

VIRGINIA MARINE RESOURCES COMMISSION



**Final Report
Products 1-3
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The views expressed herein are those of the author and do not reflect the views of NOAA or any of its subagencies.



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Executive Summary

As a result of generous funding through the Virginia Coastal Zone Management Program and National Oceanic and Atmospheric Association, the Virginia Marine Resources Commission's Habitat Management Division was able to maintain its tidal waters permitting programs including 100% compliance inspections of permits issued and 220 coastal zone environmental reviews. 2021 was a landmark year for tidal wetland management in Virginia with the update of Virginia's [Tidal Wetlands Guidelines](#), which now stipulate that living shorelines are the default approach to shoreline stabilization and all projects should be designed with the consideration of sea level rise and coastal adaptation under NOAA's 2017 intermediate curve projections. It appears that the work of VMRC and our partners towards promoting greater implementation of living shoreline concepts is paying off. During the reporting period living shorelines were the most requested shoreline design with 9.44 miles of living shorelines requested, 7.04 miles of riprap revetment and 5.21 miles of bulkhead.

Introduction

The Virginia Marine Resources Commission ("Commission" or "VMRC"), as provided in Chapter 12 of Title 28.2 of the Code of Virginia, is the State agency responsible for issuing permits for encroachments in, on, or over State-owned submerged lands throughout the Commonwealth. Virginia is one of six "low water states" and, as such, maintains ownership of all submerged lands channelward of the mean low water mark in tidal waters and regulatory authority channelward of the ordinary high water mark on most naturally occurring non-tidal perennial streams, creeks and rivers.

In addition to managing the Commonwealth's 1,472,000 acres of submerged lands, the Commission also regulates the use or development of tidal wetlands and coastal primary sand dunes / beaches pursuant to the provisions of Chapters 13 and 14 of Title 28.2 of the Code of Virginia. Local governments in Tidewater Virginia are provided the option of adopting and locally administering the wetlands and dune / beaches zoning ordinances. VMRC, however, maintains original jurisdiction in localities that have not adopted the ordinances. Even if locally adopted and implemented, the

Commission retains certain oversight responsibilities and reviews all decisions made by those local boards. Figure 1 illustrates the localities within Tidewater Virginia that have adopted the wetlands ordinance and the dune / beach ordinance that can now be adopted by local governments throughout Tidewater Virginia.

The regulatory activities conducted by the Commission and the 34 local wetlands boards are integral components of Virginia's approved Coastal Zone Management Program. The permit review processes used by the Commission and these local wetlands boards ensures that necessary economic development is permitted in a manner which minimizes adverse impacts to the valuable natural resources within our coastal zone.

