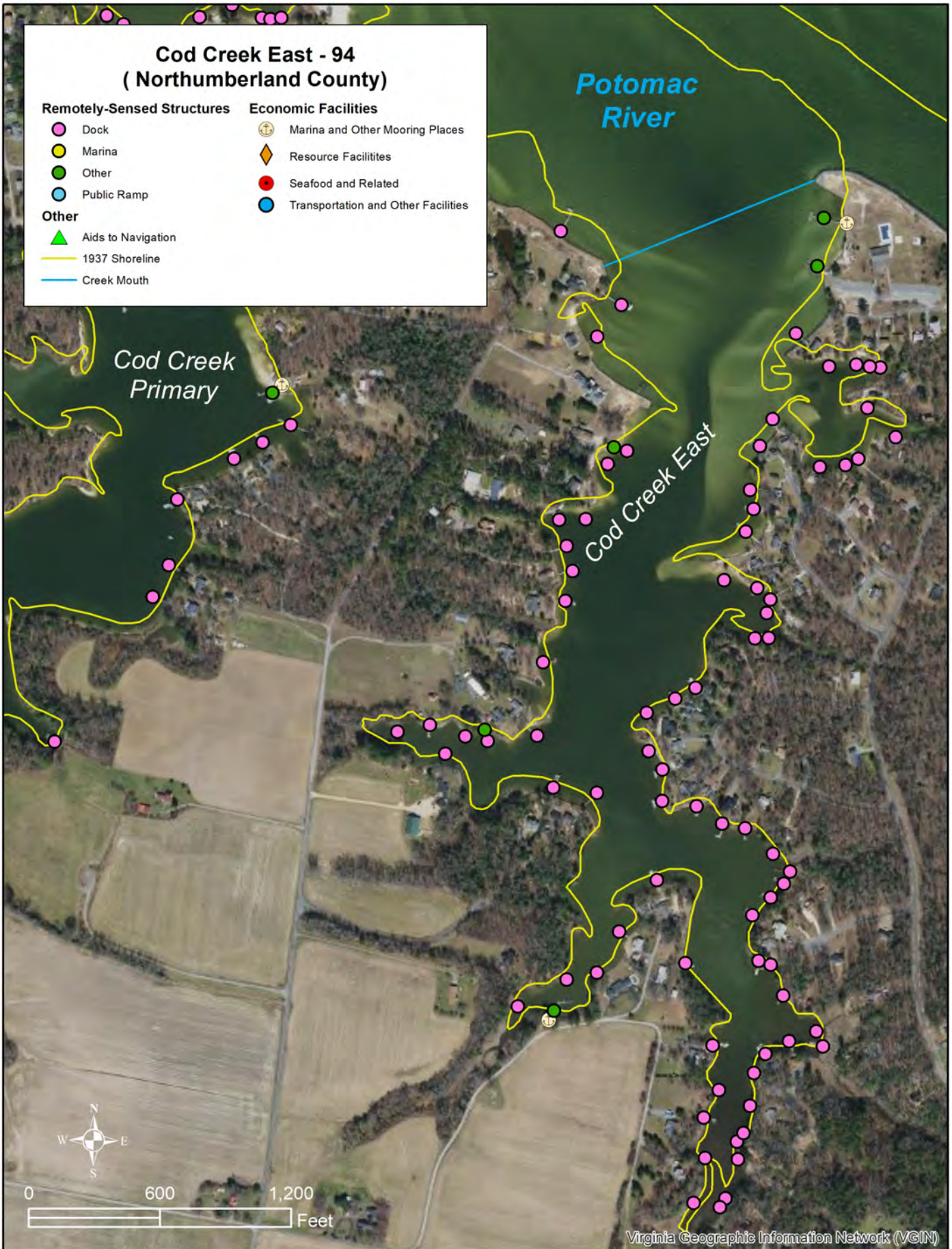
- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for **Cod Creek East**

Waterbody ID Number	94	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	0.5
Mouth Latitude	37.978100	Percent Lease Area/Waterbody Area	1%
Mouth Longitude	-76.433500	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	21,998
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	81.5	Number of Docks/1000 linear ft	3.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	78
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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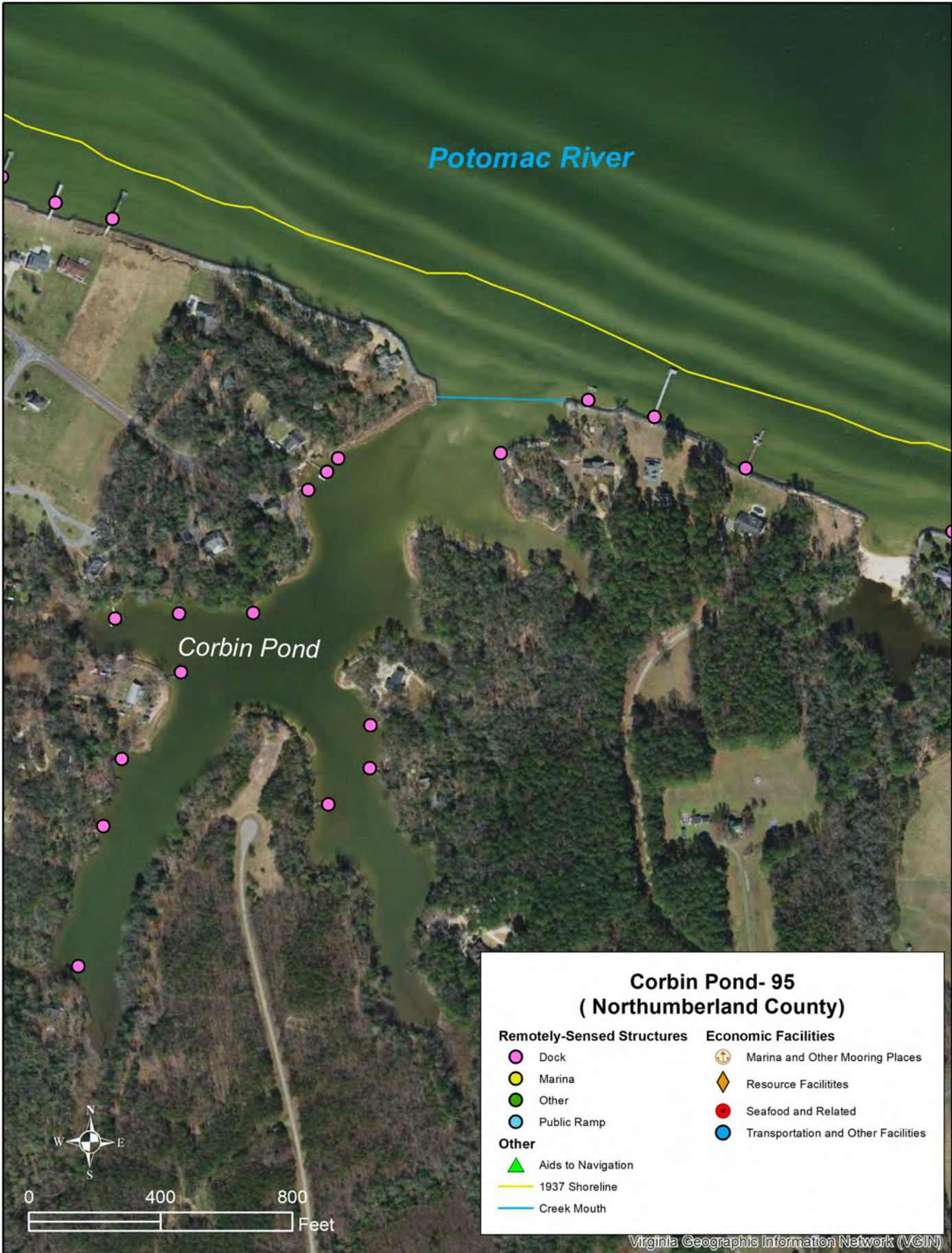
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Potomac River

Corbin Pond

**Corbin Pond- 95
(Northumberland County)**

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Economic Facilities

- ⚓ Marina and Other Mooring Places
- ◆ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities



Data Sheet for **Corbin Pond**

Waterbody ID Number	95	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.960800	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.401200	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	10,609
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	24.8	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	14
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

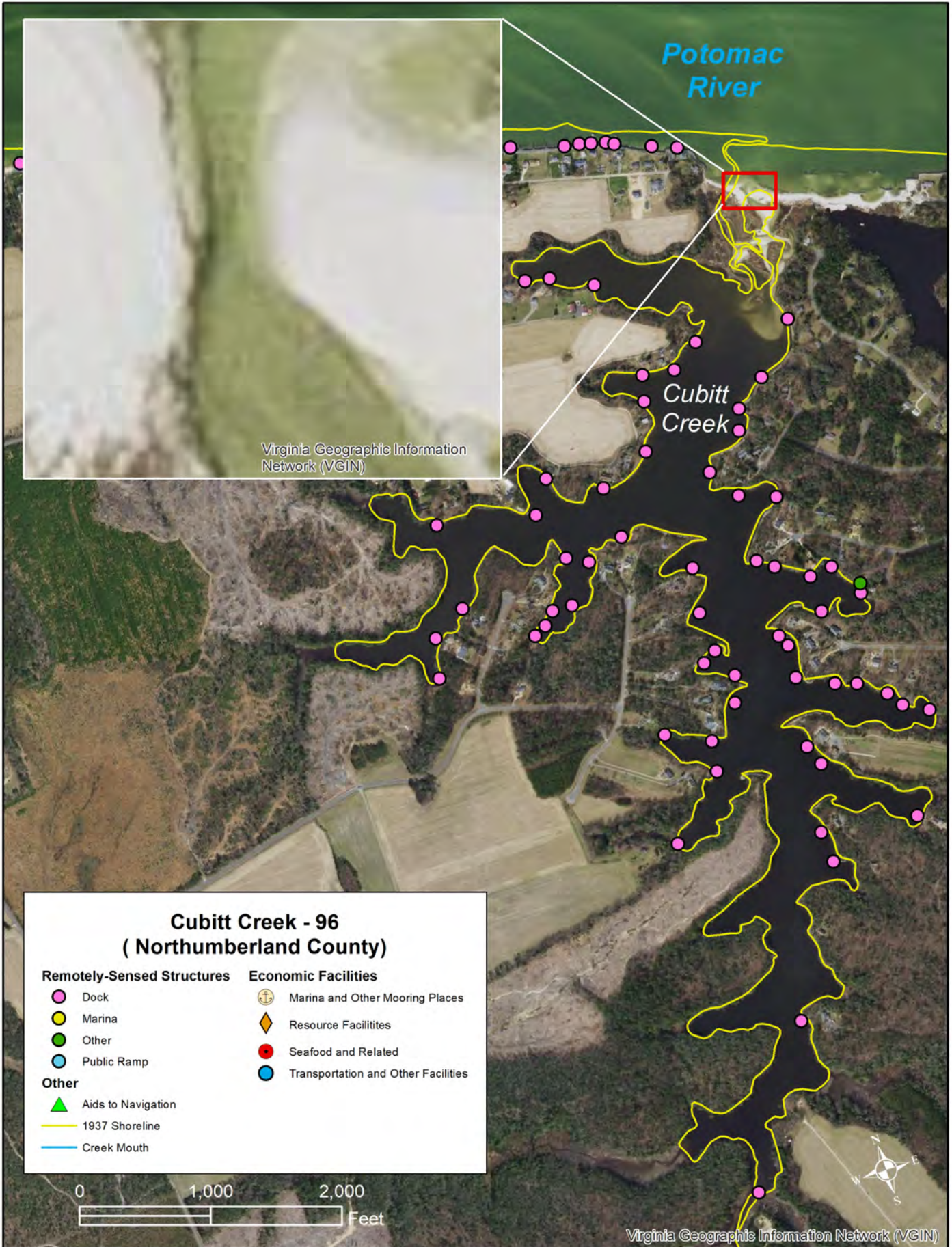
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Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Cubitt Creek**

Waterbody ID Number	96	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	14.7
Mouth Latitude	37.948000	Percent Lease Area/Waterbody Area	9%
Mouth Longitude	-76.349300	Tide Range (ft)	1.17
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	56,298
Waterbody Mouth Morphology	Inlet	Historical SAV (1971-2020)	No
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	171.3	Number of Docks/1000 linear ft	1.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	60
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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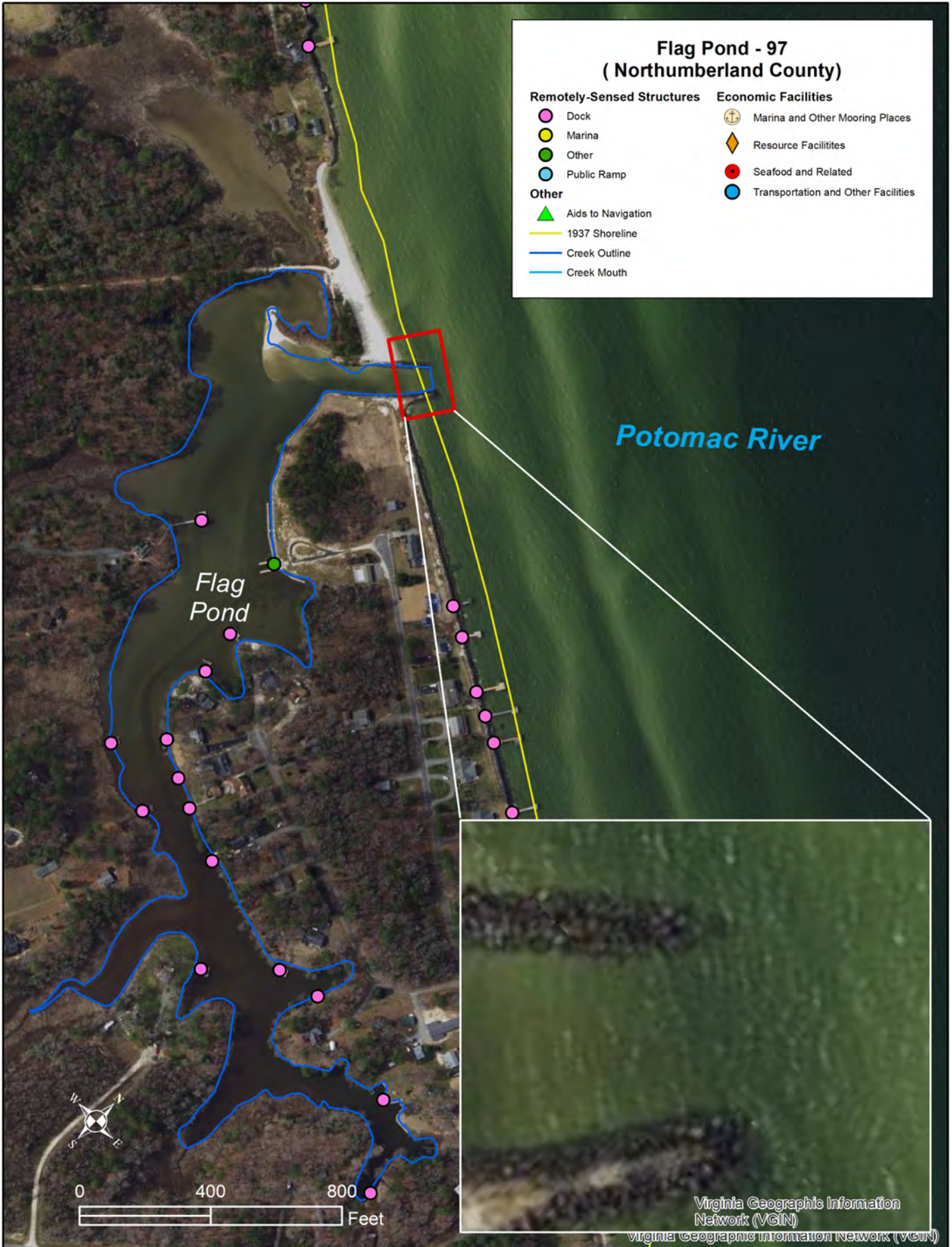
Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Flag Pond - 97 (Northumberland County)

- | Remotely-Sensed Structures | Economic Facilities |
|----------------------------|-------------------------------------|
| Dock | Marina and Other Mooring Places |
| Marina | Resource Facilities |
| Other | Seafood and Related |
| Public Ramp | Transportation and Other Facilities |
| Other | |
| Aids to Navigation | |
| 1937 Shoreline | |
| Creek Outline | |
| Creek Mouth | |



Data Sheet for **Flag Pond**

Waterbody ID Number	97	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.926900	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.300400	Tide Range (ft)	1.13
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	11,718
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	20.0	Number of Docks/1000 linear ft	1.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	14
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

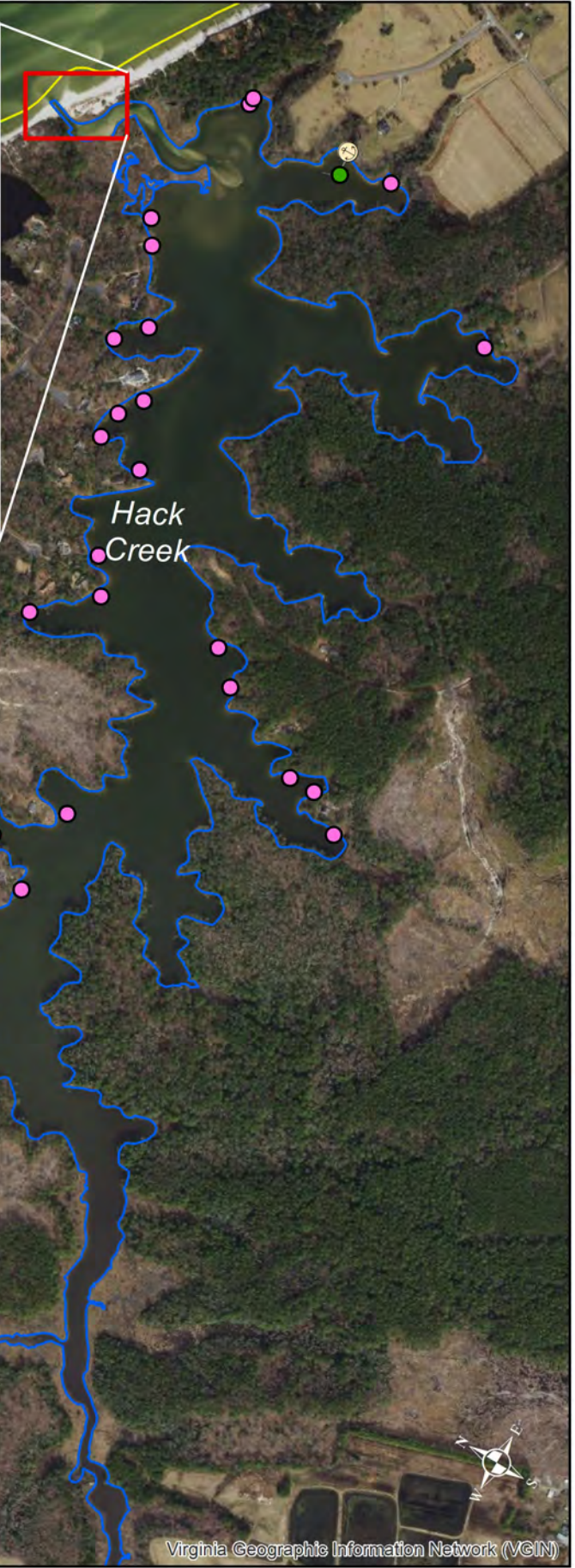
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



**Hack Creek - 98
(Northumberland County)**

Remotely-Sensed Structures	Economic Facilities
● Dock	⚓ Marina and Other Mooring Places
● Marina	◆ Resource Facilities
● Other	● Seafood and Related
● Public Ramp	● Transportation and Other Facilities
Other	
▲ Aids to Navigation	
— Creek Outline	
— Creek Mouth	



Data Sheet for Hack Creek

Waterbody ID Number	98	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.933700	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.314900	Tide Range (ft)	1.14
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	54,480
Waterbody Mouth Morphology	Inlet	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	160.9	Number of Docks/1000 linear ft	0.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	29
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

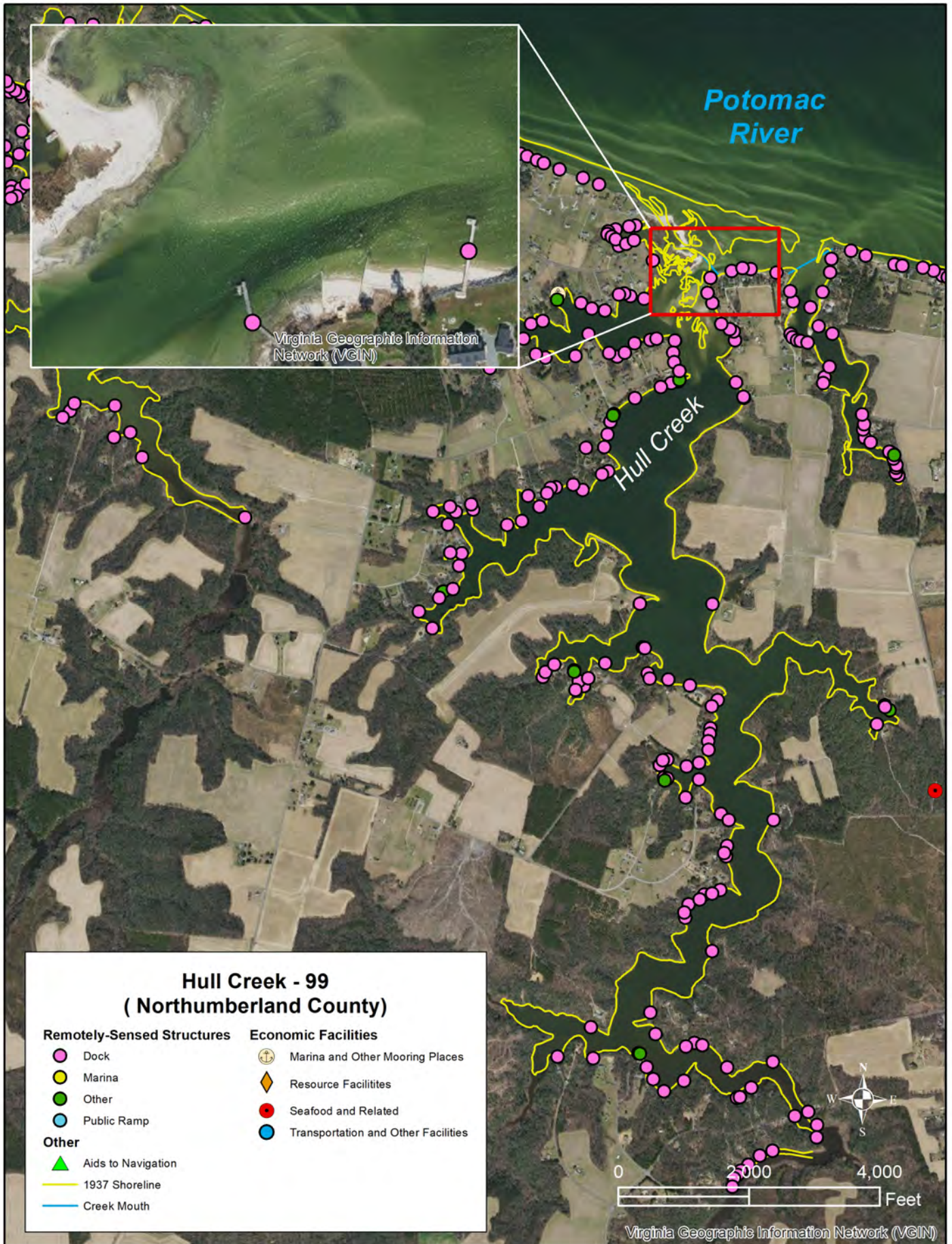
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Hull Creek**

Waterbody ID Number	99	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	156.2
Mouth Latitude	37.955000	Percent Lease Area/Waterbody Area	30%
Mouth Longitude	-76.385700	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	111,946
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	Completely Shoaled	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	513.5	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	166
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	9

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

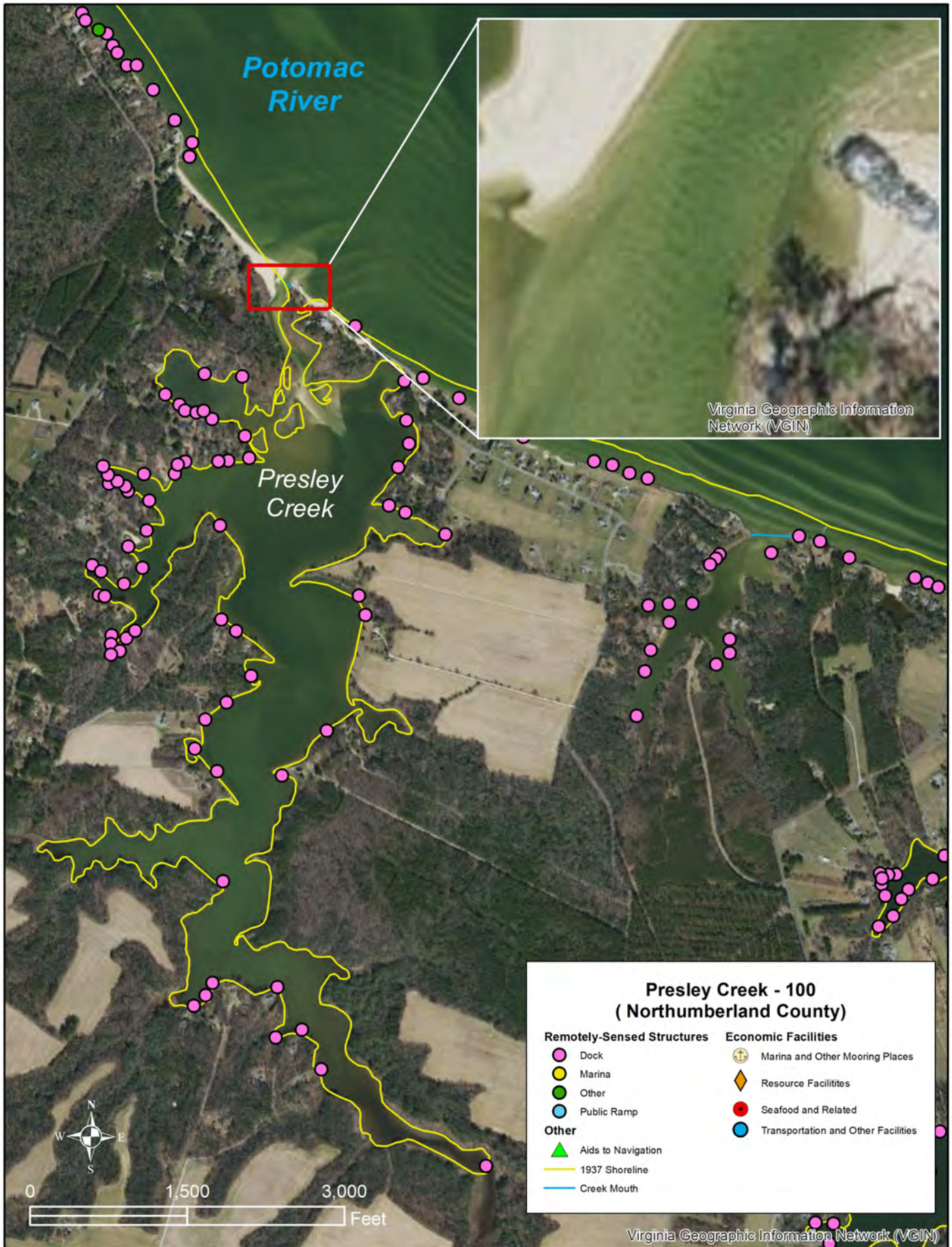
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for Presley Creek

Waterbody ID Number	100	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	35.2
Mouth Latitude	37.967200	Percent Lease Area/Waterbody Area	15%
Mouth Longitude	-76.417400	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	50,292
Waterbody Mouth Morphology	Inlet	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	229.4	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	66
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

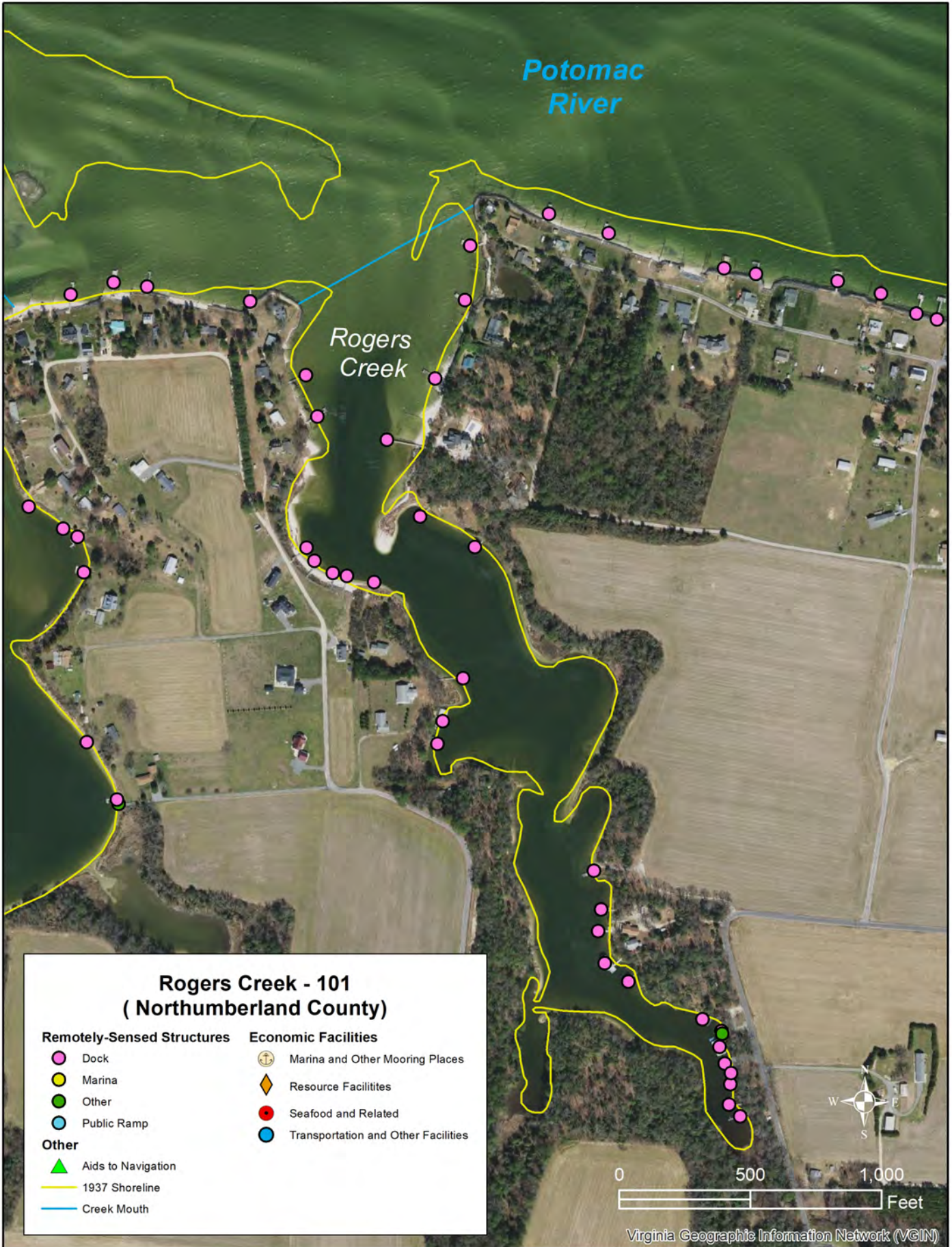
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



**Rogers Creek - 101
(Northumberland County)**

Remotely-Sensed Structures	Economic Facilities
● Dock	⚓ Marina and Other Mooring Places
● Marina	◆ Resource Facilities
● Other	● Seafood and Related
● Public Ramp	● Transportation and Other Facilities
Other	
▲ Aids to Navigation	
— 1937 Shoreline	
— Creek Mouth	



Data Sheet for **Rogers Creek**

Waterbody ID Number	101	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	5.5
Mouth Latitude	37.955300	Percent Lease Area/Waterbody Area	15%
Mouth Longitude	-76.380600	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	12,195
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	37.3	Number of Docks/1000 linear ft	2.4

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	29
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Public Ramps includes Ramps that are listed as public online.

