

October 30, 2015

**Virginia Coastal Zone Management Program  
Semiannual Section B.2-4 Report  
For the Period from April 1, 2015 – September 30, 2015**

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## **SECTION B.2 PERMIT ADMINISTRATION, MONITORING AND ENFORCEMENT**

### **1) DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)**

#### **a) DEQ – Virginia Coastal Zone Management Program**

Virginia CZM Program staff continued to work with our partner agencies to implement the Program over the last 6 months. For a full description of staff activities, please refer to the Section A report for Task 1.

#### **b) DEQ – Water Permitting Programs**

##### *DEQ- Virginia Water Protection Permit (VWPP) Program*

The Virginia Water Protection (VWP) Permit Program is required for water withdrawals and activities in wetlands and surface waters that may or may not require Clean Water Act section 401 water quality certifications. Please refer to the attached summaries of data for both permit processing data and wetlands impact data that apply to all areas of the Commonwealth.

During Virginia fiscal year 2015 (July 1, 2014 through June 30, 2015), the VWP Permit Program issued approximately the same number of individual permits; modified less individual permits; granted about the same number of coverages under VWP general permits; and made significantly less changes to general permit coverages than during the last fiscal year (see Attachment No. 1). No individual permits were reissued during the fiscal year. The modifications occurred for various types of commercial, private, and government activities. No permit applications were denied during this reporting cycle. No specific trends were identified, other than possibly a continued upswing in Virginia's economy.

Twenty-four general permit authorizations experienced a processing delay beyond statutory limits due to various circumstances, such as: failure of the permittee to provide permit application fees or agency-requested information in a timely manner; the permit process being officially suspended while needed coordination occurred; changes occurred in the project scope or impacts after an application was submitted; coordination occurred with other agencies on threatened and endangered species concerns; and the need for coordination on cultural resources, as required by the State Program General Permit (SPGP) process. Twelve VWP individual permits also experienced processing delays primarily due to application completeness, changes in the project scope or impacts after an application was submitted, coordination on threatened and endangered species, and addressing public comment. Processing for three of these individual permits was suspended. In addition, surface water withdrawal activities, such as reservoirs, intake structures, and associated utility lines, are complicated projects, and it is not uncommon for delays or changes to occur for individual permits that cover these activities.

The VWP Permit Program staff also conducted 117 more inspections on a variety of sites than during fiscal year 2014 (see Attachment No. 1).

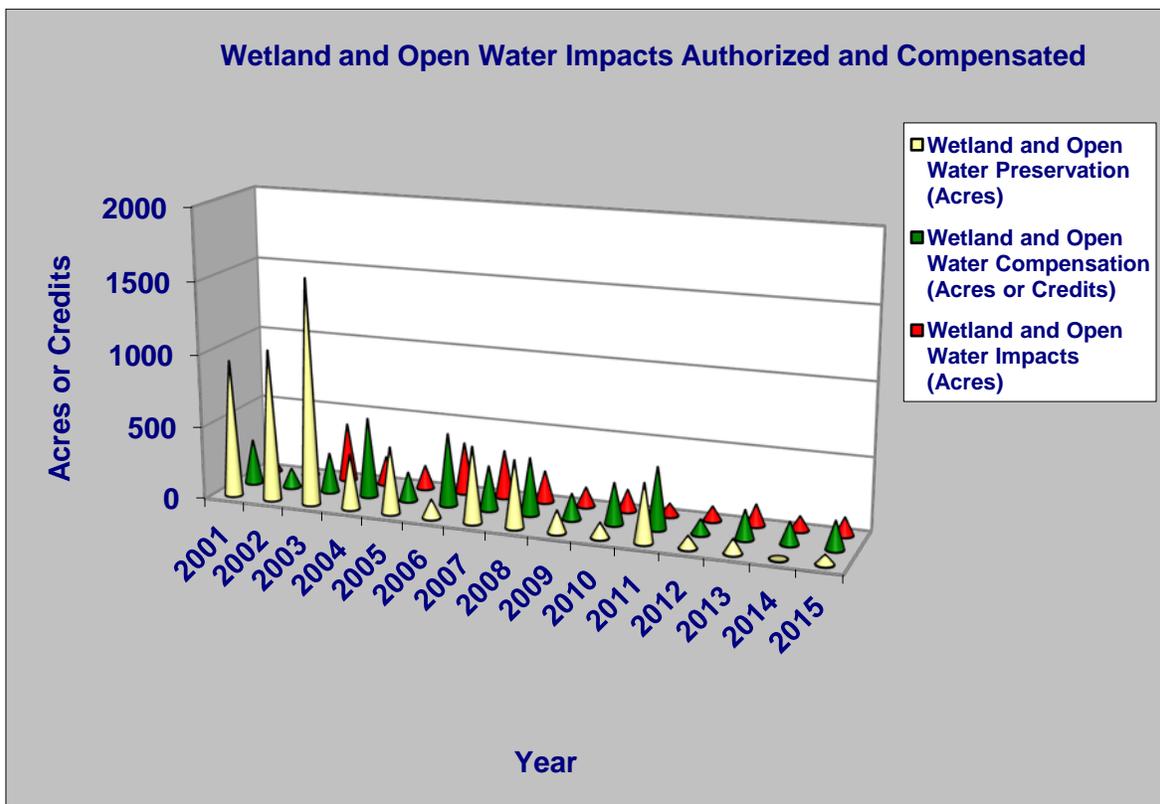
Since fiscal year 2013, the VWP Permit Program experienced a slight decrease, and then a slight increase, in the amount of nontidal wetland impacts proposed through permit applications and subsequently authorized through permit actions. Attachment No. 2 depicts the impacts for fiscal year 2015. Compensatory mitigation, when required, was consistent with current program regulations. Compensation totals have remained about the same since 2013, except for a drop in the amount of preservation received as

compensation. The VWP Permit Program finds that the development pressure in Northern Virginia, greater Richmond, and Tidewater continues to be reflected in the large amount of surface water impacts in these regions. Wetland impacts are particularly difficult to avoid in Tidewater as this area of the Commonwealth has the highest proportion of wetlands to uplands.

The VWP Permit Program continues to process a regulatory action to amend the Virginia Water Protection (VWP) Permit Program regulation and to amend and reissue four VWP general permit regulations during this reporting cycle. The program has also launched a new on-line, GIS-based wetland data viewer called the Wetland Condition Assessment Tool (WetCAT). The goal of WetCAT is to support DEQ’s regulatory decision-making, to allow reporting of wetland condition, and to provide information for policy development.

The VWP Permit Program did not receive comments, concerns, or procedures for expediting decision-making for the management of coastal resources. However, the VWP Permit Program was made aware of an external web resource developed by the Center for Coastal Resources Management at the Virginia Institute of Marine Science and its partners, [sagecoast.org](http://sagecoast.org), that highlights a hybrid engineering approach, integrating soft or 'green' natural and nature-based measures with hard or 'gray' structural ones. “SAGE, which stands for "Systems Approach to Geomorphic Engineering," is federal, local government, academic, and non-governmental organizations working together to reduce coastal risk and improve resilience.”

ATTACHMENT NO. 2



Source: Virginia Water Protection Permit Program Overview, 2015

<b>Group</b>	<b># Permit Actions</b>	<b># Inspections</b>	<b>Average Processing Time (Days)</b>
- VWP Individual Permit Issuances	29	N/A	120
- VWP Individual Permit Modifications	30	N/A	N/A
- VWP Individual Permit Reissuances	0	N/A	N/A
- Coverage under VWP General Permits Granted	262	N/A	35
- Changes to VWP General Permit Coverage	70	N/A	N/A
- VWP Inspections	N/A	908	N/A

*DEQ – Virginia Pollution Abatement (VPA) Water Permitting Program*

The Virginia Pollution Abatement permit (VPA) is required for facilities that manage wastewater, animal waste, biosolids or industrial sludges in such a manner that they do not have a discharge from the site. For example, an agricultural facility that temporarily stores wastewater to be land applied as part of an irrigation/fertilization program. During the period between April 1, 2015 and September 30, 2015, DEQ received 2 permit applications for VPA Individual Permits within the coastal zone area: 1 for a new permit; 1 application for modification; neither was for the land application of biosolids. Six permits that authorize the land application of biosolids were issued during the period. Three VPA permits authorizing the land application of biosolids were modified - each to incorporate amended regulatory language. Seven VPA Individual Permits were reissued within the Coastal Zone Management area; each was for no-discharge activities other than biosolids land application.

During the period between April 1, 2015 and September 30, 2015, 9 applications in total were submitted and processed (8 new facilities, 1 permit was transferred to another owner-categorized under the modification column) for coverage under the General Permit for Poultry Waste management in the Coastal Zone Management area. Also during the period, 4 applications were received and coverage was reissued under the VPA General Permit for Animal Feeding Operation in the Coastal Zone Management area.

*DEQ – Virginia Pollution Discharge Elimination System (VPDES) Water Permitting Program*

There are a total of 249 individual municipal and industrial CZM area VPDES permits. This number and the numbers in the table above represent typical activity in the program. There is no known reason for increases or decreases in numbers of permits from the last reporting period.

There are also numerous facilities registered under general permits in CZM areas including 38 car wash, 73 concrete products, 8 cooling water, 205 domestic sewage  $\leq$  1,000 GPD (single family homes), 48 nonmetallic mineral mining, 18 petroleum, 10 potable water treatment, 53 seafood processors, and 509 industrial storm water. These represent typical numbers for general permit registrants in CZM areas in Virginia. There are a number of general permit coverages that are automatically covered under a permit (e.g., pesticide applications and hydrostatic testing) and are not entered into the CEDS database.

VPDES/VPA - April 1, 2015 – September 30, 2015										
	Permits Issued / Avg Proc. Days <sup>(1)</sup>		Permits Reissued / Avg Proc. Days		Permits Modified / Avg Proc. Days		Denied / Avg Proc. Days		Permits Reissue Pending / Avg Proc. Days	
VPDES	0	N/A	17	524**	8	204	0	N/A	14***	N/A
VPA	6	249	7	253	3	53	0	N/A	10	1745
VPA GP	8	33.9	4	6.25	1	1	0	0	0	0

**Processing day is the amount of time between receiving a complete application and making the final case decision (issuance, reissuance, modification, etc.).**

\* Information from CEDS database

\*\*This processing time is unusually high because two MS4 permits were issued during this reporting period and the processing time average includes the time the application was received at DCR in 2005 and 2007. These permits remained expired and unissued at DCR until the MS4 program moved to DEQ in July 2013 and these permits were reissued within 18 months of being transferred to DEQ.

\*\*\*This represents existing VPDES individual permits expired but pending through September 30, 2015.

### c) DEQ – Water Program Enforcement and Compliance

DEQ continues to apply both informal and formal enforcement measures in the enforcement program. Reference Table 1, below.

Informal measures, such as Warning Letters and Letters of Agreement, are used in those cases where non-compliance is not significant in nature and where compliance can be achieved in a short period of time. For the period April 1, 2015 through September 30, 2015, DEQ issued 198 Warning Letters for violations of VPDES, VPA, VWPP, and Ground Water program requirements.

Formal enforcement actions are used in those cases where non-compliance is more serious or may take a significant amount of time to correct. Formal measures generally involve the issuance of a Notice of Violation followed by a Consent Order, or an Executive Compliance Agreement in the case of a state agency. In some cases, Unilateral Administrative Orders or court orders may be sought. Between April 1, 2015 and September 30, 2015, DEQ issued 29 Notices of Violation for violations of VPDES, VPA, VWPP, and Ground Water program requirements. During the same period, the agency concluded enforcement cases with the issuance of seven Consent Orders that assessed a total of \$606,319 in civil charges.

**Table 1**

Measure	Action Type	Count	Total Civil Charges Assessed
Informal	Warning Letters	198	N/A
Informal	Letters of Agreement	0	N/A
Formal	Notices of Violation	29	N/A
Formal	Consent Order	7	<b>\$606,319</b>
<b>Total</b>		<b>234</b>	<b>\$606,319</b>

d) DEQ – Air Permitting Program

**OFFICE OF AIR PERMIT PROGRAMS  
PERMITS ISSUED REPORT FOR  
VIRGINIA’S COASTAL RESOURCES MANAGEMENT PROGRAM**

Period: April 1, 2015 – September 30, 2015

PERMIT TYPE	NUMBER OF PERMITS ISSUED	AVERAGE PROCESSING TIME (Days)
PSD & NA	0	N/A
Major	0	N/A
Minor	45	26
Administrative Amendment	5	32
Exemptions	8	14
State Operating	0	N/A
Federal Operating (Title V)	2	545
Acid Rain (Title IV)	0	N/A
Total Number Permits Issued	<b><u>60</u></b>	

\* The average processing time is determined by computing the difference between when the application was deemed administratively complete and when the permit was issued.

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Portions of the Piedmont Regional Office and the Tidewater Regional Office only.

Definitions:

Prevention of Significant Deterioration (PSD) = A source which emits **250 tons or more** per year of any regulated pollutant or is one of 28 specific industries listed in the state regulations and will emit 100 tons per year of a regulated pollutant.

Major = A source which emits, or has the potential to emit, **100 tons or more** per year of any air pollutant.

Minor = A source which emits, or has the potential to emit, **less than 100 tons** per year of any air pollutant.

State Operating= Permit written pursuant to 9 VAC 5-80-800 et al.

Administrative Consent Agreement = An agreement that the owner or any other person will perform specific actions to diminish or abate the causes of air pollution for the purpose of coming into compliance with regulations, by mutual agreement of the owner or any other person and the Board.

Administrative Amendment = Administrative changes made to the permit to clarify or correct an issued permit. For example, typographical errors, name changes, etc.

Exemption = Facilities are exempted from permitting requirements by exemption levels defined in 9 VAC 5-80-1105.

Federal Operating (Title V) = a source that emits **10 tons or more** per year of any hazardous air pollutant, **or 25 tons** per year of any combination of hazardous air pollutants or emits any criteria pollutant above 100 tons per year.

Acid Rain (Title IV) = Permits issued specifically to address SO<sub>2</sub> and NO<sub>x</sub> from electric generating units covered under the Acid Rain regulations.

**OFFICE OF AIR PERMIT PROGRAMS  
 PERMITS PENDING REPORT FOR  
 VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM**

Permits pending as of September 30, 2015

PERMIT TYPE	NUMBER OF PERMITS PENDING
PSD & NA	1
Major	1
Minor	18
Administrative Amendment	2
Exemptions	0
State Operating	3
Federal Operating (Title V)	4
Acid Rain (Title IV)	0
Total Permits Pending	<b><u>29</u></b>

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Piedmont Regional Office and Tidewater Regional Office only.

**OFFICE OF AIR PERMIT PROGRAMS  
PERMITS WITHDRAWN AND APPLICATIONS DENIED REPORT FOR  
VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM**

Period: April 1, 2015 – September 30, 2015

PERMIT TYPE	NUMBER OF PERMITS WITHDRAWN	NUMBER OF APPLICATIONS DENIED
PSD	1	0
Major	0	0
Minor	6	0
Administrative Amendment	0	0
Exemptions	0	0
State Operating	1	0
Federal Operating (Title V)	0	0
Acid Rain (Title IV)	0	0
Total Permits Rescinded	<u>8</u>	<u>0</u>

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Piedmont Regional Office and Tidewater Regional Office only.

**e) DEQ – Air Program Enforcement and Compliance**

DEQ continues to apply both informal and formal enforcement measures in its air enforcement program. Reference Table 2, on the following page.

Informal measures include Requests for Corrective Action, Informal Correction Letters, Warning Letters, and Letters of Agreement. These actions are used in those cases where non-compliance is not significant in nature and where compliance can be achieved in a short period of time. During the six-month period beginning April 1, 2015 through September 30, 2015, DEQ issued 21 Requests for Corrective Action, and 12 Warning Letters.