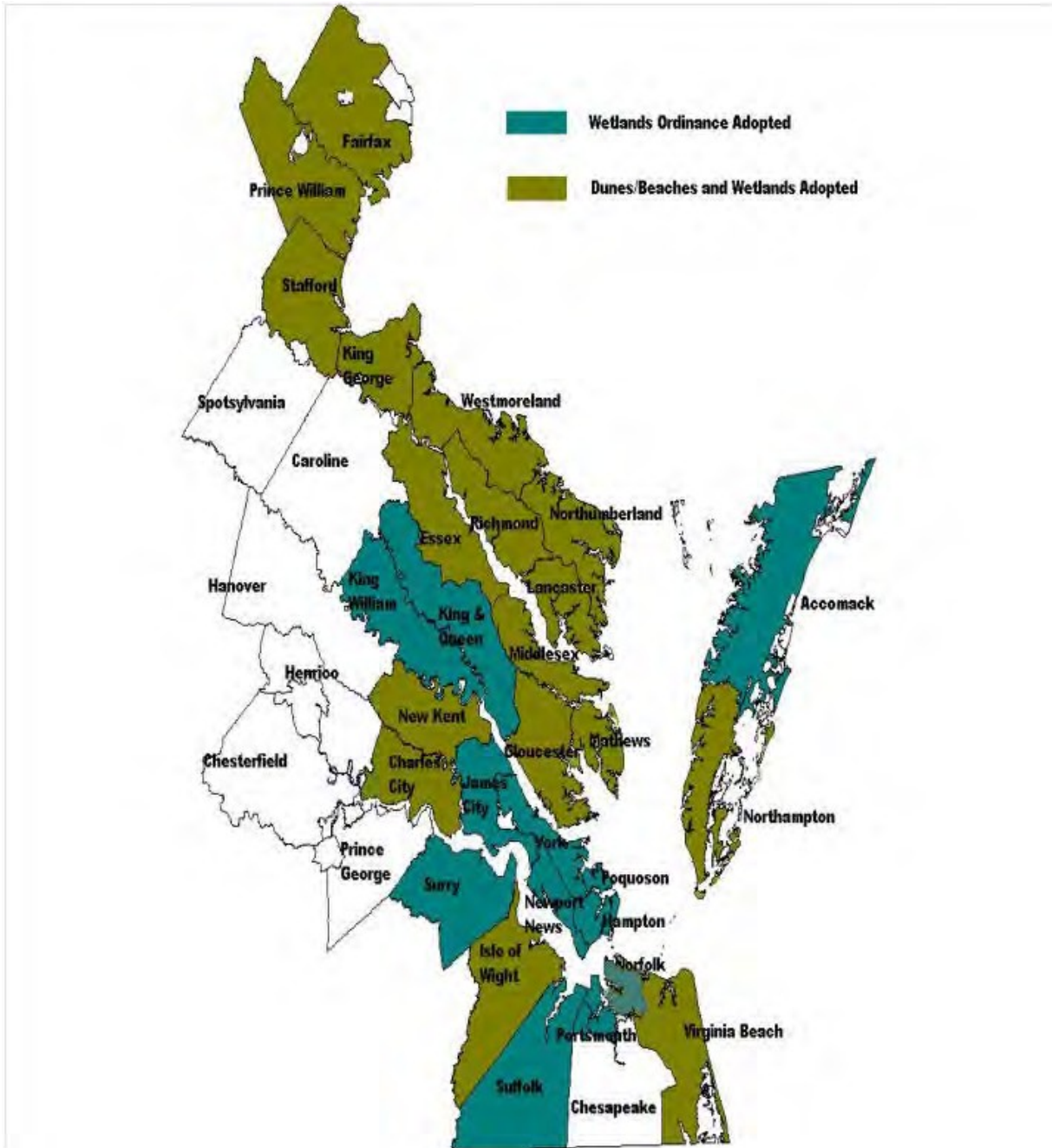


Figure 1. Tidewater Virginia Localities

Product 1: Subaqueous Lands & Tidal Wetlands Permit Program

The Commission's permit review program is conducted by 9 environmental engineers. Each is assigned a specific geographic territory (Figure 2). They conduct application reviews, correspond with applicants and concerned citizens, conduct site inspections, coordinate application reviews with other agencies, prepare project briefings, present contested cases to the full Commission at public hearings and draft permit documents. In addition, they assist local wetlands boards with their wetland management responsibilities and attend all wetland board meetings in order to conduct the required review of wetland board actions.

The environmental engineers also document losses and conversions of submerged land, wetlands, and dunes/beaches associated with all proposed shoreline stabilization projects. Proposed and permitted losses, as well as habitat conversions, are recorded in the existing VMRC permit-tracking database. This intends to track impacts associated with traditional shoreline projects, as well as proposals utilizing living shoreline techniques.

Permit compliance is a mandatory component of any effective regulatory program. As such, it is essential that the terms and conditions contained in the permit documents are followed if the full benefits of the regulatory program are to be realized. Without such permit compliance, the regulatory process breaks down and serves only as an increased bureaucracy.