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Potomac River

Coan River - 125 (Northumberland County)

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Economic Facilities

- ⊕ Marina and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth
- ▭ NorthernNeck_FedChannels

Coan River



Data Sheet for **Coan River**

Waterbody ID Number	125	Main Waterbody	Potomac River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	1049.1
Mouth Latitude	37.991300	Percent Lease Area/Waterbody Area	47%
Mouth Longitude	-76.463100	Tide Range (ft)	1.20
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	301,496
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	1,370.0	Number of Docks/1000 linear ft	1.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	5	Number of Docks	468
Total Businesses	1	Number of Marinas	5
Total Resources	2	Number of Public Ramps	2
Combined Total	8	Number of Other Structures	24

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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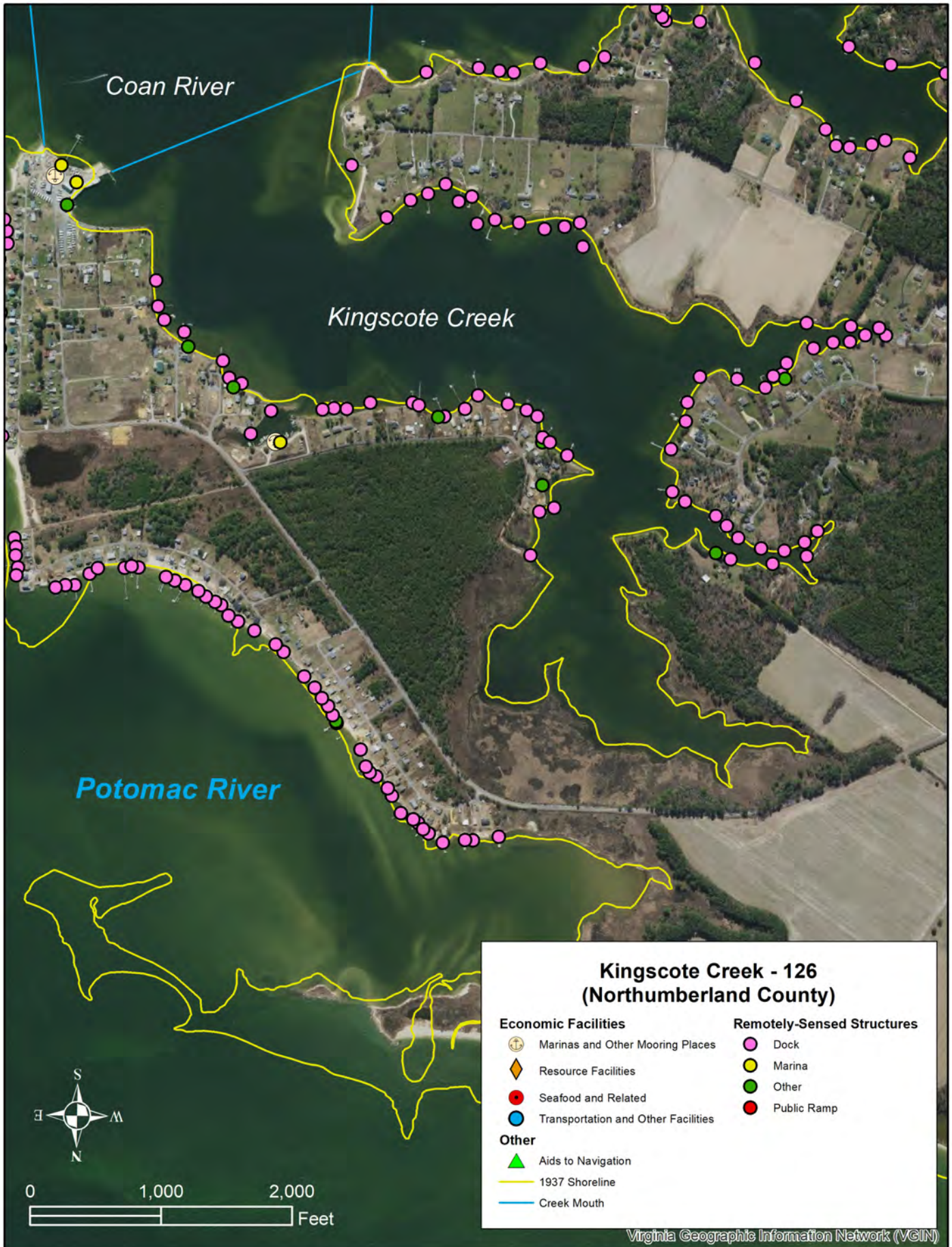
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Data Sheet for Kingscote Creek

Waterbody ID Number	126	Main Waterbody	Coan River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	15.0
Mouth Latitude	37.995300	Percent Lease Area/Waterbody Area	6%
Mouth Longitude	-76.468100	Tide Range (ft)	1.20
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	34,115
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	246.7	Number of Docks/1000 linear ft	2.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	70
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	8

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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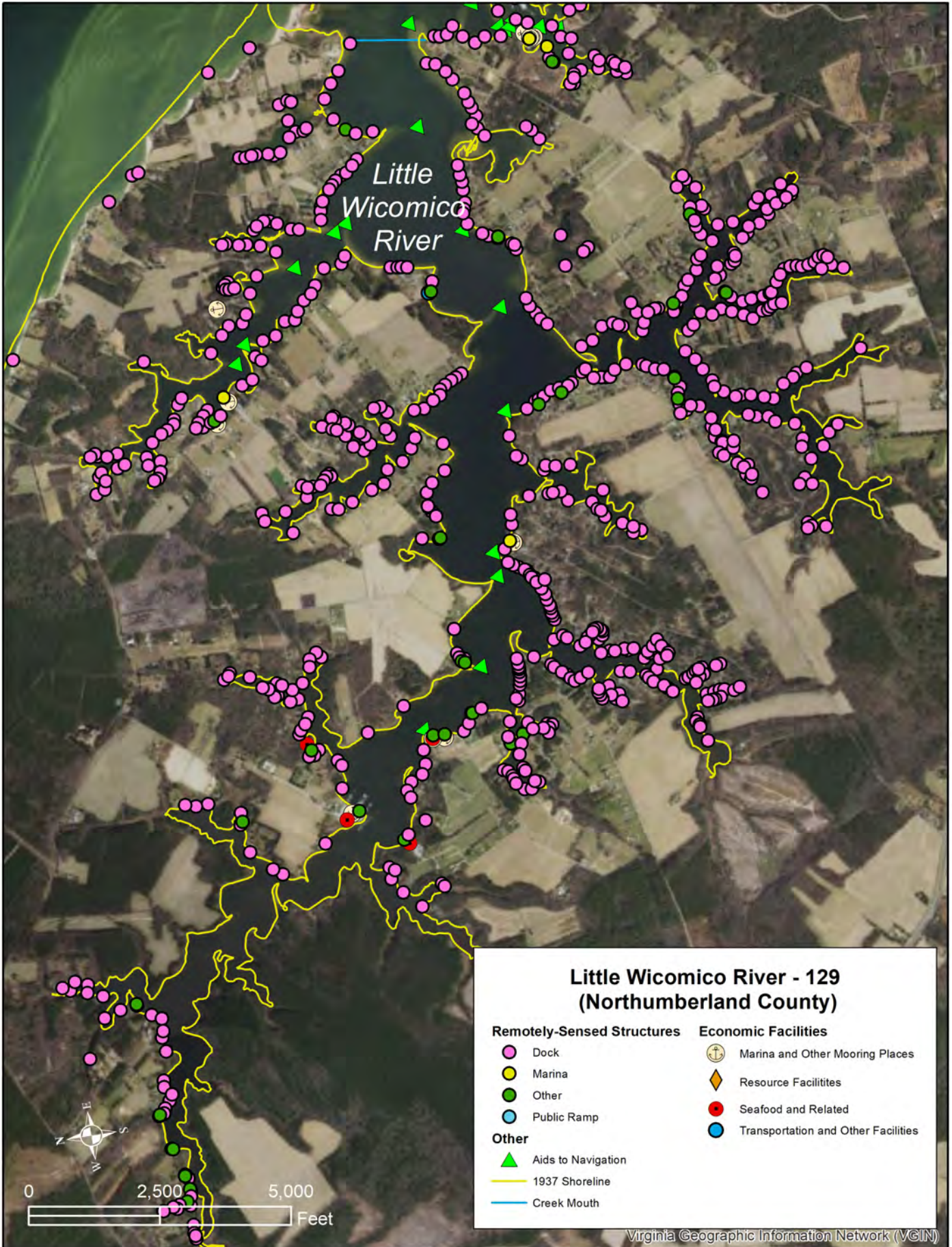
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Little Wicomico River**

Waterbody ID Number	129	Main Waterbody	Wicomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	743.0
Mouth Latitude	37.890600	Percent Lease Area/Waterbody Area	50%
Mouth Longitude	-76.252800	Tide Range (ft)	1.00
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	298,248
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	955.9	Number of Docks/1000 linear ft	2.2
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	8	Number of Docks	643
Total Businesses	8	Number of Marinas	2
Total Resources	2	Number of Public Ramps	0
Combined Total	18	Number of Other Structures	33

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

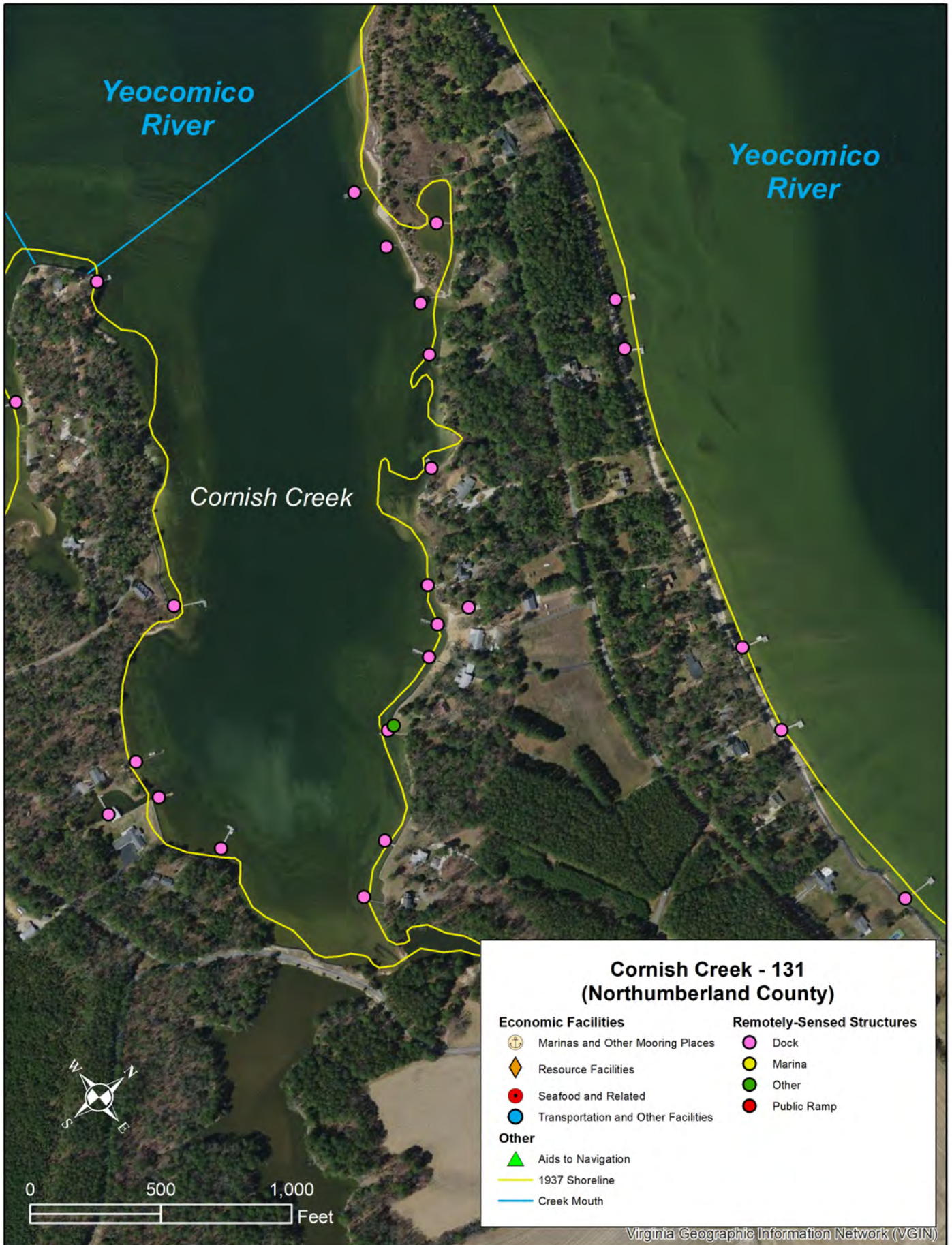
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Cornish Creek**

Waterbody ID Number	131	Main Waterbody	Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	62.2
Mouth Latitude	38.023300	Percent Lease Area/Waterbody Area	84%
Mouth Longitude	-76.535900	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	11,537
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	73.9	Number of Docks/1000 linear ft	1.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	19
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

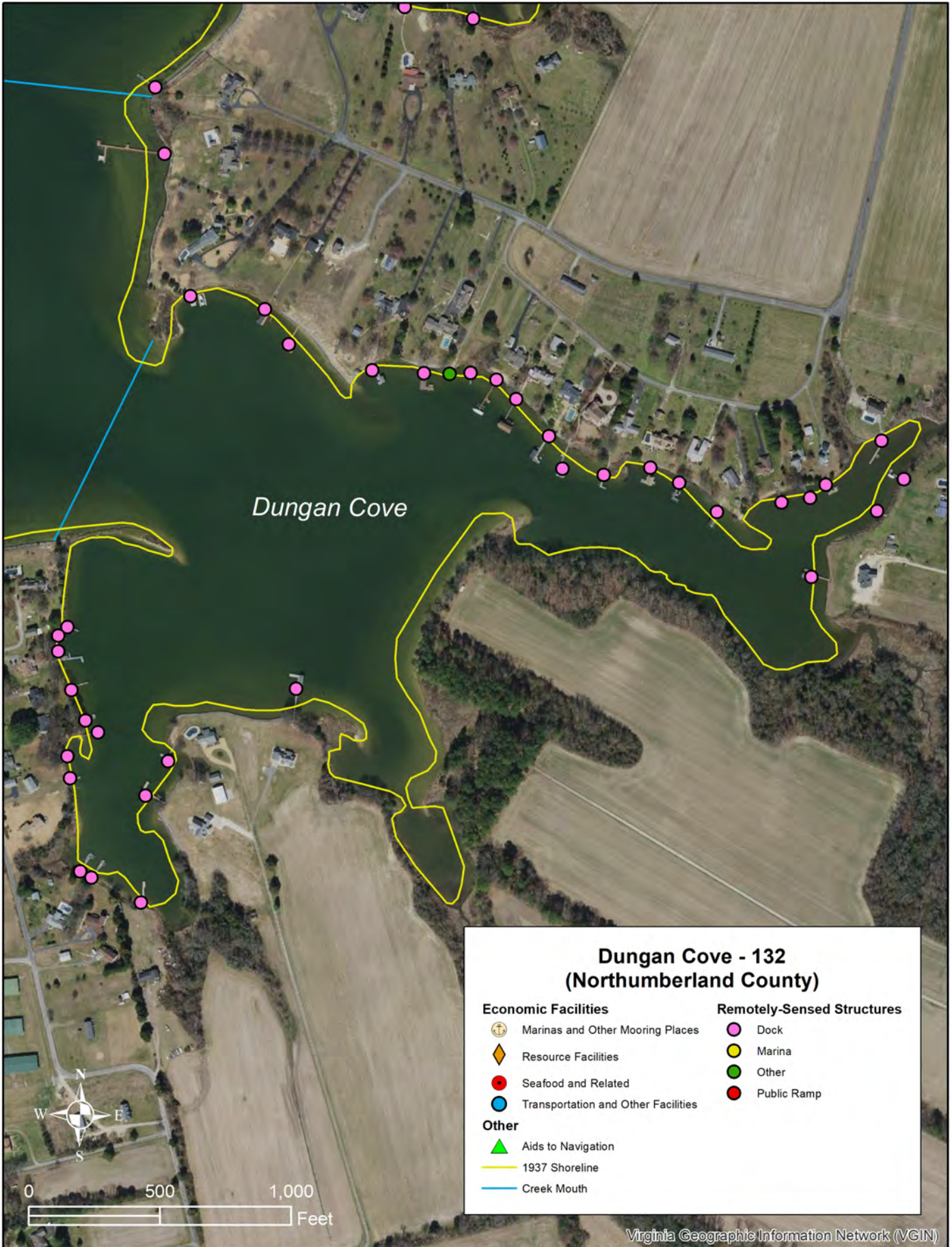
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.












Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Dungan Cove

**Dungan Cove - 132
(Northumberland County)**

- | | | | |
|---|-------------------------------------|---|-------------|
| Economic Facilities | | Remotely-Sensed Structures | |
|  | Marinas and Other Mooring Places |  | Dock |
|  | Resource Facilities |  | Marina |
|  | Seafood and Related |  | Other |
|  | Transportation and Other Facilities |  | Public Ramp |
| Other | | | |
|  | Aids to Navigation | | |
|  | 1937 Shoreline | | |
|  | Creek Mouth | | |



0 500 1,000 Feet

Data Sheet for **Dungan Cove**

Waterbody ID Number	132	Main Waterbody	South Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	14.9
Mouth Latitude	38.002900	Percent Lease Area/Waterbody Area	19%
Mouth Longitude	-76.537600	Tide Range (ft)	1.30
Waterbody Type	Quaternary Waterbody	Combined Shoreline Length (ft)	15,577
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	76.9	Number of Docks/1000 linear ft	2.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	35
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Lodge Creek - 133 (Northumberland County)

Economic Facilities

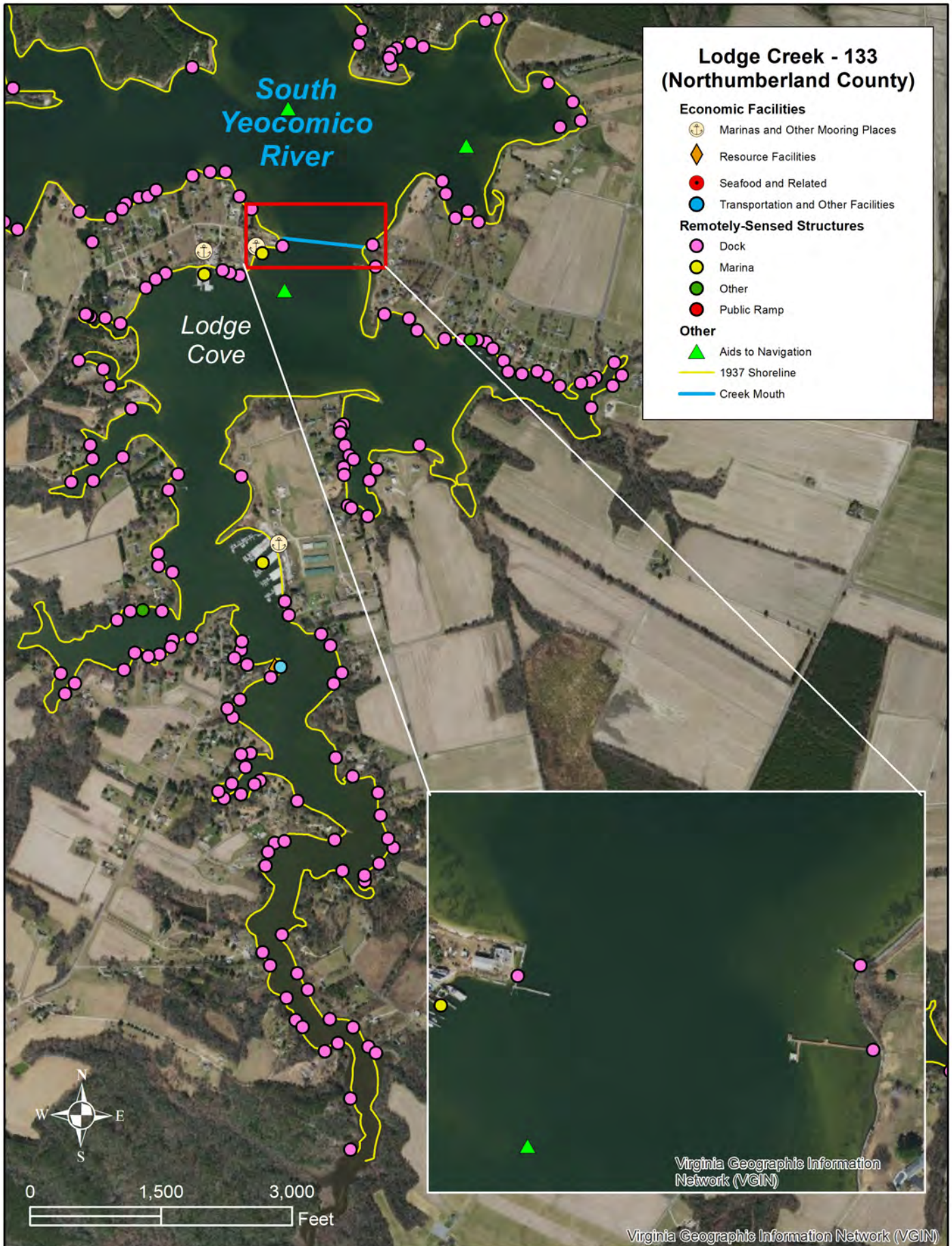
- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Lodge Creek**

Waterbody ID Number	133	Main Waterbody	South Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	69.9
Mouth Latitude	38.006600	Percent Lease Area/Waterbody Area	18%
Mouth Longitude	-76.538800	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	72,753
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	311.1	Number of Docks/1000 linear ft	1.8

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	3	Number of Docks	132
Total Businesses	0	Number of Marinas	3
Total Resources	1	Number of Public Ramps	1
Combined Total	4	Number of Other Structures	2

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Mill Creek - 134 (Northumberland County)

Economic Facilities

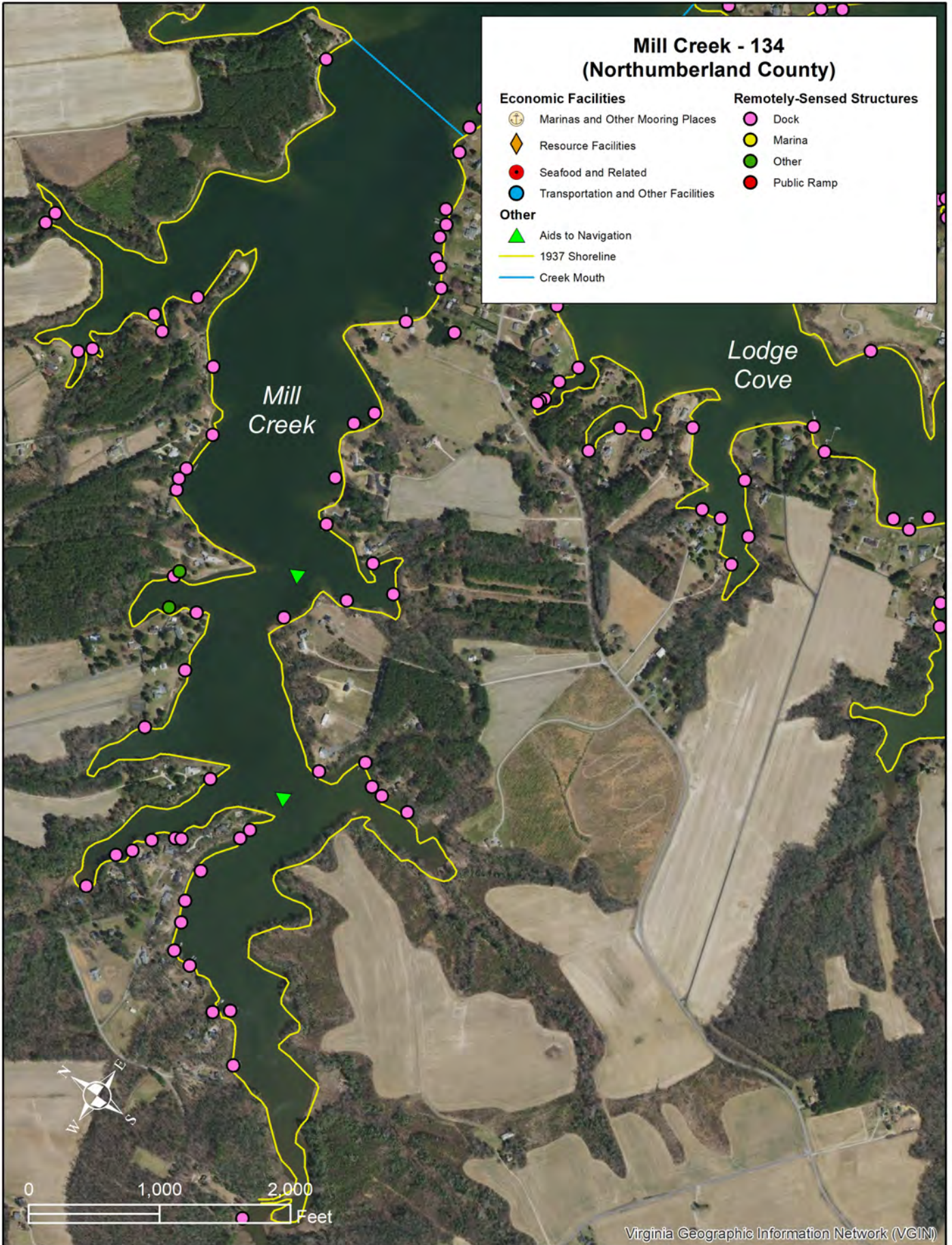
- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Mill Creek-Yeocomico**

Waterbody ID Number	134	Main Waterbody	South Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	70.4
Mouth Latitude	38.010400	Percent Lease Area/Waterbody Area	29%
Mouth Longitude	-76.543600	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	45,486
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	245.6	Number of Docks/1000 linear ft	1.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	45
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

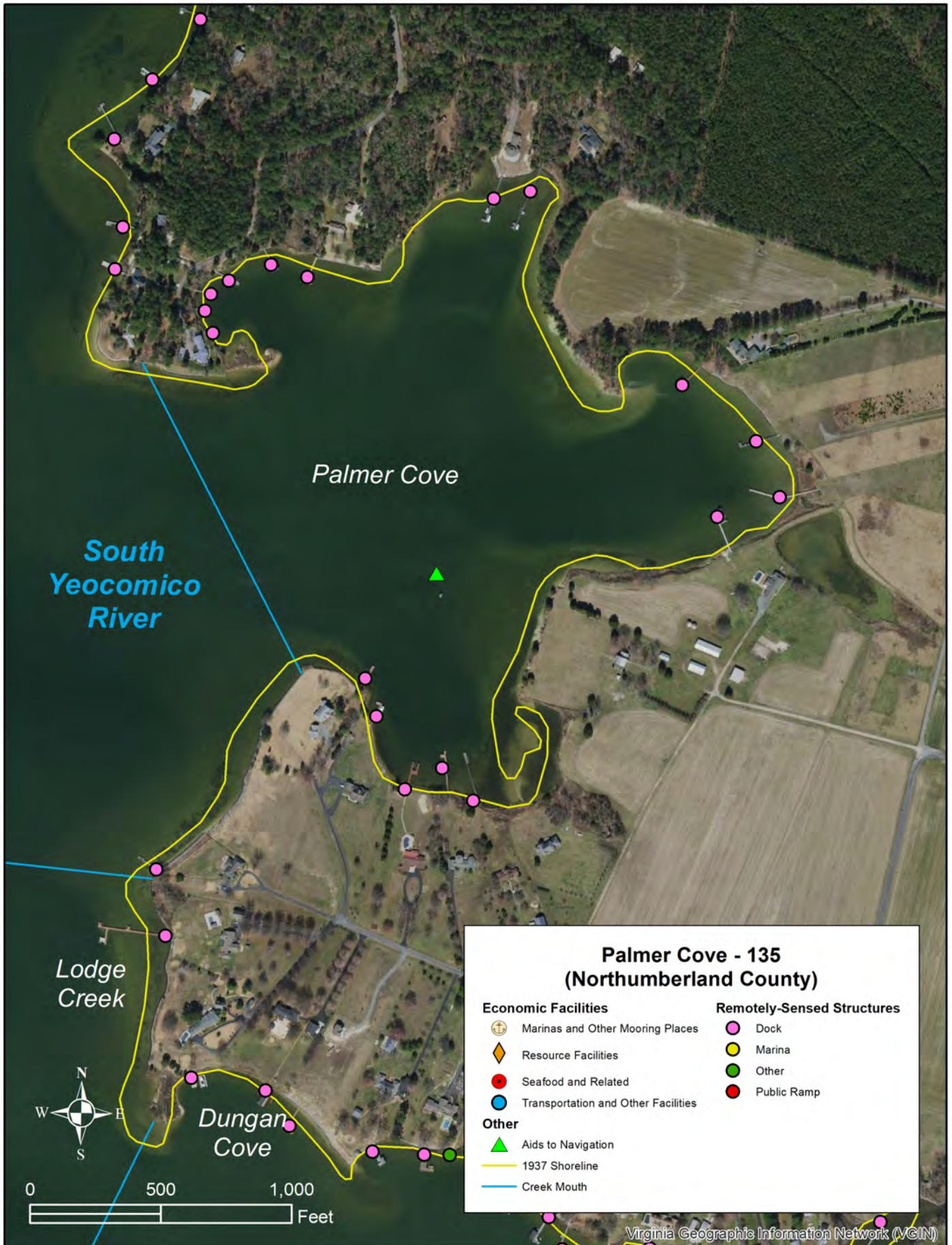
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Palmer Cove**

Waterbody ID Number	135	Main Waterbody	South Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	24.6
Mouth Latitude	38.010100	Percent Lease Area/Waterbody Area	35%
Mouth Longitude	-76.536100	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	9,827
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	71.2	Number of Docks/1000 linear ft	1.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	17
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

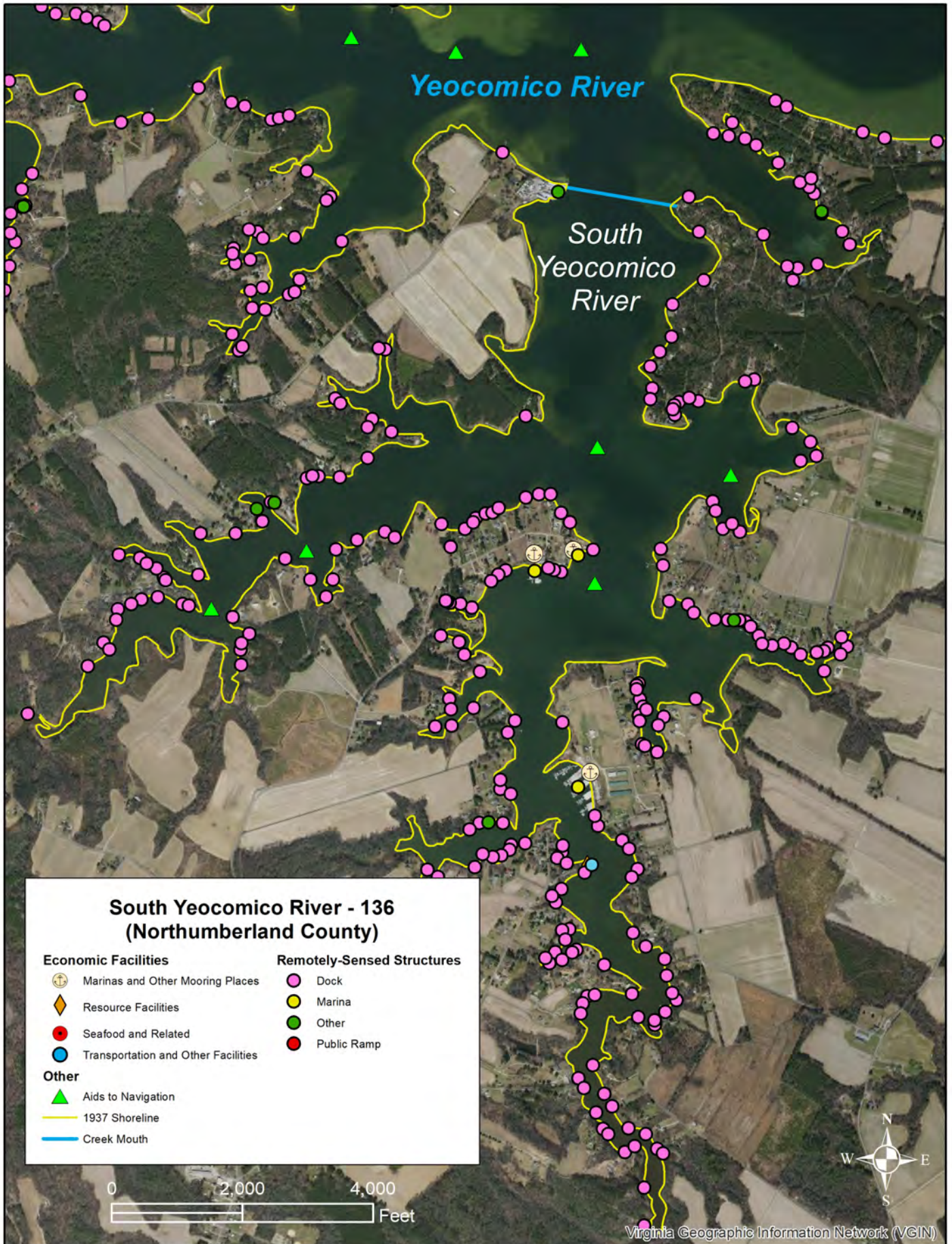
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.





Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.






**South Yeocomico River - 136
(Northumberland County)**

Economic Facilities

-  Marinas and Other Mooring Places
-  Resource Facilities
-  Seafood and Related
-  Transportation and Other Facilities

Other

-  Aids to Navigation
-  1937 Shoreline
-  Creek Mouth

Remotely-Sensed Structures

-  Dock
-  Marina
-  Other
-  Public Ramp

0 2,000 4,000
Feet



Data Sheet for **South Yeocomico River**

Waterbody ID Number	136	Main Waterbody	Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	242.1
Mouth Latitude	38.021400	Percent Lease Area/Waterbody Area	25%
Mouth Longitude	-76.539800	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	148,470
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	276.2	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	3	Number of Docks	218
Total Businesses	0	Number of Marinas	3
Total Resources	1	Number of Public Ramps	1
Combined Total	4	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Data Sheet for **Wilkins Creek**

Waterbody ID Number	137	Main Waterbody	West Yeocomico River
County	Northumberland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	16.1
Mouth Latitude	38.023500	Percent Lease Area/Waterbody Area	19%
Mouth Longitude	-76.552800	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	17,609
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	84.4	Number of Docks/1000 linear ft	1.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	22
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

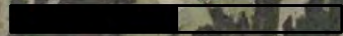
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Appendix C-3

Richmond County Data and Maps

Richmond County

2 1 0 Miles



124
Totuskey Creek

Richmond

123
Farnham Creek

69
Morattico Creek

122
Lancaster Creek

Lancaster

Rappahannock River

Essex



Richmond County

2 1 0 Miles

Westmoreland

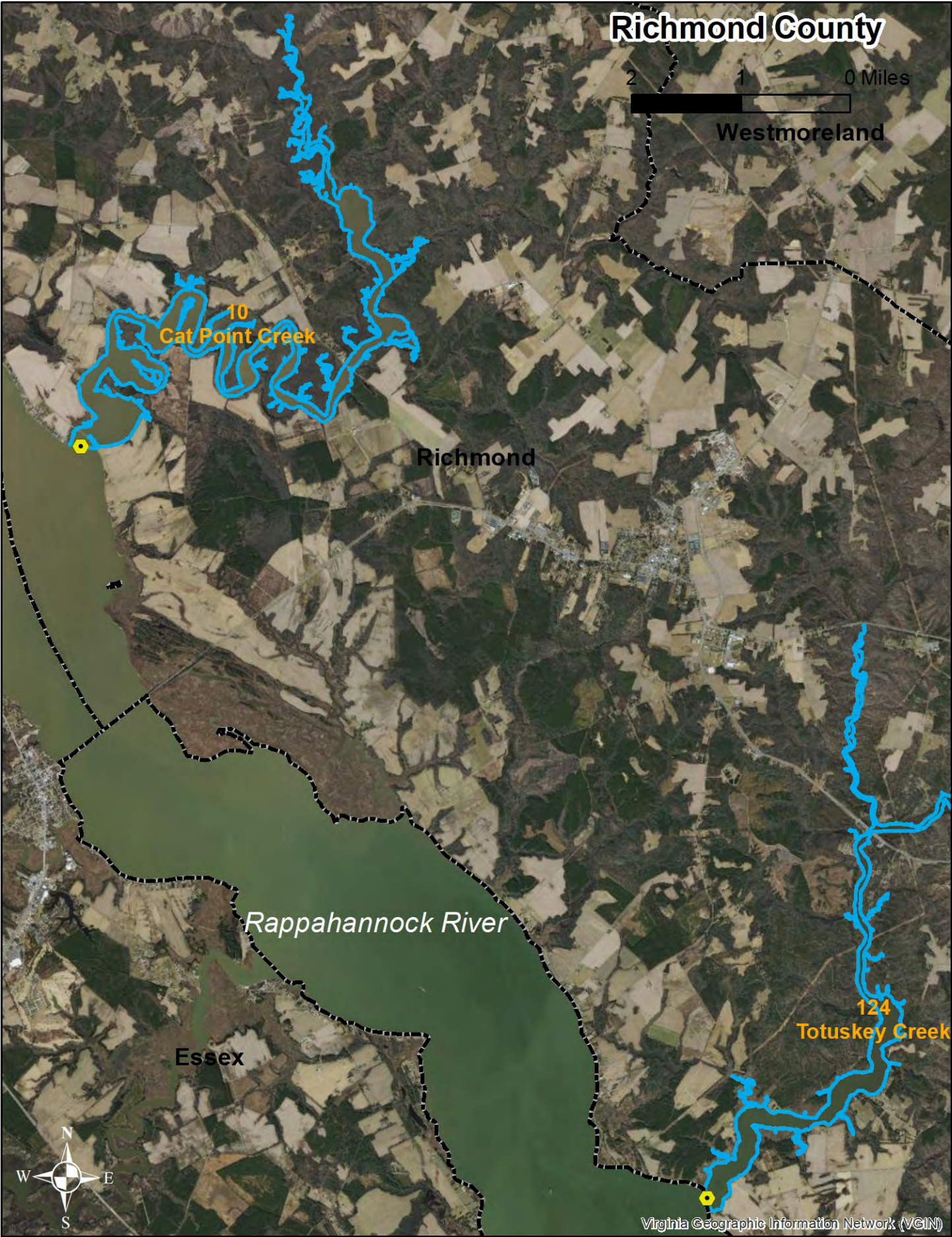
10
Cat Point Creek

Richmond

Rappahannock River

Essex

124
Totuskey Creek



Cat Point Creek - 10 (Richmond County)