Formal enforcement actions are used in those cases where non-compliance is more serious or may take a significant amount of time to correct. Formal measures generally involve the issuance of a Notice of Violation and negotiation of a Consent Order, or an Executive Compliance Agreement in the case of a state agency. In some cases, Unilateral Orders or court orders may be pursued. Between April 1, 2015 and September 30, 2015, DEQ initiated fourteen new formal enforcement actions via issuance of Notices of Violation. Additionally, the Agency issued two Consent Orders; assessing a total of \$11,231 in civil charges.

**Table 1**

Measure	Action Type	Count	Total Civil Charges Assessed
Informal	Requests for Corrective Action	21	N/A
Informal	Informal Correction Letter	0	N/A
Informal	Warning Letters	12	N/A
Formal	Notices of Violation	14	N/A
Formal	Consent Orders	2	\$11,231
<b>Total</b>		<b>49</b>	<b>\$11,231</b>

## f) DEQ – Erosion and Sediment Control

### Summary of Specific Outputs:

Specific Outputs	Progress / Status
16 CZM Chesapeake Bay Land Disturbing Activities Permitted - Projects greater than 2,500 s.f. but less than 1 acre found within Chesapeake Bay Designated Areas.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
206 CZM Small Construction Activities Permitted- Land Disturbing Activities greater than 1 acre but less than 5 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
114 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than 5 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
336 Total CZM Land Disturbing Activities Permitted thru coverage under the Construction General Permit.	Coastal Zone Management resources are conserved and restored through permit compliance.

### Supplemental Narrative:

Considerable erosion and sediment control and stormwater management progress occurred during the performance period. New and improved requirements for project stabilization during construction and recently enhanced post construction requirements will result in further improvements to coastal zone resources. The new post construction requirements have been developed to more closely mimic predevelopment hydrology found in a naturally wooded site condition. The implementation of these new requirements will result in less downstream sediment export and fewer nutrient export impacts from land development.

Erosion & Sediment Control (ESC) and Stormwater Management (SWM) Laws and Regulations are designed to help reduce pollutants in the Chesapeake Bay, and require localities, developers, and consultants to be certified in various knowledge and practices. The regulations require DEQ to offer two certification tracks, one for ESC and another for SWM.

Each track includes training courses to assist people to become certified as Program Administrators, Inspectors, Plan Reviewers and Combined Administrators. Each certification type is valid for 3 years and individuals can recertify by completing continuing education throughout the certification period.

Between April 1 and September 30, 2015 DEQ Office of Training Services trained 1,521 people through 43 certification classes in Erosion & Sediment Control and Stormwater Management. This compares with 2,134 people through 40 classes in 2014.

## **g) DEQ- Office of Stormwater Management – Local Government Programs - Chesapeake Bay Local Assistance**

### Summary

#### Program Description

The Bay Act program is designed to improve water quality in the Chesapeake Bay and other waters of the State by requiring the use of effective land management and land use planning. Specifically, these requirements fall into three implementation phases. Phase I consists of local governments designating and mapping Chesapeake Bay Preservation Areas (CBPAs) and adopting land use and development performance criteria to protect those features. CBPAs include Resource Protections Areas (RPAs) and Resource Management Areas (RMAs). RPAs are made up of tidal wetlands, tidal shores, nontidal wetlands connected and contiguous to tidal wetlands or perennial streams and a 100-foot fully vegetated buffer. RMAs include lands adjacent to RPAs that are made up of land features such as highly erodible soils, steep slopes and floodplains. Sixty of the eighty-four Tidewater localities have identified their entire jurisdiction as an RMA. Phase II consists of the incorporation of water quality protection measures into local comprehensive plans. Phase III involves the review and revision of local land use codes to include specific standards that implement water quality performance criteria.

During the reporting period, April 1, 2015 - September 30, 2015, staff continued to provide assistance and training to the Bay Act localities. Also through the Environmental Impact Review process, staff also continued to review plans for State and Federal project to ensure those projects were consistent with the Bay Act.

#### Advisory Code and Ordinance Reviews

As stated in previous reports, Local Government Assistance staff initiated Phase III of the Bay Act, requiring localities to review and revise their codes and ordinances for the inclusion of specific standards that minimize impervious cover, minimize land disturbance and maintain indigenous vegetation. The advisory review process, which is the first component of Phase III, began in September of 2009 and uses two checklists as screening tools in the review the local ordinances. A [Plan and Plat Consistency Review Checklist](#) helps determine if a locality has addressed the six plan and plat provisions that must be contained in local ordinances, as they are specifically required by the Regulations. The [Checklist for Advisory Review of Local Ordinances](#) determines if there are adequate provisions to address the three performance criteria and contains numerous examples of requirements that may be contained within a locality's land development ordinances. During the reporting cycle, the Bay Act liaisons completed advisory reviews of codes and ordinances of all of the eighty four Bay Act localities. A determination of how well these water quality ordinance provisions are being implemented occurs during formal compliance reviews of the local Bay Act programs.

#### Compliance Reviews

In the previous semi-annual report, we reported that the Department undertook a business improvement initiative on the Bay Act compliance review process and that the process was significantly improved and streamlined. The compliance process had been suspended so DEQ could focus on the development of local stormwater programs. The local stormwater program development process is now completed and Bay Act compliance reviews were restarted in September of 2015. DEQ will conduct fourteen compliance reviews through June of 2016. Five compliance reviews were initiated during the reporting cycle.

During these reviews, staff assess whether or not the locality is implementing soil & water quality conservation assessments for agricultural lands, the status of the water quality provisions of the local comprehensive plans, how well local governments are ensuring that impervious cover is minimized, indigenous vegetation is maintained and land disturbance is minimized on approved development projects and how well performance criteria are being applied to the use and development of land.

## **2) VIRGINIA MARINE RESOURCES COMMISSION (VMRC)**

### **a) VMRC – Habitat Management Division**

During the period April 1, 2015 through September 30, 2015, the Habitat Management Division received 1010 applications for projects involving State-owned submerged lands, wetlands or 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 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, VIMS and others as necessary.

A public interest review was initiated and site inspections were conducted for those projects requiring a permit from the Marine Resources Commission. 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. Two notices to comply were issued during the period.

The Habitat Management Staff completed actions on 928 applications received during the period. Action on most applications was completed within 90 days after they were received. As such, a number of the actions taken during the period were for applications received prior to April 2015. 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 Full Commission considered 42 projects. During the reporting period, the Commission considered 23 protested projects or projects requiring a staff briefing, The Commission also approved 19 projects over \$500,000.00 in value.

During the reporting period local wetland boards throughout Tidewater Virginia acted on 170 projects involving tidal wetlands. Of this total, 133 were approved as proposed, 33 were approved as modified, 0 were denied, 1 is pending, 1 was inactivated, 2 no permit was required, and 32 required compensation either on or off site (15), or through payment of an in lieu fee (17) accounting for 28,548 square feet of tidal wetland impacts.

### **b) VMRC – Fisheries Management Division**

At the April 2015 meeting, the agency established amendments to regulations for striped bass, summer flounder, black sea bass, and Atlantic menhaden. The agency adopted the previous emergency amendment for the striped bass minimum size limit. Minimum size limit was increased from 32-inches to 36-inches for the trophy-size striped bass recreational fisheries in the Chesapeake Bay and its tributaries and Coastal Area. Also established was an amendment to close the summer flounder commercial offshore fishery on April 19, 2015.

The 2015 black sea bass recreational season was established, as May 15 through September 21 and October 22 through December 31. The agency also established the 2015 commercial non-purse seine menhaden bait sector quota as 4,629,542 pounds. This was a reduction to account for the 2014 quota landings overage of this sector.

At its May 2015 meeting, the agency established amendments to regulations for spiny dogfish and scup (porgy). The spiny dogfish commercial harvest quota from May 1, 2015 through April 30, 2015 was increased to 5,463,565 pounds. The agency also established the commercial scup (porgy) summer period harvest quota as 13,646 pounds.

At its June 2015 meeting, the agency adopted amendments for Atlantic menhaden that would establish an increase in total allowable landings for 2015 and 2016. This was portioned out to the three different sectors of the menhaden fishery: purse seine menhaden reduction, 315,036,445 pounds, the purse seine menhaden bait, 29,313,757 pounds and the non-purse seine menhaden bait, 5,523,682 pounds for a total commercial landing amount of 349,873,884 pounds. The agency adopted the amendment that will make this regulation conform to the Code of Virginia, in terms of the process for paying back overages of quota.

At the September 2015 meeting, the agency adopted amendments to establish a permit for incidental harvest of lobsters in state waters.

### **c) VMRC – Law Enforcement Division**

Enforcement under "Other Agency" refers to summons issued for other agencies' laws, code or regulation sections. The majority of the summons in this category are for DGIF regulations on boating safety laws, expired boat registration, no life jackets, flares, etc.

Summons under "Police Powers" are all criminal vs fisheries. These are the reckless driving, drunk driving, driving without a license/suspended license, shoplifting, possession of controlled substances.



**VIRGINIA MARINE POLICE  
ARRESTS/CONVICTIONS SUMMARY BY CATEGORY**

REPORT FORMAT: FEDERAL FISCAL YEAR AREA: ALL AREAS  
 START PERIOD: 10/01/2010  
 END PERIOD: 09/30/2015

Category	2010/2011		2011/2012		2012/2013		2013/2014		2014/2015	
	Convictions	Arrests								
Buyers	1	1	7	7	6	8	7	7	4	5
Casting Garbage/Trash	1	1	1	1	0	0	5	5	0	0
Clams	1	1	6	6	7	9	4	7	2	3
Commercial Fishing License	3	6	8	9	4	6	5	9	3	4
Conch	0	0	0	0	0	0	0	0	0	0
Conchs	0	0	4	4	2	2	1	2	0	0
Crab	0	0	0	0	0	0	0	0	0	0
Crabs	48	59	79	96	43	50	92	119	71	81
Federal Violation	0	0	0	0	0	0	0	0	0	0
FIP Violations	92	100	142	156	63	63	58	60	58	61
Fish	118	138	520	608	219	253	75	81	97	106
Freshwater Fishing without a license	11	13	9	11	14	18	12	16	14	16
Gill Nets	6	8	7	14	9	11	14	18	12	19
Habitat/Wetlands	0	0	0	0	0	0	0	0	0	0
License Tags	2	4	4	10	0	2	3	4	1	1
Mandatory Reporting	0	2	0	0	1	58	0	0	8	11
Misc	0	0	0	0	0	0	0	0	0	0
Non-residents	0	0	0	0	0	0	0	0	0	0
NSSP	0	3	0	0	0	0	0	0	0	0
Other Agencies	275	321	317	354	220	255	224	275	298	360
Oysters	60	74	147	194	139	226	102	154	150	241
Piers	0	0	0	0	0	0	0	0	0	0
Police Powers	95	118	87	97	95	109	76	88	59	67
Removal of Obstructions	1	1	3	3	3	5	1	1	0	0
Resisting officer	0	0	0	0	0	0	0	0	0	0
Shellfish	2	3	14	15	15	20	14	16	11	16
SW Recreational Licenses	167	212	210	250	204	262	189	240	171	193
<b>TOTALS:</b>	<b>883</b>	<b>1065</b>	<b>1565</b>	<b>1835</b>	<b>1044</b>	<b>1357</b>	<b>882</b>	<b>1102</b>	<b>959</b>	<b>1184</b>
<b>PERCENT OF CONVICTIONS:</b>	<b>82.91%</b>		<b>85.29%</b>		<b>76.93%</b>		<b>80.04%</b>		<b>81.00%</b>	

**3) VIRGINIA DEPARTMENT OF HEALTH (VDH) – DIVISION OF SHORELINE SANITATION**

From April 1, 2015 through September 30, 2015, the VDH Division of Shellfish Sanitation had 529 acres of shellfish grounds closed to harvesting. There were 1527 acres of shellfish grounds reopened.

Activities of the Virginia Department of Health for the Virginia Coastal Resources Management Report are summarized below. This includes statics on applications for sanitary facilities at marinas and other places where boats are moored.

The Department received and reviewed a total of 25 VMRC Permit Applications, and processed as follows:

Thirty-six (36) Permit Applications needed action in the Marina Program.

Thirty-four (34) applications were approved based on meeting the requirements of providing adequate facilities.

Two (2) applications were denied because of inadequate facilities.

## 4) Department of Conservation and Recreation (DCR)

### a) DCR - Division of Soil and Water Conservation

#### Nutrient Management

DCR Nutrient Management Staff have been active in developing, reviewing nutrient management plans, enhancing private sector plan development, and other nutrient reduction activities to achieve the Commonwealth's nutrient reduction commitments of Chesapeake Bay TMDLs. In the coastal zones of Virginia, DCR staff has overseen the development of nutrient management plans covering 36,465 acres during the reporting period. Many plans are active for up to three years, but all new or revised acreage developed in the coastal watershed is summarized in the following table:

CZM Basins	Cropland	All Other Hayland	Pasture	Specialty Crop	Total
Albemarle Sound	-	8	165	-	173
Atlantic Ocean	-	-	-	-	-
Chesapeake Bay Coastal	2,569	6	-	-	2,575
Chowan	1,343	-	13	-	1,356
James	1,981	1,314	905	60	4,260
Potomac	7,641	4,446	4,393	84	16,563
Rappahannock	10,065	703	267	-	11,035
York	436	67	-	-	503
Total	24,034	6,544	5,743	144	36,465

### b) DCR - Division of Natural Heritage

This report lists projects and activities conducted by the Department of Conservation and Recreation, Division of Natural Heritage (DCR-NH) during this period that were not funded by or otherwise reported to the VCZMP

#### Inventory

##### A Rediscovered Rare Moss Found at Two Natural Areas Preserves – 8/14/15

A globally rare moss, *Savanna campylopus* (*Campylopus carolinae* - G2/S1), was recently rediscovered at Blackwater Ecological Preserve nearly 30 years after it was first noted by bryologist Lewis Anderson. The moss is diminutive and restricted to areas of sterile, exposed sands within open longleaf pine-scrub oak woodlands on the property. It is otherwise known from a handful of populations in North Carolina. Since mosses and liverworts can be daunting to identify in the field, this rediscovery was only considered tentative. Confirmation finally came when the DCR Natural Heritage staff botanist attended a bryophyte identification course at Highlands Biological Station in North Carolina and used the specimens as study subjects. The Highlands course was tailored to botanists wishing to learn the specialized techniques of bryophyte identification, which involves both a field component and careful study with a compound microscope. Following this training, the DCR Southeast Regional Steward and Staff Botanist discovered a second, small population of this rare moss in a similar pine-scrub oak habitat at South Quay Sandhills Natural Area Preserve.



Savanna campylopus moss (G2/S1)

#### Historical Occurrence for Globally Rare Plant Refound on Mattaponi River – 8/19/15

The DCR-Natural Heritage Field Botanist, Botany Intern, and the Southeast Region Steward conducted a survey by boat on the Mattaponi River 4-5 miles upstream from Walkerton in an attempt to refind an historical occurrence of Parker's pipewort (*Eriocaulon parkeri*, G3/S2), a small plant in the Pipewort family. Staff of the Richmond Times-Dispatch, Rex Springston and Joe Mahoney, accompanied the surveyors to document the survey. Parker's pipewort is a globally rare plant of eastern North America ranging from Quebec to North Carolina but is in decline over portions of its range. It is found on mud, sand, silt, or gravel flats on freshwater intertidal river shores and rarely in the mud of tidal swamps. The plant is known from more-recent locations farther downstream on the Mattaponi River but the status of an occurrence along a more upstream stretch of the river had not been updated since being found by a surveyor in 1986. The DCR surveyors were successful in refinding plants within its historical location and in roughly similar numbers (1000+ plants) along both sides of the river shoreline exposed at low tide. The highly invasive plant species hydrilla (*Hydrilla verticillata*) and marsh dewflower (*Murdannia keisak*) were noted as threats along portions of the shoreline. This survey effort was part of a larger project funded by the Virginia Native Plant Society in order to update some of the historical plant records, occurrences last seen 25 years ago or more.