VMRC Environmental Engineer Territory Map

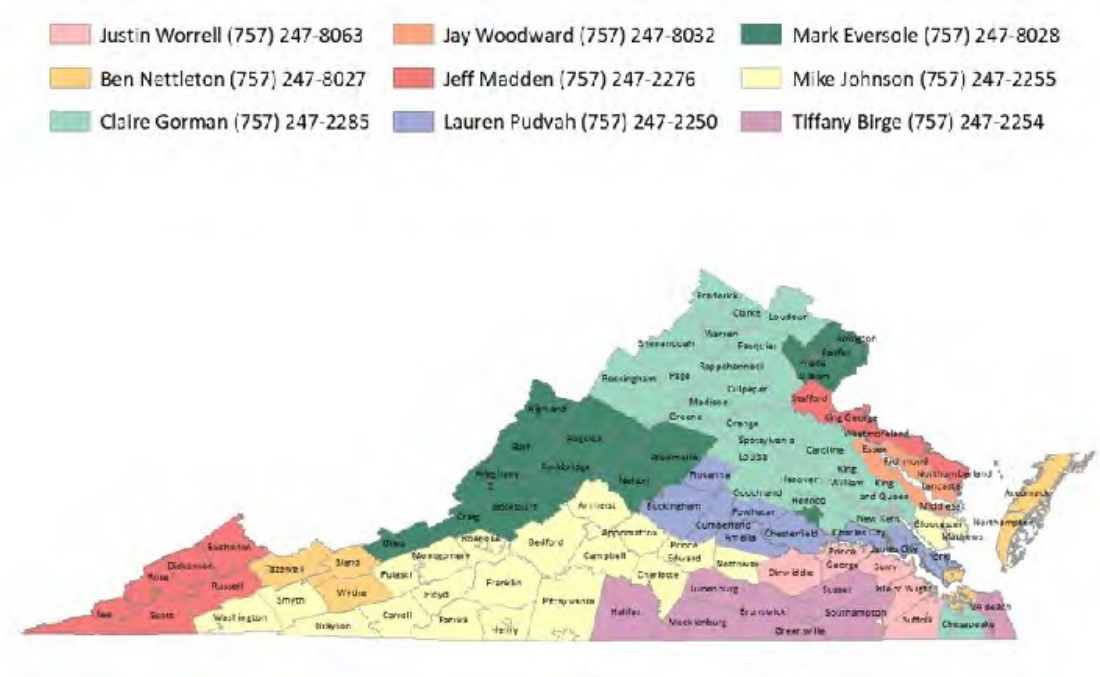


Figure 2. Engineer Territory Map

Permit Overview

During the grant year, the Habitat Management Division received 2,807 applications for projects involving State-owned submerged lands, wetlands, or beaches/dunes. These applications were for projects such as piers, boathouses, boat ramps, marinas, dredging and shoreline stabilization. As the clearinghouse for the Joint Permit Application, all applications were assigned a processing number by the Habitat Management Division and forwarded to the appropriate agencies including local wetlands boards, the Norfolk District of the U.S. Army Corps of Engineers, the Department of Environmental Quality, Virginia Institute of Marine Science, and others as necessary.

A public interest review was initiated and site inspections were conducted for those projects requiring a permit from VMRC. Likewise, Habitat Management staff also conducted site inspections for all projects requiring a local wetlands board permit and evaluated each local board decision for Commissioner review. Habitat

Management staff also conducted compliance inspections on permits issued by VMRC and local wetlands boards.

The Habitat Management staff completed actions on 2,174 applications received during the reporting period. Action on most applications was completed within 90 days following receipt of a complete application. As such, a number of the actions taken during the period were for applications received prior to the grant year. Similarly, those applications received near the end of the current reporting period are still under review. Habitat Management staff also participated in the inter-agency review process involving general permits for Virginia Department of Transportation projects. In addition to staff actions, the Commission considered 76 projects at their regular scheduled monthly meeting. Local wetlands boards, or the Commission in localities without a board, acted on 299 shoreline projects involving tidal wetlands and dunes/beaches.

Submerged Land Permit Results

During the reporting period, VMRC issued 597 permits for encroachments in, on or over State- owned submerged lands. Another 1,623 applications were reviewed for projects that were determined to be authorized by statute or outside the jurisdiction of VMRC. Many of these projects involved private piers, which met the requirements for statutory authorization established by law.

Many of the subaqueous permits involve structures that encroach in, on or over the bottom, including open-pile structures or overhead and submerged utility crossings. Other subaqueous permits involve structures or activities that result in filling or conversion of the submerged land to a different habitat. Table 1. summarizes the authorized filling and conversion of State-owned submerged lands.