Economic Facilities

- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

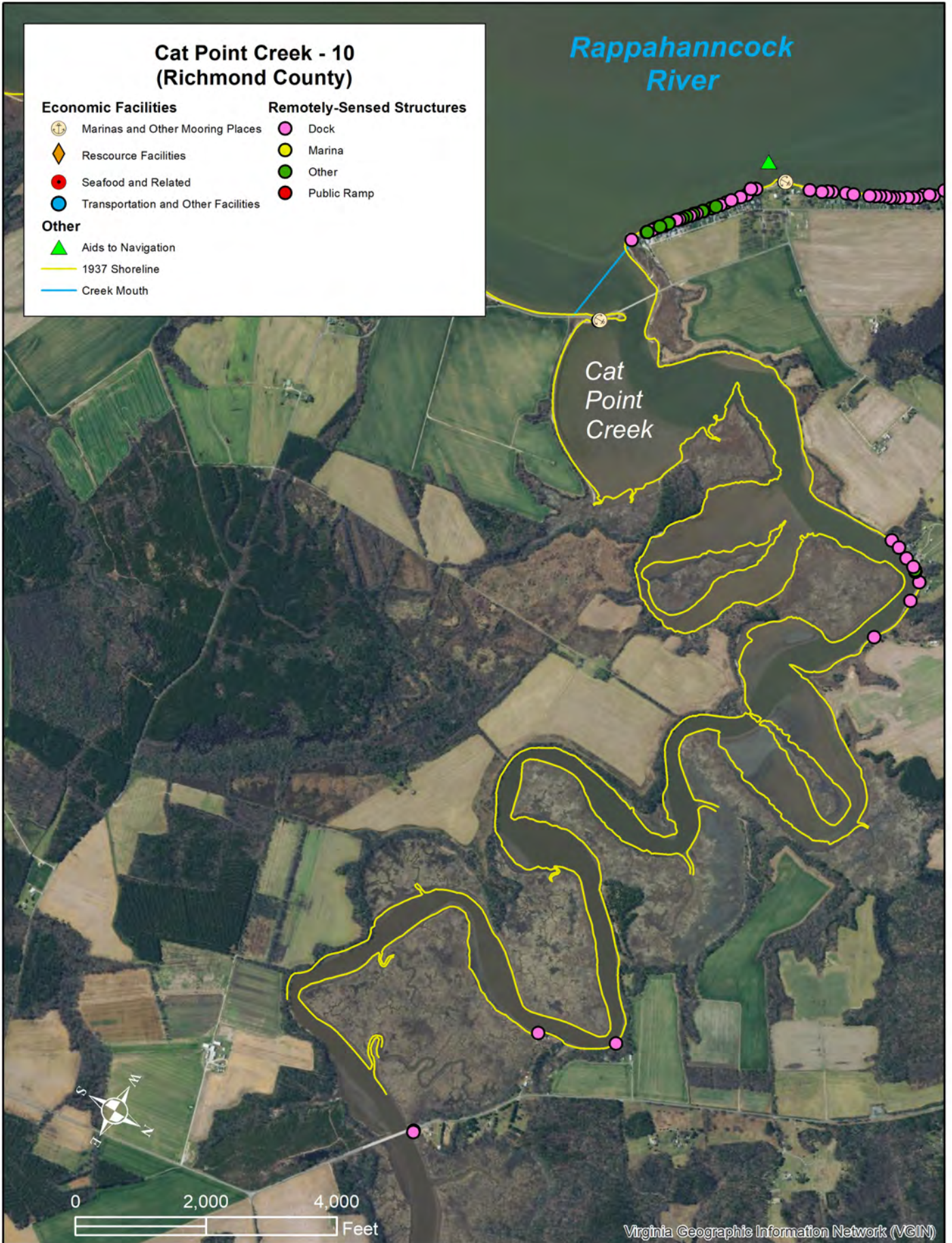
- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Rappahannock
River

Cat
Point
Creek



Data Sheet for **Cat Point Creek**

Waterbody ID Number	10	Main Waterbody	Rappahannock River
County	Richmond	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.972963	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.854632	Tide Range (ft)	1.70
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	254,274
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	927.7	Number of Docks/1000 linear ft	0.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	25
Total Businesses	0	Number of Marinas	0
Total Resources	1	Number of Public Ramps	0
Combined Total	3	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

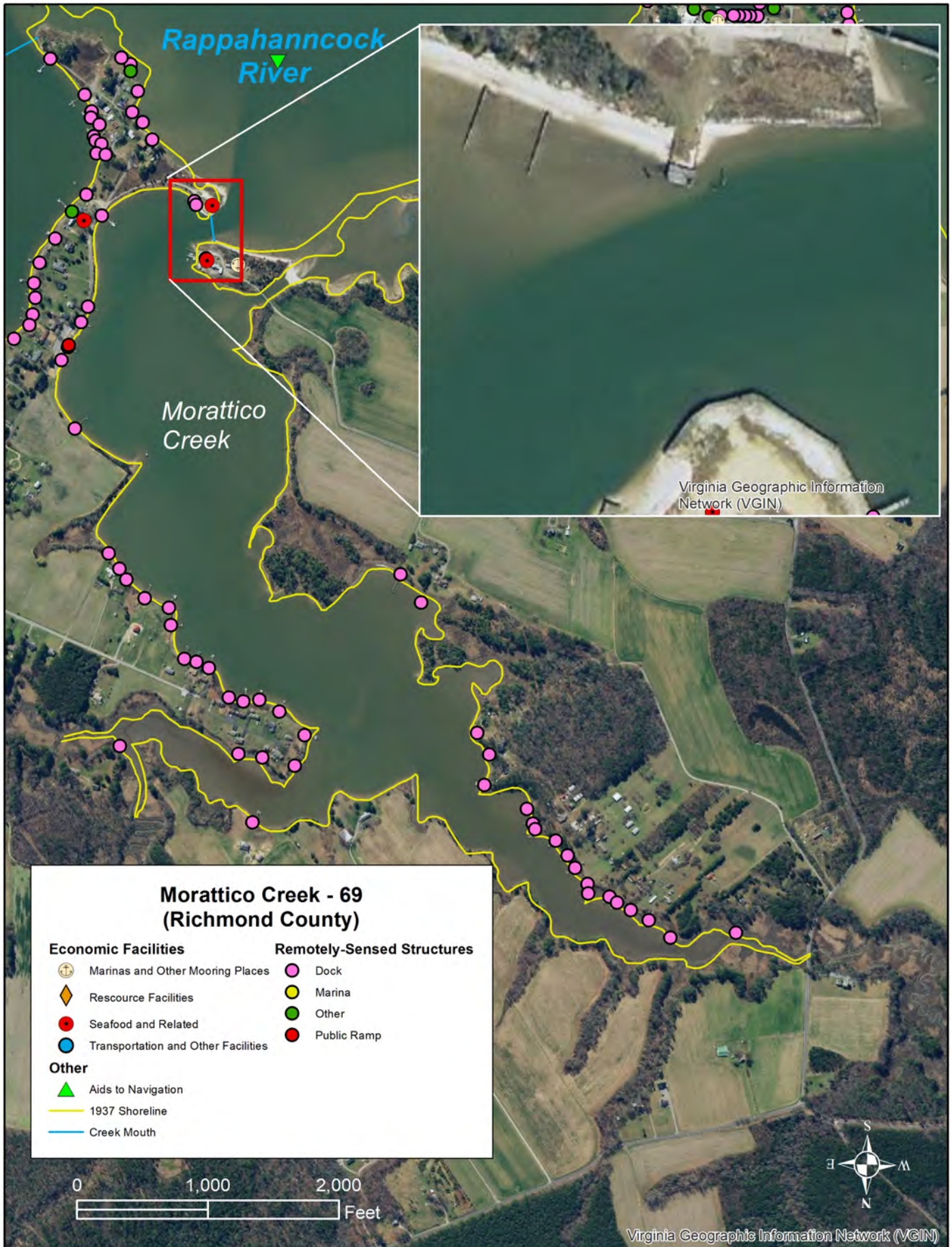
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Morattico Creek**

Waterbody ID Number	69	Main Waterbody	Lancaster Creek
County	Richmond	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	37.5
Mouth Latitude	37.804500	Percent Lease Area/Waterbody Area	20%
Mouth Longitude	-76.637300	Tide Range (ft)	1.65
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	35,589
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	192.0	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	46
Total Businesses	2	Number of Marinas	0
Total Resources	1	Number of Public Ramps	1
Combined Total	4	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

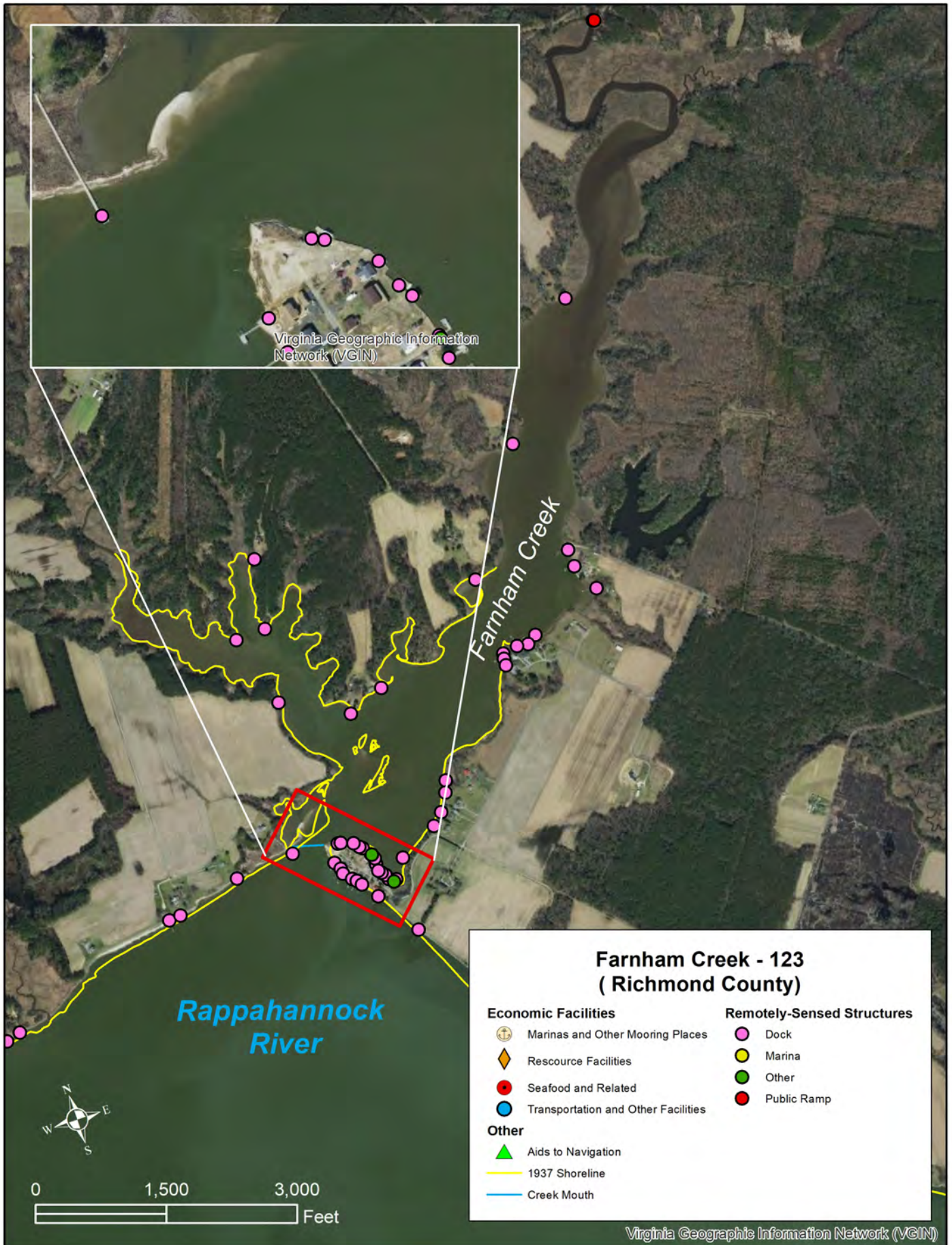
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Farnham Creek**

Waterbody ID Number	123	Main Waterbody	Rappahannock River
County	Richmond	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	37.825400	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.680200	Tide Range (ft)	1.70
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	86,882
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	282.5	Number of Docks/1000 linear ft	0.4

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	37
Total Businesses	2	Number of Marinas	0
Total Resources	1	Number of Public Ramps	1
Combined Total	3	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

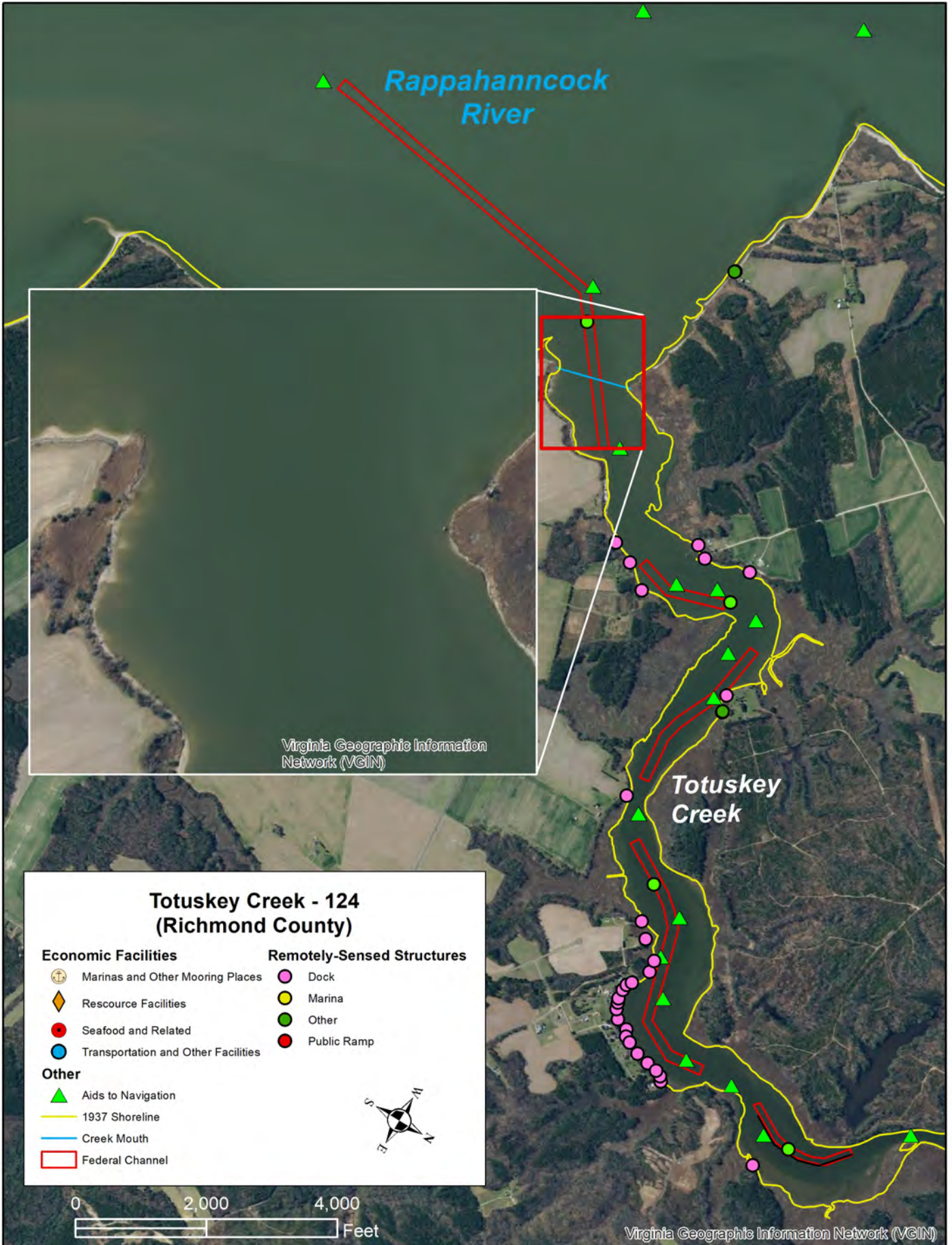
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Totuskey Creek

Waterbody ID Number	124	Main Waterbody	Rappahannock River
County	Richmond	Private Oyster Leases Present	No
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	0.5
Mouth Latitude	37.874600	Percent Lease Area/Waterbody Area	0%
Mouth Longitude	-76.746800	Tide Range (ft)	1.80
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	218,924
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	No
Waterbody Area (acres)	636.9	Number of Docks/1000 linear ft	0.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	51
Total Businesses	0	Number of Marinas	1
Total Resources	1	Number of Public Ramps	1
Combined Total	2	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Appendix C-4

Westmoreland County Data and Maps

2 1 0 Miles



Westmoreland County

King George

110
Rosier Creek

86
Upper Monroe Creek
108
Monroe Bay

107
Mattox Creek

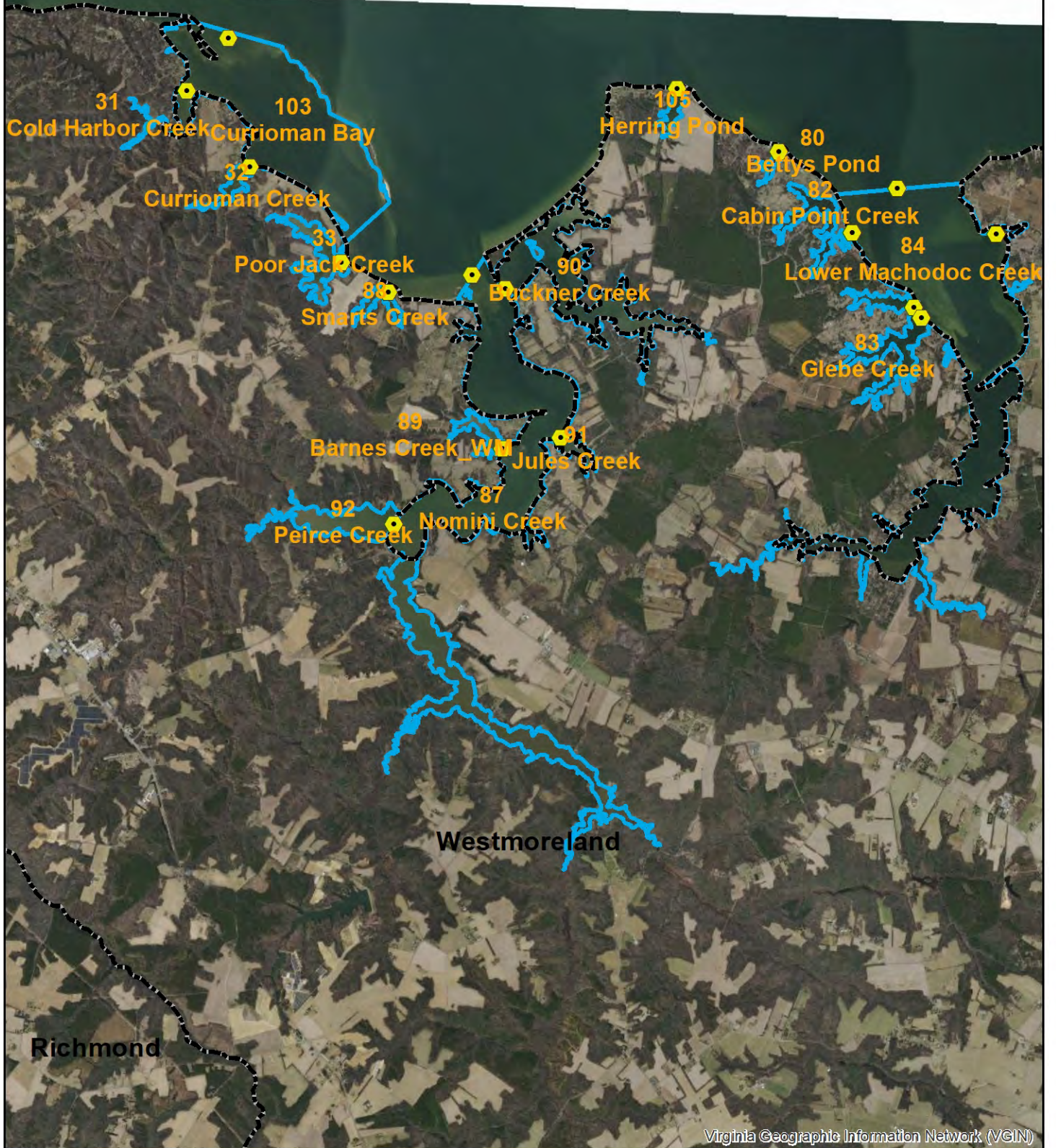
109
Popes Creek

Westmoreland

2 1 0 Miles



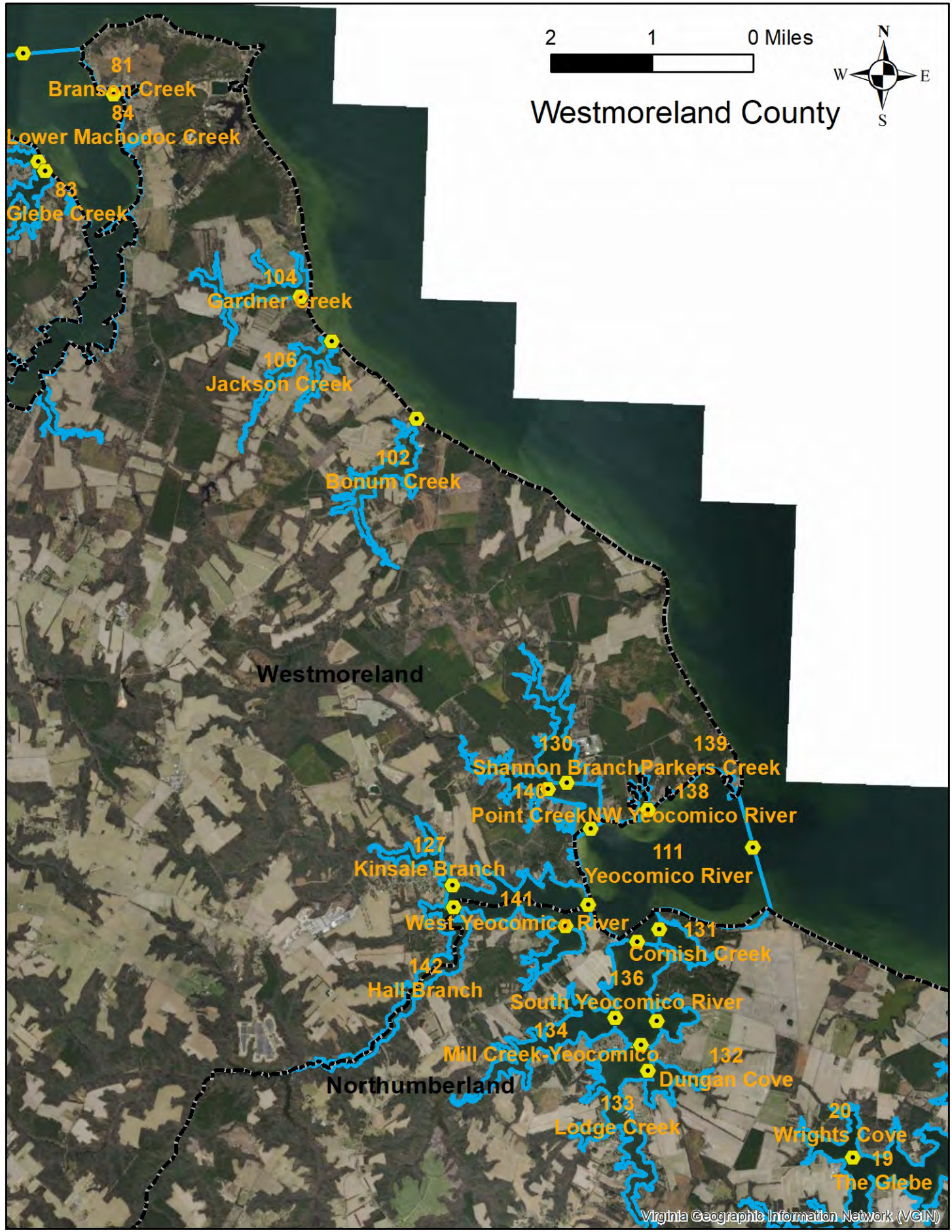
Westmoreland County



2 1 0 Miles



Westmoreland County



81
Branson Creek
84
Lower Machodoc Creek
83
Glebe Creek

104
Gardner Creek

106
Jackson Creek

102
Bonum Creek

Westmoreland

130
Shannon Branch
139
Parkers Creek

140
Point Creek
138
NW Yeocomico River

127
Kinsale Branch
111
Yeocomico River

141
West Yeocomico River

142
Hall Branch
131
Cornish Creek

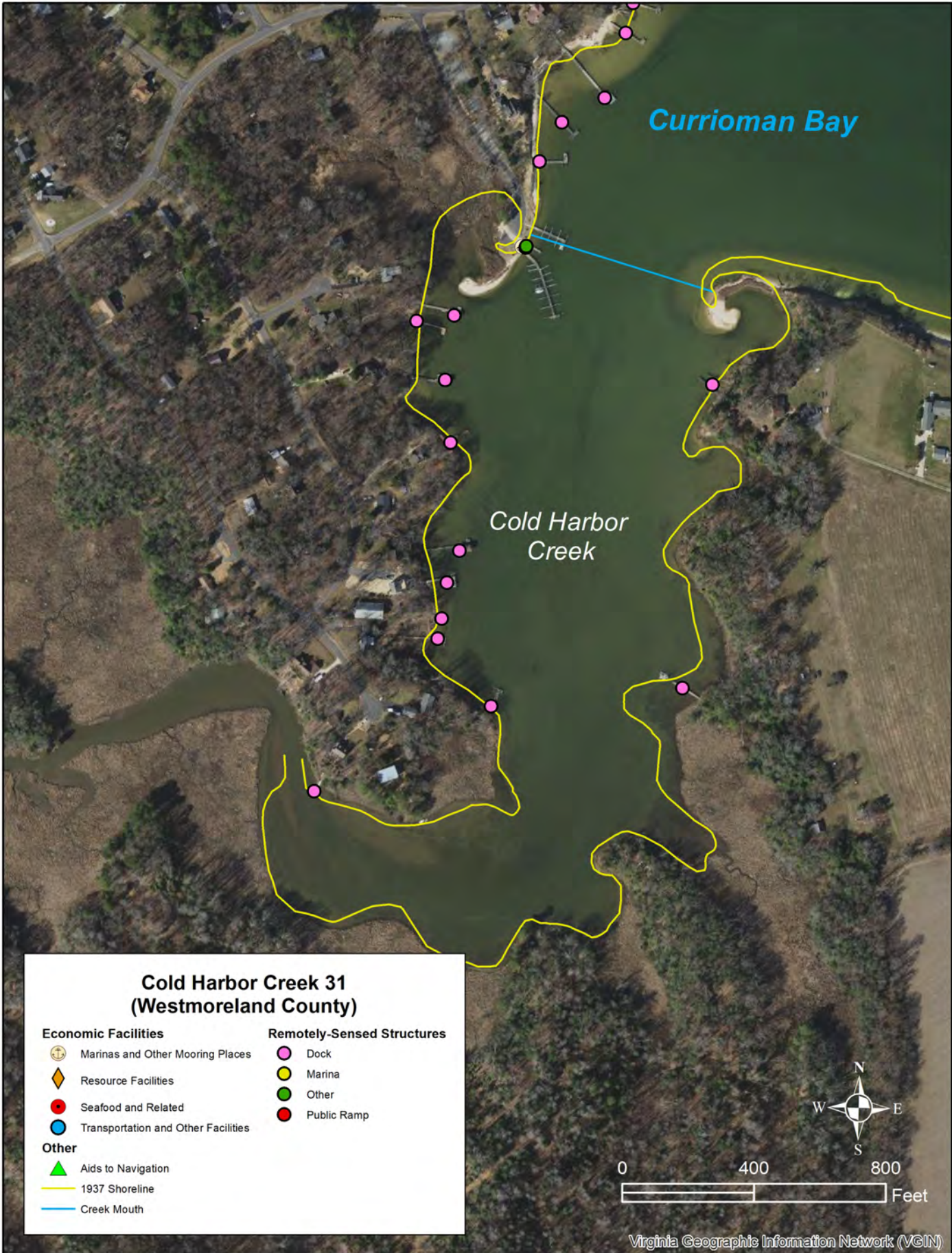
136
South Yeocomico River

134
Mill Creek
132
Yeocomico

Northumberland

133
Lodge Creek
132
Dungan Cove

20
Wrights Cove
19
The Glebe



Data Sheet for **Cold Harbor Creek**

Waterbody ID Number	31	Main Waterbody	Currioman Bay
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.158200	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.771400	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	23,311
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	50.1	Number of Docks/1000 linear ft	0.5
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	12
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

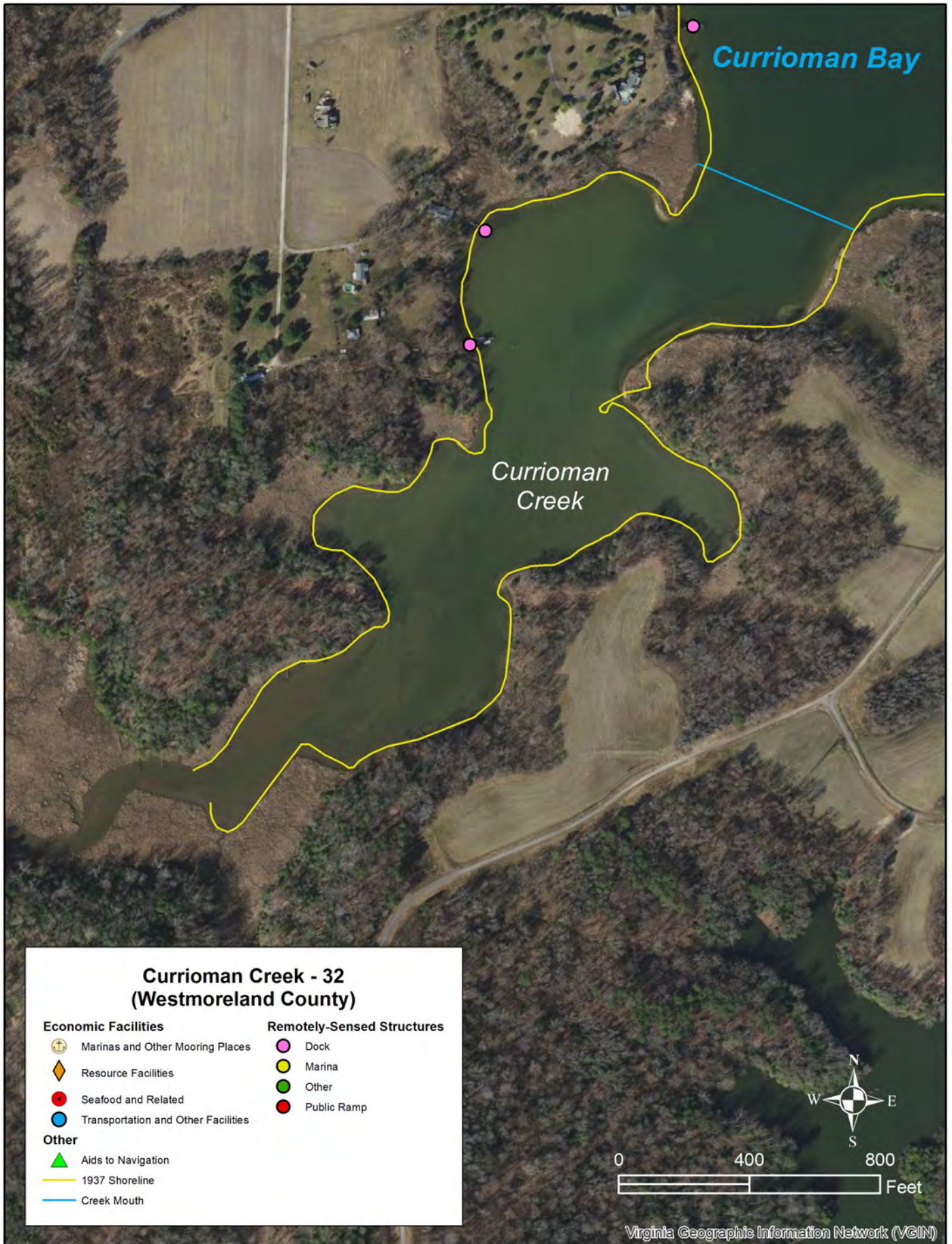
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for Currioman Creek

Waterbody ID Number	32	Main Waterbody	Currioman Bay
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.148500	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.760700	Tide Range (ft)	1.60
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	11,905
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	35.6	Number of Docks/1000 linear ft	0.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	2
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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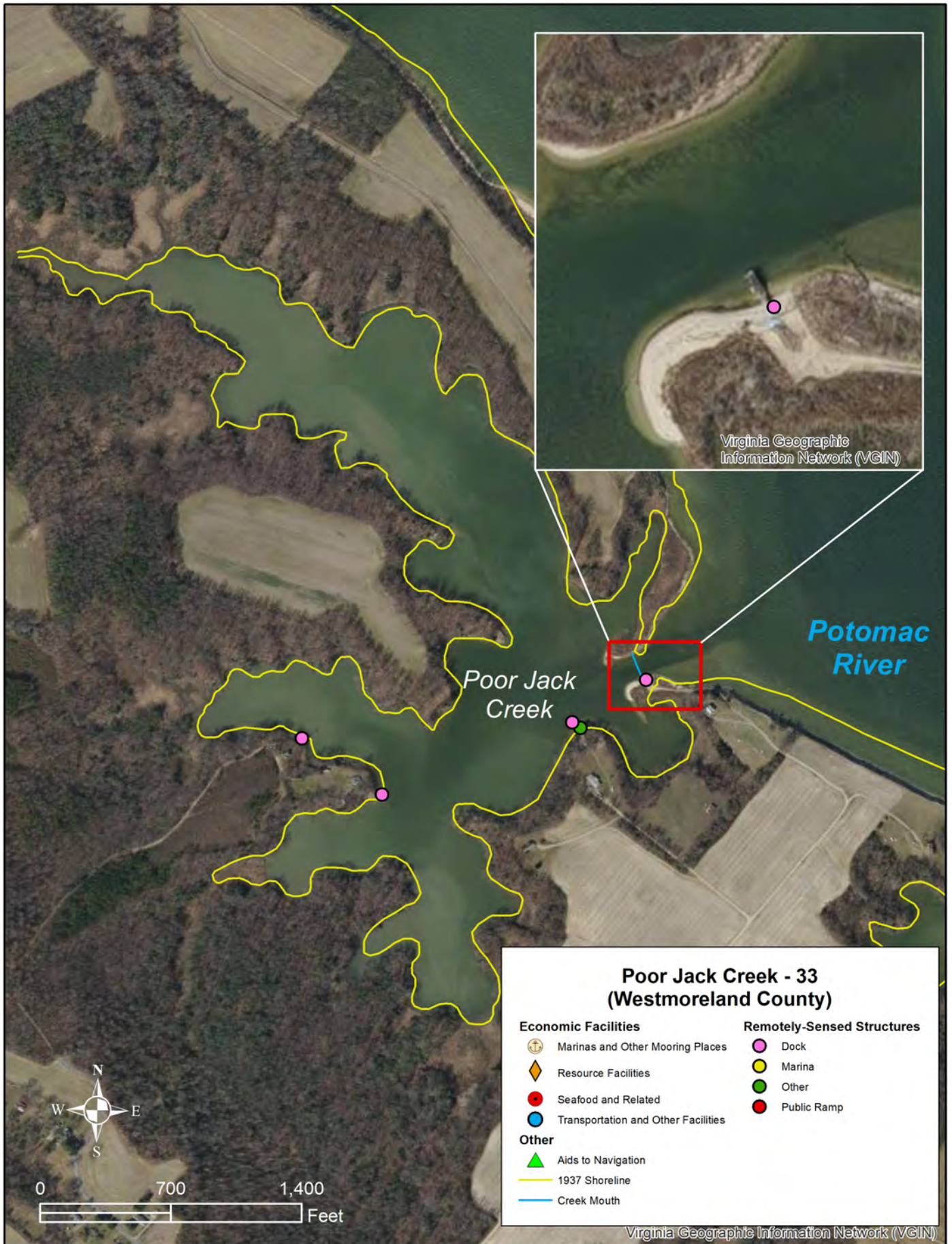
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Data Sheet for **Poor Jack Creek**