Parker's Pipewort (*Eriocaulon parkeri*)

#### Prescribed Burning

DCR Natural Heritage Staff Assist Partners with Prescribed Burn Projects – Spring 2015 – During late March and early April of 2015, DCR-Natural Heritage staff assisted partner agencies (The Nature Conservancy and U.S. Fish and Wildlife Service) with a total of six prescribed burn projects, totaling 684 acres. DCR staff performed critical roles on these burns, including serving as Burn Boss, Ignition Specialist, Engine Boss, Fire Weather Monitor and Holding Boss. Date, lead agency, acres burned and location of each project were as follows:

April 1; USFWS; 24 acres; Great Dismal Swamp National Wildlife Refuge in Suffolk  
 April 2; USFWS; 28 acres; Great Dismal Swamp NWR in Suffolk  
 April 2; TNC; 180 acres; 5-year old longleaf pine at Raccoon Creek Pinelands in Sussex County  
 April 3; USFWS; 20 acres; Great Dismal Swamp NWR (area around refuge HQ / Visitor Center)  
 April 6; TNC; 275 acres; Piney Grove Preserve in Sussex County  
 April 13; TNC; 100 acres; Raccoon Creek Pinelands in Sussex County.



DCR-Natural Heritage fire staff assisted partners from The Nature Conservancy and U.S. Fish and Wildlife Service with six prescribed burn projects in March and April 2015.

AmeriCorps Prescribed Fire Volunteer Assistance Accomplishments – During spring of 2015, AmeriCorps student volunteers trained as wildland firefighters have assisted DCR’s Natural Heritage staff, as well as DCR’s fire partners, in conducting numerous prescribed burn projects. Thus far, AmeriCorps firefighters have assisted with over 5,000 feet of fireline preparation and participated in 20 prescribed fire events totaling 1,899 acres burned since completing their training in March 2015. This is a major contribution of volunteer effort, which now stands at 1,032 person-hours representing a value of over \$25,000. Prescribed burn projects completed to date include the following agencies and locations:

DCR – Antioch Pines, Chub Sandhill and South Quay Sandhills state natural area preserves; DGIF – Big Woods Wildlife Management Area; TNC – Piney Grove Preserve, Raccoon Creek Pinelands, USFWS – National Conservation Training Center (WV), and Rappahannock River Valley and Great Dismal Swamp national wildlife refuges.



AmeriCorps prescribed fire volunteers in action providing assistance to DCR, DGIF, TNC and USFWS during Spring 2015

### Assistance to Prescribed Fire Partners – 5/4/15

Over four days during the week of May 4, 2015, DCR Natural Heritage staff assisted the USF&WS in conducting prescribed burns that treated four grassland units with fire at the Rappahannock River Valley National Wildlife Refuge. Also assisting were crew members from DCR State Parks, The Nature Conservancy, National Park Service and AmeriCorps volunteers. A total of 160 acres was burned, maintaining critical habitat for native grassland species for ground-nesting birds including Grasshopper Sparrow and Northern Bobwhite.



Crewmember monitoring fire spread at RRVNWR

### Longleaf Pine Restoration Site Preparation Burning Completed – 9/16/15 to 9/18/15

DCR Natural Heritage staff and partners caught a great series of weather days and accomplished an extensive portion of our fall 2015 prescribed burning goals. Three consecutive days of hard work at South Quay Sandhills Natural Area Preserve, just south of Franklin, resulted in the completion of 425 acres of site preparation burning within five individual burn units. All units had previously been mechanically treated by drum chopping. Burning was the next step in the restoration process, to be followed by planting with native Virginia container-grown longleaf pine seedlings later during fall of 2015. DCR's well-developed prescribed fire partnership with other agencies and organizations resulted in fire crews for these South Quay Sandhills NAP burns being comprised of staff from DCR, The Nature Conservancy, U.S. Fish and Wildlife Service, DGIF, and AmeriCorps.



DCR's fire management partnerships assist tremendously to restore longleaf pine communities at South Quay Sandhills Natural Area Preserve near Franklin, Virginia.

### Natural Area Preserve Stewardship

#### Crow's Nest NAP Progress – 4/1/15 to 4/6/15

Between April 1 and April 6, 2015, the DCR Natural Heritage Northern Region Operations Steward and Northern Region Steward worked together to put the final touches on the Brooke Road canoe launch facility at Crow's Nest. They installed a 20-foot rock dust trail addition around a newly installed kiosk, installed the

necessary signage along the hiking trail, canoe launch, and parking area, and built and installed an entrance sign at the entrance to the parking lot from Brooke Road. Four dead trees around the parking lot that could prove hazardous to vehicles using the facility were brought down and removed as well.



Crow's Nest Natural Area Preserve

#### Mutton Hunk Fen Natural Area Preserve – 4/13/15

On April 13, 2015 members of the Mutton Hunk Fen Natural Area Preserve Volunteer Stewardship Committee assisted DCR's Natural Heritage Eastern Shore stewardship staff to control invasive Tree-of-heaven (*Ailanthus altissima*) at Mutton Hunk Fen preserve in Accomack County. Twenty-two mature trees and innumerable saplings and sprouts were treated on this particular work day, using the "hack and squirt" method. Volunteers used tools to cut through tree bark, and DCR staff followed up by applying Garlon 3A herbicide. Tree-of-heaven is a highly invasive exotic tree species that threatens biological diversity in woodlands throughout Virginia. Its control is an on-going stewardship project at Mutton Hunk Fen and many other state natural area preserves and state parks in the Commonwealth.



Tree-of-heaven (*Ailanthus altissima*) is a widespread exotic invasive species in Virginia. DCR volunteers assisted with its control in April 2015 at Mutton Hunk Fen Natural Area Preserve in Accomack County

#### Huntley Meadows Park – 4/16/15

The Natural Heritage Program's Stewardship Manager, Chief Biologist and Natural Area Protection Specialist met with staff of Huntley Meadows Park and Fairfax County on April 16, 2015, to discuss the potential of dedicating part of the park as a state natural area preserve. The park supports numerous rare plants and animals

and an excellent example of a globally uncommon wetland community known as a Coastal Plain Depression Swamp (Willow Oak – Red Maple – Sweetgum Type).



Meeting at Huntley Meadows Park

#### Shorebird Survey and Nesting Report from Wreck Island Natural Area Preserve – 4/17/15

An early season shorebird survey of Wreck Island NAP conducted on April 17 revealed that breeding season has started! DCR’s Natural Heritage Eastern Shore Region Steward observed and photographed Brown Pelicans, White Ibis, Great Egrets, Tri-colored Herons, Black-crowned Night Herons, Greater Black-backed Gulls, Herring Gulls, Laughing Gulls and American Oyster Catchers all nesting on the island. Over 900 Brown Pelicans and 150 White Ibis were in residence. Wreck Island is located within the chain of Atlantic barrier islands flanking the Eastern Shore of Virginia. The preserve is an important breeding site for shorebirds and supports one of the largest coastal wading bird rookeries in Virginia.



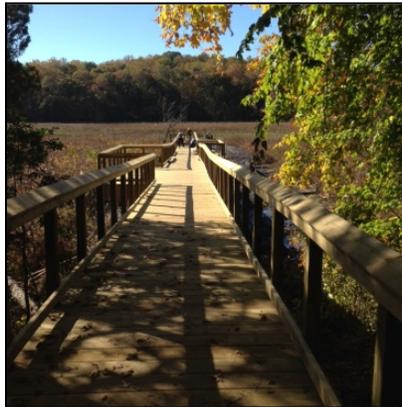
Brown Pelicans nesting at Wreck Island Natural Area Preserve – a barrier island on Virginia’s Eastern Shore.



White Ibis nesting at Wreck Island Natural Area Preserve – April 2015

#### Crow's Nest Natural Area Preserve Water Trail Opened April 14 – Early Use Report – 4/18/& 4/19/15

In the first week after opening, the Brooke Road access area at Crow's Nest Natural Area Preserve had 132 visitors. Of those, 45 were on Saturday 4/18 and 30 were on Sunday 4/19. Some visitors launched hand-carry boats, while others just came to investigate the new facility and hike the Accokeek Shoreline Trail to see birds and views of the Tidal Freshwater Marshes along the creek. DCR Natural Heritage Northern Region stewards were on-site for most of each weekend day and received positive feedback from visitors about this new recreation opportunity in Stafford County. While staff needed to advise some visitors to keep dogs on leash and that fishing is not allowed from the handicap-accessible boat launch platform, there were no major issues and it was a smooth first week/weekend at the preserve. Most persons launching canoes and kayaks did so for the purpose of fishing, while three parties were just out for a paddle. There were many opportunities for staff to talk one-on-one with new visitors about DCR's objectives for Crow's Nest and the state natural area preserve system, and to address questions about preserve use/rules in a positive, educational setting.



#### The Nature Conservancy's "Big Share" Event on the Eastern Shore – 4/21/15

DCR's Natural Heritage Eastern Shore Region Steward participated in "The Big Share", held in Machipongo, Virginia on Earth Day, April 21, 2015. Sponsored by The Nature Conservancy's Virginia Coast Reserve, the event brought together environmental educators from across the Eastern Shore. The purpose was to increase collaboration between government agencies, NGOs, and educational facilities that provide natural resource education opportunities for the community. Networking opportunities were "shared" and ideas for moving the effort forward were discussed. The group will meet again in December 2015 to refine collaborative efforts and share progress.



Environmental educators from multiple organizations on the Eastern Shore participated in the “Big Share”

### Fredericksburg Academy Visit Crow' Nest – 5/1/15

The DCR Natural Heritage Northern Region Steward and Operations Steward welcomed 28 8<sup>th</sup> graders from Fredericksburg Academy to Crow’s Nest Natural Area Preserve. The purpose of the visit was to collect clues from a local landscape to gain a deeper understand of Virginia’s rich cultural and environmental history. Students examined forest characteristics, landscape topography, primary documents, and oral histories to investigate how the landscape at Crow’s Nest has changed over the past 400 years, and how this changing landscape reflected the attitudes and perspectives of people that lived on the peninsula. Also participating in the event were three members of the Law family who lived on Crow’s Nest starting in the 1950s and two staff members with the Northern Virginia Conservation Trust.



Fredericksburg Academy Visit Crow’s Nest – May 1, 2015

### Crow’s Nest Spring Field Day – 5/2/15

The DCR Natural Heritage Northern Region Steward and Operations Steward, with assistance from Stafford County staff, welcomed visitors to the Spring Field Day at Crow’s Nest Natural Area Preserve. It was a beautiful spring day for the 38 participants who signed up for the event. After a brief introduction to the Natural Heritage Program and Crow’s Nest, participants divided into two groups for hikes on the Accokeek Creek Loop and Boykin’s Landing trails. Trip leaders pointed out many of the spring wild flowers and the many spring migrant birds that were heard and seen along the trails. Staff also discussed the recent opening of the canoe launch. Participants also learned about the ecological value of the preserve and the history of the Crow’s Nest peninsula.



Crow's Nest Field Day Participants – May 2, 2015

### Salamander Predation Study at Magothy Bay Natural Area Preserve – 5/8/15

Undergraduate students, under the direction of Dr. Eric Liebgold of Salisbury State University (Maryland) are conducting salamander research at Magothy Bay NAP on the Virginia Eastern Shore. Students are investigating whether predation rates by birds and small mammals differ between striped and un-striped morphs of the red back salamander (*Plethodon cinereus*). Students constructed clay models of both morphs and placed them in forested study sites within the preserve. Salamander models will be left on site until mid-May, 2015. Upon retrieval, the models will be examined for bite and scratch marks of potential predators. The number and type of marks will be used to assess preferences by specific predators for one or the other color morph. This undergraduate study is one example of the many scientific values provided by state natural area preserves for use as research sites and outdoor classrooms.



Red back salamander clay models used in undergraduate research study at Magothy Bay Natural Area Preserve on the Eastern Shore

### Crow's Nest Public Access – 5/12/15

DCR staff met with VDOT Fredericksburg Residency staff to discuss improvement of a 1.5 mile access road into Crow's Nest Natural Area Preserve. Stafford County will be applying for a Recreational Access Program Grant in June, if approved, planning is expected to take 90 days and construction an additional 30 days for the one lane gravel road with pull-offs.

### Wreck Island NAP Field Trip – 6/8/15

DCR Natural Heritage staff from Richmond met with Natural Heritage Eastern Region Steward and Operations Steward at Wreck Island Natural Area Preserve in Northampton County. Wreck Island provides important nesting habitat for several colonial nesting shorebird and wading bird species that are tracked by Natural Heritage, such as Brown Pelican and Black Skimmer, as well as the federally threatened Piping Plover. The main purpose of the visit was to conduct breeding pair censuses and annual nesting success monitoring, and to conduct hands-on training in the use of mobile data collection methods that have been recently developed internally for use by Natural Heritage field staff. Three summer fellows from the Secretary of Natural Resources' and Lieutenant Governor's offices joined as well, for a rich, real-world peek into DCR Natural Heritage's role in biodiversity conservation on the eastern shore and in Virginia overall.



Natural Heritage Staff



Wreck Island Natives

### Commonwealth Transportation Board approves Crow’s Nest Project – 6/15/15

The Commonwealth Transportation Board approved a \$400,000 Recreation Road Access grant for the Crow’s Nest Natural Area Preserve. The funding provides for the improvement of the existing 1.5 mile one lane gravel road and will bring it to a safe condition, allowing public access to the main part of Crow’s Nest this fall or winter. This is a cooperative effort of Stafford County, VDOT, and DCR with VDOT handling the design and improvement work.

### 330 Acres Prepared for Longleaf Pine Planting at South Quay Sandhills NAP – 6/30/15

Crowder and White Contractors completed over 330 acres of drum chopping at South Quay Sandhills NAP. The completion of this task is the first step in land preparations for the restoration of Virginia-native Longleaf Pine, which is sourced from the last remaining stand of mature trees located at this site. After allowing 6-8 weeks for the downed biomass (7-9 year old successional hardwood re-growth) to cure and dry out, Natural Heritage staff will begin looking for favorable weather conditions to initiate a controlled burn that will reduce the downed biomass and retard the growth of re-sprouting vegetation. Later this fall, seedlings, which have been grown from the cones collected in the fall of 2014, will be planted over the prepared acreage. Funding for the work was provided by The Nature Conservancy through a \$100,000 donation for forest restoration work by Harley-Davidson – part of Harley-Davidson’s “Renew the Ride” campaign.

### Natural Heritage Staff Complete Virginia Natural Resources Leadership Institute – 7/6/15

Two Division of Natural Heritage stewardship staff, Ryan Klopf and Rebecca Wilson, recently completed the Virginia Natural Resources Leadership Institute. During six, three-day sessions, spanning nine months, this course taught its fellows effective leadership tools based upon the paradigm that effective leadership begins with personal responsibility, and that conflict is an opportunity to forge novel solutions that are mutually beneficial. Fellows had the opportunity to meet with a number of effective leaders from the public, private, and NGO sectors, who have worked on natural resource issues ranging from Chesapeake Bay restoration and sea level rise to coal mine land reclamation and sustainable agriculture. The Virginia Natural Resources Leadership Institute is a tremendous opportunity to increase the capacity of its fellows to become more effective leaders in their organizations.



VNRLI Class of 2015.