Bioengineered structures and submerged oyster reef creation are now recorded with shoreline changes. These are manmade projects such as modular concrete reef structures and fiber logs intended to create habitat often in conjunction with shoreline stabilization.

Table 1. Permitted Conversion of Submerged Land (10/1/2020 – 9/30/2021)

Conversion of Submerged Lands	Square Footage
Submerged land gained from uplands	623
Submerged land loss	18,459
Submerged land to reef	610,409
Submerged land to beach	172,950
Submerged land to intertidal biogenic	11,127
Submerged land to intertidal riprap	406,534
Submerged land to non-vegetated wetland	86,891
Submerged land to vegetated wetland	22,050

Wetlands and Dune/Beach Permit Results

During the grant year, wetlands boards and the Commission acted on 299 projects that required a permit for use and development of tidal wetlands in Tidewater Virginia. Of this total, 266 were approved as proposed, 33 were modified in some manner, generally to reduce wetlands impacts, and 5 projects were denied. Some form of wetlands compensation was required for 64 cases where wetlands impacts were unavoidable. For 5 of the projects, replacement wetlands were created either at the project site or nearby. The purchase of credits from a mitigation bank was utilized for 5 projects and the payment of an in-lieu fee was used as compensation for 26 projects (Table 2). The total compensation accounted for 12,674 square feet of tidal wetland impacts (vegetated and non-vegetated).

Table 2. Projects Requiring Wetland Compensation (10/1/2020 – 9/30/2021)

Compensation for Wetland	Cases
Total projects requiring	36
Required on or off site	5
Purchased mitigation bank credits	5
Paid in-lieu fee	26

The authorized intertidal projects resulted in a variety of habitat conversions and losses, which are tracked by Habitat Management Division staff. Table 3 summarizes those habitat conversions and losses for wetlands and beach/dunes.

Table 3. Permitted Conversion of Jurisdictional Wetlands and Beach/Dunes (10/1/2020 – 9/30/2021)

Conversion of Intertidal Land	Square Footage
Beach loss	24,208
Beach to intertidal riprap	22,273
Beach to vegetated wetland	24,650
Non-vegetated to intertidal bioengineered	10,891
Non-vegetated wetland loss	22,976
Non-vegetated wetland to beach	3,458
Non-vegetated wetland to intertidal riprap	140,352
Non-vegetated wetland to vegetated wetland	242,441
Non-vegetated wetlands gained from uplands	796
Non-vegetated wetlands to submerged land	12,401
Vegetated to intertidal biogenic structure	180
Vegetated wetland loss	2,634
Vegetated wetland to another vegetated	2,233
Vegetated wetland to intertidal riprap	13,734
Vegetated wetlands created from uplands	14,274
Vegetated wetlands to non-vegetated wetlands	18
Vegetated wetlands to submerged land	24

Tidal Shoreline Erosion Control

The Code of Virginia now stipulates that living shorelines are the default approach to shoreline control unless the “best available science” indicates the site is not suitable for such methods (Code of Virginia 28.2-104.1). During the grant year, the VMRC and/or the local wetlands boards acted on projects that included a living shoreline component request along a total of 49,892 linear feet (9.44 miles) of shoreline. During the same period, 39,264 linear feet (7.04 miles) of riprap revetment and 27,512 linear feet (5.21 miles) of bulkhead were requested by applications (Table 4).

Table 4. Application Requests for Shoreline Erosion Control Structures (10/1/2020 – 9/30/2021)

Type of Erosion Control	Linear Footage
Bulkhead, New	6,727
Bulkhead, Replacement	20,785
Riprap Revetment, New	26,660
Riprap Revetment, Maint.	12,604
Living Shoreline * (total)	49,892
Marsh Toe Structure	3,747
Coir Log	2,287
Sill	27,269
Bioengineered	6,595
Breakwater	9,994

*Living shorelines include marsh toe structures, coir logs, sills, bioengineered structures, breakwaters, and planting.