Waterbody ID Number	33	Main Waterbody	Currioman Bay
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.136300	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.745300	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	26,037
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	103.9	Number of Docks/1000 linear ft	0.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	4
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

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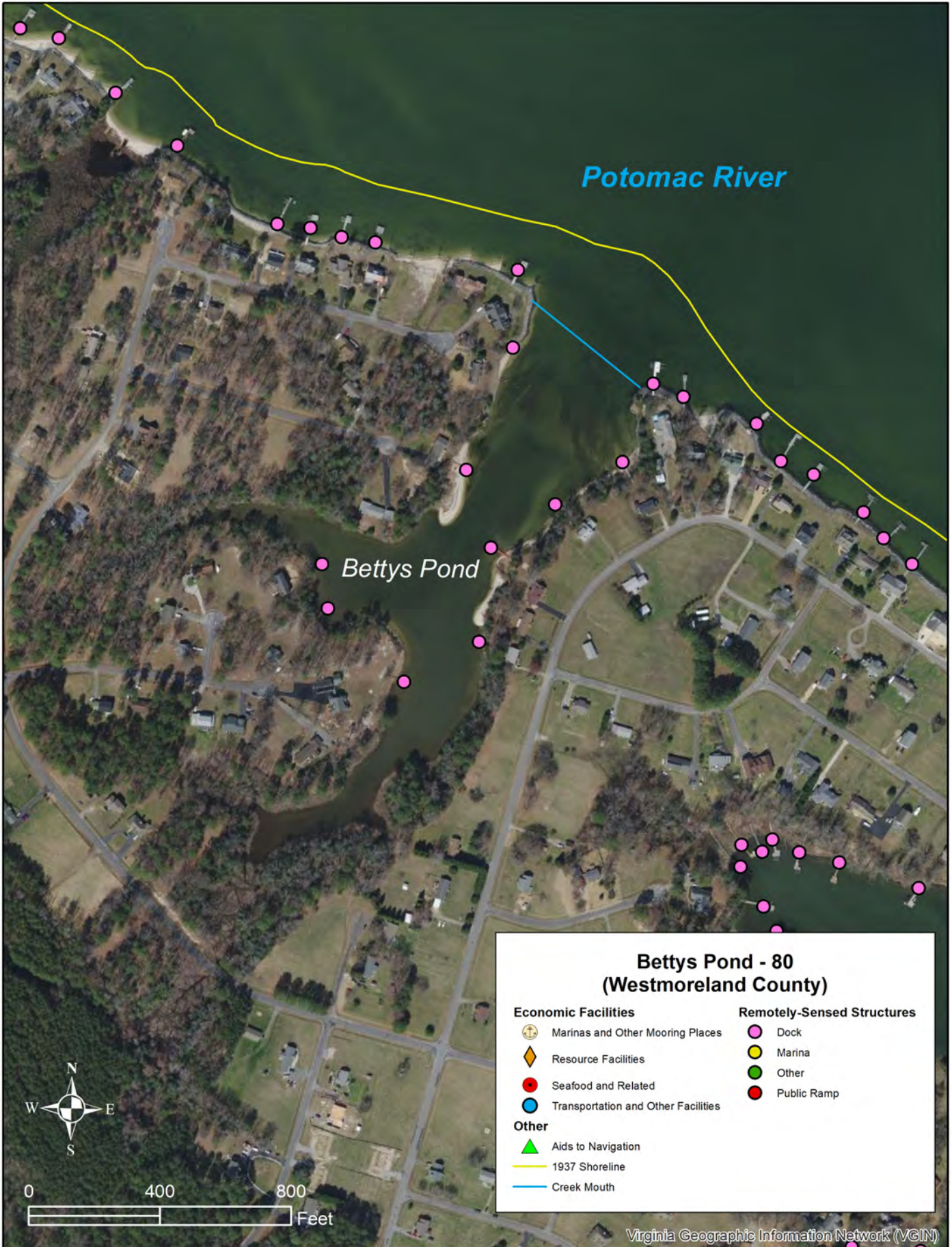
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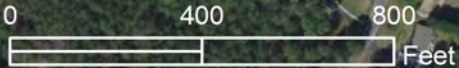


Potomac River

Bettys Pond

**Bettys Pond - 80
(Westmoreland County)**

- | | | | |
|----------------------------|-------------------------------------|-----------------------------------|-------------|
| Economic Facilities | | Remotely-Sensed Structures | |
| | Marinas and Other Mooring Places | | Dock |
| | Resource Facilities | | Marina |
| | Seafood and Related | | Other |
| | Transportation and Other Facilities | | Public Ramp |
| Other | | | |
| | Aids to Navigation | | |
| | 1937 Shoreline | | |
| | Creek Mouth | | |



Data Sheet for **Bettys Pond**

Waterbody ID Number	80	Main Waterbody	Lower Machodoc Creek
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.151700	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.673500	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	6,111
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	13.5	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	9
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Branson Cove - 81 (Westmoreland County)

- | Economic Facilities | Remotely-Sensed Structures |
|-------------------------------------|----------------------------|
| Marinas and Other Mooring Places | Dock |
| Resource Facilities | Marina |
| Seafood and Related | Other |
| Transportation and Other Facilities | Public Ramp |
- Other**
- Aids to Navigation
 - 1937 Shoreline
 - Creek Mouth
 - Federal Channel



Data Sheet for **Branson Cove**

Waterbody ID Number	81	Main Waterbody	Lower Machodoc Creek
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.141600	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.637400	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	5,097
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	13.8	Number of Docks/1000 linear ft	2.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	13
Total Businesses	0	Number of Marinas	3
Total Resources	1	Number of Public Ramps	1
Combined Total	3	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

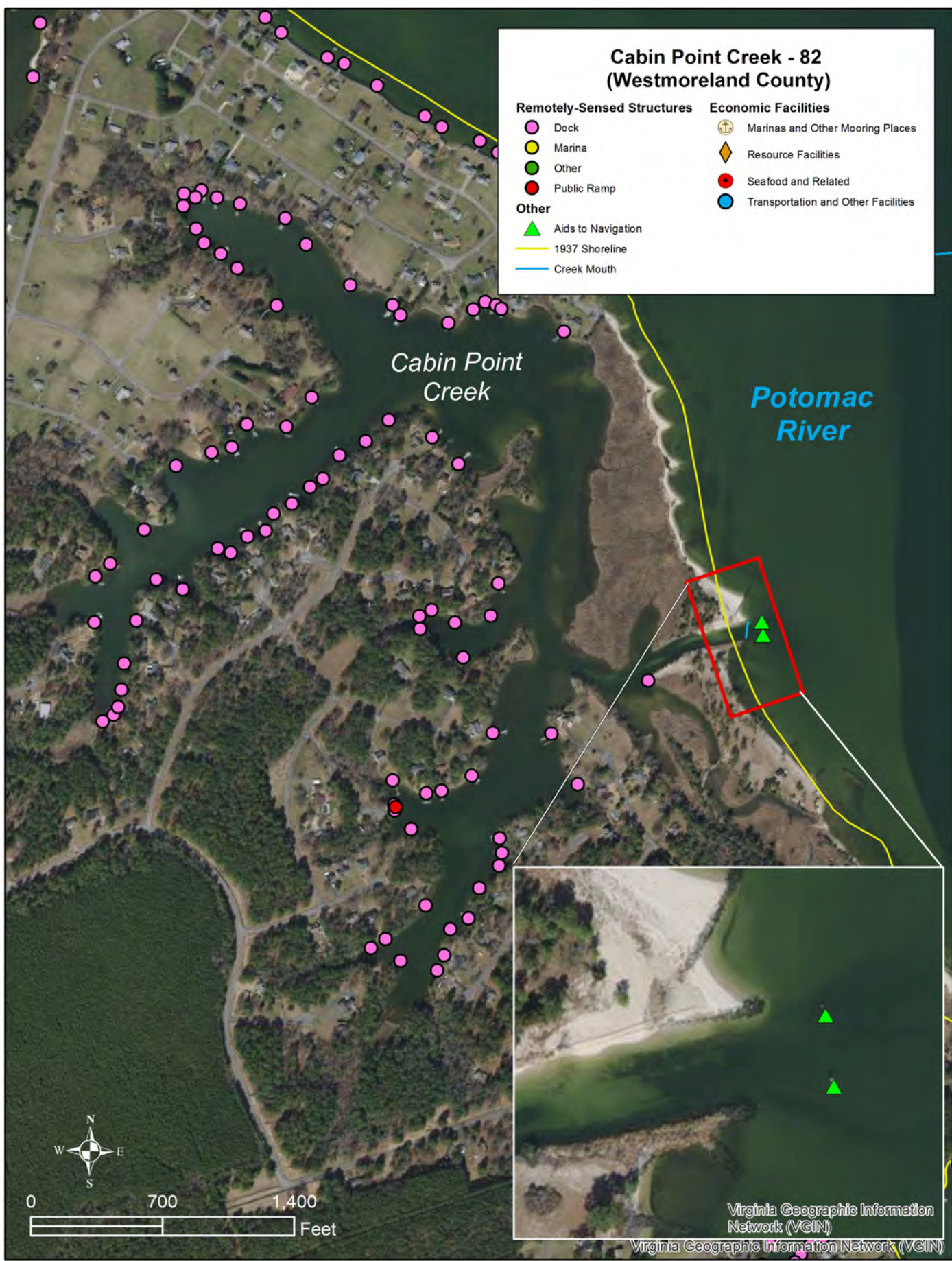
Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Cabin Point Creek - 82 (Westmoreland County)

- | Remotely-Sensed Structures | Economic Facilities |
|----------------------------|-------------------------------------|
| Dock | Marinas and Other Mooring Places |
| Marina | Resource Facilities |
| Other | Seafood and Related |
| Public Ramp | Transportation and Other Facilities |
| Other | |
| Aids to Navigation | |
| 1937 Shoreline | |
| Creek Mouth | |



0 700 1,400 Feet

Virginia Geographic Information Network (VGIN)

Virginia Geographic Information Network (VGIN)

Data Sheet for **Cabin Point Creek**

Waterbody ID Number	82	Main Waterbody	Lower Machodoc Creek
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.141400	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.661200	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	28,436
Waterbody Mouth Morphology	Inlet	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	87.0	Number of Docks/1000 linear ft	2.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	83
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	1
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Lower Machodoc Creek

Glebe Creek - 83 (Westmoreland County)

Economic Facilities

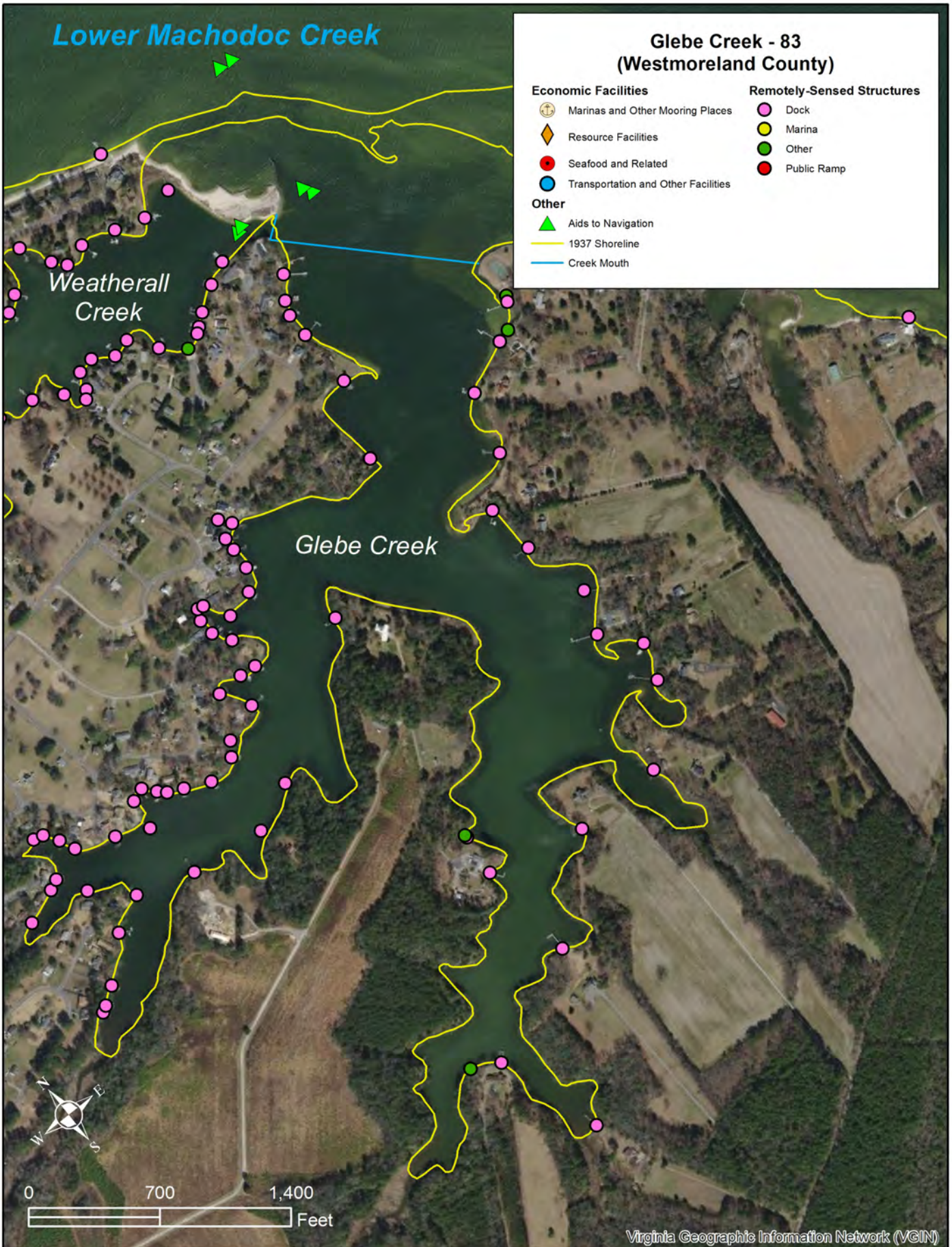
- Ⓜ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth



Data Sheet for **Glebe Creek**

Waterbody ID Number	83	Main Waterbody	Lower Machodoc Creek
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	51.8
Mouth Latitude	38.130400	Percent Lease Area/Waterbody Area	43%
Mouth Longitude	-76.649600	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	31,230
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	120.8	Number of Docks/1000 linear ft	2.1
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	66
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	4

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

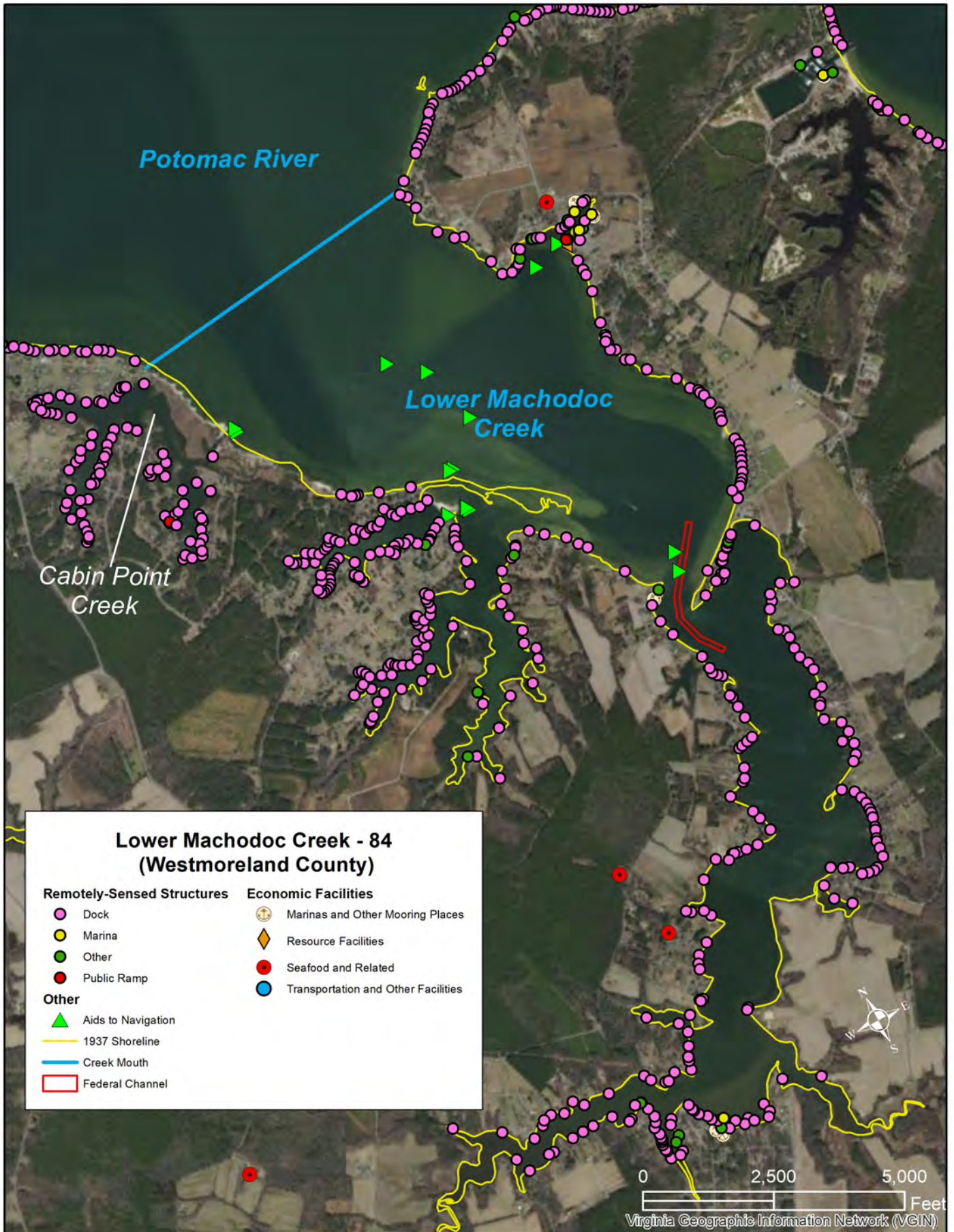
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Lower Machodoc Creek

Waterbody ID Number	84	Main Waterbody	Lower Machodoc Creek
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	1073.3
Mouth Latitude	38.147200	Percent Lease Area/Waterbody Area	56%
Mouth Longitude	-76.654000	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	211,703
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	1,657.0	Number of Docks/1000 linear ft	2.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	4	Number of Docks	456
Total Businesses	3	Number of Marinas	4
Total Resources	0	Number of Public Ramps	2
Combined Total	7	Number of Other Structures	20

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

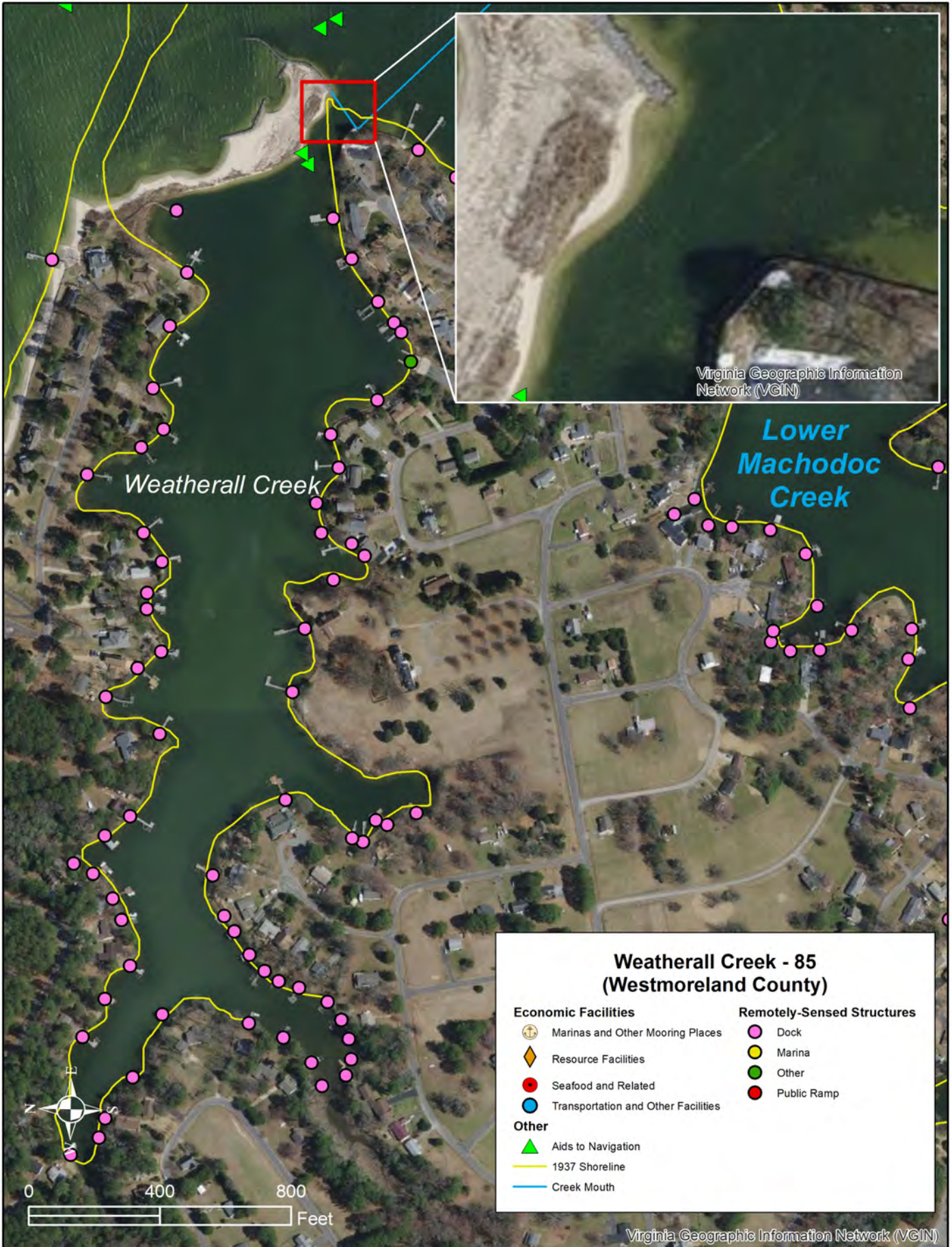
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Data Sheet for **Weatherall Creek**

Waterbody ID Number	85	Main Waterbody	Lower Machodoc Creek
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	
Mouth Latitude	38.131800	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.650900	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	11,789
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	37.4	Number of Docks/1000 linear ft	5.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	66
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

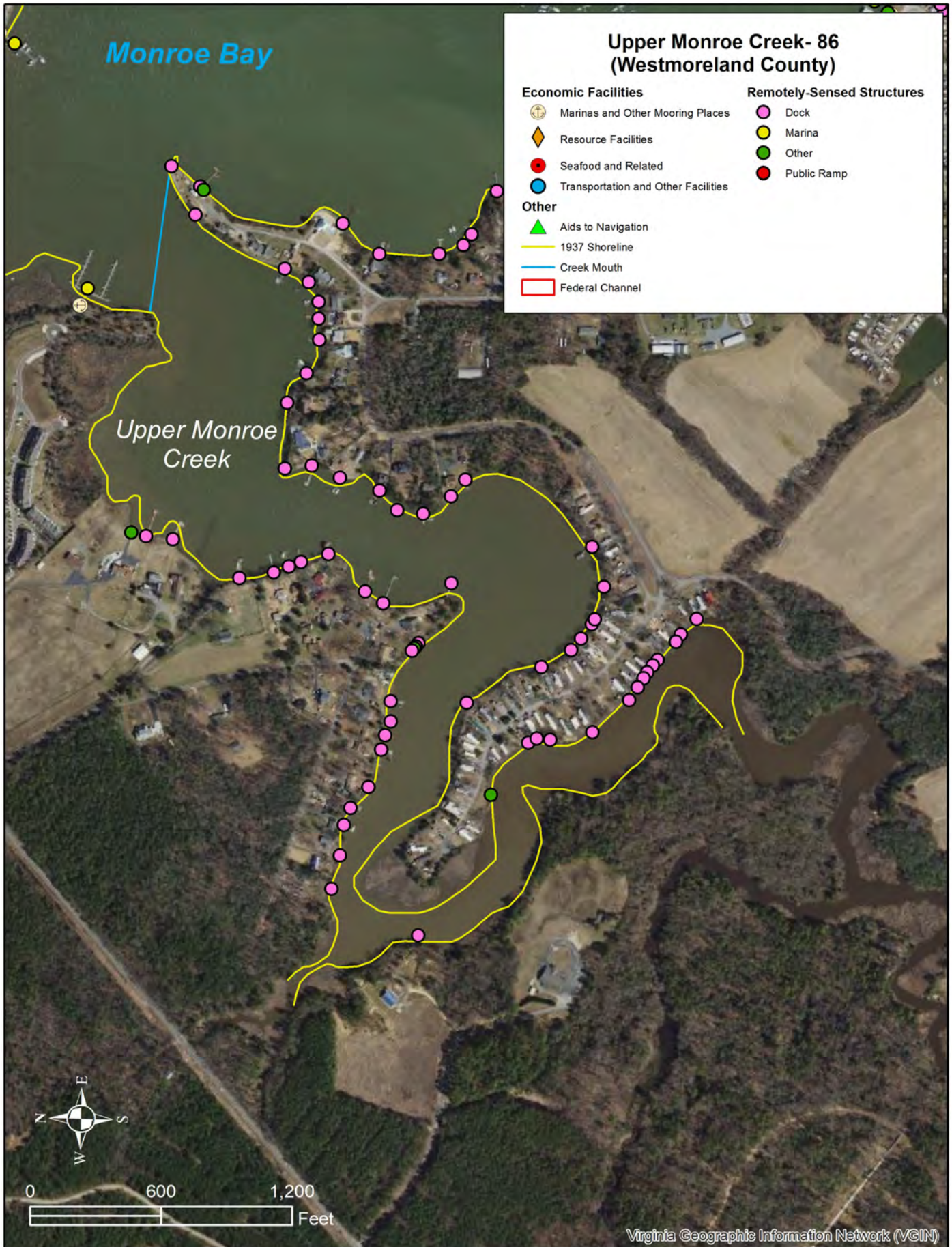
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Upper Monroe Creek**

Waterbody ID Number	86	Main Waterbody	Monroe Bay
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.248500	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.971200	Tide Range (ft)	1.60
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	38,613
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	83.6	Number of Docks/1000 linear ft	1.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	60
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	3

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

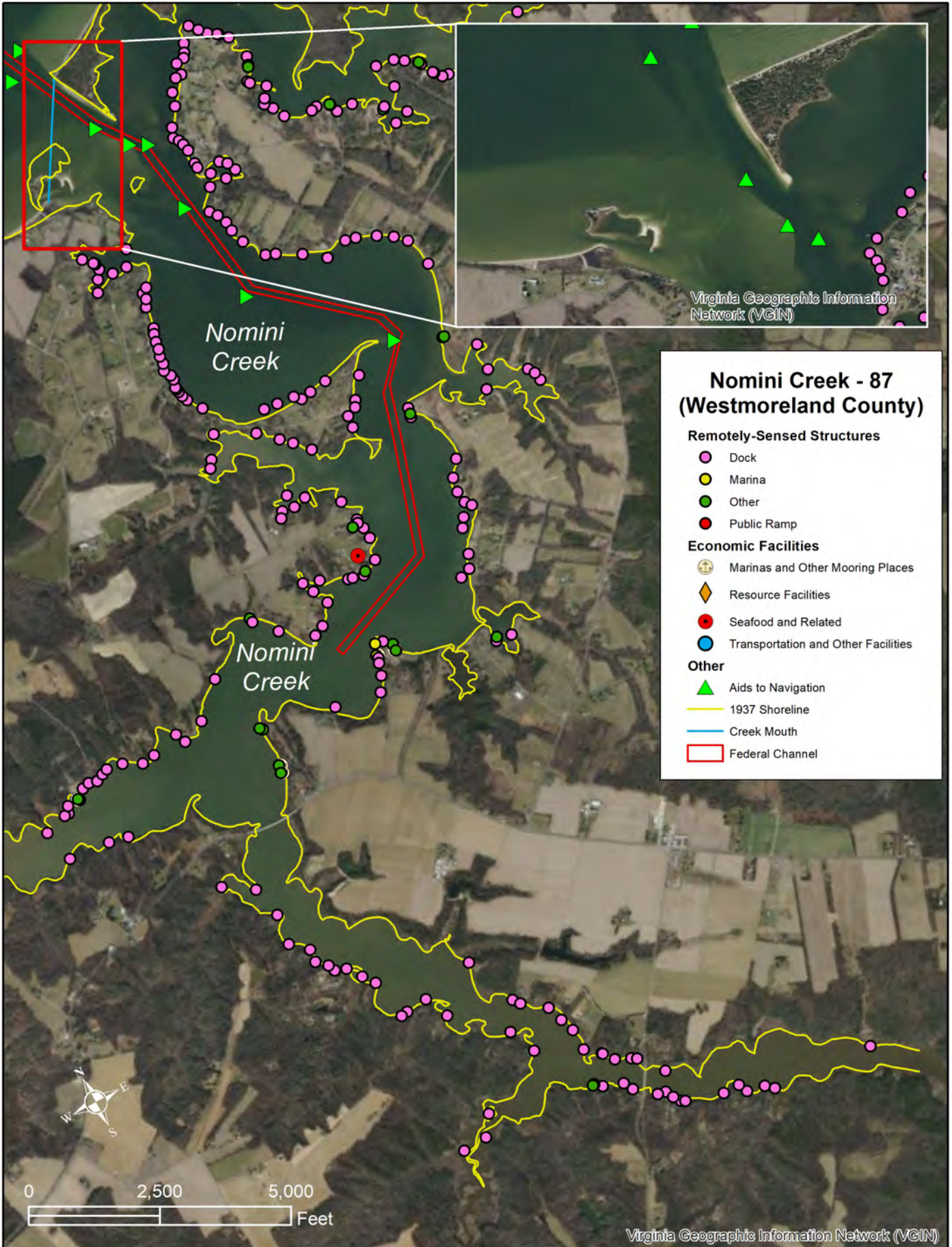
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for **Nomini Creek**

Waterbody ID Number	87	Main Waterbody	Nomini Bay
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	709.0
Mouth Latitude	38.135000	Percent Lease Area/Waterbody Area	35%
Mouth Longitude	-76.723700	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	272,283
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	1,391.7	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	5	Number of Docks	239
Total Businesses	4	Number of Marinas	2
Total Resources	0	Number of Public Ramps	0
Combined Total	9	Number of Other Structures	24

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

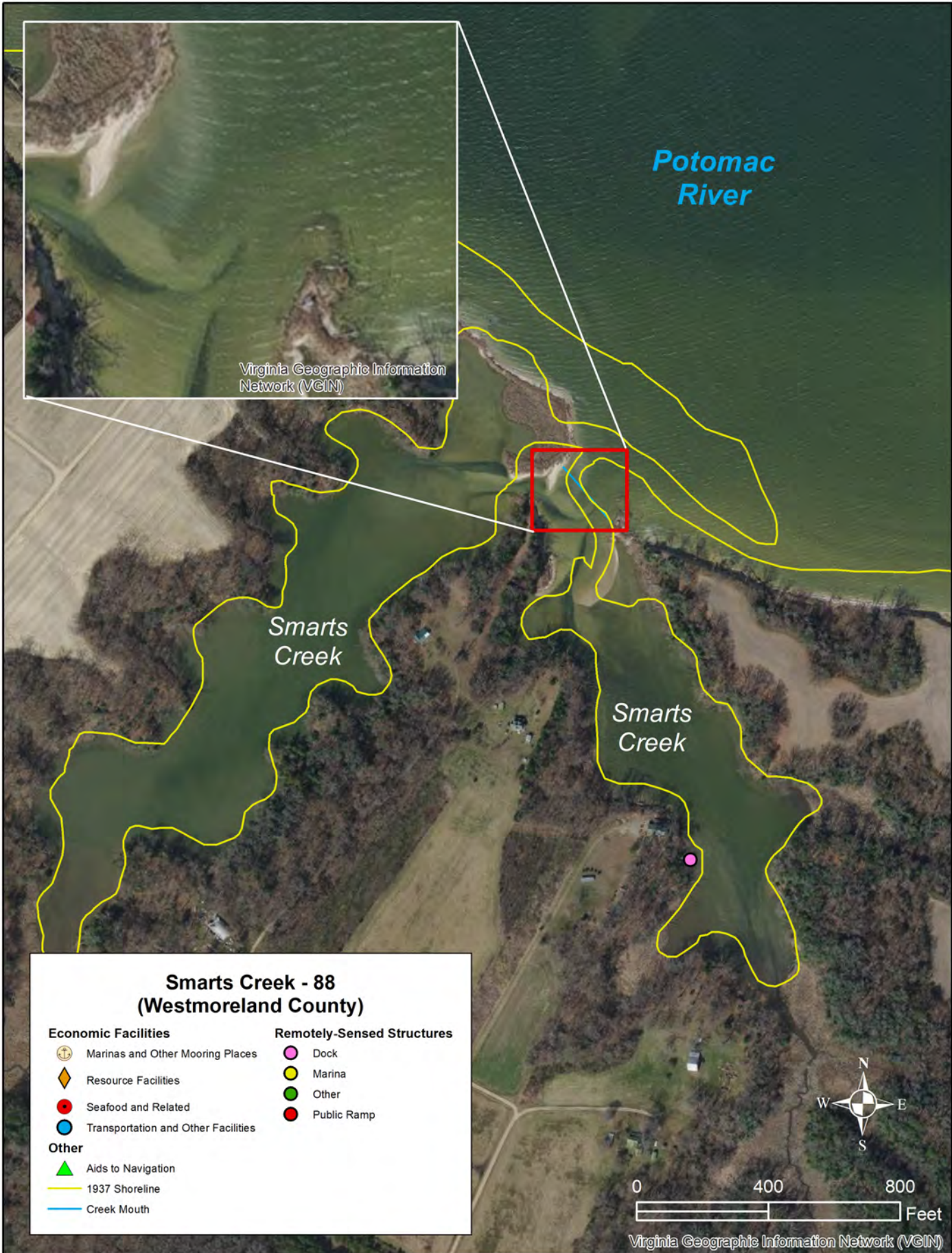
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Data Sheet for Smarts Creek

Waterbody ID Number	88	Main Waterbody	Nomini Bay
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.132500	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.737500	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	12,899
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	33.4	Number of Docks/1000 linear ft	0.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	1
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