### Crow's Nest 2015 Breeding Bird Monitoring Completed – 7/15/15

The DCR Natural Heritage Northern Region Steward completed the 2015 breeding bird monitoring at Crow's Nest Natural Area Preserve (CNNAP). Point counts (n=110) were completed at 60 randomly placed locations within the preserve. In total, 1741 birds were tallied during the monitoring season. The top three species detected were Red-eyed Vireos, Tufted Titmice and Woodthrush, identified in 85%, 77% and 70% of the point counts, respectively. A breeding population of King Rails (*Rallus elegans*), a rare breeding bird (G4/S2B/S3N) in Virginia, was confirmed in the Freshwater Tidal Marsh community along Accokeek Creek. Additional work to better determine the population size of King Rails at CNNAP will be completed in 2016. A summary report of the first two breeding bird monitoring seasons at CNNAP will be completed this winter.



King Rail (*Rallus elegans*) (photo not taken at Crow's Nest)

### Crow's Nest Access Road Project Progressing – 8/13/15

DCR Natural Heritage and VDOT staff met at Crow's Nest Natural Area Preserve to discuss current efforts to improve the main access road into the preserve. Potential road surface and design alternatives were discussed, including Full -depth Reclamation (FDR). For a variety of reasons, the preferred alternative for the one-lane with turn-outs road design will be conventional gravel surface and no FDR sub-surface structure. In addition to road design, VDOT updated DCR on status of ongoing environmental and cultural resource review and permitting. VDOT expects construction of the project to begin this fall with completion by late winter or spring 2016, depending on weather conditions.

## Invasive Species

### Virginia Invasive Species Working Group Meets – 5/13/15

The Virginia Invasive Species Working Group (WG) met at Pocahontas State Park. DCR Director Cristman chaired the meeting attended by WG members from the Department of Agriculture and Consumer Services, Game & Inland Fisheries, Marine Resources Commission, U.S. Fish & Wildlife Services, Department of Health, VA Tech, VA Nursery and Landscape Association, VA Native Plant Society and Dominion Power. Todd Lookingbill from University of Richmond gave an overview of proposed legislation, the “Invasive Fish and Wildlife Prevention Act” which would modernize current federal laws regulating importation of animals and allow the USF&WS to use science-based assessments of imported species potential impacts on native wildlife and other resources. The WG approved sending a letter of support to Congress for the bill. The DCR Stewardship Biologist gave an overview of the invasive plant assessment protocol used for listing species on the DCR Invasive Plant Species list, which the WG then voted to sanction. Staff with VDACS Office of Plant Pest Services provided an update on VA’s noxious weed regulations. The WG charged its Advisory Committee to study and make recommendations on the issue of golden bamboo – a DCR-listed invasive species too widespread to be considered a noxious weed, but a common problem across VA. A VDGIF Wildlife Biologist gave an update on feral hogs in Virginia, highlighting the complicated set of factors surrounding the issue. The meeting concluded with roundtable discussions and a field trip to observe Japanese stilt-grass and discuss how this and other invasive plants are being managed in the Park.



DCR State Park District Resource Specialist discusses Japanese stilt-grass control with members of the Virginia Invasive Species Working Group at Pocahontas State Park

### Japanese stilt grass treatment at Crow’s Nest Natural Area Preserve – 7/15/15

The National Capital Region Exotic Plant Management Team (EPMT) with the National Park Service completed their 2015 season at Crow’s Nest Natural Area Preserve. This was the third season the team has assisted with exotic plant management at Crow’s Nest. This season, they treated Japanese stilt grass (*Microstegium vimineum*) along approximately four miles of roads and trails. In addition to Japanese stiltgrass, the team also treated beefsteak plant (*Perilla frutescens*) and garlic mustard (*Alliaria petiolata*). DCR’s Northern Region and Operations Stewards will continue the stilt grass treatments at Crow’s Nest over the coming weeks.



EPMT at Crow's Nest Natural Area Preserve

#### Invasive Plant Treatments at Crow's Nest Natural Area Preserve – 8/15

In late August 2015, the DCR Natural Heritage Northern Region stewardship staff, with assistance from a National Park Service weed crew, completed the 2015 treatments to control highly invasive Japanese stilt-grass and beefsteak plant at Crow's Nest Natural Area Preserve. Approximately nine miles of trails and road edges, plus considerable areas of adjacent forest were treated this summer. To accomplish this effort, staff applied approximately thirty 50-gallon sprayer tanks of 1% Rodeo herbicide solution. Staff also installed six monitoring plots to track the effectiveness of the season's treatment efforts. DCR staff plan to continue working cooperatively with the NPS weed crew during 2016 in order to achieve invasive species control objectives at Crow's Nest.



Japanese stilt-grass infestation prior to treatment



Japanese stilt-grass infestation post-treatment

#### Phragmites Sampling by University of Richmond Biology Students – 9/4/15 & 9/11/15

This month, University of Richmond (UR) biology classes conducted Phragmites genetics sampling on two natural area preserves. On September 4, 2015, UR biology professor Dr. Carrie Wu, brought 15 freshman biology students to Hughlett Point NAP. On September 11, 2015, another class of 18 visited Crow's Nest NAP. The field trips were organized and led by the DCR Stewardship Biologist, with support from the Chesapeake Bay Regional Steward, the Eastern Operations Steward, and the Invasive Species Specialist. Students collected Phragmites leaf tissue and field data. The leaf tissue will be analyzed in the lab to determine whether the plants sampled are native or the invasive non-native Phragmites. Over the last fifty years, the invasive Phragmites has overrun 15,000 acres of wetland habitat in Virginia. Dr. Wu is also looking for evidence of hybridization of the invasive and the native. If there is a hybrid, it could pose a new threat to freshwater marsh habitat that has been relatively free from the invasive Phragmites. This is the fifth year of the Phragmites genetics study partnership with UR, which led to the publication of a research paper in the May 2015 issue of the American Journal of Botany.



UR Students at Hughlett Point NAP



UR Students at Crow's Nest NAP

## Information Management

### Presentation at State GIS User Group Meeting – 6/10/15

Natural Heritage Data Management staff traveled to Providence Forge to present to the State GIS User Group Meeting held at Department of Forestry's New Kent Conference and Education Center. The presentation outlined DCR's establishment of a mobile data collection method using ArcGIS Online and ESRI's Collector App, designed for streamlined collection of rare species and natural community information in the field. Much interest was garnered from the talk and many questions were asked. Presentations from other groups included information on aerial imagery updates, new available statewide mapservices, updates on new ESRI tools and applications, and another project involving mobile data collection. Entities in attendance included DEQ, VDOT, DOF, VGIN, ESRI, DCR- State Parks, VOF, VEDP, as well as others. The meeting concluded with a potluck lunch, a brief history lesson on the DOF forest nursery and research center, and a hike to the Chickahominy River along a Bald Cypress – Mixed Tupelo Intermediate Swamp community.



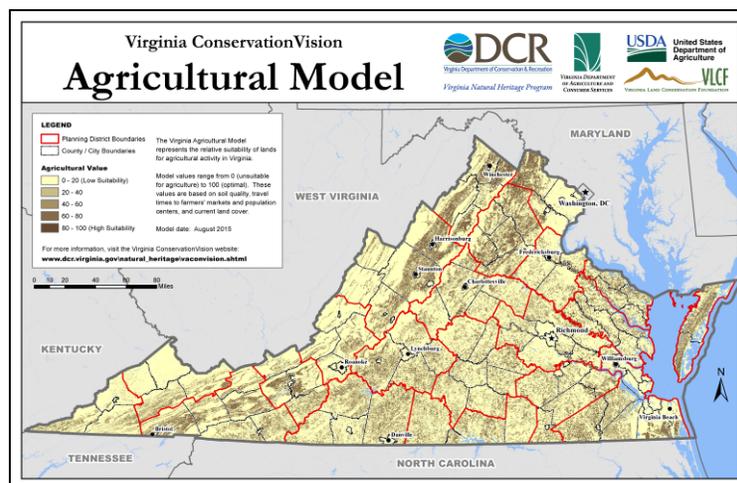
Chickahominy River along a Bald Cypress – Mixed Tupelo Intermediate Swamp community

## Workshop on Triple Value Simulation Modeling – 6-17-15

The DCR Natural Heritage Information Manager and Eastern Shore Region Steward attended a day-long workshop focused on an EPA-led Triple Value Simulation modeling project focused on the Delmarva Peninsula. This project will develop a sustainability model that incorporates social, economic and environmental factors throughout the Delmarva Peninsula. Tools will also be developed for regional and state planners to use to examine land use decisions such as the proper scale of conservation needed to ensure water quality or the role of coastal wetland conservation in combating the effects of sea level rise. Local land use planners will be able to use the model output to assess how their land use decisions may influence future infrastructure costs, property values and tax revenue. Workshop attendees represented local, state and federal government, non-profit organizations and universities from Virginia, Maryland and Delaware.

## ConservationVision – Update to the Virginia Agricultural Model – 8/28/15

The Natural Heritage Landscape Ecologist and a student intern from the University of Richmond completed an update to the Virginia Agricultural Model with assistance from the VA Department of Agriculture and Consumer Services and NRCS. The Ag Model is one of several in a suite of conservation planning and prioritization models known collectively as Virginia ConservationVision. The purpose of the Virginia Agricultural Model is to quantify the relative suitability of lands for agricultural activity. It provides some of the information needed for prioritizing lands that may be placed under conservation easements in the interest of sustaining agricultural values and uses and facilitates evaluating proposed easements. This update takes advantage of the best available soils data, and also incorporates some considerations that were not included in the first edition of the model in 2007. The relative agricultural value of lands is assessed primarily based on inherent soil suitability, but also accounts for current land cover as well as travel time between agricultural producers and consumers. Model values range from 0 (unsuitable for agriculture) to 100 (optimal). An overview of the model can be viewed as a Prezi presentation at: <http://tinyurl.com/VirginiaAgrMod>



## Outreach and Education

### Talk on Given to VCU Students – 4/8/15

DCR Natural Heritage Information Manager, spoke to a group of about 25 graduate students from the VCU Environmental Studies and Biology Departments about 'Careers Outside of Academia'. He shared his experiences from graduate research, working in universities, working as an Ecologist in the private sector, working for DCR and his work with partners along the way. Students asked many questions about entering various career paths in a very conversational and casual setting.

#### Presentation at Bryan Park – 4/9/15

The Natural Heritage Protection Specialist gave an overview presentation on the Natural Heritage Program to the Friends of Bryan Park on April 9, 2015. Approximately 20 people attended.

#### New Kent County Envirothon – 4/18/15

A DCR Natural Heritage Project Review intern represented Natural Heritage at New Kent County's Earth Day Envirothon with around two hundred in attendance. Discussion beyond a Natural Heritage overview focused on species interactions within a community context and invasive plant information and management. In addition, participants were informed in detail about Cumberland Marsh Natural Area Preserve in New Kent.



DCR Natural Heritage Project Review Intern at New Kent County's Earth Day Envirothon

#### Fort A.P. Hill Earth Day – 4/23/15

A DCR–Natural Heritage Project Review Assistant attended the Fort A. P. Hill Earth Day Event near Bowling Green, VA. The event included 55 exhibitors and was attended by almost 800 students and families from surrounding area schools. The Natural Heritage display focused on the rare species of Fort A.P. Hill, including several dragonfly species. Children could choose to make a popsicle stick dragonfly or participate in a fortune teller activity while learning about the Natural Heritage program and the species we track.



Exhibit at Fort A. P. Hill Earth Day

#### Invasive Plant Presentation at Norfolk Botanical Garden – 4/23/15

The Natural Heritage Stewardship Biologist, gave a public presentation on the DCR Invasive Plant List at the Norfolk Botanical Garden. The presentation included DCR's definition of invasive species and the method for assessing species to determine whether or not they are invasive in Virginia. To emphasize that part of the definition of invasive is that a species "causes ecological or economic harm or harm to humans," he provided examples of all these kinds of impacts. Over forty people attended the talk.

### Crow's Nest Birding Walk – 4/25/15

The DCR Natural Heritage Northern Region Steward led a birding walk at the Crow's Nest Natural Area Preserve. Highlights of the day included a solitary sandpiper, a first for the preserve since data collection started in 2012. Participants in the walk also had several nice looks at hooded warbler, ovenbirds and heard several prothonotary warblers. Spring migration was in full swing and 56 species were detected, including 14 warbler species. In all 14 participants joined the walk.



Birding from the new boardwalk



Prothonotary warbler at Crow's Nest

### Field Trip to Blackwater Ecological Preserve – 4/25/15

DCR's Southeast Region Steward, led a field trip at Blackwater Ecological Preserve for the Historic Southside Chapter of the Virginia Master Naturalists. Twenty-two student Master Naturalists learned about longleaf pine, fire ecology, the historic role of fire on the southeastern Virginia landscape, and how to identify trees using a key. The field trip was co-led by VDOF Director of State Lands, Harvey Darden.

### Biodiversity Without Boundaries Conference – 4/26 - 4/30/15

Five Natural Heritage employees participated in the Biodiversity without Boundaries conference, organized by NatureServe (<http://www.natureserve.org/>) in Traverse City, MI. The annual four day conference is an outstanding opportunity to interact with colleagues in the Heritage network across the US, Canada, and Latin America. In addition, partner conservation agencies such as US Forest Service, US Fish and Wildlife Service, US Geological Survey, The Nature Conservancy, several universities, and many others also were present. Talks, workshops, and symposia were centered around the topics of Biodiversity Information, Conservation Assessment, and Conservation Planning. In all, Virginia Natural Heritage staff presented 8 talks on topics including species distribution models, data collection methods, and data development.



Biodiversity Without Boundaries presentation

### “Virginia Home Grown” Episode Features Natural Heritage Rare Plant Inventory Efforts and Land Management Activities – 4/28/15

DCR–Natural Heritage Staff Botanist Johnny Townsend was featured on the WCVE program “Virginia Home Grown”, co-hosted by Amy Barton Williams and Peggy Singlemann. The show featured a field trip to Blackwater Ecological Preserve for a discussion of DCR-DNH rare plant inventory efforts as well as the issues

of management and protection of the longleaf pine landscape in Virginia. Several rare plant species and habitats from the property were highlighted in the video segment. The live portion of the show included a discussion of the value of plant specimens for scientific research as well as a call-in period where listeners posed questions to the guests. A video archive of the show will be made available soon at: <http://ideastations.org/watch/virginia-home-grown>

Field Trip for Department of Forestry Staff at South Quay Sandhills Natural Area Preserve – 5/6/15  
DCR’s Natural Heritage Southeast Region Steward led a field trip at South Quay Sandhills NAP for 10 Senior Area Foresters with the Virginia Department of Forestry. DOF staff was introduced to the preserve’s resources and provided with a history of the property and its importance to DCR and DOF’s shared longleaf pine restoration goals. State Forest lands located within the DCR natural area preserve were visited, as were areas of naturally-regenerating Atlantic White-cedar. A highlight of the trip was a visit to the last remaining mature, native stand of seed-producing longleaf pine in Virginia, where DCR and DOF work together to collect longleaf cones/seed each fall. DOF’s Director of State Lands shared his knowledge about the circumstances that led the former landowner (International Paper) to retain Virginia’s last stand of longleaf pine.

#### 4<sup>th</sup> Annual Go Wild Event – 5/17/15

May 17, 2015, a DCR Natural Heritage Project Review Assistant represented the Natural Heritage program at the 4<sup>th</sup> annual Go Wild! event at the Rappahannock River Valley National Wildlife Refuge. Over 200 local residents attended the event, which provided an opportunity to promote the mission of DCR-DNH and to highlight some of the local resources that are tracked and protected by Natural Heritage.