Product 1 Conclusion

The data in this report provides an overview of the permit activity involving State-owned submerged lands, tidal wetlands, and dunes/beaches within the Commonwealth. The data was generated from the Habitat Management Division permit-tracking database originally developed to record permit processing information, such as project type and various dates associated with application receipt and notices,

as well as final permit actions. While the dimensions for structures like bulkheads, riprap and piers were recorded previously, the conversion of habitat types was not added until 2013. This latter information now allows for a more complete assessment of project impacts from year to year and provides data to evaluate the permit program actions. As part of the effort to better assess project impact and permit actions, application information and permit decisions are also now made available to the general public. This information can be accessed at <https://webapps.mrc.virginia.gov/public/habitat/index.php>. Anyone with internet access can view permit applications, the project status, and a project description, including dimensions, site photos, and aerial photographs of the project site. This information is relatively complete for recent permit applications.

Older project information does not include photos or applications submitted before the Habitat Management Division began digitally recording files in the database. However, efforts are underway to digitally record older files and update database files with more complete information. This initiative, along with efforts to record project impacts and habitat conversions will better inform project managers and the public regarding permit actions and outcomes, and improved management of submerged land, tidal wetlands and dune/beach resources.

Product 2: Permit Compliance Evaluation

In order to evaluate compliance with permits issued by VMRC and local wetlands boards, a survey, funded in part by CRMP grant #NA90AA-H-CZ96, was originally conducted in 1991. The compliance survey was designed to investigate and gauge the effectiveness of the various compliance monitoring programs utilized by VMRC and the local wetlands boards. The survey was intended to both identify existing compliance shortcomings and to ascertain effective compliance monitoring techniques in order to enable VMRC to develop concise recommendations to enhance compliance monitoring programs.

The purpose of this grant project was to continue the implementation of recommendations of the original Permit Compliance and Inspection Program report and continue a standardized permit compliance program for those permits issued by the

Commission within the Coastal Zone. Additionally, Commission staff assessed permit compliance for wetland projects authorized in 2019. The latter was designed as a follow up to the previous compliance inspections conducted for projects permitted from 1989 through 2013.

Permit Compliance Program Overview

In the December 1991 Habitat Management Division – Special Report five recommendations were made for VMRC to enhance permit compliance efforts.

1. Require detailed drawings for all projects requiring a VMRC permit.
2. Require accurate benchmarks or reference points on the plan view drawing(s).
3. Require Engineers to take an adequate number of slides during the initial site visit to illustrate pre-construction conditions.
4. Require Engineers to conduct post-construction inspections at all sites permitted by VMRC.
5. Incorporate the data collected from the post-construction inspections into the Habitat Management Division's computer database.

In 1993, with funding provided by CZM Grant No. NA27020312-1, these recommendations were incorporated into the Commission compliance monitoring program through several mechanisms. The [Joint Permit Application](#) was amended to reflect the need for more detailed drawings with accurate benchmarks. The Joint Permit Application was last revised in 2018, as was the Tidewater form. New conditions were incorporated into Commission permits requiring that a permit placard be posted at the project site, and procedures were established for the Commission to receive notice when project construction is started. The latter was accomplished through the use of a self-addressed stamped card that is returned to the Commission by the permittee. Special conditions related to permit compliance have been added to all permits issued by VMRC. In addition, a statement has been added to the permit cover letter that warns permittees that deviation from the permit specifications could result in a civil charge of up to \$10,000 per violation.

Procedures have been established within the Habitat Management Division to require that the Division's Environmental Engineers or VMRC's Compliance Officer inspect all permitted projects. These procedures require that photos are taken of the site before and after construction, and that the final inspections are documented in the compliance database.

In addition, a compliance database has been established to track compliance monitoring efforts and results. Data for VMRC projects inspected during the grant year can be found in Figure 3. Prior to the 1994 grant year the compliance database had been separate from the Habitat Management Division's permit tracking data. The compliance data for projects permitted by VMRC is now incorporated into the Habitat Management Division permit tracking system. The compliance data is entered and maintained by the Division's Compliance Program Support Technician supported by the grant, and the system is accessible by all Division Staff.