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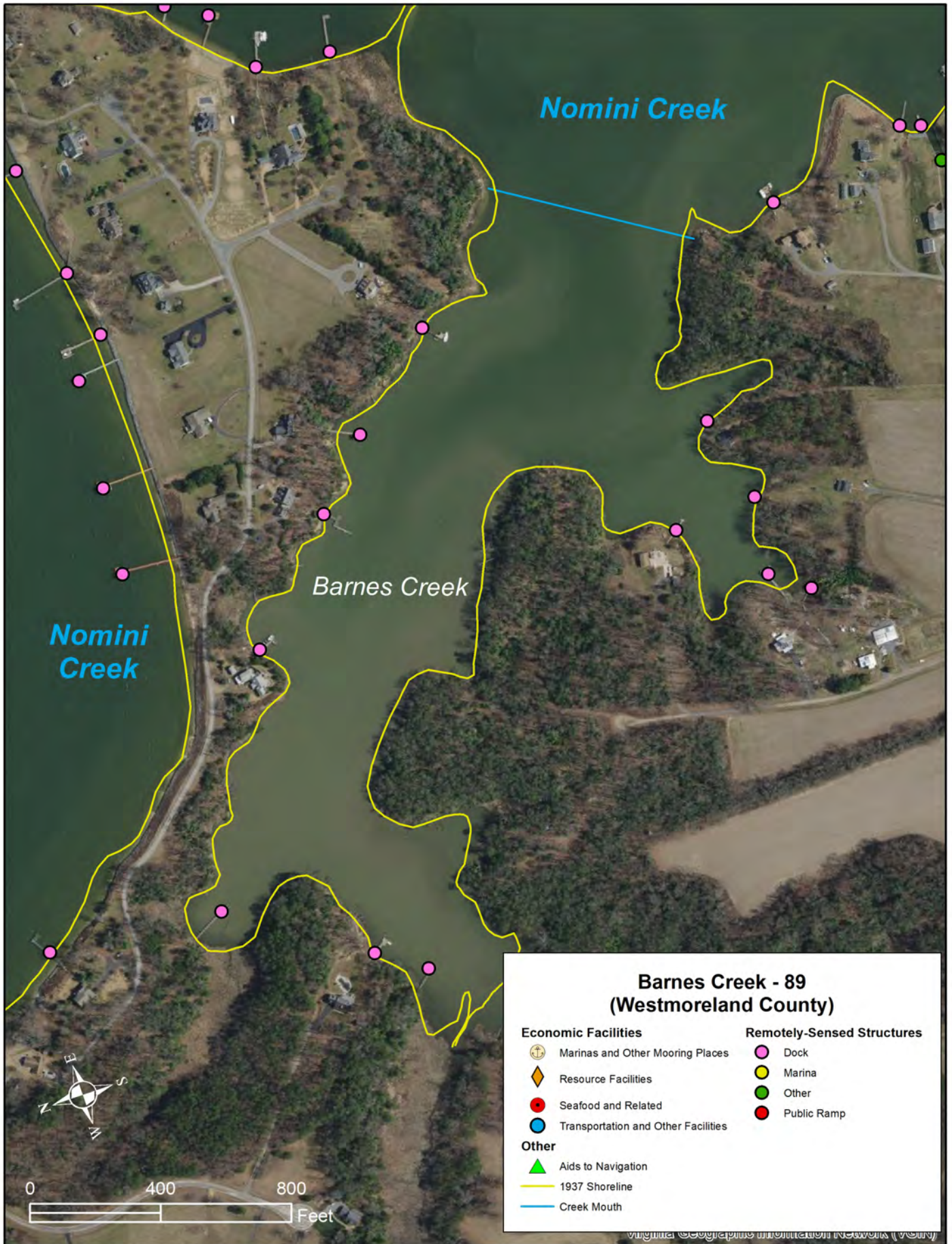
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

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Data Sheet for **Barnes Creek_WM**

Waterbody ID Number	89	Main Waterbody	Nomini Creek
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.112400	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.718100	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	13,032
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	44.6	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	12
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

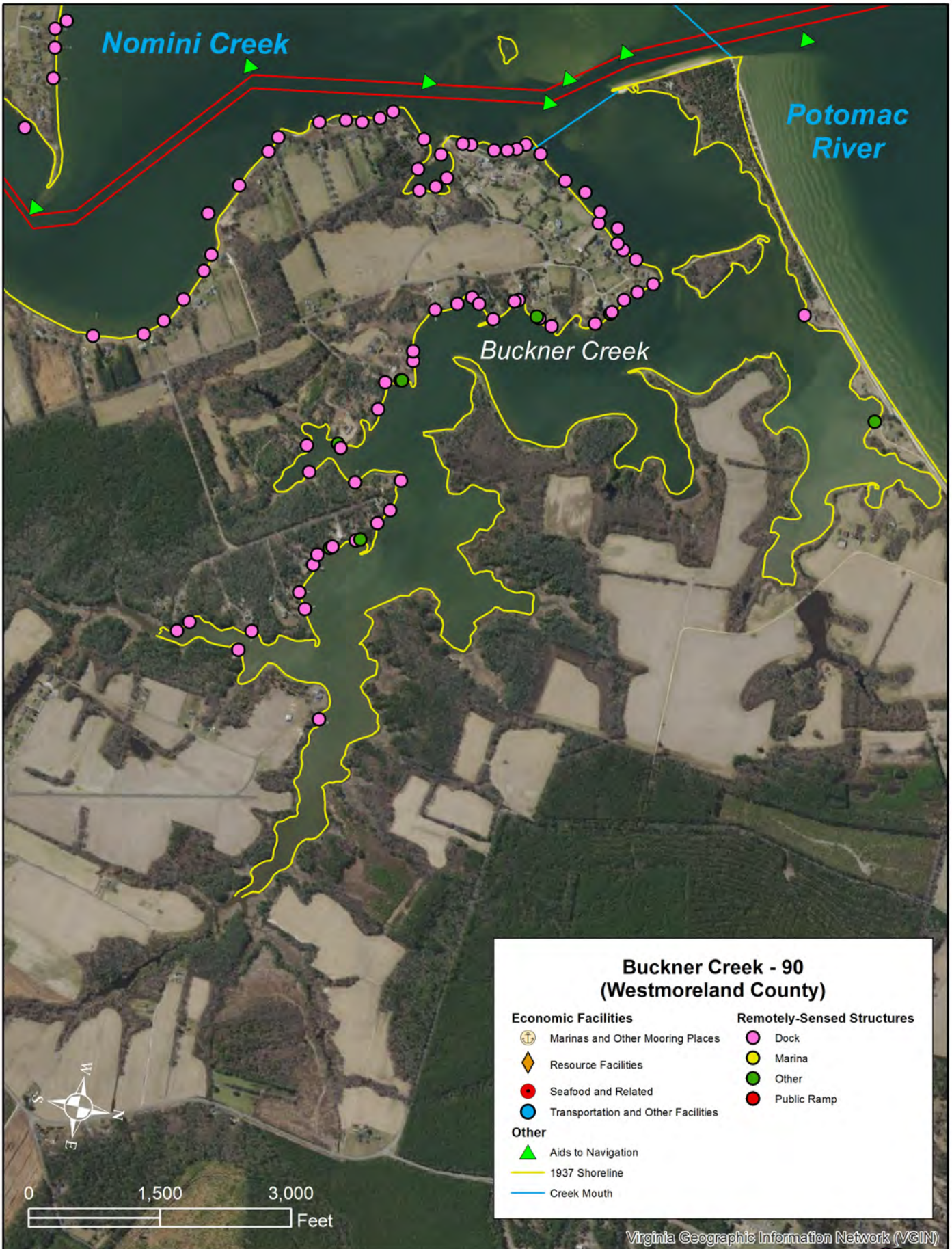
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Data Sheet for **Buckner Creek**

Waterbody ID Number	90	Main Waterbody	Nomini Creek
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	153.9
Mouth Latitude	38.133300	Percent Lease Area/Waterbody Area	36%
Mouth Longitude	-76.718200	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	67,455
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	429.1	Number of Docks/1000 linear ft	0.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	47
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	7

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Nomini Creek

Jules Creek - 91 (Westmoreland County)

Economic Facilities

- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

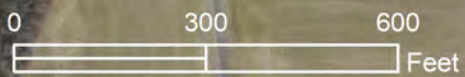
Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Jules Creek



Data Sheet for Jules Creek

Waterbody ID Number	91	Main Waterbody	Nomini Creek
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.114000	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.708700	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	9,343
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	32.4	Number of Docks/1000 linear ft	0.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	6
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Nomini Creek

Peirce Creek - 92 (Westmoreland County)

Economic Facilities

- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Peirce Creek



Data Sheet for Peirce Creek

Waterbody ID Number	92	Main Waterbody	Nomini Creek
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	19.3
Mouth Latitude	38.102300	Percent Lease Area/Waterbody Area	14%
Mouth Longitude	-76.735900	Tide Range (ft)	1.50
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	27,047
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	140.4	Number of Docks/1000 linear ft	0.7

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	18
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

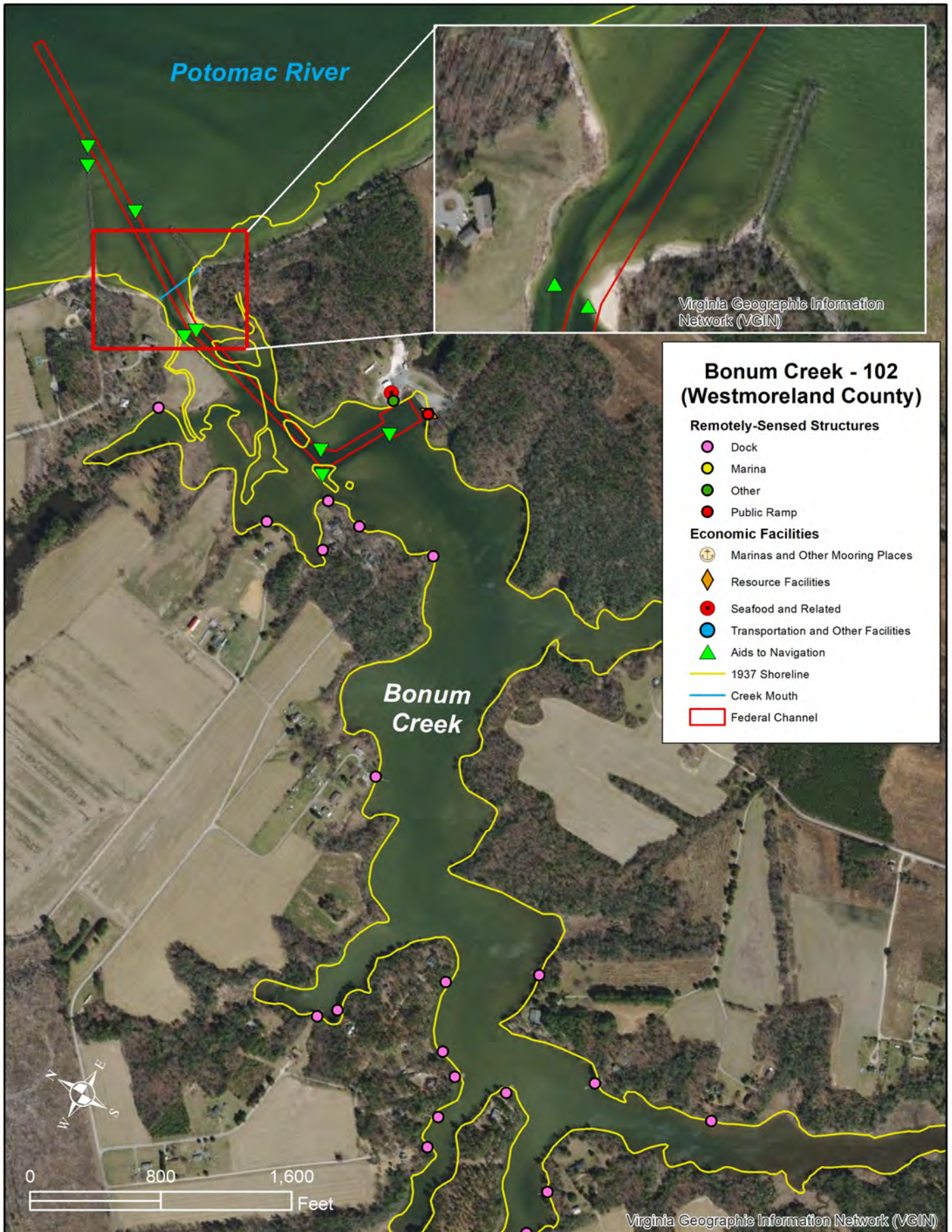
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Bonum Creek**

Waterbody ID Number	102	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	78.8
Mouth Latitude	38.095800	Percent Lease Area/Waterbody Area	56%
Mouth Longitude	-76.581500	Tide Range (ft)	1.40
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	42,171
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	139.5	Number of Docks/1000 linear ft	0.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	20
Total Businesses	1	Number of Marinas	0
Total Resources	1	Number of Public Ramps	1
Combined Total	2	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

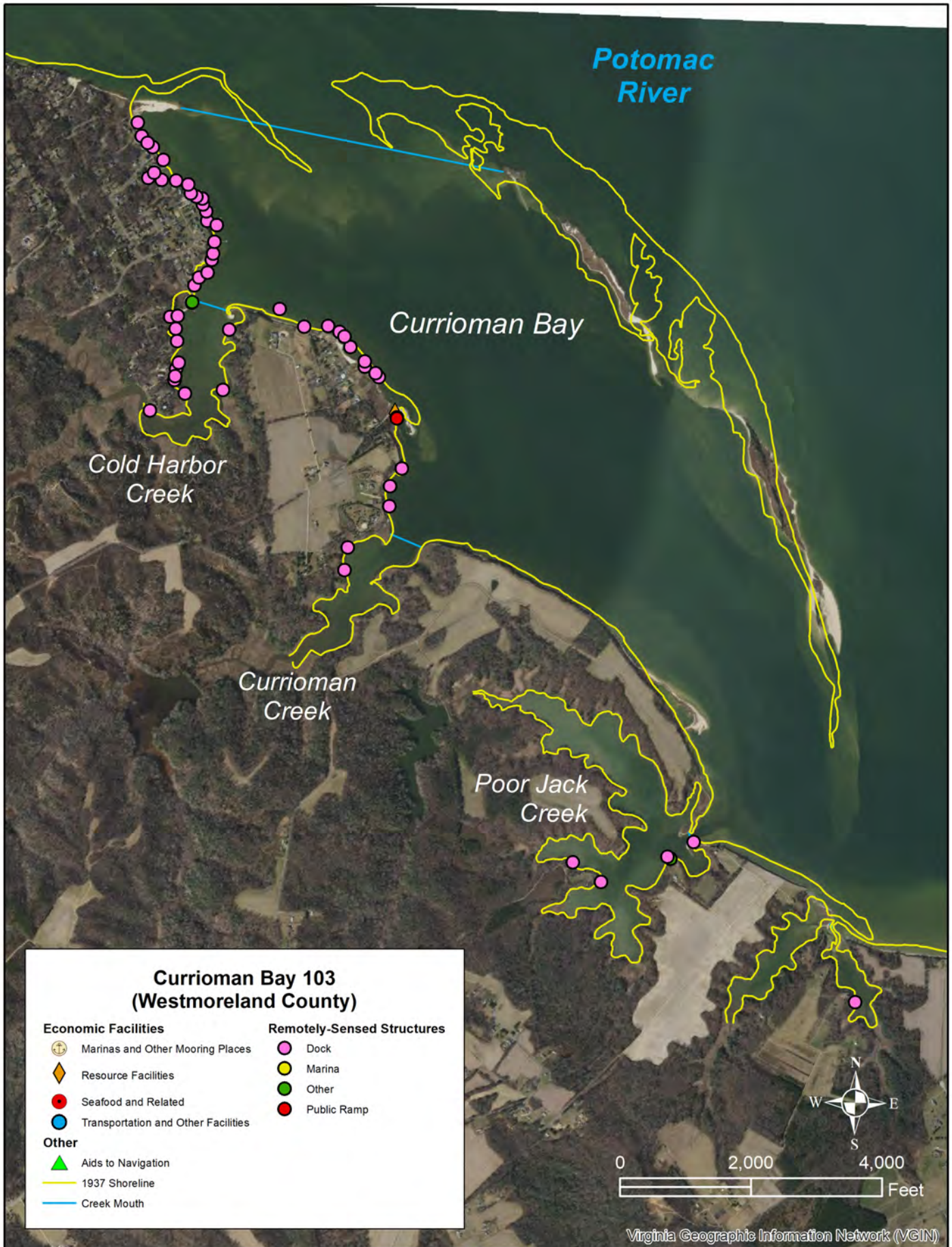
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Currioman Bay

Waterbody ID Number	103	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	324.9
Mouth Latitude	38.165200	Percent Lease Area/Waterbody Area	32%
Mouth Longitude	-76.764600	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	41,979
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	No
Waterbody Area (acres)	1,018.1	Number of Docks/1000 linear ft	0.9
RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	37
Total Businesses	0	Number of Marinas	0
Total Resources	1	Number of Public Ramps	1
Combined Total	2	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

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Potomac River

Gardner Creek - 104 (Westmoreland County)

Economic Facilities

- ⊕ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Gardner Creek



Data Sheet for Gardner Creek

Waterbody ID Number	104	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	64.3
Mouth Latitude	38.113100	Percent Lease Area/Waterbody Area	50%
Mouth Longitude	-76.602900	Tide Range (ft)	1.40
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	34,220
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	128.9	Number of Docks/1000 linear ft	2.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	99
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	16

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Herring Pond - 105 (Westmoreland County)

Economic Facilities

- ⚓ Marinas and Other Mooring Places
- ♦ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Remotely-Sensed Structures

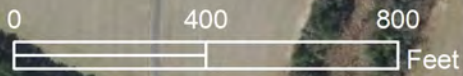
- Dock
- Marina
- Other
- Public Ramp

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Potomac River

Herring Pond



Data Sheet for **Herring Pond**

Waterbody ID Number	105	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.159700	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.690600	Tide Range (ft)	1.50
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	8,544
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	27.1	Number of Docks/1000 linear ft	0.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	1
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

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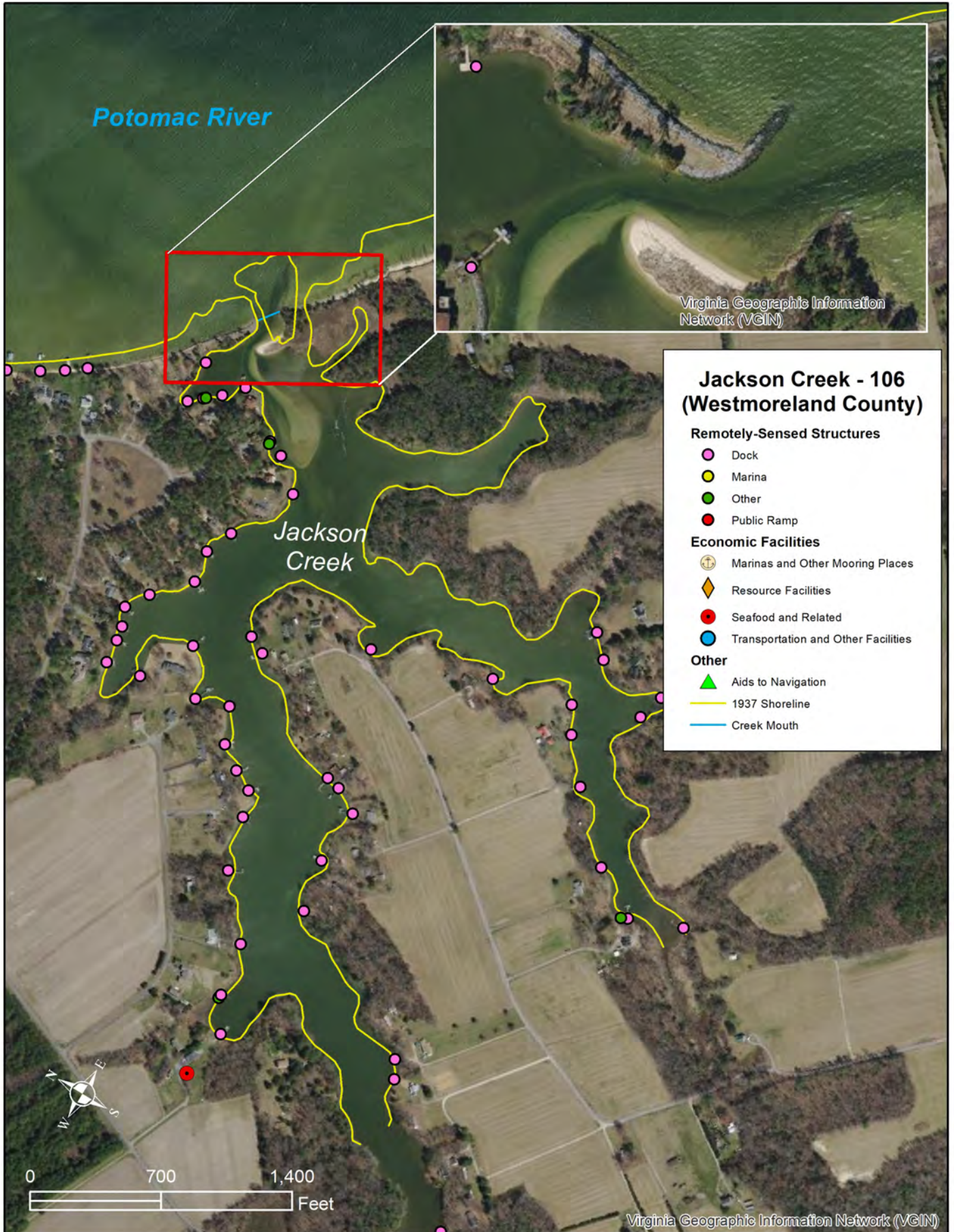
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Jackson Creek

Waterbody ID Number	106	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	26.7
Mouth Latitude	38.106700	Percent Lease Area/Waterbody Area	29%
Mouth Longitude	-76.597100	Tide Range (ft)	1.40
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	33,783
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	92.7	Number of Docks/1000 linear ft	1.5

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	50
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	4

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

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Combined Total is the total number of verified resource facilities identified along the waterbody.

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Mattox Creek- 107 (Westmoreland County)

- | Economic Facilities | | Remotely-Sensed Structures | |
|---|-------------------------------------|---|-------------|
|  | Marinas and Other Mooring Places |  | Dock |
|  | Resource Facilities |  | Marina |
|  | Seafood and Related |  | Other |
|  | Transportation and Other Facilities |  | Public Ramp |
- Other**
-  Aids to Navigation
 -  1937 Shoreline
 -  Creek Mouth

Potomac River

Mattox
Creek



0 2,000 4,000 Feet

Data Sheet for **Mattox Creek**

Waterbody ID Number	107	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	209.1
Mouth Latitude	38.210600	Percent Lease Area/Waterbody Area	26%
Mouth Longitude	-76.958300	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	124,790
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	789.3	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	5	Number of Docks	163
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	5	Number of Other Structures	8

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

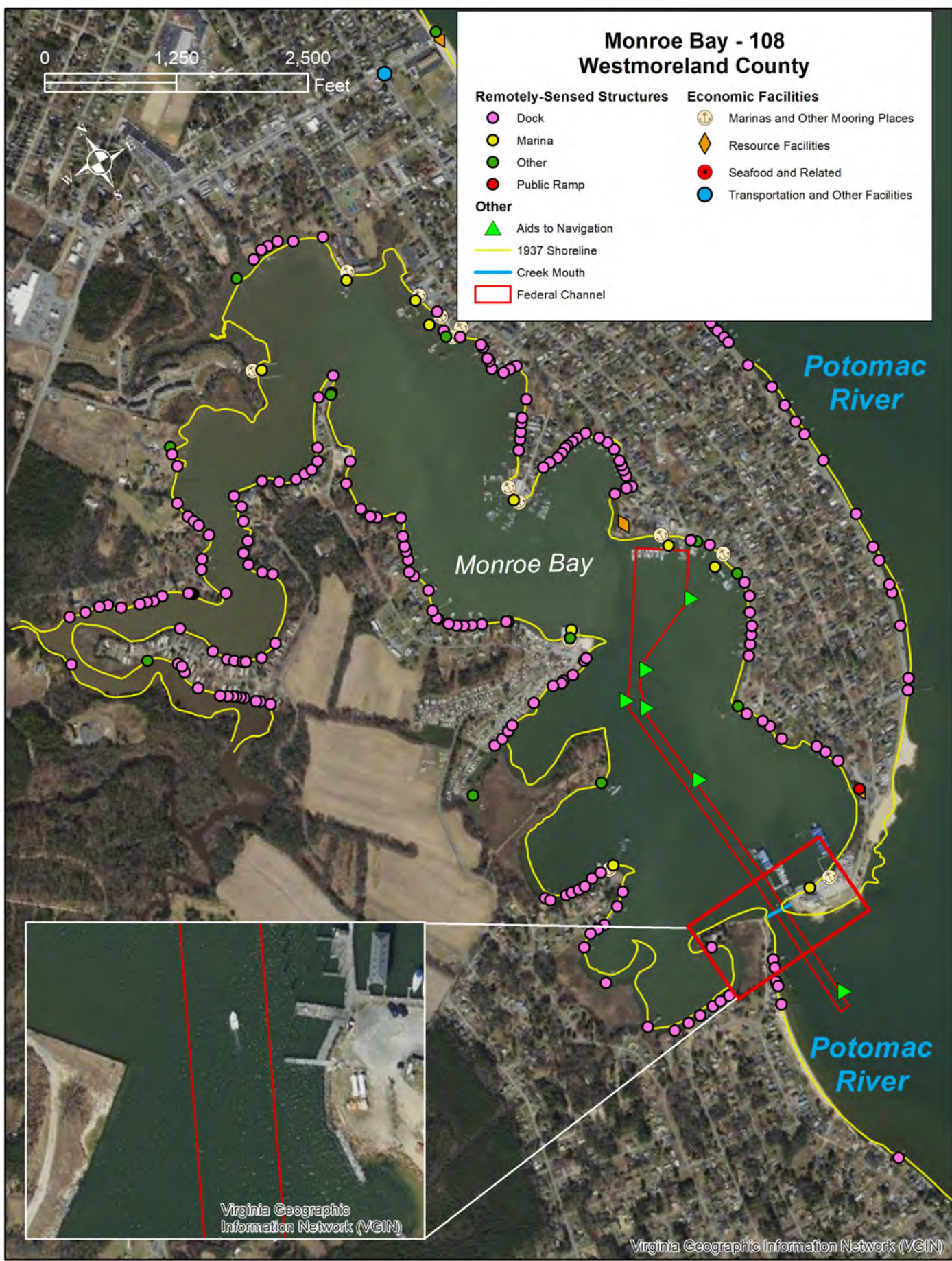
Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Monroe Bay - 108 Westmoreland County



- | Remotely-Sensed Structures | Economic Facilities |
|--|---|
| ● Dock | ⚓ Marinas and Other Mooring Places |
| ● Marina | ◆ Resource Facilities |
| ● Other | ● Seafood and Related |
| ● Public Ramp | ● Transportation and Other Facilities |
- Other**
- ▲ Aids to Navigation
 - 1937 Shoreline
 - Creek Mouth
 - ▭ Federal Channel



Virginia Geographic Information Network (VGIN)

Virginia Geographic Information Network (VGIN)

Data Sheet for **Monroe Bay**

Waterbody ID Number	108	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Federal	Private Lease Acreage (acres)	0.9
Mouth Latitude	38.230500	Percent Lease Area/Waterbody Area	0%
Mouth Longitude	-76.965500	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	77,330
Waterbody Mouth Morphology	Inlet	Historical SAV (1971-2020)	No
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	364.9	Number of Docks/1000 linear ft	2.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	14	Number of Docks	175
Total Businesses	1	Number of Marinas	10
Total Resources	3	Number of Public Ramps	1
Combined Total	18	Number of Other Structures	14

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

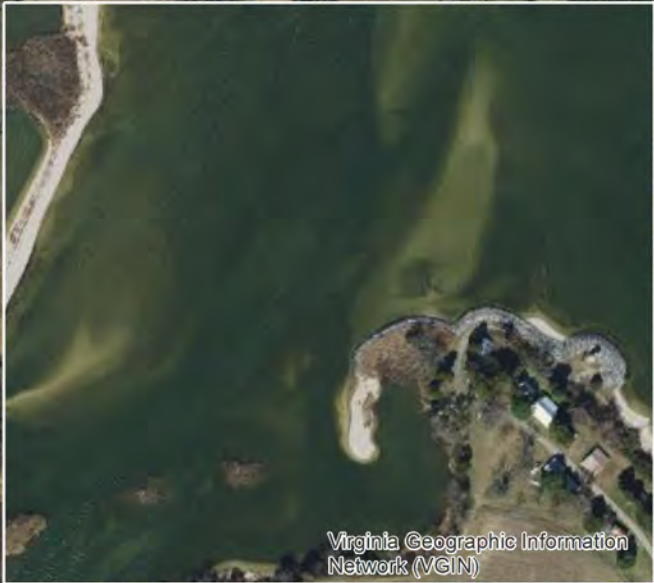
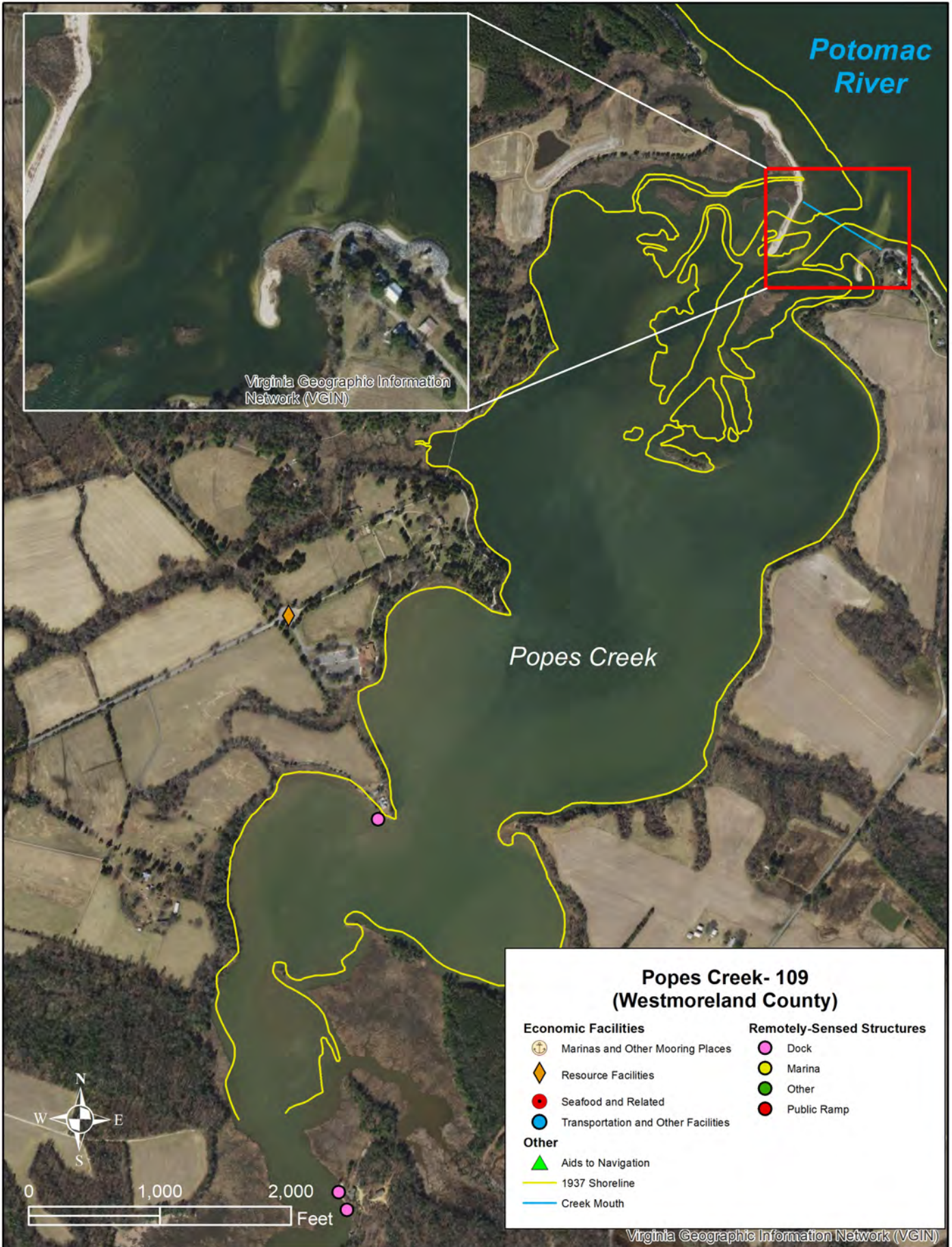
REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Potomac River

Popes Creek



Data Sheet for Popes Creek

Waterbody ID Number	109	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	No
Channel Type	Non-Federal	Private Lease Acreage (acres)	
Mouth Latitude	38.192200	Percent Lease Area/Waterbody Area	
Mouth Longitude	-76.905600	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	59,905
Waterbody Mouth Morphology	Restricted	Historical SAV (1971-2020)	No
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	421.4	Number of Docks/1000 linear ft	0.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	3
Total Businesses	0	Number of Marinas	0
Total Resources	1	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

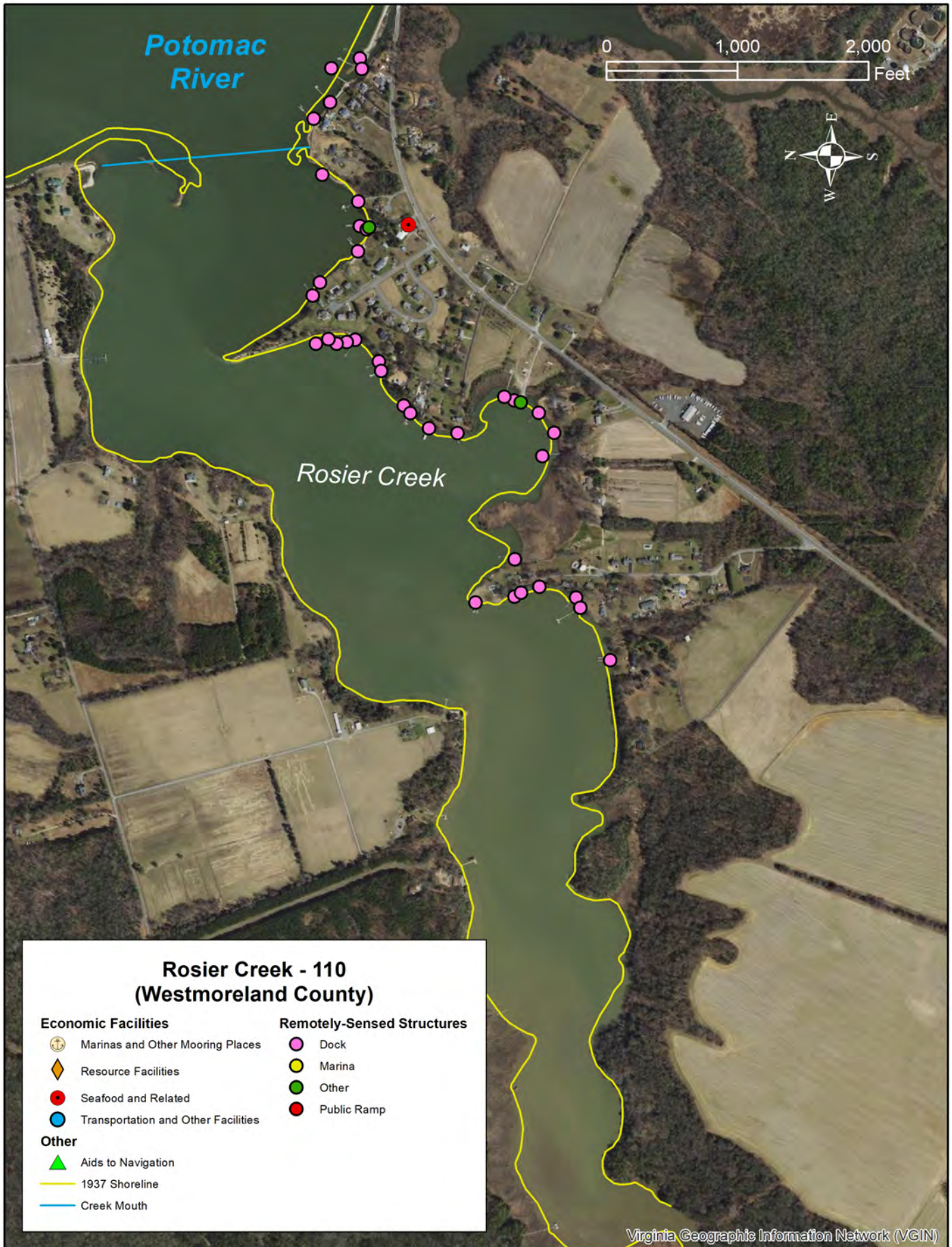
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Rosier Creek

Waterbody ID Number	110	Main Waterbody	Potomac River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	123.3
Mouth Latitude	38.277000	Percent Lease Area/Waterbody Area	38%
Mouth Longitude	-77.000900	Tide Range (ft)	1.60
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	50,149
Waterbody Mouth Morphology	Semi-Restricted	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	<50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	321.7	Number of Docks/1000 linear ft	0.6

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	31
Total Businesses	1	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

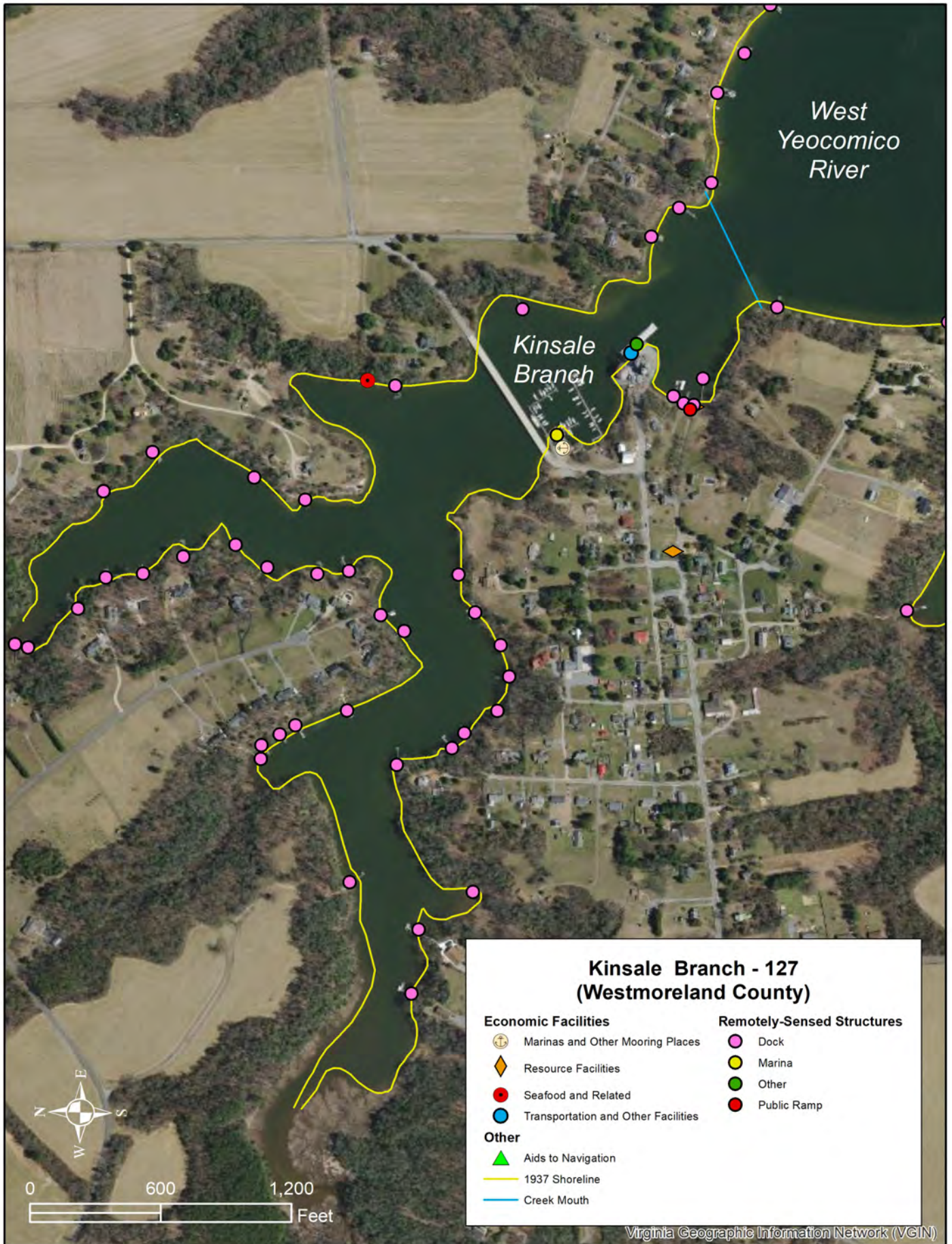
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Kinsale Branch**

Waterbody ID Number	127	Main Waterbody	West Yeocomico River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	1.3
Mouth Latitude	38.029000	Percent Lease Area/Waterbody Area	2%
Mouth Longitude	-76.573500	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	20,989
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	76.2	Number of Docks/1000 linear ft	2.0

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	42
Total Businesses	0	Number of Marinas	1
Total Resources	2	Number of Public Ramps	1
Combined Total	3	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:












Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.