#### State of Virginia’s Environment Symposium – 5/21/15

The DCR staff zoologist was an invited speaker at the State of Virginia’s Environment symposium held on May 21 during the annual meeting of the Virginia Academy of Science at James Madison University in Harrisonburg. Topics covered by 16 experts in their respective areas included seven presentations on animal groups in Virginia ranging from insects and freshwater mussels to birds and mammals, as well as the plants, forests, water quality, air quality, tidal wetlands, oceans and marine environments, central Virginia rivers, geology, and land use. The staff zoologist’s presentation summarized current knowledge regarding the inventory, composition, and conservation status of the insect fauna of Virginia, which is believed to contain as many as 20-25,000 species, far more than all other animals and plants combined. A special issue of the Virginia Journal of Science will contain the published proceedings of the symposium, with an anticipated publication date of late 2016.

#### Tricycle Gardens Volunteer Event – 6/2/15

DCR Natural Heritage staff participated in a volunteer opportunity with Tricycle Gardens. Staff prepared new beds, planted, mulched, weeded, pruned, and removed invasives alongside the Farm Manager for overall farm maintenance. The majority of the produce grown at the 31<sup>st</sup> Street Baptist Church Urban Farm goes to the group’s Healthy Corner Store Initiative which aims to increase access to fresh, local and affordable produce in Richmond neighborhoods. Tricycle Gardens has two farms and multiple Community and Learning Gardens in the Richmond area.



DCR-Natural Heritage staff at Tricycle Gardens helping plant and weed

### Crow's Nest Bull Run Mountains Conservancy Visit – 6/3/15

The DCR Natural Heritage Northern Region Steward and Operations Steward, welcomed staff and board members from the Bull Run Mountains Conservancy (BRMC) to Crow's Nest Natural Area Preserve. After a two-hour paddle along Accokeek Creek, participants took a three mile hike on the Accokeek Creek Loop Trail. Staff shared information on the ecological value of the preserve and the history of the Crow's Nest peninsula. Participants had many questions related to invasive species control and potential public access concerns at Crow's Nest. Kayaks were provided by the Stafford County Department of Parks and Recreation.



Participants in the Accokeek Creek Paddle and Three Mile Hike

### Nick DiPasquale, EPA Director, Chesapeake Bay Program visits E Shore – 7/29/15 & 7/30/15

Nick DiPasquale, EPA Director, Chesapeake Bay Program toured multiple projects on the Eastern Shore including Kiptopeke State Park native plant garden, Pickett's Harbor Natural Area Preserve (purchased with EPA nitrogen settlement funds) restoration and acquisition projects, Cherrystone Aqua Farms tour, two organic farm visits, living shoreline project, and a BMP roundtable at the Eastern Shore Community College that included Mr. DiPasquale presenting "Everyone can do something to advance good stewardship of the Chesapeake Bay. The tour was hosted by Josephine Mooney – Eastern Shore RC&D.



Nick DiPasquale & DCR Natural Areas Steward Dot Field

### Henrico County Adventure Race–8/21/15

The Natural Heritage Project Review Coordinator provided natural resource information as part of an adventure race at Dorey Park in Henrico County. 30 children and adults were in attendance. Participants learned about natural heritage resources in Henrico County including a significant aquatic community in Four Mile Creek located downstream of the park. The natural area preserve system was also discussed including preserve management techniques such as prescribed fire and rarity ranks of associated resources. Children made natural heritage fortune tellers identifying habitat types for rare resources.



Adventure Race at Dorey Park in Henrico County

#### Virginia Master Naturalists RareQuest Launched – 8/29/15 & 8/30/15

A critical issue for DCR’s Natural Heritage Program is the growing number of site records that have not been seen in 25+ years. On Saturday and Sunday August 29 & 30<sup>th</sup>, the DCR Natural Heritage Chief Biologist, Database Specialist, and Director provided training to 50 Master Naturalists volunteers at two Regional MN meetings. RareQuest is funded by the Virginia Native Plant Society and designed to train volunteers on the identification and data collection techniques using state of the art technology to visit rare plant and animal sites not seen in over 25 years, and determine the species and sites current status. Two more regional trainings will be held in late September bringing the number of volunteers to 100 for this 2016 pilot project.

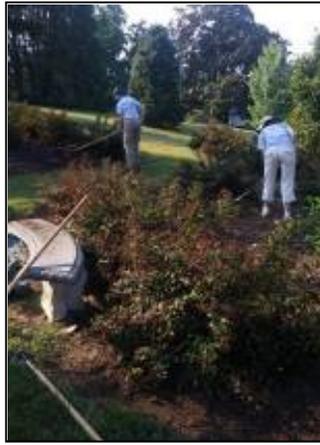
<http://www.virginiamasternaturalist.org/home/now-recruiting-vmn-volunteers-for-rarequest-project>

#### Community Volunteer Effort – 9/3/15

Five DCR Natural Heritage Staff participated in a morning of volunteering at Maymont. The volunteers helped trim plants, weed, and mulch five beds in the “Spirea Circle” that were donated by the Garden Club of Virginia to Maymont. The service time saved Maymont a day and a half of staff time to accomplish the task and allowed some DCR staff to enjoy the outdoors in the beauty of Maymont’s gardens.



DCR-DNH Volunteers



Volunteers raking mulch in the Spirea circle

### Virginia Natural Heritage Program Presentation to the Exmore Rotary Club – 9/3/15

The Eastern Shore Region Steward presented a talk on the Virginia Natural Heritage Program to the Exmore Rotary Club. The presentation included an overview of the structure of the Department of Conservation and Recreation, followed by the role of the Division of Natural Heritage. Emphasis was placed on the Natural Area Preserves located on the Eastern Shore. The talk was well-received by the 41 attendees, sparking several childhood memories of visiting these special places.

### Natural Heritage Staff and UCI World Bike Championships – 9/18/15 to 9/27/15

As the world came to Richmond, Virginia, DCR Natural Heritage staff lent a helping hand by volunteering more than 50 hours for the event. Volunteer duties included course marshal, volunteer support, implementation team and sustainability team. In addition to volunteering, Heritage staff also had a chance to enjoy the race along the course and meet some interesting people in the state employee fan zone.



UCI World Bike Championships



Heritage Staff enjoying the race



Ben King USA Cyclist from Richmond VA



Governor McAuliffe thanks Joe Weber for volunteering

### Youth Sportsman Day – 9/19/15

DCR Natural Heritage Northern Region Steward participated in a Youth Sportsman Day held at Curtis Lake in Stafford County. This event was organized by the Virginia Department of Game and Inland Fisheries and was focused on getting children interested in the outdoors and conservation. There were a number of activities for the kids to join, including fishing and archery. The DCR Natural Heritage display included information on the Heritage Program and Crow's Nest Natural Area Preserve. Staff discussed recreational opportunities at Crow's Nest associated with the canoe launch and the opening of the preserve interior that is scheduled for 2016. Approximately 150 people attended the event.



Participants enjoying the Youth Sportsman Day

### Presentation at the 2015 International Conference on Ecology and Transportation – 9/21/15

The DCR Natural Heritage Information Manager delivered a presentation at the 2015 International Conference on Ecology and Transportation, in Raleigh, NC, entitled "Expediting transportation planning and multi-agency environmental review with species distribution models in Virginia and throughout the eastern U.S." The nearly 200-person audience consisted of private sector, NGO and government agency staff whose work focuses on research and technology implementation towards minimizing the impacts of transportation infrastructure on ecosystem functions and species habitat quality. DCR staff shared examples of how predicted suitable habitat maps developed from Species Distribution Modeling, can expedite and better inform transportation planning and environmental review procedures, via providing common threatened & endangered species-specific screening maps to regulatory partners. These tools are proving themselves in Virginia by reducing the amount of interagency communication required on projects involving species for which these maps have been developed. Several projects are underway now at DCR-Natural Heritage, which are leading to a library of Species Distribution Models for all T&E in Virginia, to make project review and planning more efficient across multiple agencies, for all proposed projects in Virginia.

### Presentation on "Expediting Multi-agency Environmental Review with Species Distribution Models in Virginia and Throughout the Eastern U.S." – 9/29/15

The DCR Natural Heritage Information Manager delivered a presentation at the 2015 Organization of Fish and Wildlife Information Managers, in Williamsburg, Virginia, entitled "Expediting multi-agency environmental review with species distribution models in Virginia and throughout the eastern U.S." The audience consisted of data managers, data specialists and managers from state wildlife agencies and universities around the U.S. DCR staff shared examples of how predicted suitable habitat maps developed from Species Distribution Modeling, can expedite and better inform environmental review procedures, via providing common threatened & endangered species-specific screening maps to regulatory partners. These tools are proving themselves in Virginia by reducing the amount of interagency communication required on projects involving species for which these maps have been developed. Several projects are underway now at DCR-Natural Heritage, which are leading to a library of Species Distribution Models for all T&E in Virginia, to make project review and planning more efficient across multiple agencies, for all proposed projects in Virginia.

### Natural Heritage Presentation to a VCU Environmental Studies Senior Class – 9/30/15

DCR Natural Heritage Information Manager provided a presentation to a Senior year Capstone class in the VCU Environmental Studies Program. The presentation consisted of a description of the mission and work of DCR-Natural Heritage; an overview of several projects currently underway in the DCR-Natural Heritage Information Management section; a summary of the presenter’s career steps leading to their current DCR position; remarks about the value and role of interns and volunteers at DCR; and some guidance on ways to strengthen a graduate’s profile as they enter the job market or apply to graduate schools. The presentation was followed by plenty of time for questions, answers and discussion.

### Land Conservation

#### VA Environmental Endowment Seeking Treasures Grant – 4/24/15

The Virginia Environmental Endowment notified DCR and VOF this week on a \$28,290 award. The funds are designed to help target land conservation treasures. Over the next year, DCR and VOF will digitize all existing conservation easements, develop a database of all the resources protected by these easements, and identify which easement properties contain important resources that are not protected by the existing easement. Then identify easements and landowners important to approach for easement amendments to protect significant resources.

#### DCR’s Larry Smith receives Jackson M. Abbott Conservation Award – 5/9/15

Larry Smith, DCR Natural Areas Protection Manager, received the Jackson M. Abbott Conservation Award from the Virginia Society of Ornithology at their 2015 Annual Meeting at Wintergreen on May 9. The conservation award is given to individuals or organizations that have demonstrated outstanding work in conserving Virginia birds and/or their habitat. Larry was recognized for his 25 years of work in building the State Natural Area Preserve System from zero to 62 Natural Area Preserves protecting 55,541 acres and supporting 760 exemplary natural communities and rare plant and animal species, including many of Virginia’s top bird habitats and birding hotspots. Larry’s nomination was supported by the American Bird Conservancy, The College of William and Mary, The Nature Conservancy, and Natural Heritage staff.



Larry Smith receiving Jackson M. Abbott Conservation Award from the Virginia Society of Ornithology

#### Land Conservation Report – 7/27/15

1,176 acres were permanently protected in May and June by local, state, federal, and private entities, bringing the total since January 2014 to 39,017 acres. The 14 transactions in May and June have not yet been evaluated for their Treasure status.

#### Southside Land Conservation Forum – 7/29/15

DCR staff joined some 30 private, local, state, and federal land conservation partners to discuss the need for enhanced land trust presence in Southside. The meeting was hosted by Virginia Environmental Endowment and Land Trust Alliance.

#### Chesapeake Conservancy meeting – 8/7/15

DCR Natural Heritage staff met with the Chesapeake Conservancy to discuss potential land conservation projects in the James and Potomac River watersheds that the Conservancy may be interested in assisting with. The Conservancy pledged support for a Nelson County project and staff are investigating a project on the Potomac.

#### Navy Project for Secretary of Natural Resources – 8/14/15

DCR Natural Heritage staff identified fourteen parcels for potential addition to key Chesapeake Bay Natural Area Preserves: Hughlett Point NAP, Dameron Marsh NAP, and Hickory Hollow NAP. The additions provide for marsh/wetland retreat zones and species protection with sea level rise at Hughlett Point and Dameron Marsh, and key rare natural community and species protection at Hickory Hollow NAP.

#### Land Conservation Treasures Map Products – 9/4/15

DCR Natural Heritage staff are working to build two map products that will be made readily available via internet mapping resources to the land conservation community and the public to help determine if prospective new land conservation projects meet the criteria to be considered part of the 1000 Treasures Goal. Two maps are being developed. Map one will display in a single map form the areas in VA covered by the six metrics that do not require specific language in the Deed – if your permanent land conservation project is in this area you are a Treasure. Map two will be a single map for the eight metrics that do require specific resource protection language in the deed and the Treasure determination will depend on the specific deed language which is analyzed by DCR staff.

#### Pickett's Harbor Natural Area Preserve Addition –

DCR added critical maritime forest, beach and dune habitat to the 122-acre Pickett's Harbor Natural Area Preserve, Northampton County. This addition supports globally rare maritime forest community and habitat critical for migratory songbirds. DCR's Natural Area Preserve System now contains 62 natural area preserves supporting 760 exemplary natural communities and rare species on 55,600 acres.

Natural Heritage Data Management Totals for FY2014:

Activity 04-01-15 – 09-30-15

New Mapped Locations (EOs) – 7  
Updated Mapped Locations (EOs) -136  
New Conservation Sites – 0  
Updated Conservation Sites - 56

Total Number in Database 09-30-15:

Animal Mapped Locations (EOs) – 603  
Plant Mapped Locations (EOs) – 1193  
Community Mapped Locations – 530  
Conservation Sites – 555

Managed Areas: (Acres added 4/1/14 – 9/30/14) -1, 450.70Acres  
Mapped Tracts: (total in coastal zone) - 20 Tracts  
Mapped Managed Areas: (total in coastal zone) - 20 Managed Areas

DCR – Healthy Waters

For the grant reporting period, the Environmental Scientist/Analyst with the Virginia Commonwealth University, Center for Environmental Studies in the Department of Life Sciences continued to serve as the Program Manager of the Virginia Healthy Waters Program at the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

The Healthy Waters Program is supported through funding from several grant sources including the VA CZM Section 306, US EPA Section 319 Nonpoint Source Program, and the Chesapeake Bay Implementation Grant. These sources fund various aspects of the Program including the administration and oversight, Program growth and expansion, improvement in capacity, acquisition and analysis of new data and data integration.

Programmatically, the assessment of program resources and needs has continued to determine gaps and areas of improvement. Data integration, geographic expansion and data re-sampling continue to be the top focal areas of the analysis with immediate attention addressed to integrate existing INSTAR data into the NHD data explorer and the creation of new Ecological Occurrences (EOs) and Stream Conservation Units (SCUs). Challenges to administering the Program are development of new data to complete the statewide coverage, and the resource and staffing needs to conduct field assessments. The DNH continued to support the Healthy Waters Program by contributing one field biologist for the purpose of being trained in the INSTAR data collection and field identification process. This increased capacity in the program is a critical advancement in the program within the Division of Natural Heritage and permits the collection of data by additional field personnel aside from specific grant related activities. The field personnel conducted field assessments with VCU Biologists in the locations of Madison, Fauquier and Hanover Counties. While two of those are not in the Coastal Zone, they all provided sampling in locations that had previously been sampled by VCU Biologists but the data were determined to be old enough to warrant a resample. This process provides the Healthy Waters Program the ability to identify and track trends in Healthy Waters.

While VDCR DNH has directed staff to include collecting data relevant to the HWP, the data will be in a raw form still requiring the development of models to interpret such information to make relevant to the Program, as a whole. The development of an INSTAR model is typically done on a basin scale to provide for comparable

results within a defined area. The collection of raw data will permit an additional cataloging of resources to further inform the development of an INSTAR model when resources are present for the specific region or basin.