Permit Compliance Survey Results

During the grant year a total of 368 compliance inspections were conducted by VMRC Habitat Management Division Staff. This involved inspections of projects permitted by VMRC and 130 inspections of projects permitted by local wetlands boards. The inspections for projects permitted by VMRC followed receipt of the self-addressed stamped card indicating the project commencement or in response to the follow-up letter sent by VMRC to the permittee prior to permit expiration that requests they notify the Commission of the project status. If no response is received, the site is scheduled for inspection upon permit expiration. The inspected wetland projects during the reporting period were randomly selected from projects permitted in 2019 in order to gauge compliance from the projects approved in the previous year. Table 5 shows the breakdown of inspections per locality for the reporting period.

Prior to 1993, wetland projects and VMRC permits were randomly selected for compliance inspections and both permit types were reported together in the previous data. However, since initiation of the Habitat Management Division program to inspect all VMRC permits, the random selection process is used only for wetland permit projects.

Compliance results for all inspections are grouped into the following five categories:

1. In compliance.
2. Moderate compliance (the average allowable encroachment does not exceed 6 inches greater than the permitted alignment and the length and square footage measurements are no more than 10% greater than authorized.
3. Out of compliance (the average additional encroachment exceeded 6 inches and the length or square footage measurements were more than 10% greater than authorized.
4. Unable to determine compliance.
5. Project not constructed.

Compliance rates for the projects permitted by VMRC and inspected during the grant year are shown in Table 5. Cumulative totals for all VMRC permits inspected since initiation of the Habitat Management Division compliance program are shown in Figure 4. While the overall data for the grant year shows that 91% of the projects were found to be in compliance, only 3% of the projects were found to be out of compliance. The remainder were either in moderate compliance (3%), or were not constructed. Although compliance could not be determined for 3% of the projects, inspections in these cases did not indicate there were any permit violations.

Product 2 Conclusion

Based on our review of the data collected and considering the improvements in observed compliance rates since the beginning of this initiative, the program appears to be working. However, compliance rates do seem to have stabilized. As such, our efforts must continue, if we are to ever approach the ultimate goal of 100% compliance on all permitted projects. In order to achieve this goal we must continue our current monitoring program. For projects requiring permits from the Commission, the compliance program has led to better project drawings and the use of accurate benchmarks for improved project monitoring. On the other hand, it has allowed us to identify those projects that present a monitoring challenge. For example, as previously noted, dredging projects have proven difficult to monitor. It is not always appropriate to

require the average homeowner to incur the expense of a post dredge survey for a small dredging project under his pier slip. As a result, special permit conditions have been developed that require pre-dredging conferences and encourage post dredging surveys on large dredging projects. Even with the special conditions, however, this continues to be an area where we must continue to focus our attention.

To date, the compliance monitoring program has allowed evaluations of the effectiveness of our permit and monitoring procedures. As such, the monitoring program can only improve our resource management responsibilities. Therefore, permit compliance initiatives must continue to be a long-term effort if we are to ensure proper construction compliance and the protection of our valuable natural resources. This effort, combined with the improvement of our permit tracking database and the development of GIS capabilities, is necessary if we are to realize the goal of making cumulative impact assessments a part of our wetlands and submerged lands permitting program.