Shannon Branch - 130 (Westmoreland County)

- | | |
|---|---|
| Economic Facilities | Remotely-Sensed Structures |
|  Marinas and Other Mooring Places |  Dock |
|  Resource Facilities |  Marina |
|  Seafood and Related |  Other |
|  Transportation and Other Facilities |  Public Ramp |
| Other | |
|  Aids to Navigation | |
|  1937 Shoreline | |
|  Creek Mouth | |

Shannon Branch



Data Sheet for **Shannon Branch**

Waterbody ID Number	130	Main Waterbody	NorthWest Yeocomico River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	95.5
Mouth Latitude	38.044000	Percent Lease Area/Waterbody Area	52%
Mouth Longitude	-76.553100	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	31,449
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	181.8	Number of Docks/1000 linear ft	1.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	36
Total Businesses	0	Number of Marinas	4
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

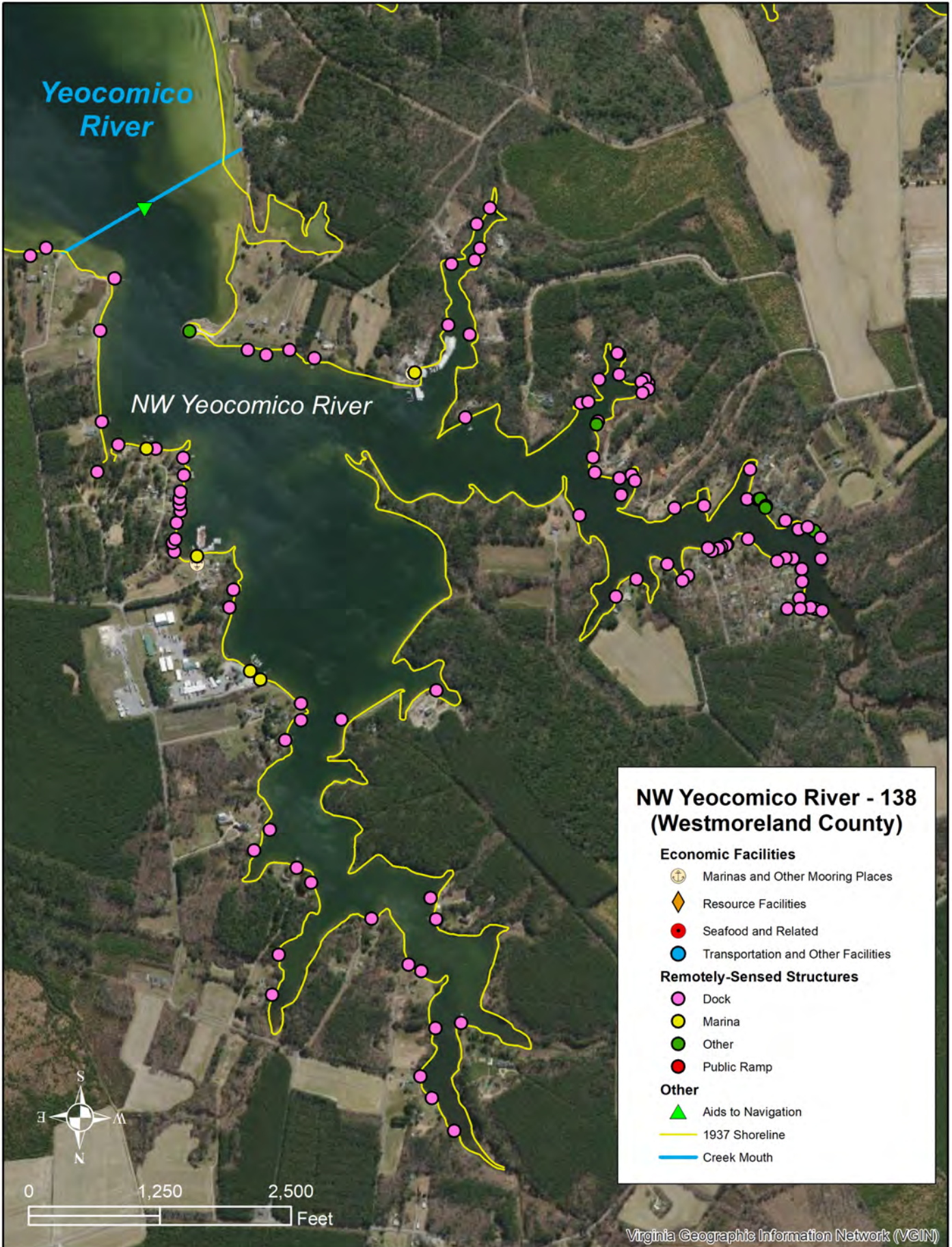
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for NW Yeocomico River

Waterbody ID Number	138	Main Waterbody	Yeocomico River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	278.2
Mouth Latitude	38.037500	Percent Lease Area/Waterbody Area	72%
Mouth Longitude	-76.548700	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	77,578
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	112.3	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	2	Number of Docks	103
Total Businesses	0	Number of Marinas	5
Total Resources	0	Number of Public Ramps	0
Combined Total	2	Number of Other Structures	6

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

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Parkers Creek - 139 (Westmoreland County)

Economic Facilities

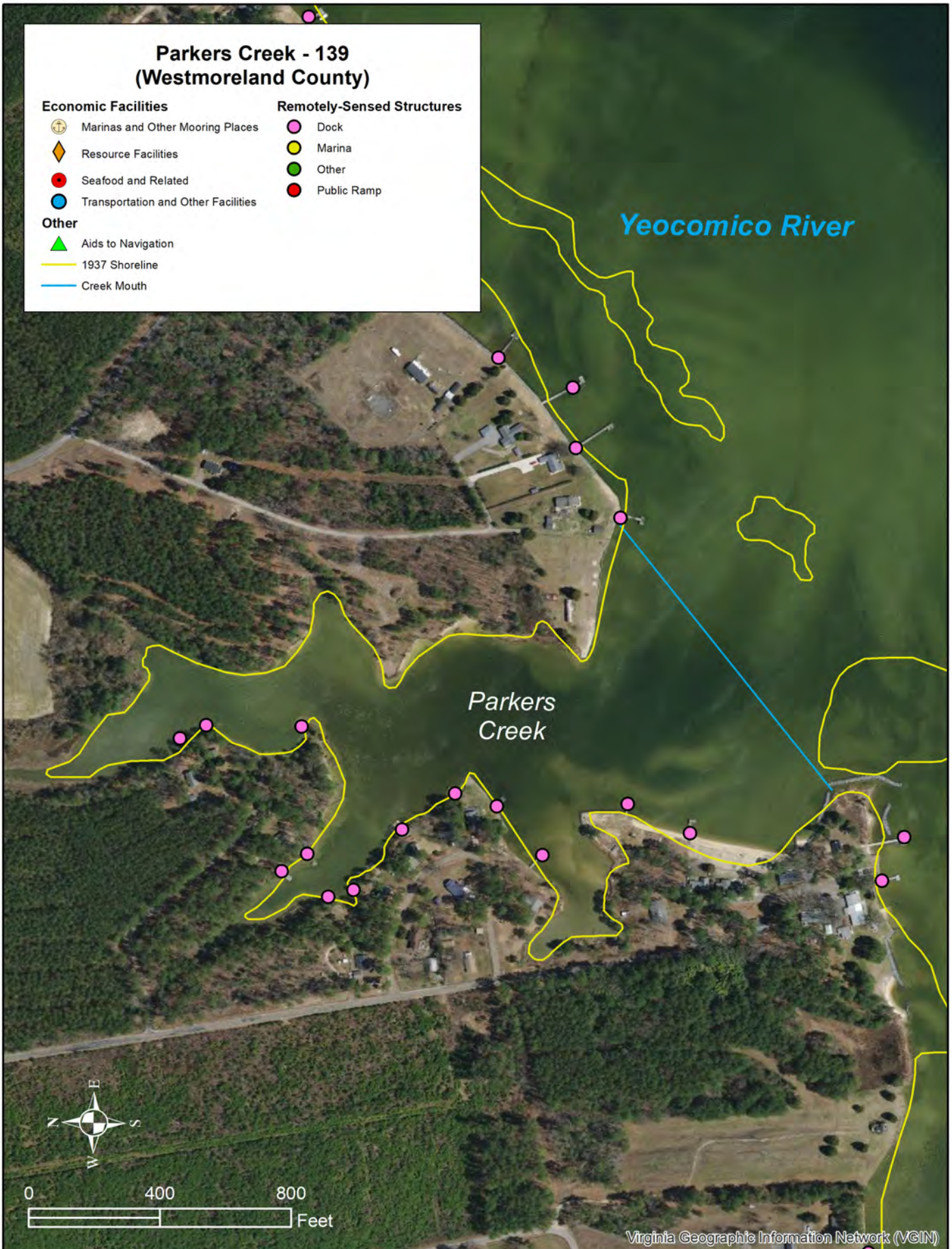
- ⚓ Marinas and Other Mooring Places
- ◇ Resource Facilities
- Seafood and Related
- Transportation and Other Facilities

Other

- ▲ Aids to Navigation
- 1937 Shoreline
- Creek Mouth

Remotely-Sensed Structures

- Dock
- Marina
- Other
- Public Ramp



Data Sheet for Parkers Creek

Waterbody ID Number	139	Main Waterbody	Yeocomico River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	19.7
Mouth Latitude	38.040300	Percent Lease Area/Waterbody Area	68%
Mouth Longitude	-76.538300	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	10,039
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	>50% of channel	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	28.8	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	13
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	0

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

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Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

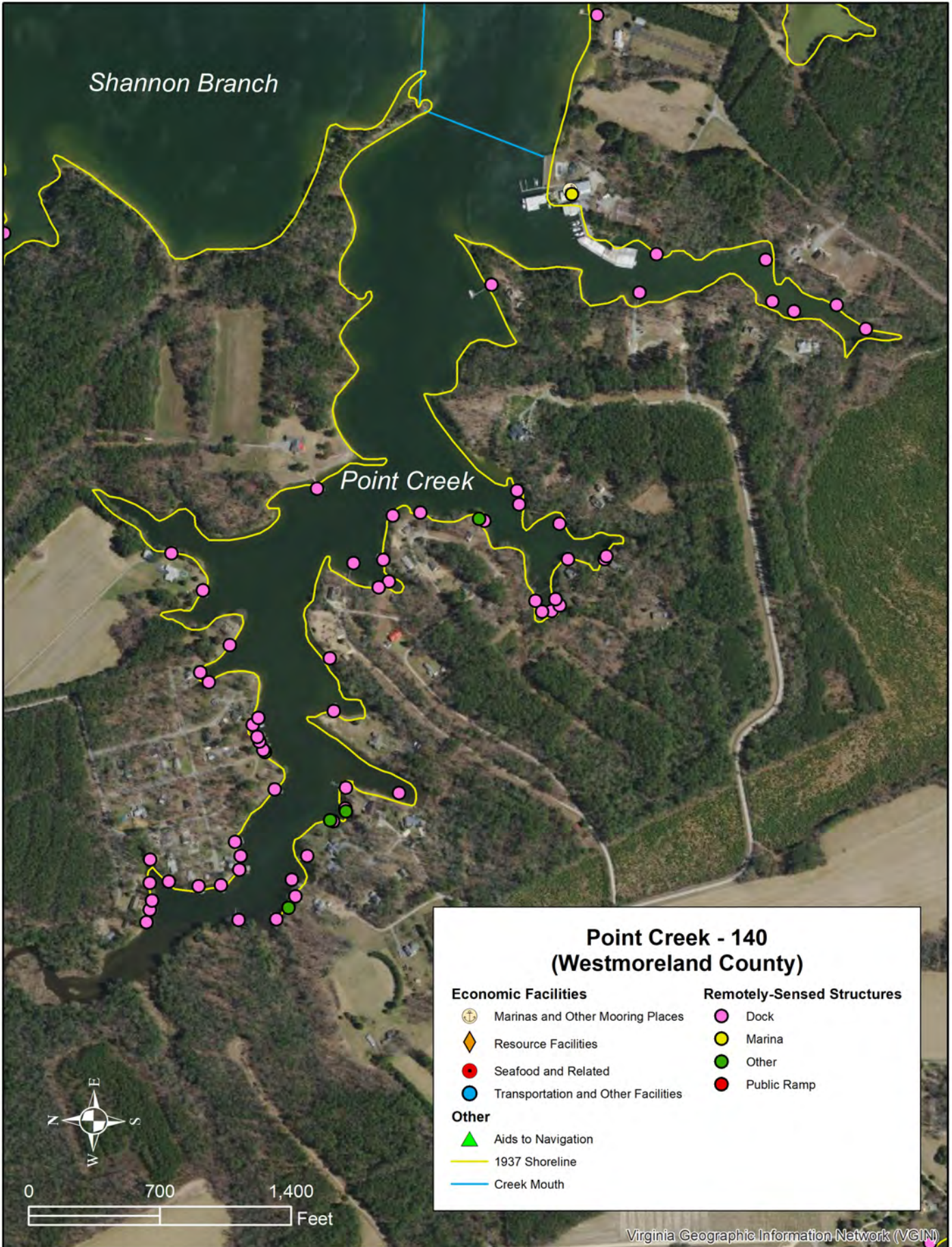
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Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for **Point Creek**

Waterbody ID Number	140	Main Waterbody	Northwest Yeocomico River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	21.2
Mouth Latitude	38.043100	Percent Lease Area/Waterbody Area	23%
Mouth Longitude	-76.556500	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	28,873
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	94.0	Number of Docks/1000 linear ft	2.1

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	60
Total Businesses	0	Number of Marinas	1
Total Resources	0	Number of Public Ramps	0
Combined Total	1	Number of Other Structures	5

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

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Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

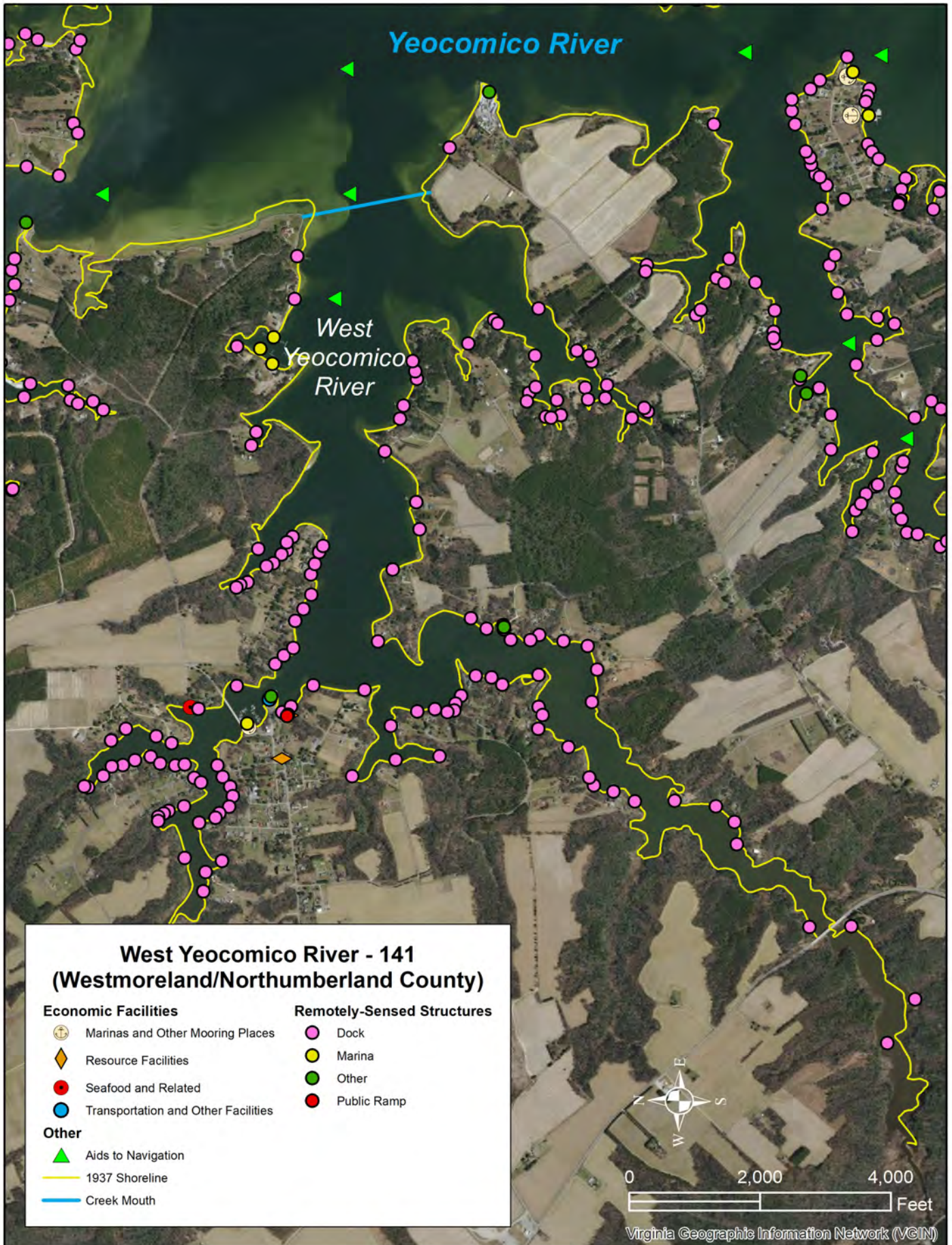
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Data Sheet for **West Yeocomico River**

Waterbody ID Number	141	Main Waterbody	Yeocomico River
County	Westmoreland	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	136.9
Mouth Latitude	38.026600	Percent Lease Area/Waterbody Area	20%
Mouth Longitude	-76.548800	Tide Range (ft)	1.30
Waterbody Type	Secondary Waterbody	Combined Shoreline Length (ft)	111,986
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	319.5	Number of Docks/1000 linear ft	1.2

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	1	Number of Docks	139
Total Businesses	4	Number of Marinas	4
Total Resources	2	Number of Public Ramps	1
Combined Total	7	Number of Other Structures	2

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

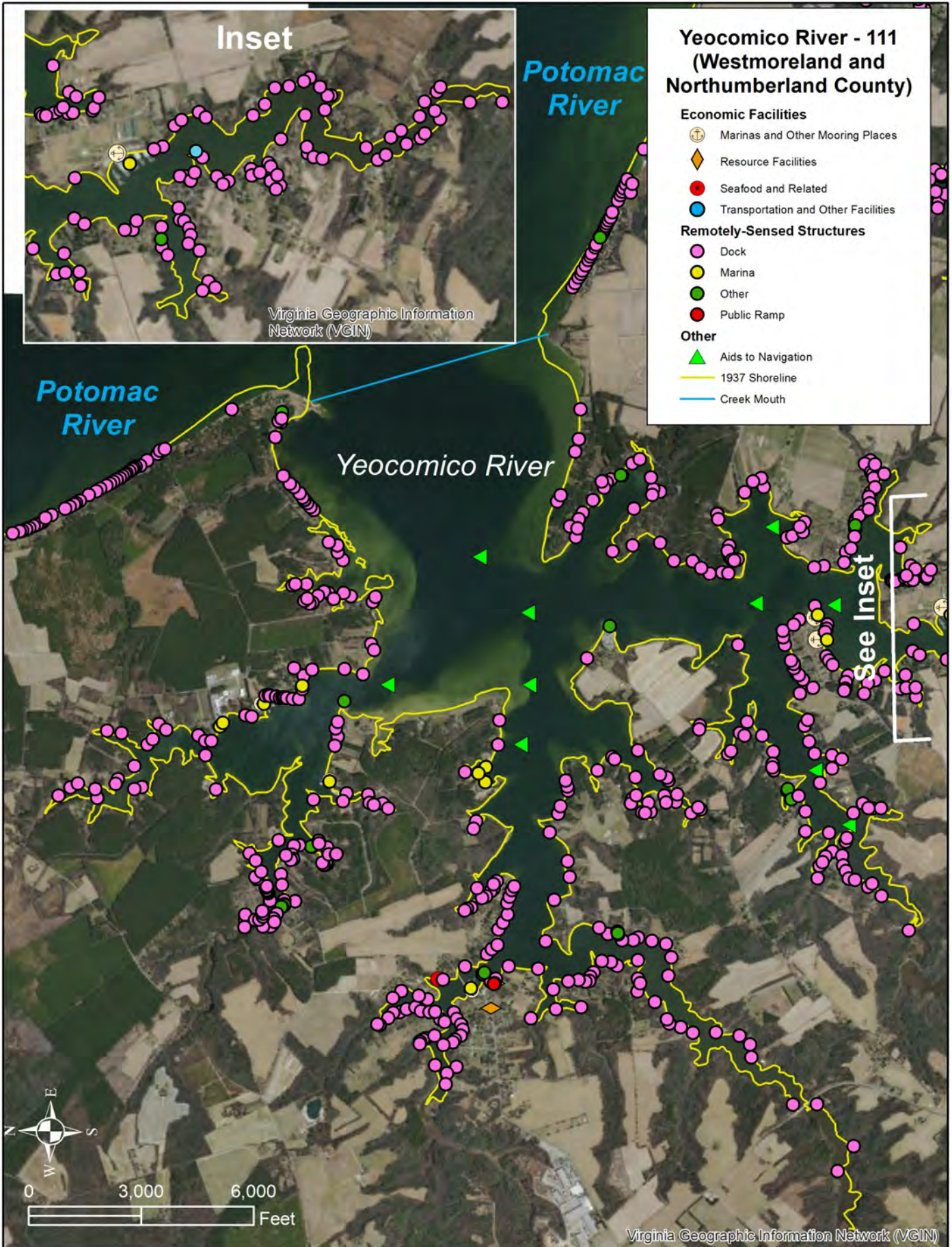
REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Yeocomico River

Waterbody ID Number	111	Main Waterbody	Potomac River
County	WM/NL	Private Oyster Leases Present	Yes
Channel Type	Non-Federal with ATONS	Private Lease Acreage (acres)	1216.5
Mouth Latitude	38.035200	Percent Lease Area/Waterbody Area	34%
Mouth Longitude	-76.519100	Tide Range (ft)	1.30
Waterbody Type	Primary Waterbody	Combined Shoreline Length (ft)	403,505
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	Yes
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	1,376.8	Number of Docks/1000 linear ft	1.3

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	6	Number of Docks	519
Total Businesses	5	Number of Marinas	12
Total Resources	3	Number of Public Ramps	2
Combined Total	14	Number of Other Structures	16

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

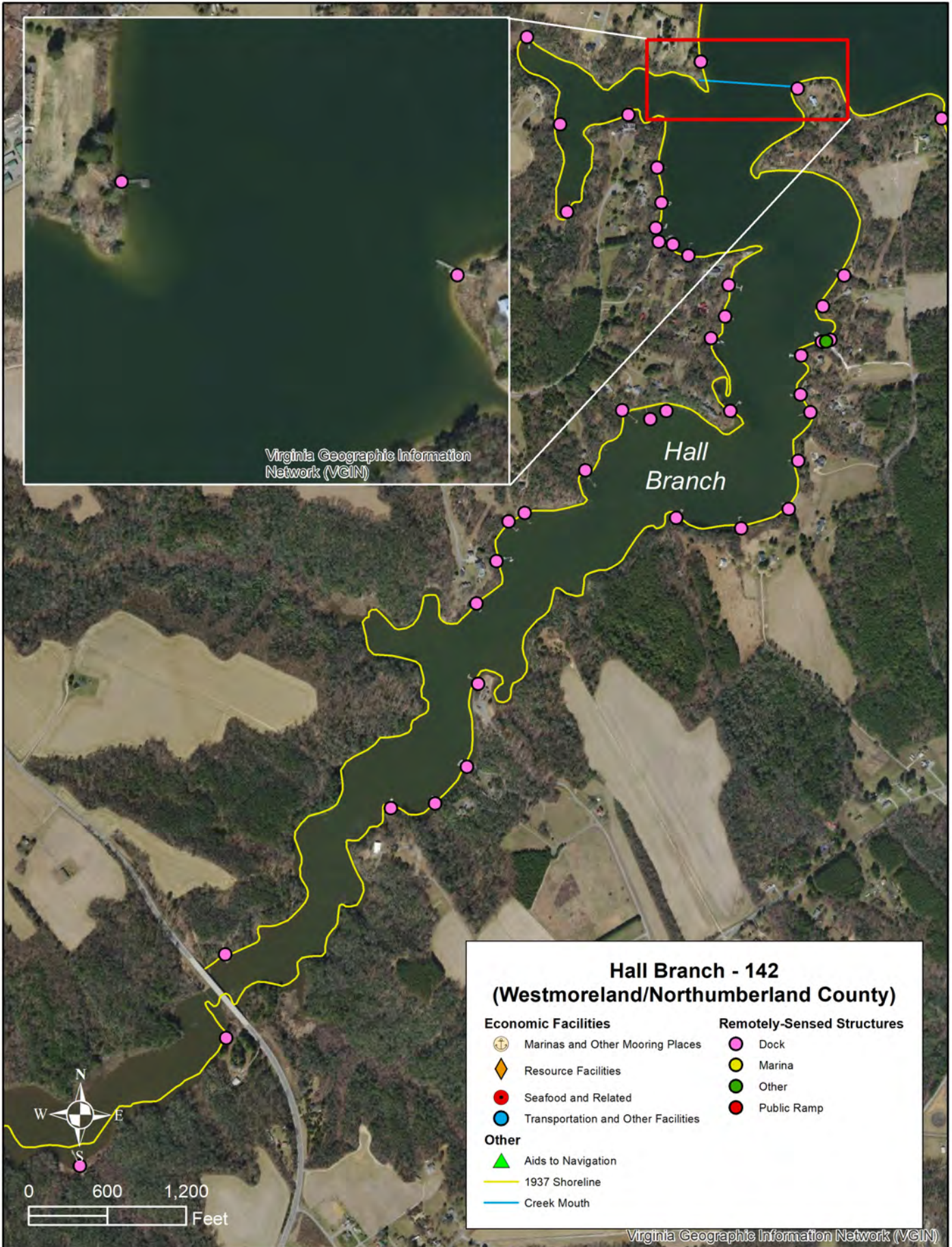
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Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

Number of Marinas includes any type of structures that appeared to be non-residential and could be used to moor boats.

Number of Public Ramps includes Ramps that are listed as public online.

Number of Other Structures includes Wharfs- bulkheaded structures on the water, Ferry Piers – piers that a ferry presently leaves from, Private Ramps– any type of ramp that can be used by boaters to access the water that was not listed as public online, and mooring facilities that were larger than single property use but did not appear to be commercial. The other category also includes those structures that are generally too large to be residential.



Data Sheet for Hall Branch

Waterbody ID Number	142	Main Waterbody	West Yeocomico River
County	WM/NL	Private Oyster Leases Present	Yes
Channel Type	Non-Federal	Private Lease Acreage (acres)	50.8
Mouth Latitude	38.025900	Percent Lease Area/Waterbody Area	25%
Mouth Longitude	-76.573300	Tide Range (ft)	1.30
Waterbody Type	Tertiary Waterbody	Combined Shoreline Length (ft)	44,315
Waterbody Mouth Morphology	Open	Historical SAV (1971-2020)	No
Waterbody Shoaling	No Visible Shoaling	Current SAV (2016-2020)	Not Mapped
Waterbody Area (acres)	205.4	Number of Docks/1000 linear ft	0.9

RESOURCE FACILITIES		REMOTELY SENSED STRUCTURES	
Marinas and OMP	0	Number of Docks	42
Total Businesses	0	Number of Marinas	0
Total Resources	0	Number of Public Ramps	0
Combined Total	0	Number of Other Structures	1

Combined Shoreline length includes the length along the main part of the waterbody as well as the shoreline length of any waterbodies flowing into it.

RESOURCE FACILITIES includes facilities, verified via License/Permit by the localities and/or personal communication, utilized by major industry groups along the waterbody. They also include verified facilities held by regional and local governments, private industry, non-governmental organizations and local entities. They are listed in the following categories:

Marinas and Other Mooring Places includes commercial marinas and any other location where commercial vessels are moored.

Total Businesses includes **Agriculture and Seafood and Related Facilities**, identified in the above map, such as crab packing plants, certified shellfish dealers, seafood manufacturers and seafood market retailers, as well as other identified businesses along the waterbody.

Total Resources includes **Resource Facilities**, identified in the above map, such as cultural and natural resource facilities that support tourism as well as **Transportation and Other Facilities**, such as public boat ramps and ferry facilities.

Combined Total is the total number of verified resource facilities identified along the waterbody.

REMOTELY SENSED STRUCTURES were originally created by VIMS between 2006 and 2018 and updated using the 2021 VGIN Imagery. These data were visually-identified so it could not be determined if the facilities are actively being used. They are listed in the following categories:

Number of Docks includes any type of pier that appeared to be single property residential. These include any type of residential docks that had boathouses. Dilapidated docks and piers that were obviously in a ruined state and could not be used to access the water, were disregarded in this analysis.

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Appendix D
Complete Report of the Economic Facilities

Economic Profile of the Region

According to the Virginia Economic Development Partnership, the Northern Neck offers a rich heritage and unparalleled natural resources that have shaped the region’s industrial base, coupled with a reliable talent pool and a business-friendly climate. The region consists of Lancaster, Northumberland, Richmond, and Westmoreland counties and is bounded by the Potomac River to the north, the Chesapeake Bay to the east, and the Rappahannock River to the south. The headwaters of the Potomac and Rappahannock Rivers border the region to the west. Throughout development of this profile every attempt was made to provide data over comparable periods of time, generally spanning the period 2010 to 2020/2021/2022 where available. Regarding potential impacts from the COVID-19 virus (SARS-CoV-2 and its variants), the year 2018 was also selected as a proxy to represent pre-virus conditions in each county.

Population Levels

The population of the region has shown a minimal increase since the 2010 Census, up 31 people, or less than 1 percent, to a level of 50,460 in 2022. The population increased significantly in Westmoreland County while the population in the remaining counties decreased. Table 1 provides comparative population levels in 2010, 2018 and 2020 as well as on July 1, 2022.