During the reporting period, the Program Manager continued to participate in the Chesapeake Bay Management Strategy development process to coordinate the involvement of VA Departments of Conservation and Recreation, Environmental Quality and Forestry. The Chesapeake Bay Program identified three management measure outcomes for the Healthy Waters Goal Implementation Team Four (GIT4) that included: Healthy Waters, Land Use Metrics and Land Use Options Evaluation. The Bay Program sent the overall strategies out for public comment in mid-summer with the anticipated development of State two-year work-plan strategies to begin in the winter of 2015. During this reporting period, the Goal Implementation Team for Healthy Watersheds released a limited Request for Proposals for projects to be implemented under the GIT. The VDCR DNH submitted a proposal to develop a Healthy Waters tracking mechanism using the soon to be completed vulnerability model and to pilot the use of the Criteria for Ecologically Healthy Watershed Conservation in a threatened watershed. The VDCR DNH Healthy Waters Program also provided critical comments and review on all the proposals submitted under this limited RFP.

As identified previously, the Criteria for Ecologically Healthy Watershed Conservation is under review with the US EPA and the VA DEQ Waters Division. This iterative approach includes the following elements:

- Quantify and verify the empirical basis for aquatic communities identified with high ecological integrity
- Identify conditions needed to maintain existing ecological integrity (e.g., sediment loadings)
- Identify best management practices and other preventative actions to achieve and maintain the system with high ecological integrity
- Estimate needed technical and financial resources
- Provide information, education and public participation component
- Include schedule for implementing Non Point Source (NPS) management measures
- Identify interim measurable milestones for implementation
- Establish criteria to determine high ecological integrity is maintained (eg. land cover as related to sediment)
- Provide a monitoring component to evaluate effectiveness

Through funding from EPA 319, the Program Manager continued to manage the process by which watersheds and water-bodies are identified as Healthy and how the Program communicates outward. The Watershed Integrity Model, used and developed by the Natural Heritage Division and VCU, has been identified to be updated and streamlined to improve the utility.

The Healthy Waters Program Manager also updated the 2014 Chesapeake Bay and Virginia Waters Clean-up Plan, also referred to as the Consolidated Water Quality Report. Key points in the update included identifying broadening partnerships with the VA Department of Forestry to expand the applicability of the Healthy Waters Program and identification of ongoing strategies to achieve the 2025 Chesapeake Bay Goal of 100% of State Identified Healthy Waters Maintained.

### **c) DCR – Division of Outdoor Recreation**

#### **Water Access & Water Trails:**

Staff facilitated and participated in a two-part Virginia Recreation and Parks webinar featuring southern Virginia water trails. This webinar provided Continuing Education Units for participating parks and recreation professionals. The water trail maps for the VOP Mapper are being updated as part of the annual Virginia Outdoors Plan regional meetings.

## State Trails:

On August 19, staff held the first State Trails Advisory Committee meeting at the Virginia Housing Center in Glen Allen. The committee was established through HB 1542 in the 2015 General Assembly. The role of the committee is to “...assist the Commonwealth in developing and implementing a statewide system of attractive, sustainable, connected, and enduring trails for the perpetual use and enjoyment of the citizens of the Commonwealth and future generations.” Attendees provided input on desired committee outcomes and unanimously voted for the following recommendations to be included in the October report to the General Assembly:

- Support a State Park Bond of at least \$500 million
- Support new state funding for trails from either the bond or general funds
- Support two full-time state employees to administer and carry out the Statewide Trails program

No one from Delegate Scott Ligamfelter’s office was able to attend, but they have requested notes from the meeting.



## National Trails:

Staff continues to coordinate and partner with the Captain John Smith Chesapeake National Historic Trail (<http://www.nps.gov/cajo/index.htm>) through the National Park Service. New initiatives include reporting public access in the Chesapeake Bay region.

## Virginia Outdoors Plan:

Staff conducted annual meetings in each planning district region to update the Virginia Outdoors Plan. A video featuring annual outdoor recreation updates was prepared by DCR’s public communications office. During these meetings, staff identify regional outdoor recreation and land conservation accomplishments published in the 2013 VOP.

An award for implementation of regional featured projects and other Virginia Outdoors Plan implementation for outdoor recreation will be recognized at the 2016 Environment Virginia conference through a new awards program. Staff worked with DEQ to develop guidance and an application process for this new Environment Virginia recognition.

Staff is also working with the University of Virginia, Weldon Cooper, Center for Survey Research to update the Virginia Outdoor Recreation Inventory. This product will be complete in late 2015 and will inform the Virginia Outdoors Survey.

## 5) Department of Game and Inland Fisheries (DGIF)

### Fisheries

#### *Stream Monitoring, Adult Anadromous Fishes*

Weekly boat electrofishing for adult anadromous fish was begun in mid-February 2015 and continued through early June on the James, Appomattox and Rappahannock rivers in the fall zones and on the tidal Chickahominy River. American Shad CPUE was down considerably compared to recent years on the James and Rappahannock rivers, especially on the Rappahannock. The goal of 100 adult American Shad for otolith analysis was reached on the James. However, only 13 American Shad were collected on the Rappahannock. The otoliths of these fish have not yet been examined for origin determination (hatchery vs wild) due to a recent vacancy in DGIF's Age and Growth Lab.

Hickory Shad catch rates were also down on the upper tidal James and upper tidal Rappahannock rivers. A major increase in Blueback Herring CPUE was seen on the upper tidal James and upper tidal Rappahannock compared to recent years. Alewife numbers were slightly up on the upper tidal James but still disappointingly low compared to the Rappahannock Alewife run where CPUE was up considerably and close to the highest seen in the last 12 years.

Of special note are the sampling results of the initial post-removal sampling upstream of the Harvell Dam removal on the Appomattox River. Hickory Shad, Alewife and Blueback Herring were found upstream of the removal indicating initial success of passing target species. Hickory Shad were found in relatively great abundance. American Shad were not found upstream in 2015, but it's worth noting that only one American Shad was found downstream of the dam in the upper tidal Appomattox during weekly sampling throughout the spring.

In spring 2015, we initiated backpack electrofishing surveys in three tidal Rappahannock tributaries near Fredericksburg (Clairborne Run, Hazel Run and White Oak Run). Sampling had three major goals: 1) document the presence or absence of Alewife and/or Blueback Herring spawning runs in these tributaries that had not been sampled for over 10 years; 2) generate baseline information on relative run strength and timing of the runs; 3) evaluate a nature-like fishway on Claiborne Run and a pool and weir fishway on White Oak Run (Hazel does not have blockages and was known to have a herring run). Alewives were documented in Claiborne up to the new fish passage structure (Gizzard Shad were found upstream) that is one mile upstream of the confluence with the Rappahannock. Alewife and Blueback Herring were found in White Oak and Alewives were also found upstream of the road culvert pool and weir fishway. This site had not been sampled since the construction of the fishway in 2003. We plan to build on this sampling protocol along with the work being done on tidal James tributaries by other DGIF Aquatics staff (reported elsewhere in DGIF's report).

#### *Stream Monitoring, Juvenile Anadromous Fishes*

Juvenile alosine sampling using a bow-mounted push net was conducted from June into August of 2015 on the James (Boshers pool) and Rappahannock (tidal) rivers. Several American Shad juveniles were found in the Boshers pool and tidal Rappahannock collections were typical (American Shad and herring juveniles). Boat electrofishing began in August and continued into September also resulting in the collection of target fish from the tidal Rappahannock at Fredericksburg and Port Royal. American Shad juveniles were also collected by electrofishing in the Boshers pool. In 2013, no American Shad were found in the Boshers pool with either gear and in 2014 only one American Shad was collected. This year has been a return to more typical sampling results. Oxytetracycline treatment of fry in the hatchery results in a visible ring in the otoliths (earstones) under black light. Otoliths will be extracted from the American Shad juveniles collected in the James and examined under a black light microscope to determine origin. American Shad fry stocking operations have ceased on the Rappahannock so all juveniles collected are of wild origin.

Collections are being done to monitor habitat use, relative abundance and growth rates, which are also goals on the James.

#### *Boshers Dam Fishway*

The estimates for American Shad passage in 2013 and 2014 are 180 and 24, respectively. We returned to counting all fish species in 2014. In contrast to the low American Shad count in 2014, the Gizzard Shad estimate for 2014 is 71,972 with a total fish passage estimate of 84,236 individuals. The five and ten year running averages for American Shad passage are 242 and 155, respectively. Both of these are also trending downward. This is not surprising considering other measures of abundance of American Shad in the James River indicate weak runs (fall zone boat electrofishing by DGIF; netting index by VIMS in tidal James).

#### *Fish Passage Projects*

Harvell Dam was removed from the Appomattox River in the summer of 2014. The final report to NOAA was submitted at the end of September 2015. This project was funded by NOAA, USFWS and DGIF. A sign describing the history of the Harvell Dam was erected near the dam on the owner's property in August. In September, an identical sign was erected near the shoreline about 100m upstream of the dam site in the public park. This completed the historical mitigation requirements (Section 106). Photo documentation of the site and permit reporting will continue for several years.

Modifications were made to the Claiborne Run nature-like fishway in Stafford County. In order to increase the depth over the culvert slab two short concrete walls were added that taper down to a two-foot opening. This addition will ensure sufficient depth for fish to pass through to the upstream side over the culvert slab. The fish passage facility on this tidal Rappahannock tributary is part of Stafford County's mitigation plan for the construction of Rocky Pen Run Reservoir that is now complete and filled. The Fish Passage Crew is working with the consulting firm to monitor the site for all fish species to document colonization of the stream restoration structure and passage of migratory species.

The DGIF continues to pursue the removal of Monumental Mills Dam on the Hazel River. A major title research project was recently completed for DGIF by an independent researcher so that the Office of the Attorney General can provide legal counsel on the question of claimed king's grant ownership of the river bottom by the neighbor who opposes dam removal. Results of the study do not support any king's grant ownership of the river bottom. The owner of the dam is still cooperating and several key issues remain to be resolved before this project can proceed.

Chandlers Dam, a DGIF operated fishing lake dam near Montross failed earlier this year. A Denil fishway was constructed in 1995 when the dam was reconstructed following a failure. The 2015 failure occurred at the principal spillway and under the adjacent fishway. A PER has been prepared for DGIF by a consulting firm, which includes options for providing fish passage. If the Denil fishway is not retained DGIF is considering constructing a nature-like fishway to provide passage. American Eel reach Chandlers but are impeded by the dam and have now been identified as the primary target species for passage. Downstream beaver activity is likely the limiting factor for herring migration upstream to this dam.

#### *Stream Fish Community and Recreational Fisheries Stream/River Sampling Summary*

During this reporting period, using boat electrofishing techniques primarily, VDGIF conducted survey work, on sections of a multitude of streams which drain into the geographic area covered by the CZMP. Extensive sampling of stream fish communities occurred in the James, Rappahannock, Shenandoah, and York drainages. Relative abundance indices were generally obtained for all species surveyed, for recreationally important species additional parameters were examined, including analyses of age structure and growth rates based on examination of otoliths.

A report detailing results of this work, and work conducted throughout 2015, is being prepared under Sportfish Restoration Grant F-111-R.

#### *Tidal River Catfish Monitoring and Population Trend Detection*

In 2015, VDGIF Fisheries biologists, other staff, and volunteers conducted intensive mark-recapture studies on 1. Powell Creek (Prince George County), a tributary to the James River, 2. Rappahannock River from below Fredericksburg, (Caroline County/King George County) downstream to Port Royal, 3. Pamunkey River within King William County/New Kent County boundaries to obtain catfish density estimates and absolute abundance estimates. Prior to mark-recapture events, standardized sites within those areas were sampled to compare absolute abundance estimates with previous relative abundance trends. Additionally, VDGIF biologists surgically implanted acoustic transmitters (30 in each river totaling 60) into Blue Catfish in the Rappahannock and Pamunkey rivers, and have been actively tracking movements.

These surveys occurred as part of an ongoing effort to monitor the catfish assemblage in Virginia tidal systems – tributaries of Chesapeake Bay – that began in the mid-1990's; a primary focus on the introduced blue catfish populations which occur in these systems. Blue catfish populations all Virginia tidal systems (Rappahannock, York, James) where blue catfish have been established for several decades are experiencing declines in individual growth associated with increasing density (fish per area). These shifts in growth combined with ongoing changes in various other population parameters for blue catfish make it difficult to determine what the eventual impacts of this introduced species will be on other resources and species of concern in these tidal systems.

VDGIF biologists and Virginia Tech researchers conducted targeted sampling in June-July 2015 for flathead catfish to better understand population dynamics in the tidal James River. Primary study area was below Richmond downstream to Hopewell (Prince George County/Charles City County).

Reports detailing results of this work are being prepared under Sportfish Restoration Grant F-111-R.

#### *Tidal River Blue Catfish Diet and Modeling Research Project*

Given the variability observed in blue catfish food habits in Virginia tidal rivers, DGIF has contracted with researchers at Virginia Tech to conduct a multi-year, multi-river, multi-habitat, multi-seasonal assessment of blue catfish food habits. At the conclusion of the multiyear fieldwork component of the study the researchers have been asked to assess blue catfish diet, and model impacts on other species at the population level.

The goal of this project is to develop the data required to inform discussions and assessments of potential impacts of blue catfish on other species in the Chesapeake Bay watershed. Data that are currently lacking – we lack the understanding to make informed statements of impact in most cases.

Reports detailing results of this work are being prepared under Sportfish Restoration Grant F-111-R.

#### *Monitoring of Northern Snakehead Range Expansion*

Work to document range expansion of northern snakehead continued, with electrofishing work in the Rappahannock River watershed, Dragon Run/Piankitank River watershed. In 2015, the species was found to have further expanded, and is likely established, in the fresh-oligohaline reaches of the Rappahannock River as well as Piankitank River/Dragon Run.

#### *Rappahannock River Largemouth Bass Stocking Project*

In 2015, VDGIF biologists evaluated stocking success of largemouth bass stockings in the Rappahannock River from Pee Dee Creek to Jetts Creek (Caroline County/King George County). Stocking occurred in May 2013 by the angler group, Concerned Bass Anglers of Virginia. Surveys from spring 2014 indicated poor overwinter survival or movement from the study area as zero marked fish were collected, and 2015 showed similar results.

VDGIF followed up with stocking in 2014 with an additional 40,000 largemouth bass fingerlings in the same geographic scope with stockings targeted at locations with ample habitat (woody debris/vegetation). An additional 8,500 largemouth bass were stocked in 2015.

Reports detailing results of this work are being prepared under Sportfish Restoration Grant F-111-R.

#### *Chickahominy River Largemouth Bass Stocking Project*

In 2015, VDGIF biologists stocked 40,000 largemouth bass fingerlings into various creeks in the Chickahominy River (James City County/Charles City County). Recent angler surveys and electrofishing surveys have indicated declining largemouth bass catch rates. Largemouth bass populations in the Chickahominy River system are limited by poor recruitment. Previous stocking evaluations in the Chickahominy River (evaluations following 2006 and 2007 stockings) indicated high contribution of stocked fish to the fishery.

#### *Assessment of Critical Habitats for Recovering the Chesapeake Bay Atlantic Sturgeon Distinct Population Segment*

In 2015, VDGIF biologists conducted periodic maintenance of the James River Atlantic sturgeon receiver array, conducting receiver maintenance and data download and maintenance for 26 receiver stations distributed in the tidal river from Richmond (Henrico County/Chesterfield County) downstream to Newport News (Newport News/Isle of Wight Count). Receiver deployment is intended to be part of an ongoing effort to track Atlantic sturgeon movements within the tidal James River system. VDGIF conducts this maintenance in cooperation with NOAA, U.S. Fish and Wildlife Service, Virginia Commonwealth University, and Virginia Institute of Marine Science.

Reports detailing results of this work are being prepared under Section 6 grant from NOAA.