Inspections during the Grant Year

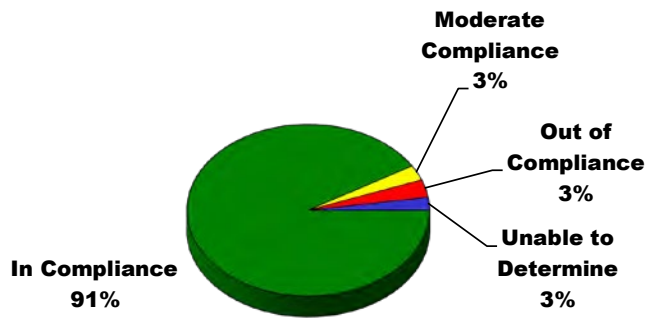
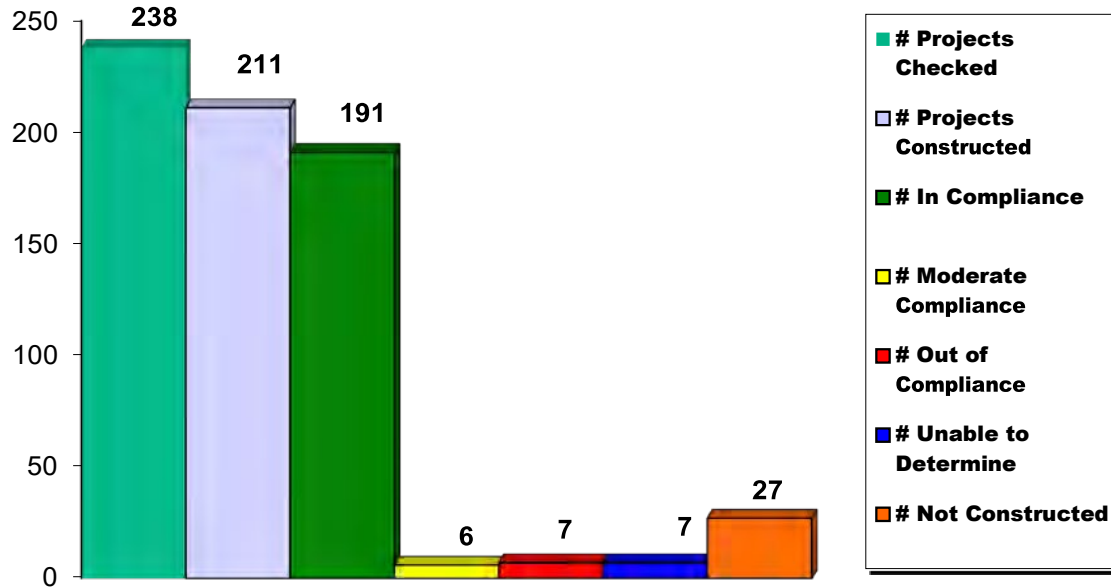


Figure 3 – Inspections of VMRC permits for the Grant year following notification of project commencement or permit expiration

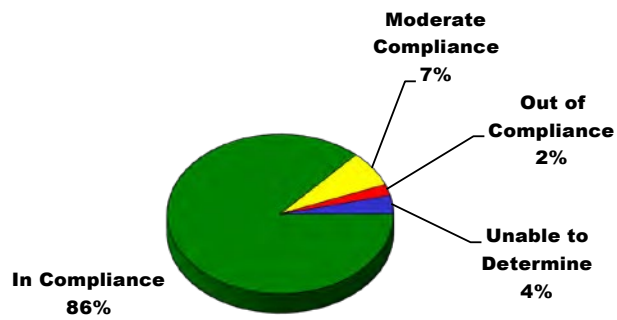
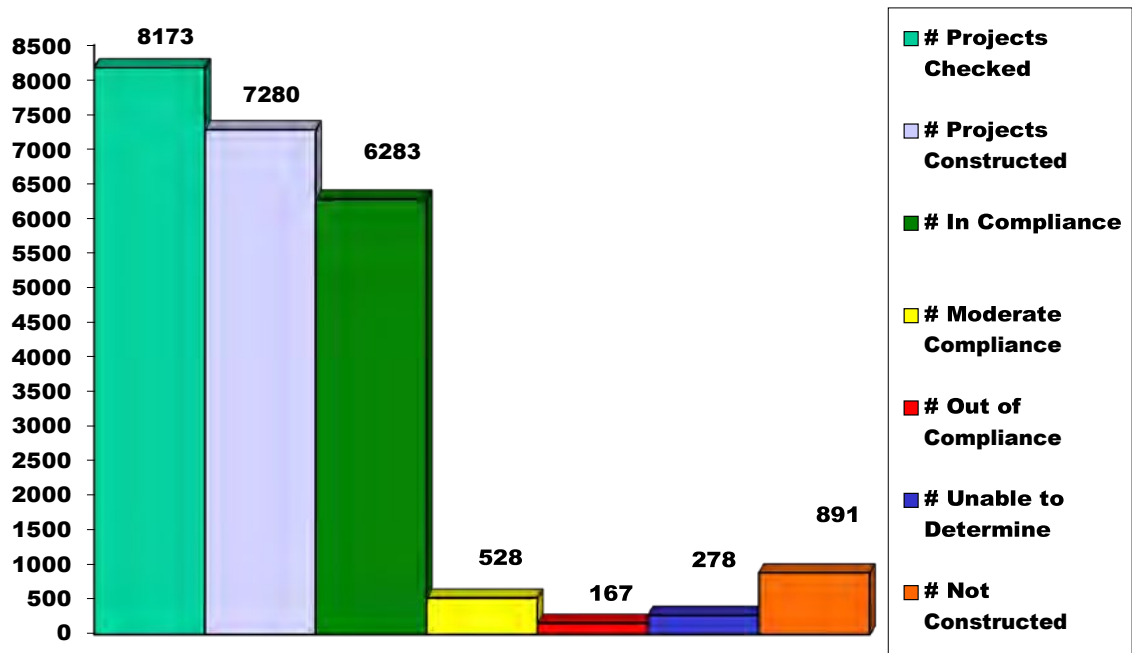