County	2010 Population (Census)	2018 Population (July 1)	2020 Population Census	2022 Population (July 1)	Land Area (Square Miles)	Population Density Per Square Mile in 2021
Lancaster	11,391	10,979	10,919	10,757	133.5	80.6
Northumberland	12,330	12,075	11,839	11,778	191.3	61.6
Richmond	9,254	9,145	8,923	9,165	191.5	47.9
Westmoreland	17,454	17,911	18,477	18,760	229.4	81.8
4-County Region	50,429	50,110	50,158	50,460	745.7	67.7
Other Areas:						
City of Alexandria	139,966	161,050	159,467	160,146	14.9	10,726.5
City of Fredericksburg	24,286	28,387	27,982	28,766	10.5	2,752.7
City of Richmond	204,214	226,919	226,610	232,866	59.9	3,886.3
Virginia	8,001,024	8,517,685	8,631,393	8,642,274	39,490.9	218.8
Sources:						
U.S. Census Bureau QuickFacts: Westmoreland County, Virginia; Richmond County, Virginia; Northumberland County, Virginia; Lancaster County, Virginia						
https://www.census.gov/quickfacts/fact/table/westmorelandcountyvirginia.richmondcountyvirginia.northumberlandcountyvirginia.lancastercountyvirginia						
https://demographics.coopercenter.org/virginia-population-estimates						

Establishments, Employment, and Wages

Several detailed measures of economic activity were obtained from the U.S. Bureau of Labor Statistics (BLS) and the Federal Reserve Bank of Richmond which consisted of the number of business establishments as well as associated employment and wage information for industries located in the region. Information was collected for each of the four counties in terms of the quantitative and qualitative aspects of the many shallow draft waterways which dot the landscape. Using BLS quarterly census of employment and wages (QCEW) for the 2010-2022 period an assessment of navigation related industries was performed for Lancaster, Northumberland, Richmond and Westmoreland counties. The assessment was facilitated via use of the North American Industrial Classification System (NAICS) codes for each industry located in the region.

QCEW produces a comprehensive tabulation of data on the number of establishments, monthly employment and quarterly wages for workers covered by State unemployment insurance (UI) laws and Federal workers covered by the Unemployment Compensation for Federal Employees (UCFE) program. These data are aggregated to many different levels, starting at the 6-digit NAICS industry level, to higher industry levels (NAICS industry groups, sectors, and supersectors), and to higher geographic levels (Metropolitan Statistical Areas (MSA), State, and national). At the national level, the QCEW program publishes establishment, employment and wage data for nearly every NAICS industry. At the State, County and MSA level, the QCEW program publishes establishment, employment, and wage data down to the 6-digit NAICS industry level, if disclosure restrictions are met. Establishment counts and wage data are available quarterly and annually. Employment data are available monthly and annually. In addition to richly detailed employment and wage data, the QCEW program produces data on establishments, employment, and wages stratified by size of establishment for the first quarter of each year.

QCEW monthly employment data represent the number of covered workers who worked during, or received pay for, the pay period that included the 12th day of the month. Covered employees in the private-sector and in the state and local government include most corporate officials, all executives, all supervisory personnel, all professionals, all clerical workers, many farm workers, all wage earners, all piece workers, and all part-time workers. Workers on paid sick leave, paid holiday, paid vacation, and the like are also covered. Federal employment data are based on reports of monthly employment and reports of quarterly wages, both submitted quarterly to state agencies. Reports are submitted for all federal installations with employees covered by the act, except for certain national security agencies, which are excluded for security reasons.

Besides excluding the aforementioned national security agencies, QCEW excludes proprietors, the unincorporated self-employed, unpaid family members, certain farm and domestic workers from having to report employment data, and railroad workers covered by the railroad unemployment insurance system.

QCEW wages data represent the total compensation paid during the calendar quarter, regardless of when the services were performed. In most states, covered employers report total compensation paid during the calendar quarter, regardless of when the services were performed.

A few state laws, however, specify that wages be reported for or be based on the period during which services are performed rather than the period during which compensation is paid. Under most state laws or regulations, wages include bonuses, stock options, severance pay, the cash value of meals and lodging, tips and other gratuities. In some states, wages also include employer contributions to certain deferred compensation plans, such as 401(k) plans.

Covered employer contributions to old-age, survivors, and disability insurance; health insurance; UI; workers' compensation; and private pension and welfare funds are not reported as wages. Employee contributions for the same purposes, however, as well as money withheld for income taxes, union dues, and so forth, are reported, even though they are deducted from the worker's gross pay.

Employment Establishment Levels

When measured on a year over year basis the number of employment establishments in the region has been growing since 2010. All four counties have shared in that growth. The number of establishments in the region has increased by 97, or 5.9 percent to a level of 1,741 from 2010 to the 3rd quarter of 2022. Table 2 presents the number of employment establishments for the counties, the region and for selected other areas over the most recent reporting period.

Table 2. Number of Employment Establishments (1)						
County	2010	2015	2018	2020	2021	2022 Q3 (2)
Lancaster	545	492	490	490	497	567
Northumberland	394	349	382	370	375	406
Richmond	250	221	222	233	252	283
Westmoreland	455	410	403	420	432	485
4-County Region	1,644	1,472	1,497	1,513	1,556	1,741
Other Areas:						
City of Alexandria	6,105	6,553	6,302	6,203	6,376	6,921
City of Fredericksburg	1,678	1,664	1,681	1,658	1,689	1,834
City of Richmond	7,147	7,393	7,902	8,001	8,296	9,247
Virginia	230,288	254,270	278,349	282,884	297,191	330,128
Source:						

U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages Searchable Database.

Notes:

(1) All establishment sizes.

(2) Preliminary.

Employment Levels

When measured on a year over year basis the employment level in the region has declined by 755 jobs or 5.3 percent since 2010. With the exception of Lancaster County, each

county had a net employment loss from 2010 to the 3rd quarter of 2022 with particularly large losses in Richmond County. Table 3 presents the employment levels for the counties, the region and for selected other areas over the most recent reporting period.

Table 3. Employment (1)(2)						
County	2010	2015	2018	2020	2021	2022 Q2 (3)
Lancaster	4,615	4,443	4,522	4,372	4,375	4,642
Northumberland	2,650	2,424	2,517	2,505	2,433	2,496
Richmond	3,350	2,795	2,896	2,841	2,746	2,861
Westmoreland	3,507	3,377	3,435	3,210	3,280	3,368
4-County Region	14,122	13,039	13,370	12,928	12,834	13,367
Other Areas:						
City of Alexandria	95,948	96,328	91,915	83,919	84,081	85,483
City of Fredericksburg	25,137	23,520	25,008	22,608	22,797	24,282
City of Richmond	148,083	149,651	155,753	147,619	148,861	155,147
Virginia	3,536,676	3,735,713	3,893,254	3,743,712	3,838,861	3,971,016
Source:						
U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages Searchable Database.						
Notes:						
(1) Total All Industries, Total Covered Employment (Place of Work), All Establishment Sizes.						
(2) Average Annual Data Unless Otherwise Noted. Data Not Seasonally Adjusted.						
(3) Preliminary.						

Average Weekly Wage Levels

When measured on a year over year basis the nominal average weekly wage level in the region is increasing. All four counties have shared in that growth with a particularly large growth in Northumberland County. Table 4 presents the average weekly wage levels for the counties and for selected other areas over the most recent reporting period.

Table 4. Average Weekly Wages (1)(2)(3)						
County	2010	2015	2018	2020	2021	2022 Q3 (4)
Lancaster	\$589	\$660	\$705	\$758	\$806	\$885
Northumberland	\$572	\$711	\$829	\$976	\$1,013	\$1,087
Richmond	\$564	\$697	\$735	\$788	\$825	\$887
Westmoreland	\$524	\$559	\$608	\$682	\$717	\$784
4-County Region	(5)	(5)	(5)	(5)	(5)	(5)
Other Areas:						
City of Alexandria	\$1,286	\$1,393	\$1,501	\$1,621	\$1,669	\$1,704
City of Fredericksburg	\$623	\$710	\$806	\$1,004	\$1,048	\$1,118
City of Richmond	\$1,002	\$1,121	\$1,186	\$1,352	\$1,408	\$1,468
Virginia	\$955	\$1,044	\$1,120	\$1,253	\$1,307	\$1,380
Source:						
U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages Searchable Database.						
Notes:						
(1) Total All Industries, Total Covered Employment (Place of Work), All Establishment Sizes.						
(2) Average Annual Data Unless Otherwise Noted. Data Not Seasonally Adjusted.						
(3) Nominal Wages (Current Dollars).						
(4) Preliminary.						
(5) Not Available.						

Historical Perspective of the Economy from a Waterway Perspective

The region has seen a dramatic transformation of its economy over the past century, first via the steamship era, then via the advent of the Interstate highway system era, and currently via the telecommunications era. From a navigation perspective, the principal commodities consisted of the export of natural resources such as seafood and farm products and the import of finished goods and services. Exported products were perishable by nature and thus had to reach consumption markets quickly. These markets existed primarily in Washington, D.C. and Baltimore, Maryland. In recent years the decreases in commodity transit time has allowed for an increase in the number of market areas to include such urbanized areas as Richmond and Norfolk, Virginia, Philadelphia, Pennsylvania and New York, New York. The economy of the region remains dependent upon waterborne transportation of goods and services and it is noted that the region is a net exporter of waterborne commerce. Figure 1 provides a glimpse into the transportation system that existed when the primary movements of goods and services were via shallow draft navigation channels, principally accomplished via an interconnected steamboat system. Dredging of these channels was, and to a lesser extent today, a common practice. Appendix A, of the main report, provides key terms used in the evaluation.



Figure 1. Transportation Lines of the Chesapeake Bay, 1923. Source: U.S. Army Corps of Engineers Board of Engineers for Rivers and Harbors.

Identification of the Major Groups of Water Bodies

In order to assess economic activity on the individual water bodies, county level information was collected from a number of entities. These entities included the Virginia Departments of Environmental Quality (DEQ), Health (VDH), Tourism (VTC) and Transportation (VDOT), the Virginia Marine Resources Commission (VMRC), the Virginia Institute of Marine Science (VIMS), the Potomac River Fisheries Commission (PRFC), the National Oceanic and Atmospheric Administration (NOAA), the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard (USCG), and local governments. This information was supplemented via contact with private industry, non-governmental organizations, and local residents whose quality of life is so dependent upon the water resources in the region. Coordination with the above groups was vital in establishing a master list of water bodies where economic activity occurs. Through this process one-hundred-forty-two water bodies were identified and divided into three Groups based on information provided by the above entities, primarily by the USACE, USCG, VDH and VIMS. The three groups are defined as follows and a detailed listing is provided in Appendix B of the main report:

- Group One (Thirteen Federal water bodies with Aids to Navigation in Place)
- Group Two (Thirty-Seven Non-Federal water bodies with Aids to Navigation in Place)
- Group Three (Ninety-Two Non-Federal water bodies without Aids to Navigation in Place)

Group One Water Bodies

Group One water bodies are included in the USACE portfolio of dredging projects however federal funding for these water bodies has been declining in recent years as federal priorities have changed. The last federal navigation channel to be dredged by the USACE was the Little Wicomico River in 2010 as shown in Photo 1. Three of the water bodies are located in Lancaster County, four are located in Northumberland County, and five are located in Westmoreland County. A thirteenth water body, the Rappahannock River, is located adjacent to Lancaster, Richmond, and Westmoreland Counties. Table 5 provides the authorizing legislation and description for the thirteen water bodies that comprise Group One.



Photo 1. Dredging of the Little Wicomico River Federal Navigation Channel in 2010. Photo courtesy of the U.S. Army Corps of Engineers, Baltimore District.

Table 5. Group One Water Bodies

County	Water Body	Main River	Authorizing Legislation	Authorized Dimensions	Date Last Dredged by USACE
Westmoreland	Bonum Creek	Potomac River	Section 107 of the River and Harbor Act of 1960	A channel 6 feet deep and 60 feet wide from that depth in the Potomac River to and including an anchorage basin of the same depth, 160 feet wide and 200 feet long. The project also provides for the entrance channel to be protected on both sides by jetties. The north jetty is about 100 feet long and the south jetty is about 300 feet long. The project length is 3,795 feet.	2004
Westmoreland	Branson Cove	Lower Machodoc Creek	River and Harbor Act of 1945	An entrance channel 7 feet deep, 60 feet wide, and 950 feet long; with boat basins 7 feet deep, 120 feet wide, and 430 feet long, and 7 feet deep, 200 feet wide, and 370 feet long.	1950
Lancaster	Carler Creek	Rappahannock River	River and Harbor Act of 13 June 1902	A channel from the Rappahannock River 15 feet deep, 200 feet wide, with a jetty 742 feet long at the entrance; a channel in the Eastern Branch at Gallyhook Point 12 feet deep, 100 feet wide, and 1,100 feet long.	1908
Northumberland	Coan River	The Glebe	Section 107 of the River and Harbor Act of 1960	A channel 10 feet deep and 60 feet wide from the 10-foot contour in the Potomac River to deep water in the Coan River, protected by one 500-foot long stone jetty.	2003
Northumberland	Cranes Creek	Great Wicomico River	River and Harbor Act of 2 March 1945	A channel 6 feet deep and 80 feet wide from deep water in the Great Wicomico River to deep water in Cranes Creek.	1996
Lancaster	Dymers Creek	Fleets Bay	River and Harbor Act of 25 June 1910	A channel 15 feet deep and 200 feet wide from the Chesapeake Bay through the bar in the mouth.	1911
Lancaster	Greenvale Creek	Rappahannock River	Section 107 of the River and Harbor Act of 1960	A channel 6 feet deep and 60 feet wide from that depth in the Rappahannock River to the mouth of Greenvale Creek, a distance of approximately 950 feet, and thence 6 feet deep and 50 feet wide, into the creek for a distance of approximately 2,400 feet.	2009
Northumberland	Jarvis Creek	Chesapeake Bay	This project was never constructed	A channel 8 feet deep, 2,300 feet long and 80 feet wide; a turning basin 8 feet deep 180 feet long and 120 feet long. This project was never constructed.	Authorized but Never Constructed
Northumberland	Little Wicomico	Chesapeake Bay	River and Harbor Act of August 30, 1935	A channel 8 feet deep and 150 feet wide from the Potomac River to deep water in the Little Wicomico River, two stone jetties, 1,000 feet and 1,300 feet long at the entrance and 1,007 linear feet of timber bulkhead to stabilize the dredged inner channel. The project length is 4,800 feet.	2010
Westmoreland	Lower Machodoc Creek	Lower Machodoc Creek	River and Harbor Act of 1892	A channel 7 feet deep and 60 feet wide through the bar at The Narrows. The project length is 4,700 feet.	1903
Westmoreland	Monroe Bay and Creek	Nomini Bay	River and Harbor Act of 1930	A channel 8 feet deep and 100 feet wide through a bar at the entrance to the creek; and a channel 7 feet deep and 100 feet wide within the creek with a turning and anchorage basin 500 feet wide at Robins Grove Point. The project length is 3,450 feet.	1989
Westmoreland	Nomini Bay and Creek		River and Harbor Act of 1872	A channel 9 feet deep and 150 feet wide across the bar at the mouth of Nomini Creek; a stone jetty 2,410 feet long at the mouth.	1927
Lancaster	Rappahannock River	Rappahannock River	River and Harbor Act of 3 March 1905	A channel 12 feet deep and 200 feet wide from the mouth to Port Royal, VA, thence 12 feet deep and 100 feet wide to Fredericksburg, VA, a distance of 30 miles. The construction of 20,401 linear feet of crib and pile dikes and 1,906 linear feet of riprap stone dike.	1970
Richmond	Rappahannock River	Rappahannock River	River and Harbor Act of 3 March 1905	A channel 12 feet deep and 200 feet wide from the mouth to Port Royal, VA, thence 12 feet deep and 100 feet wide to Fredericksburg, VA, a distance of 30 miles. The construction of 20,401 linear feet of crib and pile dikes and 1,906 linear feet of riprap stone dike.	1970
Westmoreland	Rappahannock River	Rappahannock River	River and Harbor Act of 3 March 1905	A channel 12 feet deep and 200 feet wide from the mouth to Port Royal, VA, thence 12 feet deep and 100 feet wide to Fredericksburg, VA, a distance of 30 miles. The construction of 20,401 linear feet of crib and pile dikes and 1,906 linear feet of riprap stone dike.	1970

Group Two Waterbodies

Group Two water bodies consist of Non-Federal water bodies with Aids to Navigation in place. Ten of the water bodies are located in Lancaster County, twenty are located in Northumberland County, two are located in Richmond County, and five are located in Westmoreland County. In addition, Lancaster Creek is located in Lancaster and Richmond counties, Indian Creek is located in Lancaster and Northumberland counties, and the Yeocomico River is located in Northumberland and Westmoreland counties. Table 6 provides a listing of the thirty-seven water bodies that comprise Group Two.

Table 6. Group two waterbodies

Lancaster	Antipoison Creek	Little Bay
Lancaster	Carter Creek East Branch	Carter Creek
Lancaster	Corrotoman River	Rappahannock River
Lancaster	Corrotoman River Western Branch	Corrotoman River
Lancaster	Deep Creek	Rappahannock River
Lancaster	Johnson Cove	Dymer Creek
Lancaster	Little Bay	Fleets Bay
Lancaster	Myer Creek	Corrotoman River
LN/RM	Lancaster Creek	Rappahannock River
NL/LN	Indian Creek	Chesapeake Bay
Northumberland	Ball Creek	Chesapeake Bay
Northumberland	Bluff Neck Creek Southern Branch	Bluff Neck Creek
Northumberland	Cloverdale Creek	Chesapeake Bay
Northumberland	Cockrell Creek	Ingram Bay
Northumberland	Dividing Creek	Chesapeake Bay
Northumberland	Ellyson Creek	Little Wicomico River
Northumberland	Great Wicomico River	Ingram Bay
Northumberland	Highland Landing Cove	Dividing Creek
Northumberland	Lawrence Cove	Dividing Creek
Northumberland	Little Wicomico River	Wicomico River
Northumberland	Mill Creek	Ingram Bay
Northumberland	Mill Creek-Yeocomico	South Yeocomico River
Northumberland	Natty Point Creek	Dividing Creek
Northumberland	Palmer Cove	South Yeocomico River
Northumberland	Prentice Creek	Chesapeake Bay
Northumberland	Slough Creek	Little Wicomico River
Northumberland	South Yeocomico River	Yeocomico River
Northumberland	Warehouse Creek	Great Wicomico River
Northumberland	Whays Creek	Great Wicomico River
Northumberland	Wrights Cove	Coan River
Richmond	Morattico Creek	Lancaster Creek
Richmond	Totuskey Creek	Rappahannock River
Westmoreland	Currioman Bay	Potomac River
Westmoreland	Mattox Creek	Potomac River

Westmoreland	Weatherall Creek	Lower Machodoc Creek
Westmoreland	West Yeocomico River	Yeocomico River
WM/NL	Yeocomico River	Potomac River

Group Three Water Bodies

Group Three water bodies consist of Non-Federal channels without Aids to Navigation in place. Twenty-four water bodies are located in Lancaster County, forty-four are located in Northumberland County, one is located in Richmond County, and twenty-three are located in Westmoreland County. In addition, Hall Branch of the Yeocomico River is located in Northumberland and Westmoreland counties. Table 7 provides a listing of the ninety-two water bodies that comprise Group Three.

Table 7. Group Three Water Bodies

Lancaster	Ashley Cove	Dymer Creek
Lancaster	Beach Creek	Rappahannock River
Lancaster	Belmont Creek	Rappahannock River
Lancaster	Carter Cove	Carter Creek
Lancaster	Chases Cove North	Dymer Creek
Lancaster	Chases Cove South	Dymer Creek
Lancaster	Corrotoman River Eastern Branch	Corrotoman River
Lancaster	Davis Creek	Corrotoman River
Lancaster	Ewells Prong	Whitehouse Creek
Lancaster	Georges Cove	Dymer Creek
Lancaster	Hunts Cove	Dymer Creek
Lancaster	John Creek	Corrotoman River
Lancaster	Little Oyster Creek	Rappahannock River
Lancaster	Long Creek	Indian Creek
Lancaster	Lowrey Creek	Corrotoman River
Lancaster	Moran Creek	Corrotoman River
Lancaster	Mosquito Creek	Rappahannock River
Lancaster	Mulberry Creek	Rappahannock River
Lancaster	Pitman's Cove	Indian Creek
Lancaster	Senior Creek	Corrotoman River
Lancaster	Tabbs Creek	Fleets Bay
Lancaster	Taylor Creek	Corrotoman River
Lancaster	Whitehouse Creek	Corrotoman River
Lancaster	Windmill Point Creek	Rappahannock River
Northumberland	Back Creek	Little Wicomico River
Northumberland	Balls Creek	Great Wicomico River
Northumberland	Barnes Creek_NL	Chesapeake Bay
Northumberland	Barrett Creek	Great Wicomico River
Northumberland	Bells Creek	Indian Creek
Northumberland	Betts Mill Creek	Great Wicomico River
Northumberland	Blackwells Creek	Great Wicomico River
Northumberland	Bluff Neck Creek	Chesapeake Bay

Northumberland	Bridge Creek	Little Wicomico River
Northumberland	Bridgemans Back Creek	Little Wicomico River
Northumberland	Bush Mill Stream	Great Wicomico River
Northumberland	Cod Creek East	Potomac River
Northumberland	Cod Creek_LWR	Little Wicomico River
Northumberland	Cod Creek_PR	Potomac River
Northumberland	Coles Creek	Great Wicomico River
Northumberland	Corbin Pond	Potomac River
Northumberland	Cornish Creek	Yeocomico River
Northumberland	Cubitt Creek	Potomac River
Northumberland	Dungan Cove	South Yeocomico River
Northumberland	Flag Pond	Potomac River
Northumberland	Gougher Creek	Great Wicomico River
Northumberland	Hack Creek	Potomac River
Northumberland	Harveys Creek	Ingram Bay
Northumberland	Henrys Creek	Indian Creek
Northumberland	Horn Harbor	Great Wicomico River
Northumberland	Hull Creek	Potomac River
Northumberland	Ingram Cove	Chesapeake Bay
Northumberland	Kingscote Creek	Coan River
Northumberland	Lodge Creek	South Yeocomico River
Northumberland	Owens Pond North	Chesapeake Bay
Northumberland	Owens Pond South	Chesapeake Bay
Northumberland	Penny Creek	Great Wicomico River
Northumberland	Presley Creek	Potomac River
Northumberland	Reason Creek	Great Wicomico River
Northumberland	Rogers Creek	Potomac River
Northumberland	Sharps Creek	Little Wicomico River
Northumberland	Sloop Creek	Little Wicomico River
Northumberland	Spences Creek	Little Wicomico River
Northumberland	Taskmakers Creek	Chesapeake Bay
Northumberland	The Glebe	Coan River
Northumberland	Tipers Creek	Great Wicomico River
Northumberland	Towles Creek	Ingram Bay
Northumberland	Wilkins Creek	West Yeocomico River
Richmond	Farnham Creek	Rappahannock River
Richmond	Cat Point Creek	Rappahannock River
Westmoreland	Barnes Creek_WM	Nomini Creek
Westmoreland	Bettys Pond	Lower Machodoc Creek
Westmoreland	Buckner Creek	Nomini Creek
Westmoreland	Cabin Point Creek	Lower Machodoc Creek
Westmoreland	Cold Harbor Creek	Currioman Bay
Westmoreland	Currioman Creek	Currioman Bay
Westmoreland	Gardner Creek	Potomac River

Westmoreland	Glebe Creek	Lower Machodoc Creek
Westmoreland	Herring Pond	Potomac River
Westmoreland	Jackson Creek	Potomac River
Westmoreland	Jules Creek	Nomini Creek
Westmoreland	Kinsale Branch	West Yeocomico River
Westmoreland	NW Yeocomico River	Yeocomico River
Westmoreland	Parkers Creek	Yeocomico River
Westmoreland	Peirce Creek	Nomini Creek
Westmoreland	Point Creek	Northwest Yeocomico River
Westmoreland	Poor Jack Creek	Currioman Bay
Westmoreland	Popes Creek	Potomac River
Westmoreland	Rosier Creek	Potomac River
Westmoreland	Shannon Branch	NorthWest Yeocomico River
Westmoreland	Smarts Creek	Nomini Bay
Westmoreland	Upper Monroe Creek	Monroe Bay
WM/NL	Hall Branch	West Yeocomico River

Selection of Water Bodies to Be Evaluated in Phase 2

A number of criteria were identified for evaluation of the water bodies to be considered for dredging. These criteria focused on the commercial and recreational usage of the creeks as well as physical parameters and resource data to be discussed later. The following industry facilities were identified and evaluated.

Seafood Facilities

VMRC records were obtained for the number of vessels, commercial harvest and value, effort, and licenses. The data was provided at the county level however information was not available by water body across the spectrum of all water bodies. The number of commercial vessels (commercial, other commercial, and charter fishing) in the region has grown from 139 in 2010 to 392 in 2022, a 182 percent increase. Each of the four counties shared in the growth of commercial vessels. Fishing vessels are a subset of commercial vessels however were not separately identified in data provided. Note that the number of fishermen and commercial licenses are provided in this evaluation. The number of fishermen has been declining in the region with Lancaster County showing an increase while the other three counties showed decreases. The number of commercial licenses has also been declining in the region with Lancaster and Richmond counties showing increases and with Northumberland and Westmoreland Counties showing decreases. The number of vessel trips has also been declining in the region with a loss of 7,436 trips or 57 percent over the period of analysis. All four counties showed a significant drop in the number of vessel trips. Table 8 provides pertinent information regarding the number of vessels by vessel type in the region. As an example of the importance of commercial seafood activities to the region, the cluster of economic activity in Reedville is regarded in many circles to be the center of the largest shallow draft fishing industry in the United States. Omega Protein, Inc. operates a commercial menhaden facility in Reedville from which ten vessels call on a regular basis and make 800 to 900 trips annually between early May and early December.



Photo 2. Menhaden Trawler Operating Out of Cockrell Creek in Reedville, Virginia.
 Photo courtesy of Omega Protein, Inc.

Table 8. Number of Vessels				
Vessel Type	Year			
	2010	2015	2020	2022
Commercial	80	140	212	254
Other Commercial	58	80	113	130
Charter Fishing	1	1	3	8
Pleasure	5,111	7,909	13,131	16,527
Rent or Lease	2	2	6	9
Dealer	0	3	3	3
Unknown	2	2	2	2
Notes:				

(1) Pounds of shellfish landed (conch, blue crab, horseshoe crab, oyster, clams, shrimp, etc.) reported harvested.

(2) Nominal value of shellfish landed (conch, blue crab, horseshoe crab, oyster, clams, shrimp, etc.) reported harvested.

(3) Pounds of finfish reported harvested.

(4) Nominal value of finfish landed reported harvested.

(5) Total number of commercial fishing trips.

(6) Total number of commercial fishermen landing product in the region.

(7) Total number of licensed commercial fishermen residing in the region.

Across the region, landings of shellfish have been increasing over the period of analysis with 3.5 million pounds landed in 2010 and 4.7 million pounds landed in 2020. Lancaster and Richmond Counties showed increases in shellfish landings. The value of shellfish landings increased from \$4.8 million to \$14 million in nominal dollars from 2010 to 2020. Lancaster, Richmond, and Westmoreland Counties showed increases in the nominal value of landings over the period.

Across the region, landings of finfish have been decreasing over the period of analysis with 429 million pounds landed in 2010 and 291 million pounds landed in 2020. All four counties showed decreases in the number of pounds landed. The value of finfish landings increased from \$28.1 million to \$33.4 million in nominal dollars from 2010 to 2020. Northumberland County serves as the area where the vast majority of finfish are landed and also showed an increase in the nominal value of landings over the period of analysis. Table 9 provides pertinent information on commercial harvest and value, effort, and licenses for shellfish and finfish in the region.

Table 9. Commercial Harvest, Value, Effort, and Licensees for Shellfish and Finfish in the Region				
Vessel Type	Year			
	2010	2015	2020	2022
Pounds of Shellfish Landed (1)	3,517,956	4,234,063	4,702,789	(8)
Value of Shellfish Landed (2)	4,809,553	11,445,687	14,041,343	(8)
Pounds of Finfish Landed (3)	429,497,574	334,228,357	290,803,137	(8)
Value of Finfish Landed (4)	28,174,737	28,188,637	33,436,065	(8)
Annual Vessel Trips (5)	13,104	9,436	5,668	(8)
Number of Fishers (6)	491	601	468	(8)
Number of Commercial Licenses (7)	444	457	419	(8)
Notes:				
(1) Pounds of shellfish reported harvested (conch, blue crab, horseshoe crab, oyster, clams, shrimp, etc.).				
(2) Nominal value of shellfish reported harvested (conch, blue crab, horseshoe crab, oyster, clams, shrimp, etc.).				
(3) Pounds of finfish reported harvested.				
(4) Nominal value of finfish reported harvested.				
(5) Total number of commercial fishing trips.				
(6) Total number of commercial fishermen landing product in the region.				
(7) Total number of licensed commercial fishermen residing in the region.				
(8) Complete effort data (trips) is not yet available for all species.				



Photo 3. Menhaden Processing Facilities at Cockrell Creek in Reedville, Virginia. Photo courtesy of Omega Protein, Inc.

A number of processing and packing activities and facilities occur at landside facilities once shellfish and finfish catches are offloaded. These activities and facilities are performed by crab picking plants (twelve), shellfish dealers (thirty-nine), seafood manufacturers (three) and seafood market retailers (six). For this reason, multiple activities can occur at a given seafood facility. Table 10 provides information for each of the sixty activities and facilities aggregated at the county level. Appendix E provides detailed information on individual seafood facilities located on the water bodies in Lancaster, Northumberland, Richmond and Westmoreland Counties, respectively.

Table 10. Seafood Processing Activities and Facilities in the Region					
County	Crab Picking Plants	Activity/Facility			Total
		Shellfish Dealers	Seafood Manufacturers	Seafood Market Retailers	
Lancaster	-	9	1	4	14
Northumberland	5	16	2	1	24
Richmond	4	4	-	-	8
Westmoreland	3	10	-	1	14
Total	12	39	3	6	60

Marinas and Other Places Where Boats are Moored

VDH records were obtained for the one hundred and thirty-two marinas and other places where boats are moored. Per Virginia code a marina is defined as any installation operating under public or private ownership that provides dockage or moorage for boats, other than paddle or rowboats, and provides through sale, rental, fee, or free basis any equipment, supply, or service including fuel, electricity, or water for the convenience of the public or the lessee, renters, or users of the facilities. Boat building and ship repair facilities are included in this category. These records indicate that thirty-five facilities are located in Lancaster County, fifty-three are located in Northumberland County, seven are located in Richmond County, and thirty-seven are located in Westmoreland County. Charter fishing occurs out of several marinas in the region where one vessel is registered in Northumberland County, four vessels are registered in Richmond County, and 3 vessels are registered in Westmoreland County. Appendices C1b-C4b, of the main report, contains detailed information by water body for marinas and other places where boats are moored in Lancaster, Northumberland, Richmond and Westmoreland Counties, respectively.



Photo 4. Greenvale Creek Marina located on Greenvale Creek in Lancaster County, Virginia. Photo Courtesy of Greenvale Creek Marina.



Photo 5. Chesapeake Boat Basin, at Kilmarnock (Indian Creek) in Lancaster County, Virginia. Photo courtesy of Chesapeake Boat Basin.

Grain Facilities

Perdue Agribusiness manages a fleet of fourteen barges serving their nine marine facilities in Delaware, Maryland, Virginia, and North Carolina. Within the Northern Neck region these barges service grain facilities at Kinsale (West Yeocomico River/Kinsale Branch) and at Kilmarnock (Indian Creek). Communication with Perdue Agribusiness indicated that they use each of these creeks for the waterborne transport of corn, soybeans, and wheat primarily to Salisbury, Maryland, to Hampton Roads (Chesapeake), Virginia and occasionally to Seaford, Delaware. The grains are trucked from the farms to Perdue sites at Kinsale and Kilmarnock where it is stored in grain silos and then loaded onto barges via a conveyor system. Over the period 2011-2021 approximately 30-35 annual shipments of product use these creeks for transport. Each shipment consists of the transport of an empty barge to Kinsale or Kilmarnock and, once the barge is loaded it is moved by tug to its next location along the supply line. Therefore 30-35 annual shipments equate to 60-70 annual vessel trips at Kinsale and 60-70 annual vessel trips at Kilmarnock. At each location, corn is typically sent to feed mill facilities in Salisbury, Maryland. Soybeans are typically sent to Chesapeake, Virginia for export. Soybeans are also transported by barge to the feed mill in Salisbury, Maryland. Wheat is barged to the ports in Hampton Roads (Chesapeake, Virginia) for export to North Africa and the Middle East. The tonnage of grain products is proprietary information and for confidentiality reasons only vessel trips information was available. Appendix E provides detailed information on individual grain facilities located on the water bodies in Lancaster and Westmoreland Counties, respectively.



Photo 6. Perdue Agribusiness, Inc. at Kinsale (Yeocomico River) in Westmoreland County, Virginia. Photo courtesy of Perdue Agribusiness, Inc.



Photo 7. Perdue Agribusiness, Inc. at Kilmarnock (Indian Creek) in Lancaster County, Virginia. Photo courtesy of Perdue Agribusiness, Inc.

Ferry Facilities



Photo 8. Public Passenger Ferry at Sunnybank on the Little Wicomico River in Northumberland County, Virginia. Photo courtesy of the Virginia Department of Transportation

The VDOT operates public ferry facilities at Sunnybank in Northumberland County (Little Wicomico River) [Sunnybank Ferry - Travel | Virginia Department of Transportation \(virginiadot.org\)](#) and at Merry Point in Lancaster County (Corrotoman River) [Merry Point Ferry - Travel | Virginia Department of Transportation \(virginiadot.org\)](#). The Sunnybank ferry began operations in 1903 and crosses the Little Wicomico River from Sunnybank to Kayan in Northumberland County. It operates 5 days per week year round (and half a day on Saturdays) with an abbreviated holiday schedule and provides passage for vehicular traffic. The Merry Point ferry began operations in 1847. It crosses the Corrotoman River from Merry Point to Ottoman in Lancaster County and operates 5 days per week year round (Tuesdays through Saturdays) with an abbreviated holiday schedule and provides passage for vehicular traffic. Each ferry operates free of charge and can carry a maximum of six passengers and 16 tons. The VDOT provided the number of annual vessel trips from 2011 through 2021. As of March 2017 the VDOT reported annual average ridership for the Merry Point Ferry as 16,500 passengers and 10,300 vehicles and annual average ridership for the Sunnybank Ferry totals of 6,900 passengers and 4,275 vehicles. A trip is defined as going from one side of the water body (river) to the opposite side of the water body (river).



Photo 9. Public Passenger Ferry at Merry Point on the Corrotoman River in Lancaster County, Virginia. Photo courtesy of the Virginia Department of Transportation.

A private passenger ferry/tour boat operates from Buzzard's Point Marina in Reedville located in Northumberland County (Cockrell Creek) to Tangier Island, Virginia. See also Marinas discussed earlier. Communications with the operator of the ferry facilities indicate that prior to the COVID-19 virus the "Chesapeake Breeze" made daily trips from May to the middle of October averaging 80 guests transported daily. During the COVID-19 virus vessel trips dropped to 3 days per week with an average of 40 people transported daily for the years 2020 and 2021. Appendix E provides detailed information on individual ferry/tour boat facilities located on the water bodies in Lancaster and Northumberland Counties, respectively.



Photo 10. Private Ferry/Tour Boat Service from Cockrell Creek located at Reedville in Northumberland County, Virginia. Photo courtesy of Buzzard's Point Marina.

Tourism Facilities

According to the Virginia State Tourism Plan, Chesapeake Bay region supplement (2017), the region is developing a tourism industry. In 2021 travel and tourism accounted for approximately \$428 million in expenditures. While growing, the region lags behind the state's growth rate. In addition to tourism marketing at the destination level, the Northern Neck Tourism Commission serves as a regional organization focused on the northern part of the region. Nature and outdoor recreational opportunities related to the Bay and its rivers are visitor strengths for the region, offering scenic getaways as well as trails which offer visitors the opportunity to hike, bike, observe wildlife, fish, kayak, and canoe. The Northern Neck region is water based and water dependent. Its rich cultural and historic heritage includes the birthplaces of three presidents, including George Washington, two signers of the Declaration of Independence and the Civil War general, Robert E. Lee. Visitors can experience the history at George Washington's birthplace, Stratford Hall, and Menokin, amongst others. Photo 11 provides an example of a tourism facility located in the region.