#### *Assessment of American Eel in York, James, and Rappahannock Watersheds*

In 2015, VDGIF biologists have been collecting American eel specimens within Rappahannock, James, and York watersheds during normal fish community monitoring activities. This project is in close cooperation with Virginia Institute of Marine Science to assess age and growth, parasite loads, and general population characteristics. This broad scale assessment of American eel is the largest ever conducted in Virginia.

Reports detailing results of this work are being prepared under Sportfish Restoration Grant F-111-R.

#### *River Herring Sampling in Tidal Tributaries*

In 2015, VDGIF conducted surveys targeting river herring, specifically blueback herring and alewife at Herring and Ward's creeks which are both tributaries to the James River. Sampling consisted of boat electrofishing in middle to lower sections of each creek, and upper sections required use of backpack electrofishing units. These species are targeted during spawning run to characterize timing of run and relative abundance patterns. The results of this work will be used determine best methods for long-term monitoring of river herring populations in tidal tributaries.

Reports detailing results will be prepared under Sportfish Restoration Grant F-111-R.

#### *James and Chickahominy River Angler Survey*

In August, the Virginia Department of Game & Inland Fisheries began a yearlong angler survey on the James and Chickahominy Rivers. The survey will use completed trip, access point interviews to collect angler information on effort, catch, harvest, socio-economic and angler attitudes on both the tidal James and tidal Chickahominy Rivers. Department employees will conduct interviews from 10 access points 12 days a month. In addition to the interviews, the Department will use counts to estimate boating pressure on the tidal James and Chickahominy plus six tributaries through aerial flights 8 days each month. The survey and aerial counts will conclude July 31, 2016.

Final results will be reported in the 2017 Sportfish Restoration Grant F-111-R.

**Wetlands:**

*Mitigation Banking*

VDGIF continues to participate on the Inter-Agency Review Team that oversees stream and wetland mitigation banking and provide input on new banks all over Virginia, including the coastal zone. Numerous proposals have been made for new banks and/or additions to existing banks within the coastal region of Virginia during this reporting cycle. DGIF is also now part of the IRT overseeing the Virginia Aquatic Resources Trust Fund projects.

**Nongame Species Monitoring and Research:**

*American Oystercatcher Productivity Studies on the Eastern Shore of the Chesapeake Bay*

American Oystercatcher (*Haematopus palliatus*) productivity has been monitored at varying sites and at varying degrees of intensity along the Virginia barrier islands and in the seaside marshes since 2001. In 2015, VDGIF staff resumed American oystercatcher productivity studies in the Chesapeake Bay to assess changes in the status the Chesapeake Bay breeding population, which continues to represent approximately 16% of the statewide population. We monitored the reproductive success of 69 oystercatcher pairs on five islands (Table 1). A total of 62 young fledged from these sites, which yielded an overall productivity estimate of 0.90 fledged young per pair. Although two of the islands produced zero fledged young, the high productivity documented on Goose and Tangier islands made up for the low productivity on the other sites. All but one islands experienced an increase in the number of breeding pairs over the number of pairs documented during the 2009-2011 study. Moreover, the 2015 productivity estimate was well above the annual combined estimates for the same five sites reported during 2009-2011 study (Table 2). This suggests that although these sites have experienced considerable erosion and other perturbations since 2011, several islands are still able to sustain relatively high levels of breeding success.

Table 1. American Oystercatcher productivity estimates on five Chesapeake Bay islands in Accomack County, Virginia, 2015.

Site	No. pairs Monitored	No. known nesting attempts	No. yng Fledged	Productivity estimate <sup>1</sup>
Goose Island	15	15	16	1.07
Tangier Island	27	28	43	1.59
Watts Island	10	17	0	0.00
Parker’s Island	8	11	3	0.38
Scarsborough Is.	9	11	0	0.00
<b>TOTALS</b>	<b>69</b>	<b>82</b>	<b>62</b>	<b>0.90</b>

<sup>1</sup> No. young fledged ÷ no. pairs monitored.

Table 2. American productivity estimates (no. young fledged ÷ no. pairs monitored) on five islands in the lower Chesapeake Bay, 2009 – 2001 and 2015. Combined productivity estimates reflect the productivity across all five sites.

Island	2009	2010	2011	2015
Goose Island	1.56	1.09	0.78	1.07
Tangier Island	0.64	0.85	0.57	1.59
Watts Island	0.15	0.36	0.07	0.00
Parker’s Island	0.09	0.83	0.44	0.38
Scarsborough Is.	0.29	1.60	0.57	0.00
<b>Combined Prod. Estimates</b>	<b>0.51</b>	<b>0.87</b>	<b>0.45</b>	<b>0.90</b>

### *American Oystercatcher Multi-state Repeated Breeding Surveys*

Since 2010, VDGIF has been working with the American Oystercatcher Working Group to develop a statistically sound oystercatcher breeding survey design in preparation for a future rangewide survey. In 2013, Virginia and North Carolina participated in pilot study that involved conducted a minimum of three repeated surveys at non-randomly selected sampling plots, a portion of which served as validation sites where the number of breeding pairs was known through intensive productivity monitoring. This effort yielded the following information:

1. The maximum number counted across all surveys was always substantially lower than the estimated abundance derived from N-mixture models, indicating that the detection probability was less than 1.0.
2. Detection probability was highest during late-May to early-June which translated to the middle of the nesting season.
3. Detection probability was highest during high tide, although the differences between tide stages were not always significant.
4. The approximate metrics (territories and pairs) estimated from repeated surveys do reflect the actual number of breeding pairs.

Although the 2013 study was a huge step forward in developing a rangewide design, there were still some sampling issues that needed to be addressed. These included determining which proxy metric or set of proxy metrics serves as the most accurate measure of breeding pairs, developing a methodology to obtain breeding pair estimates that will work across all habitat types within the range, accounting for spatial bias by surveying in areas with low, medium and high probability of detecting oystercatchers and accounting for potential differences detectability rates among all habitat types (marshes, beaches, rooftops, etc.).

It is for these reasons a second pilot study was initiated in 2015 that involved more states and will likely extend into 2016. VDGIF took the lead on convening conference calls with participating states to further refine survey protocols and develop a more comprehensive list of proxy metrics. Results from the first year of the multi-state study are still being tabulated and therefore will be presented in the next performance report. Tables 1 – 3 summarize the level of voluntary effort contributed by six participating states without any additional funds or support.

Table 1. Summary of the 2015 American oystercatcher repeated breeding survey pilot study sampling effort, by state.

State	No. of sampling plots surveyed	Total no. of repeated surveys	No. or range of repeated surveys/plot	No. of validation plots <sup>1</sup>
New Jersey	3	9	3	2
Virginia	7	21	3	7
North Carolina	3	17	5 - 6	3
Georgia	9	38	3 - 10	1
Alabama	5	20	3 - 6	0
Mississippi	1	4	4	0
<b>TOTAL</b>	<b>28</b>	<b>109</b>	<b>--</b>	<b>13 (46%)</b>

<sup>1</sup> Repeated survey sampling plots at which the number of oystercatcher breeding pairs are known.

Table 2. Number of plots with high, medium and low American oystercatcher breeding densities sampled during the 2015 repeated survey pilot study, by state.

State	High <sup>1</sup>	Medium <sup>2</sup>	Low <sup>3</sup>
New Jersey	1	1	1
Virginia	3	4	0
North Carolina	2	1	0
Georgia	3	3	3
Alabama	1	4	0
Mississippi	1	0	0
<b>TOTAL</b>	<b>11</b>	<b>13</b>	<b>4</b>

<sup>1</sup>High - where oystercatchers are highly likely to occur.

<sup>2</sup>Medium - oystercatchers use these sites but density can vary noticeably among years.

<sup>3</sup>Low - low, but > 0.

Table 3. Habitat types surveyed in the 2015 American oystercatcher repeated survey pilot study across six states.

Habitat type	No. of plots
Barrier island	15
Saltmarsh	7
Bay island	3
Extended sandspit	2
Isolated sandbar	1
<b>TOTAL</b>	<b>28</b>

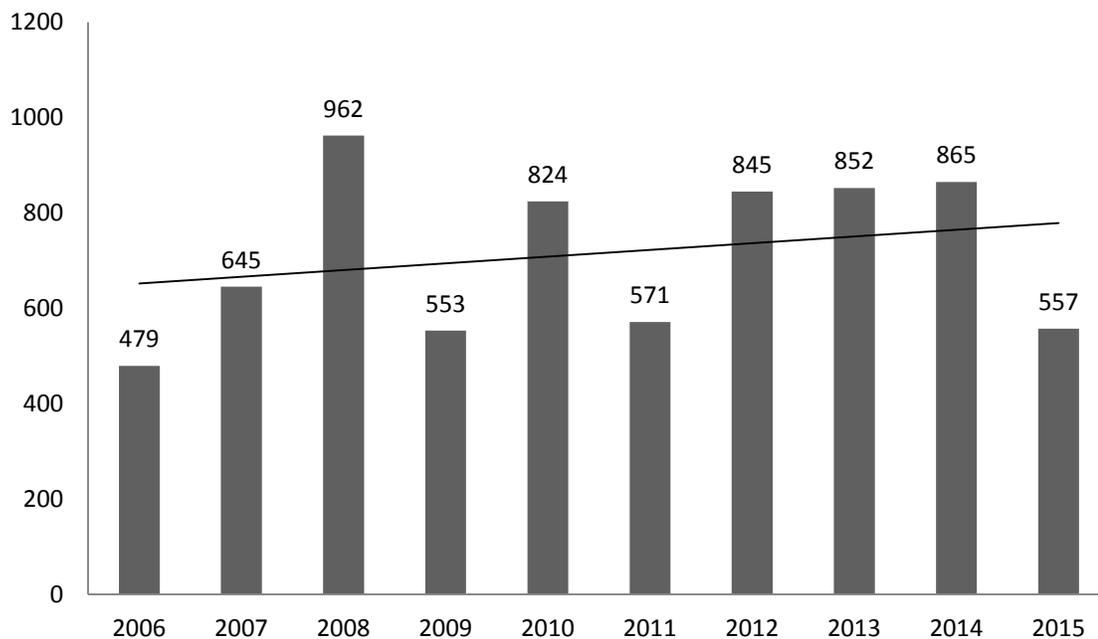
#### *Atlantic Coast Least Tern Survey*

In 2015, VDGIF staff coordinated the 10<sup>th</sup> annual Atlantic coast least tern (*Sterna antillarum*) breeding survey in Virginia, an effort which began in 2006. The survey window for the southern mid-Atlantic states (MD – NC) is June 1 – 15. Least terns are one of the more difficult seabird species for which to obtain accurate breeding population estimates. They are highly ephemeral (abandon one site in favor of another often several times during a single breeding season), patchy in distribution within colonies, and eggs are small and well-camouflaged making them difficult to see. Thus, the information gathered by participating Atlantic coast states are viewed as trend data rather than actual population estimates and efforts are made by the states to maintain a similar level of effort from year to year within in the survey window. Several methods have been used to survey least terns; however, results from a study examining the accuracy and precision of each of these techniques suggested that incubating adult counts yield the most accurate estimates with the least amount of disturbance to the birds (Matthew D. Hillman, pers. comm.) As such, Virginia survey participants continue to use this method at most colonies.

In 2015, Virginia’s least tern breeding population decreased by 36% over last year’s total and represents the fourth lowest total during this ten year period (Figure 1). The majority (63%) of breeding pairs occurred on Virginia’s barrier islands, 21% on a rooftop at Lynnhaven Mall in Virginia Beach and 16% at Craney Island Dredge Material Management Area in Portsmouth. Despite this year’s substantial drop in breeding pairs recorded during the survey window, the 2006 – 2015 estimates continue to exhibit a slightly increasing statewide trend (Figure 1).

In 2014, live and dead least nestlings were found on the ground at the Lynnhaven Mall least tern colony, indicating flightless young were going over rimless sections of the roof. This was the first time such incidences were conveyed to VDGIF biologists. There was no observed nestling mortality reported in 2015. In fact, mall staff commented that they saw large numbers of fledged terns on and near the rooftop colony from mid-July through the beginning of August. The management staff at the mall informed VDGIF staff last year that all pea-gravel roofs will be replaced with a white vinyl membrane that is not attractive to nesting seabirds. Unfortunately, mall budget constraints have delayed the installation of new roofs by at least one year.

Figure 1. Number of least tern breeding pairs in Virginia, 2006 – 2015.



*Piping Plover and Wilson’s Plover Breeding Summaries*

2015 Virginia Plover Survey: The 30<sup>th</sup> Annual Virginia Plover Survey (VPS) was conducted from June 1 - June 9, 2015 to obtain statewide breeding population estimates for the federally threatened Piping Plover (*Charadrius melodus*) and the state endangered Wilson’s Plover (*Charadrius wilsonia*). VPS participants examined all suitable nesting habitats shared by both species of plovers in coastal Virginia.

A total of 214 Piping Plover breeding pairs and 20 unpaired single adults (lone adults that did not appear to be defending a territory, mate, nest or brood) were observed during the 2015 survey (Table 1). This year’s survey pair total was below last year’s total of 225 pairs. Breeding distribution did not change in 2015; all pairs were confined to the barrier islands (Assateague Island to Fisherman Island) with the majority of birds occurring on the northern half of the island chain (Assateague Island to Cedar Island; Table 1). The preliminary 2015 end-of-season Piping Plover breeding pair total which includes additional pairs discovered during productivity

studies after the breeding survey was 256 (Table 1), which is 4% above last year's end-of-season total (Figure 1).

A total of 24 Wilson's Plover breeding pairs and zero single adults were recorded during the 2015 VPS (Table 1). The end-of-season total of 34 pairs reflects a 17% increase over last year's total of 29 pairs (Figure 2). Wilson's Plover breeding activity was confined to four northern barrier islands (Table 1). Prior to 2006, up to 25% of the state's breeding population was reported on the southern islands (Parramore Island - Fisherman Island; VDGIF unpubl. data). It is not clear why Wilson's Plovers have remained absent from the southern islands in recent years.

Plover Productivity: Staff from The Nature Conservancy's Virginia Coast Reserve (VCR), Chincoteague National Wildlife Refuge, Wallops Flight Facility and VDGIF monitored the breeding success of 98% of Virginia's Piping Plover breeding population in 2015. This year's statewide productivity estimate was 1.27 fledged young per pair, well above the value (0.93 fledged young per pair) necessary to maintain a stable population in the Atlantic coast Southern Recovery Unit (Delaware – North Carolina), but slightly below last year's estimate (Figure 3). This year's preliminary site specific productivity estimates are presented in Table 2.

VDGIF staff monitored the breeding success of 82% of Virginia's 2015 Wilson's Plover breeding population. A total of 42 young fledged among the 28 pairs monitored which yielded a productivity estimate of 1.50 fledged young per pair.

Table 1. 2015 Virginia Plover Survey results. Totals in parentheses reflect preliminary end-of-season Piping Plover and Wilson's Plover breeding pair estimates for sites where survey estimates were lower. All other values presented represent plover survey results.

SITE	PIPL			WIPL		
	PAIRS	SINGLES	TOTAL INDS.	PAIRS	SINGLES	TOTAL INDS.
Assateague Island	34 (47)	5	73	2	0	4
Wallops Island	6 (6)	0	12	0	0	0
Assawoman Island	32 (33)	0	64	4	0	8
Metompkin Island	54 (61)	2	110	1 (3)	0	2
Cedar Island	43 (58)	4	90	17 (25)	0	34
Dawson Shoals	0	0	0	0	0	0
Parramore Island	4	1	9	0	0	0
Hog Island	2	0	4	0	0	0
Cobb Island	1	1	3	0	0	0
Little Cobb Island	0	0	0	0	0	0
Wreck Island	4 (6)	1	9	0	0	0
Ship Shoal Island	4	1	9	0	0	0
Mink Island	0 (1)	0	0	0	0	0
Myrtle Island	9 (10)	2	20	0	0	0
Smith Island	18 (20)	2	38	0	0	0
Fisherman Island	3	1	7	0	0	0
Craney Is. DMMA	0	0	0	0	0	0
Grandview Beach	0	0	0	0	0	0
Plum Tree Is. NWR	0	0	0	0	0	0
Back Bay NWR	0	0	0	0	0	0
False Cape SP	0	0	0	0	0	0
<b>STATE TOTALS</b>	<b>214 (256)</b>	<b>20</b>	<b>448</b>	<b>24 (34)</b>	<b>0</b>	<b>48</b>

Figure 1. Annual number of Piping Plover breeding pairs (end-of-season totals) in Virginia, 1986 – 2015.