Figure 4 – Inspections since 1993 of all VMRC permits following notification that projects have commenced, or have reached permit expiration.

Table 5 Locations of the 130 random inspections of local wetland board approved projects

Locality	Inspections
Accomack	6
Essex	10
Gloucester	5
Hampton	1
King & Queen	4
Lancaster	11
Mathews	14
Middlesex	14
Norfolk	8
Northampton	3
Northumberland	20
Richmond Co.	4
Surry	1
Virginia Beach	18
West Point	1
Westmoreland	6
York	4

Table 6 Compliance for wetland permit inspections during the reporting period

# of Permits inspected	130
# of Permits constructed	108
% Permits constructed	83%
# in Compliance	101
% Permits in Compliance	93%
# Moderate Compliance	2
% Moderate Compliance	2%
# Out of Compliance	0
% Out of Compliance	0%
# Unable to Determine	5
% Unable to Determine	5%

Product 3: Report on Sea Grant Fellow Assistance to the Habitat Management Division

The VMRC is charged with the administration and regulatory oversight of the Commonwealth's enforceable policies of fisheries management, subaqueous lands, tidal wetlands, and coastal primary sand dunes and beaches and fisheries within Virginia's Coastal Zone Management Program. Undertaken by its Habitat Management Division, the goal of this effort is to eliminate unnecessary impacts to submerged lands, tidal wetlands, dunes and beaches, and to maintain a permit review process based on public interest review procedures consistent with the public trust doctrine that fairly balances private use of State-owned submerged lands and the need to preserve habitat for sustainable fisheries. Historically, Habitat Management did not have a single staff member coordinating environmental reviews through the CZM program. This resulted in a disjointed review program for CZM comments.

To assist the Division with streamlining the review effort from 2017 through 2019, VMRC hosted a Commonwealth Coastal and Marine Policy Sea Grant Fellow to help coordinate Division requests for environmental scoping comments. The Fellows also aided in transition from the historic paper file-based permitting process to a digital permit with electronic pay. Specifically, the Fellows were responsible for the oversight and implementation of a standardized procedure for coordinating agency review and scoping comments on environmental documents routinely provided to VMRC for projects potentially affecting marine fisheries and habitats.

The VMRC did not have a Virginia Sea Grant Commonwealth Coastal and Marine Policy Fellow for this reporting period but intend to hire to fill this position during the next round. Our previous fellow was hired during this reporting period full-time as an Environmental Engineer with the Habitat Management Division. After switching roles within the Division, she continues to coordinate and oversee the environmental scoping comments process until a new fellow is brought on board in 2022.

During the reporting period, 220 environmental review scoping comments were generated for projects that included requests for reviews of federal consistency determinations, NEPA scoping documents, and proposed activities in the

Commonwealth potentially involving the use or development of State-owned submerged lands, tidal wetlands, or beaches and dunes.