Photo 11. Tides Inn at Carter Creek in Irvington, Lancaster County, Virginia. Photo courtesy of the Virginia Tourism Corporation.

The region is rich in resources which lend themselves as valuable components of the Tourism industry. In order to capture the contributions of these resources in the evaluation all were identified whether or not they were physically located on the water bodies in the region. Those that were located on a water body were included for further data collection to include the identification of the specific latitude and longitude coordinates necessary for geocoding purposes as well as the annual number of vessel trips where available. This information will be combined with economic data for commercial facilities and compared with physical parameters and resource data (dredging needs) described in a subsequent section of this document.

While the Tourism industry is broad in composition and scope, a key criterion used for inclusion in the evaluation is the availability of a site (facility) for public access and use. Sixty-four facilities were initially identified for inclusion in a determination of public accessibility and use. In order to be deemed publicly accessible, facilities must be open to all potential users on equal terms. Conditions related to usage, including appropriate user fees, must be applied to all

on equal terms. The evaluation provided a subset of natural, cultural, and recreational resource facilities as public boat launch ramps in providing public access and use. In addition, numerous private boat launch ramps, piers, and boathouses are used by residents of the region. Each of these subsets of Tourism resources are described below.

Cultural Resources Facilities

Cultural resources consists of any product of human activity or any object or place given significance by human action or belief. Within the context of this evaluation, places that may be cultural resources include buildings and other structures, land forms, archaeological sites, traditional cultural properties, and districts that are eligible, or potentially eligible, for listing on the Hualapai Register of Heritage Places or the National Register of Historic Places. Applying the public accessibility criterion to the inventory, the following were identified. Data is not available as to the annual number of boating trips originating from cultural resources facilities.

- George Washington Birthplace National Monument
- James Monroe Birthplace Site and Visitor Center
- Kinsale Foundation and Museum
- Reedville Fishermen's Museum

Natural Resources Facilities

Natural resources are materials and components that can be found within the environment and may be classified in different ways. Within the context of this evaluation, natural resources are a part of humanity's natural heritage. Applying the public accessibility criterion to the inventory of facilities, the following were selected for further evaluation. Data is not available as to the annual number of boating trips originating from natural resources facilities.

- Rappahannock River Valley National Wildlife Refuge (two facilities/sites)
- Dameron Marsh Natural Area Preserve
- Hughlett Point Natural Area Preserve
- Belle Isle State Park

Recreational Resources Facilities

Recreational activity can be viewed from several perspectives, either as a stand-alone industry or as a component piece of a larger industry such as the Marina industry or the Tourism industry. For the purpose of this evaluation, recreational facilities such as the Captain John Smith Chesapeake National Historic Water Trail, the Star-Spangled Banner National Historic Trail and the Virginia Oyster Trail were categorized as component pieces of the Tourism industry, however not located on specific water bodies.

Based on a review of Department of Wildlife Resources/Virginia Marine Resources Commission (VMRC) boat registration records relative to the recreational connectivity to water bodies there has been a phenomenal growth in the number of licensed recreational boating vessels in the region, growing from 5,111 in 2010 to 16,527 in 2022. This represents an increase of 11,416 vessels (223 percent). Each of the four counties have contributed to this growth.

The VMRC commissions an annual survey administered by the National Oceanic and Atmospheric Administration and known as the Marine Recreational Information Program (MRIP). The MRIP provides estimates of recreational boating trips originating from designated sites located throughout the region. However, the data from the annual survey is not collected for all water bodies in the region. Estimates at the regional level for 2019 (the latest year for which consistent data with associated standard errors is available) indicated 256,421 recreational trips (standard error of 52,846) as detailed by County below:

- Lancaster County 12,398 vessel trips with an associated standard error of 9,089
- Northumberland County 78,170 vessel trips with an associated standard error of 17,479
- Richmond County 23,340 with an associated standard error of 11,873
- Westmoreland County 142,513 with an associated standard error of 14,405
- Richmond County (Five facilities)
- Westmoreland County (Seven facilities)

Enterprise/Working Waterfront Zone Facilities

Established by the General Assembly in 1982, the Virginia Enterprise Zone Program is a partnership between the state and local governments to stimulate job creation and private investment within designated areas throughout Virginia. Each of the 4 counties as well as the Towns of Kilmarnock and Warsaw have sites designated as Enterprise Zones (Figure 2). Cockrell Creek in Northumberland County and Monroe Bay and Creek in Westmoreland County are designated within these Enterprise Zones. In addition, the Northern Neck region is blessed by a number of successful working waterfronts as described in the following video link: https://m.youtube.com/watch?v=09N-3D_aiK4

Appendix E provides pertinent information relative to combination enterprise/working waterfront zone designations for Cockrell Creek and Monroe Bay and Creek.

Facilities No Longer in Operation

In years past various sand, gravel and crushed rock, petroleum products, and log/timber facilities existed on one or more of the creeks in the region. Coordination with industry representatives of Luck Stone, Aggregate Industries of Virginia and Vulcan Materials confirmed that they are not currently using these water bodies for the transport of sand, gravel or crushed rock. Coordination with the Virginia DEQ confirmed that petroleum/liquid products are not currently shipped via these water bodies. An economic assessment prepared for the Northern Neck Planning Commission in 2013 indicated a potential for barge transportation of sawlogs on the Chesapeake Bay to include Reedville (Cockrell Creek) and Kinsale (Yeocomico River). The study concluded that a number of additional tasks would have to be completed if efforts moved into the next phase of evaluation. Those additional tasks would have included the development of solid cost estimates and more detailed resource, trucking and barging information.

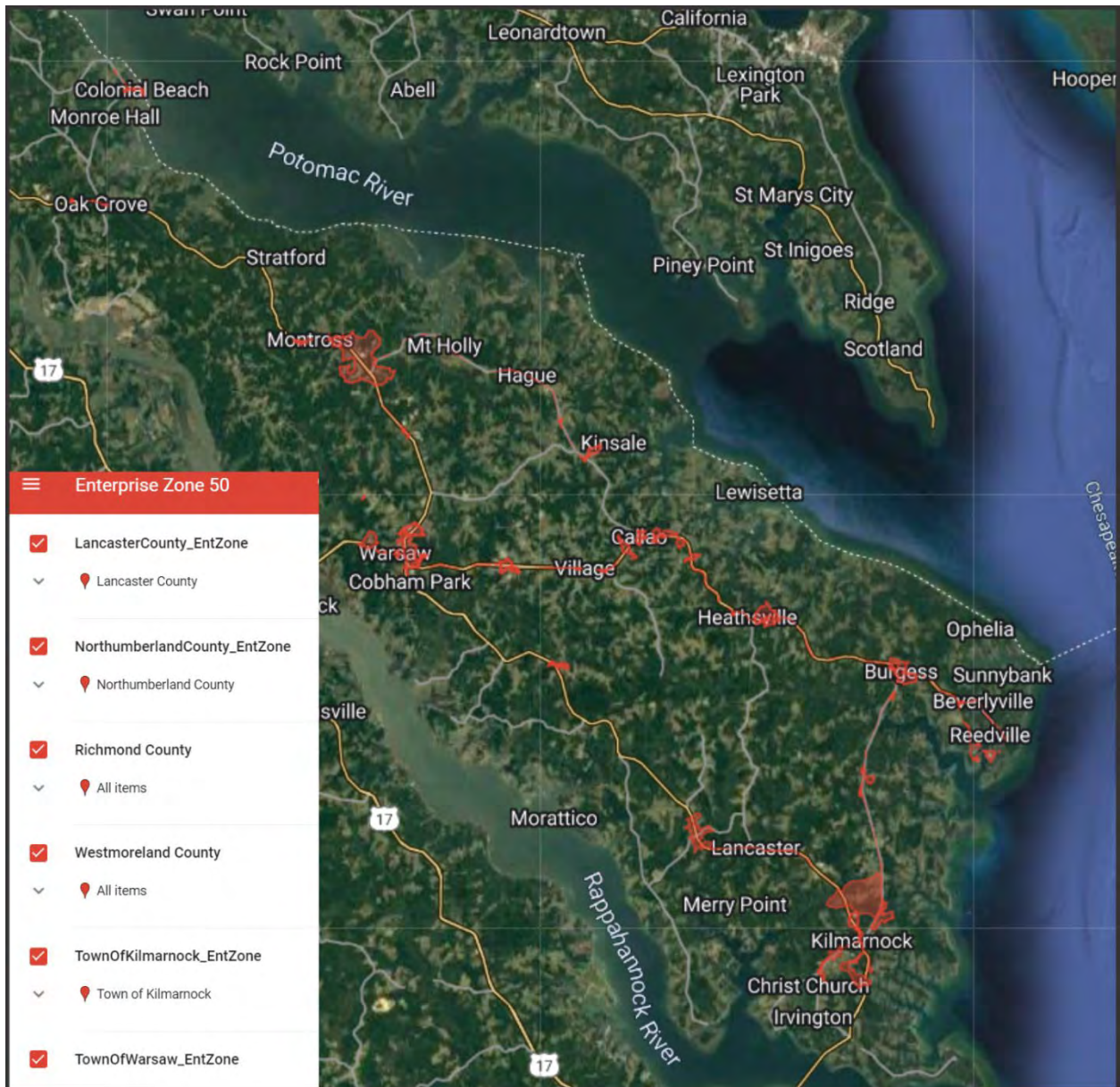


Figure 2. Enterprise Zones on the Northern Neck.

Appendix E

Listing of Economic Influences

Definition of Codes:

CPP: Crab Picking Plant

CRF: Cultural Resource Facility (Supporting Tourism)

CSD: Certified Shellfish Dealer

EZ/WW: Joint Designation as Enterprise Zone and Working Waterfront

FF: Ferry Facility

GF: Grain Facility

MOP: Marinas and Other Places Where Boats Are Moored

NRF: Natural Resource Facility (Supporting Tourism)

RRF: Recreational Resource Facility (Public Boat Launch/Ramp)

SM: Seafood Manufacturers

SMR: Seafood Market Retailer

<u>Code</u>	<u>License/Permit Type</u>	<u>License/Permit Name</u>	<u>County Name</u>	<u>Water Body</u>	<u>Waterbody ID</u>
CSD	Shellstock Shipper	Bay Bay Oyster Co.	LANCASTER	Antipoison Creek	70
CSD	Shellstock Shipper	Oyster Catcher Sea Farm, LLC	LANCASTER	Antipoison Creek	70
CSD	Shellstock Shipper	White Stone Oyster Co. LLC	LANCASTER	Antipoison Creek	70
MOP	Marina	Little Bay Seafood	LANCASTER	Antipoison Creek	70
MOP	Other Places Where Boats Are Moored	Marina (William and Kathy Nelson)	LANCASTER	Antipoison Creek	70
MOP	Other Places Where Boats Are Moored	Stay the Course Finfish Processing Facility	LANCASTER	Antipoison Creek	70
MOP	Other Places Where Boats Are Moored	Waterman's Wharf (Subdivision)	LANCASTER	Antipoison Creek	70
MOP	Other Places Where Boats Are Moored	White Stone Oyster Company	LANCASTER	Antipoison Creek	70
SMR	Fresh Seafood	Still Kickin' Seafood	LANCASTER	Antipoison Creek	70
SMR	Seafood	White Stone Oyster Co.	LANCASTER	Antipoison Creek	70
CSD	Repacker	W. E. Kellum, Inc.	LANCASTER	Carter Cove	2
CSD	Shucker/Packer	W. E. Kellum, Inc.	LANCASTER	Carter Cove	2
MOP	Marina	Carter's Cove Marina	LANCASTER	Carter Cove	2
RRF	Not Applicable	Carters Wharf	LANCASTER	Carter Cove	2
MOP	Marina	Crockett's Landing	LANCASTER	Carter Creek	2
MOP	Marina	Premier Sailing	LANCASTER	Carter Creek	2
MOP	Marina	Rappahannock River Yacht Club	LANCASTER	Carter Creek	2
MOP	Marina	Rappahannock Yachts Inc.	LANCASTER	Carter Creek	2
MOP	Other Places Where Boats Are Moored	Stingray Point Oyster Co.	LANCASTER	Carter Creek	2
MOP	Marina	Tides Inn	LANCASTER	Carter Creek	2
MOP	Other Places Where Boats Are Moored	W. Ellery Kellum Inc. Sfd.	LANCASTER	Carter Creek	2
MOP	Marina	West Irvington Yacht Club	LANCASTER	Carter Creek	2
MOP	Other Places Where Boats Are Moored	Custom Yacht Service	LANCASTER	Carter Creek Eastern Branch	3
SMR	Seafood Market	Miss Mary Seafood	LANCASTER	Carter Creek Eastern Branch	3
MOP	Other Places Where Boats Are Moored	Westbay Development	LANCASTER	Chases Cove South	39
CSD	Shellstock Shipper	King Corrotoman Oysters	LANCASTER	Corrotoman River	115
MOP	Other Places Where Boats Are Moored	LAN 26-102J	LANCASTER	Corrotoman River	115
MOP	Marina	Yankee Point Sailboat Marina	LANCASTER	Corrotoman River - Myer Creek	27
MOP	Marina	Heritage Point Marina (HOA)	LANCASTER	Corrotoman River - Senior Creek	28
MOP	Other Places Where Boats Are Moored	Laurel Point	LANCASTER	Corrotoman River Eastern Branch	21
FF	Not Applicable	VDOT Ferry Merry Point to Ottoman	LANCASTER	Corrotoman River Western Branch	22
FF	Not Applicable	VDOT Ferry Ottoman to Merry Point	LANCASTER	Corrotoman River Western Branch	22
MOP	Other Places Where Boats Are Moored	Corrotoman By The Bay (HOA)	LANCASTER	Corrotoman River Western Branch	22
MOP	Marina	Western Branch Preserve	LANCASTER	Corrotoman River Western Branch	22
RRF	Not Applicable	Belle Isle State Park	LANCASTER	Deep Creek	116
SM	Seafood/Fishery Processor	Dymer Creek Seafood	LANCASTER	Dymer Creek-Georges Cove	40
CSD	Shellstock Shipper	Rogue Oysters, LLC	LANCASTER	Greenvale Creek	117
MOP	Marina	Greenvale Creek Marina	LANCASTER	Greenvale Creek	117
MOP	Other Places Where Boats Are Moored	Rogue Oysters	LANCASTER	Greenvale Creek	117
RRF	Not Applicable	Greenvale Creek	LANCASTER	Greenvale Creek	117
GF	Not Applicable	Perdue Agribusiness Grain Plant	LANCASTER	Indian Creek	18
MOP	Other Places Where Boats Are Moored	Blue Water Point Estates (Community Dock)	LANCASTER	Indian Creek	18
MOP	Marina	Chesapeake Boat Basin Inc.	LANCASTER	Indian Creek	18
CSD	Shellstock Shipper	Steamboat Wharf Oyster Co., LLC	LANCASTER	Lancaster Creek	112
CSD	Shellstock Shipper	Camp Little Bay Oyster Co.	LANCASTER	Little Bay	44
MOP	Marina	Hoffman Harbor (DNL Construction)	LANCASTER	Mosquito Creek	119
MOP	Other Places Where Boats Are Moored	Barrack Seafood	LANCASTER	Mulberry Creek	120
MOP	Other Places Where Boats Are Moored	Sloop Pointe Community Pier	LANCASTER	Mulberry Creek	120
NRF	Not Applicable	Belle Isle State Park	LANCASTER	Mulberry Creek	120
MOP	Marina	Harbour on Indian Creek HOA, LLC	LANCASTER	Pitman's Cove	61
MOP	Other Places Where Boats Are Moored	Highbank Development, LLC	LANCASTER	Rappahannock River	4
MOP	Other Places Where Boats Are Moored	Salt Aire Subdivision	LANCASTER	Rappahannock River	4
MOP	Marina	Windmill Point Marina	LANCASTER	Rappahannock River	4
RRF	Not Applicable	Frederick H. Ajoitian Public Boat Ramp at Windmill Point	LANCASTER	Rappahannock River	4
MOP	Other Places Where Boats Are Moored	Watsons Landing Pier	LANCASTER	Whitehouse Creek	30
MOP	Other Places Where Boats Are Moored	Brightwater Subdivision	LANCASTER	Windmill Point Creek	121
SMR	Oyster Aquaculture / Retail / Wholesale	Steamboat Wharf Oyster Company, LLC	LANCASTER	Windmill Point Creek	121
MOP	Other Places Where Boats Are Moored	Kelley Marine	NORTHUMBERLAND	Chesapeake Bay	NA
NRF	Not Applicable	Dameron Marsh Natural Area Preserve	NORTHUMBERLAND	Cloverdale Creek	8
CSD	Shucker/Packer	Cowart Seafood Corporation	NORTHUMBERLAND	Coan River	125
MOP	Marina	Coan River Marina	NORTHUMBERLAND	Coan River	125
MOP	Boating Access Facility	Forrest Landing	NORTHUMBERLAND	Coan River	125
MOP	Marina	Lewisetta Marina	NORTHUMBERLAND	Coan River	125

<u>Code</u>	<u>License/Permit Type</u>	<u>License/Permit Name</u>	<u>County Name</u>	<u>Water Body</u>	<u>Waterbody ID</u>
RRF	Not Applicable	Rowes Landing	NORTHUMBERLAND	Coan River	125
CSD	Shellstock Shipper	Hardrock Seafood	NORTHUMBERLAND	Coan River - The Glebe	19
CSD	Shucker/Packer	Glebe Creek Seafood Co.	NORTHUMBERLAND	Coan River- The Glebe	19
MOP	Other Places Where Boats Are Moored	Bay Quarter Shores Inc. Subdivision	NORTHUMBERLAND	Cod Creek East	94
MOP	Other Places Where Boats Are Moored	Benjamin W. Ward Community Pier	NORTHUMBERLAND	Cod Creek East	94
MOP	Other Places Where Boats Are Moored	Haynies Boat Yard	NORTHUMBERLAND	Cod Creek-PR	93
MOP	Marina	Pine Point Civic Association Subdivision	NORTHUMBERLAND	Cod Creek-PR	93
NRF	Not Applicable	Hughlett Point Natural Area Preserve	NORTHUMBERLAND	Dividing Creek	9
CPP	Crab	Dameron Seafood, Inc.	NORTHUMBERLAND	Great Wicomico River	65
CSD	Shucker/Packer	Dameron Seafood, Inc.	NORTHUMBERLAND	Great Wicomico River	65
MOP	Other Places Where Boats Are Moored	Betz Landing Subdivision	NORTHUMBERLAND	Great Wicomico River	65
MOP	Marina	Blue Compass Marina, LLC	NORTHUMBERLAND	Great Wicomico River	65
MOP	Marina	Hacksneck Farms, LLC (Oyster Aquaculture)	NORTHUMBERLAND	Great Wicomico River	65
MOP	Other Places Where Boats Are Moored	Inland Harbor Property Owners Association	NORTHUMBERLAND	Great Wicomico River	65
MOP	Marina	Mallard Bay	NORTHUMBERLAND	Great Wicomico River	65
MOP	Marina	Tiffany Yacht Co. Inc.	NORTHUMBERLAND	Great Wicomico River	65
RRF	Not Applicable	Cedar Point Landing	NORTHUMBERLAND	Great Wicomico River	65
RRF	Not Applicable	Coopers Landing	NORTHUMBERLAND	Great Wicomico River	65
RRF	Not Applicable	Great Wicomico River Fishing Pier	NORTHUMBERLAND	Great Wicomico River	65
CSD	Shellstock Shipper	The Great Wicomico River Oyster Co.	NORTHUMBERLAND	Great Wicomico River - Barrett Creek	47
MOP	Marina	Lee Dale Shores Community Subdivision	NORTHUMBERLAND	Great Wicomico River - Barrett Creek	47
MOP	Marina	River Bend Estates Community Subdivision	NORTHUMBERLAND	Great Wicomico River - Blackwells Creek	49
CPP	Crab	Fleeton Point Seafood	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
CPP	Crab	Smith Point Seafood	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
CRF	Not Applicable	Reedville Fisherman's Museum	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
CSD	Shucker/Packer	Fishin' Chip's Seafood	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
CSD	Shellstock Shipper	Old Salt Fisheries, LLC	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
CSD	Repacker	Smith Point Seafood	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
CSD	Shellstock Shipper	Smith Point Seafood	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
EZ/WW	Not Applicable	Town of Reedville	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Marina	Buzzard Point Dry Storage & Marina North	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Marina	Fairport Marina	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Other Places Where Boats Are Moored	Fleeton Point Seafood	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Other Places Where Boats Are Moored	Ford Kelley	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Marina	Jennings Boat Yard	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Other Places Where Boats Are Moored	Omega Protein	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Marina	Reedville Marina	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Other Places Where Boats Are Moored	Reedville Marine Railway	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Marina	Smith Point Seafood, Company Inc.	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Other Places Where Boats Are Moored	Waterman's Cove Subdivision	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
RRF	Not Applicable	Shell Landing	NORTHUMBERLAND	Great Wicomico River - Cockerell Creek	64
MOP	Other Places Where Boats Are Moored	E. D. Cockerell Community Pier	NORTHUMBERLAND	Great Wicomico River - Coles Creek	51
MOP	Marina	Glebe Point Campground	NORTHUMBERLAND	Great Wicomico River - Coles Creek	51
MOP	Other Places Where Boats Are Moored	A. C. Fisher, Jr. Marine Railway	NORTHUMBERLAND	Great Wicomico River - Cranes Creek	52
RRF	Not Applicable	Cranes Creek Landing (Wicomico Church)	NORTHUMBERLAND	Great Wicomico River - Cranes Creek	52
CSD	Shellstock Shipper	Happy Oysters, VA	NORTHUMBERLAND	Great Wicomico River - Tippers Creek	57
MOP	Other Places Where Boats Are Moored	Skiff Cove HOA Dock	NORTHUMBERLAND	Hack Creek	98
MOP	Marina	Mikes Seafood	NORTHUMBERLAND	Henry's Creek	63
CSD	Reshipper	Reamy Seafood	NORTHUMBERLAND	Hull Creek	99
MOP	Boating Access Facility	Sands on the Potomac Home Owners Assoc.	NORTHUMBERLAND	Hull Creek	99
MOP	Marina	Indian Creek Country & Yacht Club	NORTHUMBERLAND	Indian Creek	18
MOP	Other Places Where Boats Are Moored	Westbay Community Association, Inc.	NORTHUMBERLAND	Indian Creek - Bells Creek	18
MOP	Marina	Lake Frances Marina Subdivision	NORTHUMBERLAND	Coan River - Kingscote Creek	126
CPP	Crab	Little River Seafood, Inc.	NORTHUMBERLAND	Little Wicomico River	129
CSD	Shucker/Packer	Little Wicomico River Oyster Co.	NORTHUMBERLAND	Little Wicomico River	129
CSD	Repacker	Little Wicomico River Oyster Co.	NORTHUMBERLAND	Little Wicomico River	129
FF	Not Applicable	Kayan to Sunnybank Ferry	NORTHUMBERLAND	Little Wicomico River	129
FF	Not Applicable	Sunnybank to Kayan Ferry	NORTHUMBERLAND	Little Wicomico River	129
MOP	Marina	Cockrell's Marine Railway Inc.	NORTHUMBERLAND	Little Wicomico River	129
MOP	Other Places Where Boats Are Moored	Lewis Seafood	NORTHUMBERLAND	Little Wicomico River	129
MOP	Other Places Where Boats Are Moored	Purcell Seafood Inc.	NORTHUMBERLAND	Little Wicomico River	129

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MOP	Other Places Where Boats Are Moored	Reedville Market	NORTHUMBERLAND	Little Wicomico River	129
MOP	Marina	Sherwood Forest Shores Subdivision	NORTHUMBERLAND	Little Wicomico River	129
SM	Seafood Fishery/Processor	Burgess Crab Company	NORTHUMBERLAND	Little Wicomico River	129
SMR	Seafood Market Retail	Little River Seafood and Gourmet Shoppe	NORTHUMBERLAND	Little Wicomico River	129
CPP	Crab	Little River Seafood/Burgess Crab Company	NORTHUMBERLAND	Little Wicomico River	129
CSD	Shucker/Packer	Purcell's Seafood	NORTHUMBERLAND	Little Wicomico River	129
MOP	Other Places Where Boats Are Moored	Countryside Corporation (Jetty's Reach Subdivision)	NORTHUMBERLAND	Little Wicomico River - Ellyson Creek	75
MOP	Other Places Where Boats Are Moored	F.T. Jett Seafood	NORTHUMBERLAND	Little Wicomico River - Ellyson Creek	75
MOP	Marina	Gaskins Seafood	NORTHUMBERLAND	Little Wicomico River - Ellyson Creek	75
MOP	Marina	Chesapeake Bay Campground & Resort	NORTHUMBERLAND	Little Wicomico River Fed - Slough Creek	78
MOP	Marina	Mt. Air Partners, LC Subdivision	NORTHUMBERLAND	Little Wicomico River Fed - Slough Creek	78
MOP	Marina	Smith Point Marina	NORTHUMBERLAND	Little Wicomico River Fed - Slough Creek	78
MOP	Marina	The Boone Docks	NORTHUMBERLAND	Little Wicomico River Fed - Slough Creek	78
CSD	Shellstock Shipper	Fat N' Happy Oyster Co.	NORTHUMBERLAND	Little Wicomico River - Spences Creek	79
MOP	Other Places Where Boats Are Moored	Ditchley Park Boat Basin	NORTHUMBERLAND	Prentice Creek	16
MOP	Marina	Ingram Bay Marina	NORTHUMBERLAND	Towles Creek	68
MOP	Other Places Where Boats Are Moored	Towles Landing Boating Assoc.	NORTHUMBERLAND	Towles Creek	68
CSD	Shucker/Packer	James E. Headley Oyster Co.	NORTHUMBERLAND	Yeocomico River	111
SM	Seafood Fishery/Processor	O'Bier Seafood, Inc.	NORTHUMBERLAND	Yeocomico River	111
MOP	Marina	Boat Yard at Harry Hogan	NORTHUMBERLAND	Yeocomico River - Lodge Creek	133
MOP	Marina	Krentz Marine Railway	NORTHUMBERLAND	Yeocomico River - Lodge Creek	133
MOP	Marina	Olverson's Marina	NORTHUMBERLAND	Yeocomico River - Lodge Creek	133
RRF	Not Applicable	Lodge Landing	NORTHUMBERLAND	Yeocomico River - Lodge Creek	133
MOP	Not Applicable	Heritage Park Resort Boat Launch Ramp	RICHMOND	Cat Point Creek	10
MOP	Working Waterfronts Historic File	Naylor's Crab House	RICHMOND	Cat Point Creek	10
NRF	Not Applicable	Rappahannock River Valley Natural Resource Site	RICHMOND	Cat Point Creek	10
CPP	Crab Picking Plant	Levere Seafood	RICHMOND	Farnham Creek	123
CSD	Shucker/Packer	Levere Seafood	RICHMOND	Farnham Creek	123
RRF	Not Applicable	Farnham Creek Landing Public Boat Launch Ramp	RICHMOND	Farnham Creek	123
CPP	Crab Picking Plant	Simonson Seafood, LTD	RICHMOND	Lancaster Creek	122
CSD	Shellstock Shipper	Morratico Gold Oysters	RICHMOND	Lancaster Creek	122
CPP	Crab Picking Plant	Ballast Point Seafood Co.	RICHMOND	Morattico Creek	69
CSD	Shellstock Shipper	Awesome Oysters, LLC	RICHMOND	Morattico Creek	69
MOP	Marina	B.G. Smith & Sons Oyster Co.	RICHMOND	Morattico Creek	69
RRF	Not Applicable	Simonson Landing Public Boat Launch Ramp	RICHMOND	Morattico Creek	69
CPP	Crab Picking Plant	Crabs Direct, LLC	RICHMOND	Rappahannock River	4
CSD	Shucker/Packer	Crabs Direct, LLC	RICHMOND	Rappahannock River	4
MOP	Not Applicable	Naylor's Beach Campground Boat Launch Ramp	RICHMOND	Rappahannock River	4
MOP	Other Places Where Boats Are Moored	Sharps Boat Basin	RICHMOND	Rappahannock River	4
MOP	Marina	Whelan's Marina & Campground	RICHMOND	Rappahannock River	4
NRF	Not Applicable	Rappahannock River Valley Natural Resource Site	RICHMOND	Rappahannock River	4
RRF	Not Applicable	Carter's Wharf Public Boat Launch Ramp	RICHMOND	Rappahannock River	4
RRF	Not Applicable	Jones Creek Landing Public Boat Launch Ramp	RICHMOND	Rappahannock River	4
MOP	Other Places Where Boats Are Moored	The Landing at Totuskey Creek Community Pier	RICHMOND	Totuskey Creek	124
RRF	Not Applicable	Totuskey Creek Public Boat Launch Ramp	RICHMOND	Totuskey Creek	124
CSD	Shucker Packer	Bonum Oyster Co.	WESTMORELAND	Bonum Creek	102
RRF	Not Applicable	Bonum's Landing	WESTMORELAND	Bonum Creek	102
MOP	Marina	Coles Point Harbour	WESTMORELAND	Branson Cove	81
MOP	Other Places Where Boats Are Moored	Drury's Marine	WESTMORELAND	Branson Cove	81
RRF	Not Applicable	Branson Cove Ramp	WESTMORELAND	Branson Cove	81
RRF	Not Applicable	Currioman Landing	WESTMORELAND	Currioman Bay	103
MOP	Marina	Stratford Harbour Boat Club	WESTMORELAND	Currioman Bay - Cold Harbor Creek	31
CSD	Shellstock Shipper	Jackson Creek Oyster Co,	WESTMORELAND	Jackson Creek	106
CPP	Crab Picking Plant	Anchor Cove Seafood	WESTMORELAND	Lower Machodoc Creek	84
CPP	Crab Picking Plant	S & W Seafood	WESTMORELAND	Lower Machodoc Creek	84
CSD	Shucker Packer	Bob's Seafood	WESTMORELAND	Lower Machodoc Creek	84
MOP	Other Places Where Boats Are Moored	Drum Bay Marina	WESTMORELAND	Lower Machodoc Creek	84
MOP	Other Places Where Boats Are Moored	Harding Subdivision Community Pier	WESTMORELAND	Lower Machodoc Creek	84
MOP	Other Places Where Boats Are Moored	K & J Marine	WESTMORELAND	Lower Machodoc Creek	84
MOP	Working Waterfronts Historic File	Sustainable Oyster Growers LLC	WESTMORELAND	Lower Machodoc Creek	84
MOP	Other Places Where Boats Are Moored	Berkley Beach	WESTMORELAND	Mattox Creek	107
MOP	Other Places Where Boats Are Moored	Ebb Tide Beach	WESTMORELAND	Mattox Creek	107
MOP	Marina	Harbor View Marina	WESTMORELAND	Mattox Creek	107

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MOP	Other Places Where Boats Are Moored	Potomac Shores Residents Assoc.	WESTMORELAND	Mattox Creek	107
MOP	Marina	Springfield Incorporated	WESTMORELAND	Mattox Creek	107
CRF	Not Applicable	James Monroe Birthplace Site and Visitor Center	WESTMORELAND	Monroe Bay	108
EZ/WW	Not Applicable	Town of Colonial Beach	WESTMORELAND	Monroe Bay	108
MOP	Marina	Bayside Marina	WESTMORELAND	Monroe Bay	108
MOP	Marina	Colonial Beach Yacht Center	WESTMORELAND	Monroe Bay	108
MOP	Brewery	Ice House Brewery & Kitchen	WESTMORELAND	Monroe Bay	108
MOP	Other Places Where Boats Are Moored	Monroe Bay Campground	WESTMORELAND	Monroe Bay	108
MOP	Marina	Monroe Landing Marina	WESTMORELAND	Monroe Bay	108
MOP	Marina	Monroe Point, Lynnhaven Court, TOCB	WESTMORELAND	Monroe Bay	108
MOP	Marina	Monroe's Landing	WESTMORELAND	Monroe Bay	108
MOP	Marina	Nightingale Marina & Motel	WESTMORELAND	Monroe Bay	108
MOP	Marina	Parker's Marina	WESTMORELAND	Monroe Bay	108
MOP	Marina	Potomac-Westmoreland Shores Civic Corp.	WESTMORELAND	Monroe Bay	108
MOP	Marina	Stanford's Marine Railway	WESTMORELAND	Monroe Bay	108
MOP	Marina	The Boathouse Marina	WESTMORELAND	Monroe Bay	108
MOP	Marina	Tranquil Marina (ST Marine)	WESTMORELAND	Monroe Bay	108
MOP	Marina	Winkledoodle Point Marina	WESTMORELAND	Monroe Bay	108
RRF	Public Boat Ramp	Colonial Beach Boat Ramp	WESTMORELAND	Monroe Bay	108
RRF	Not Applicable	Robin Grove Park	WESTMORELAND	Monroe Bay	108
CPP	Crab Picking Plant	J & J Wright Seafood	WESTMORELAND	Nomini Creek	87
CSD	Shucker Packer	Arnest Seafood	WESTMORELAND	Nomini Creek	87
CSD	Shucker Packer	Capt. Faunce Seafood, Inc.	WESTMORELAND	Nomini Creek	87
CSD	Shellstock Shipper	Nomini Bay Oyster Ranch, LLC	WESTMORELAND	Nomini Creek	87
MOP	Seafood	George Robberecht Seafood, Inc.	WESTMORELAND	Nomini Creek	87
MOP	Marina	Maurice Boasse	WESTMORELAND	Nomini Creek	87
MOP	Other Places Where Boats Are Moored	Mt. Holly Steamboat Inn	WESTMORELAND	Nomini Creek	87
MOP	Other Places Where Boats Are Moored	Robert Quinn Community Pier	WESTMORELAND	Nomini Creek	87
MOP	Other Places Where Boats Are Moored	Nomini Boat Club	WESTMORELAND	Nomini Creek - Peirce Creek	92
CRF	Not Applicable	George Washington Birthplace National Monument	WESTMORELAND	Pope's Creek	109
CSD	Shellstock Shipper	Bay B Blue Oyster LLC	WESTMORELAND	Potomac River	NA
MOP	Marina	Coles Point Plantation Marina	WESTMORELAND	Potomac River	NA
MOP	Other Places Where Boats Are Moored	St. John's Condominiums	WESTMORELAND	Potomac River	NA
MOP	Other Places Where Boats Are Moored	Wilkerson's Crab Shores & Restaurant	WESTMORELAND	Potomac River	NA
RRF	Not Applicable	Colonial Beach Landing	WESTMORELAND	Potomac River	NA
RRF	Not Applicable	Kinsale Landing Ramp	WESTMORELAND	Potomac River	NA
RRF	Not Applicable	Westmoreland State Park	WESTMORELAND	Potomac River	NA
SMR	Seafood Market	Shady Lane Seafood	WESTMORELAND	Rosier Creek	110
CSD	Shellstock Shipper	Bay Shellstock	WESTMORELAND	Yeocomico River	111
CSD	Shucker/Packer	Bevans Frozen Halfshell	WESTMORELAND	Yeocomico River	111
CSD	Shucker Packer	Bevans Oyster Co.	WESTMORELAND	Yeocomico River	111
MOP	Marina	The Slips	WESTMORELAND	Yeocomico River - Kinsale Branch	127
CRF	Not Applicable	Kinsale Foundation and Museum	WESTMORELAND	Yeocomico River - Kinsale Branch	127
GF	Not Applicable	Perdue Agribusiness Grain Plant	WESTMORELAND	Yeocomico River - Kinsale Branch	127
MOP	Marina	White Point Marina	WESTMORELAND	Yeocomico River - Point Creek	140
MOP	Marina	Sandy Point Marina	WESTMORELAND	Yeocomico River - Shannon Branch	130