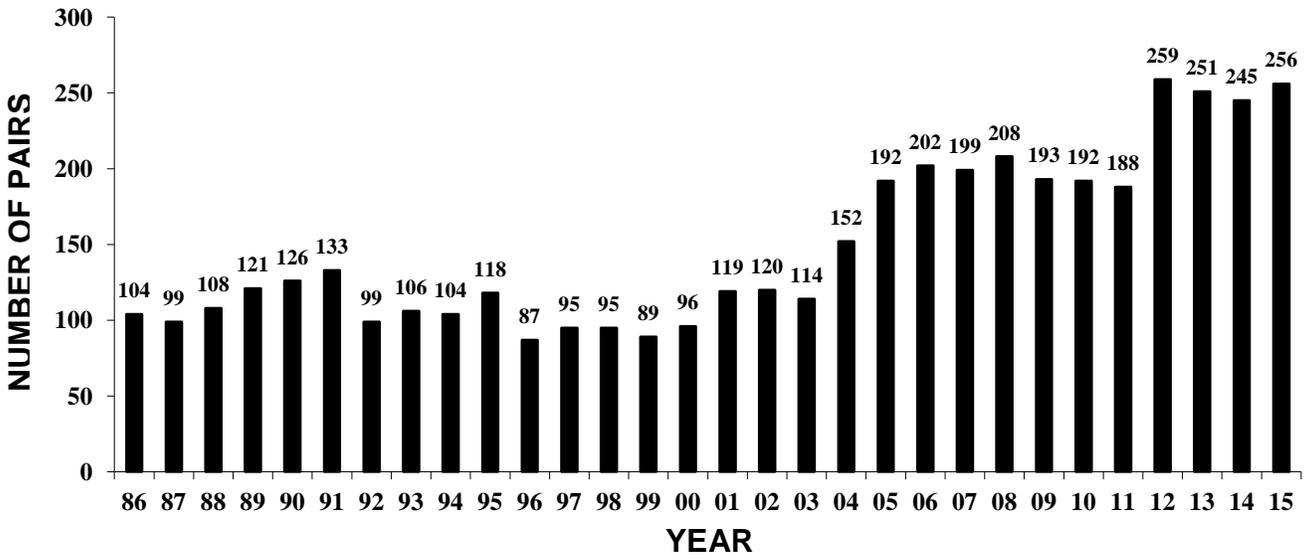


Figure 2. Annual number of Wilson’s Plover breeding pairs in Virginia, 1988-2015. These numbers reflect end-of-season totals.

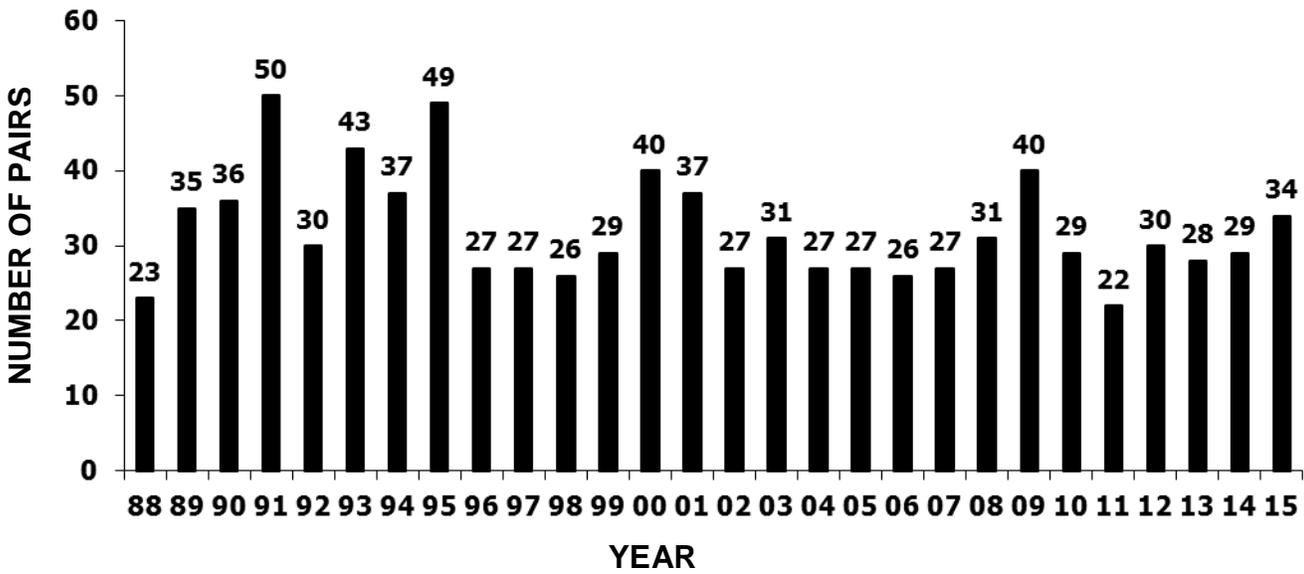


Figure 3. Annual statewide Piping Plover productivity estimates in Virginia, 1990 – 2015. The 2015 estimate is preliminary. Annual estimates obtained from  $\geq 75\%$  of nests laid each year.

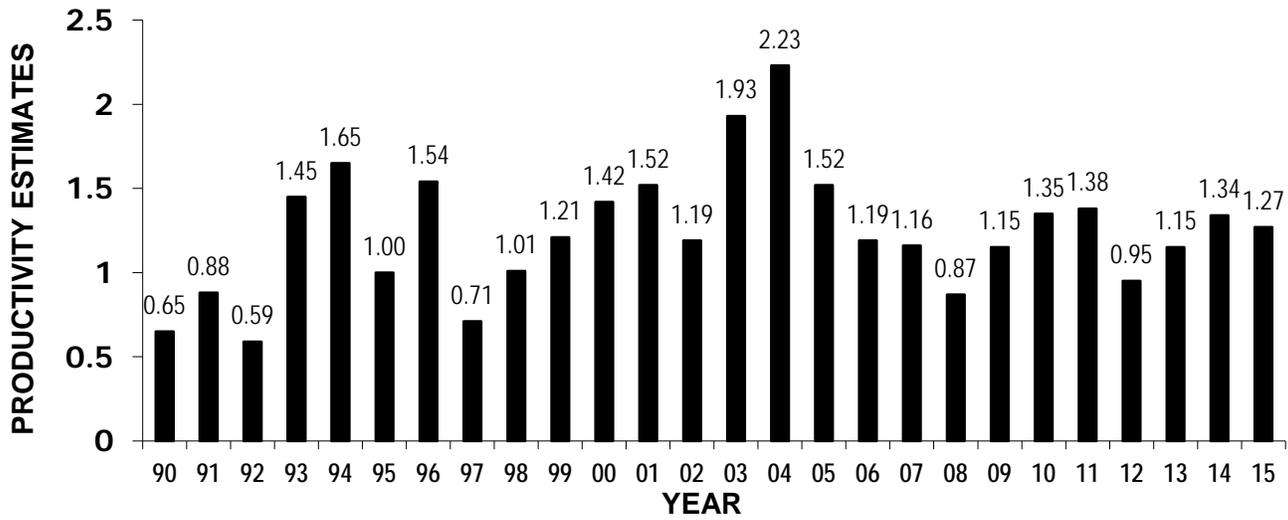


Table 2. 2015 Piping Plover preliminary productivity estimates (no. young fledged ÷ no. pairs monitored; calculations based on pairs with known nests) on Virginia’s barrier islands. The number of pairs monitored for productivity (n = 250) represents 98% of Virginia’s end-of-season Piping Plover breeding population (n = 256 pairs). Numbers in parentheses represent 2014 data in final form and dashes indicate no monitoring effort.

SITE	# OF PAIRS MONITORED	# OF CHICKS FLEDGED	2014 PROD.EST.
NORTHERN BARRIER ISLANDS			
Assateague Island <sup>1</sup>	47 (42)	59 (70)	1.26 (1.67)
Wallops Island <sup>2</sup>	6 (5)	8 (5)	1.33 (1.00)
Assawoman Island <sup>1</sup>	33 (40)	28 (71)	0.85 (1.78)
Metompkin Island <sup>3,4</sup>	61 (53)	78 (82)	1.28 (1.55)
Cedar Island <sup>3</sup>	58 (49)	89 (49)	1.53 (1.00)
<b>N. ISLAND TOTALS</b>	<b>205 (189)</b>	<b>262 (277)</b>	<b>1.28 (1.47)</b>
SOUTHERN BARRIER ISLANDS			
Hog Island <sup>5</sup>	-- (2)	-- (1)	-- (0.50)
Cobb Island <sup>5</sup>	1 (2)	0 (0)	0.00 (0.00)
Wreck Island <sup>5</sup>	6 (3)	4 (3)	0.67 (1.00)
Ship Shoal Island <sup>5</sup>	4 (3 <sup>6</sup> )	7 (1)	1.75 (0.33)
Mink Island <sup>3,5</sup>	1 (0)	1 (N/A)	1.00 (N/A)
Myrtle Island <sup>3,5</sup>	10 (8)	20 (19)	2.00 (2.38)
Smith Island <sup>5,7</sup>	20 (30)	21 (17)	1.05 (0.57)
Fisherman Island <sup>7</sup>	3 (1)	2 (0)	0.67 (0.00)
<b>S. ISLAND TOTALS</b>	<b>45 (49)</b>	<b>55 (41)</b>	<b>1.22 (0.80)</b>
<b>STATEWIDE EST.</b>	<b>250 (238)</b>	<b>317 (318)</b>	<b>1.27 (1.34)</b>

<sup>1</sup> Data provided by Chincoteague National Wildlife Refuge.

<sup>2</sup> Data provided by Wallop’s Island Flight Facility biological staff.

<sup>3</sup> Data provided by VDGIF.

<sup>4</sup> Data provided by Hal and Joanne Laskowski, USFWS volunteers.

<sup>5</sup> Data provided by The Nature Conservancy’s Virginia Coast Reserve.

<sup>6</sup> Two additional pairs were monitored through the breeding season, but because only empty scrapes were found for both pairs, they were excluded from the table.

<sup>7</sup> Data provided by Eastern Shore of Virginia National Wildlife Refuge.

### *Piping Plover Spring Migration Surveys*

Surveys to re-sight banded piping plovers and identify important migration stopover sites along Virginia’s barrier island began in the spring of 2015. This effort was partially funded by Conserve Wildlife Foundation of New Jersey. Survey plots were selected based on a pilot survey effort completed the previous fall that indicated which sites supported piping plovers during migration and could be accessed and surveyed at low tide. Five to eight survey plots on five islands were surveyed weekly from March 7, 2015 – April 30, 2015 within 3 hours of low tide. The selected survey plots included the north half of Metompkin Island, the south half of Metompkin Island, the north end of Cedar Island, the south end of Cedar Island, the north half of Wreck Island, Ship Shoal Island, the north tip of Smith Island and the south end of Smith Island. DGIF conducted a total of 43 surveys during which 207 observations of one or piping plovers were recorded. Of the 440 encounters of individual plovers, only one was banded. This bird was a female that was marked in the Bahamas several weeks prior to

being observed in Virginia on March 17, 2015. This bird was already paired with a territorial male on the south end of Cedar Island where she remained through the breeding season and successfully fledged one young. Additional results from this effort are still pending as GIS-based analyses will not begin until the 2015 fall surveys are completed.

### *Sea Turtles and Marine Mammals*

During this reporting period, minimal resources were devoted to marine mammals, with the Department's primary role being to assist the Virginia Marine Mammal Stranding Network, which is administered by the Virginia Aquarium & Marine Science Center's Stranding Response Program (VAQS).

A minimum of seven loggerhead sea turtle (*Caretta caretta*) nests have been documented in Virginia this year; three on Virginia's barrier islands, two on the southern mainland beaches, which extend from the NC/VA border north to Fort Story Military Reservation, and one on Gwynn's Island in the Chesapeake Bay. The Gwynn's Island nest is truly an anomaly because sea turtles typically nest on dynamic ocean-facing beaches. Gwynn's Island is located approximately 42 miles north of the mouth of the Bay and the nest was deposited just above the high tide line on a narrow spit called Sandy Point. After consulting with the USFWS, it was decided to leave the nest in place even though hatching success is expected to be very low and the likelihood of hatchlings finding their way to the ocean is even lower. The final fates of all nests are still pending.

VDGIF continued to maintain the state's sea turtle nesting database. From 1970 – 2015, at least 163 Loggerhead nests, one green sea turtle (*Chelonia mydas*) nest and two Kemp's ridley (*Lepidochelys kempii*) nests have been documented in Virginia, the majority of which were laid on the southern mainland beaches.

This spring, VDGIF staff prepared the *Virginia Sea Turtle Nesting Handbook* that was distributed to all agencies that are involved with sea turtle nest monitoring activities. The purpose of this handbook is to ensure that the monitoring and management of nests is done in a consistent manner throughout the Commonwealth's coastal plain and is consistent with other states' monitoring protocols. Department staff and the USFWS met with staff from Dam Neck Naval Base, Fort Story Military Reservation and the City of Virginia Beach to introduce the new nest management protocols to military and City officials.

VDGIF staff continued to respond to sea turtle strandings on the remote barrier and bay islands and conducted necropsies on fresh to moderately decomposed carcasses. The 2015 statewide stranding total thus far is 153: 85 loggerheads; 51 Kemp's ridleys; seven green turtles; four leatherbacks; and six unidentified species.

VDGIF continued to administer and manage the large multi-state NMFS Section 6 funded sea turtle project entitled the *Virginia/Maryland Sea Turtle Conservation Initiative* through the completion date of May 31, 2015. The project, which began in March 2011, yielded a comprehensive set of data on the life history, abundance and distribution sea turtles in the Chesapeake Bay and Virginia's ocean waters. VDGIF contracted with the Virginia Aquarium and Marine Science Center to complete most of the work. During this reporting period, the Department's involvement centered around the completion of the Virginia and Maryland Sea Turtle Conservation Plan (plan), which includes a detailed conservation outline comprised of three goals, 12 objectives, 36 strategies, 134 action items and 44 effectiveness measures. Accompanying the plan are six appendices, four of which describe in detail results from the studies conducted under the *Virginia/Maryland Sea Turtle Conservation Initiative*.

### *Bald Eagles*

Bald Eagle populations have increased dramatically over the past 30 years across North America. The Chesapeake Bay Region (CBR), which houses one of the densest populations of Bald Eagles in North America, has experienced nearly a 20-fold increase of breeding pairs of Bald Eagles, since the 1970s. During the early 1970s, VA had only ~30 breeding pairs of Bald Eagles; there are now more than 730 breeding pairs in the coastal plain during 2011, and more than 850 pairs state-wide. Moreover, the CBR houses thousands of migrant

Bald Eagles from northern and southern states during mid-winter and mid-summer, respectively. In addition, there are large numbers of resident non-breeding individuals, of multiple age classes, that exploit the CBR's rich prey resources and high quality habitat. As populations of Bald Eagles have increased, so have conflicts with human activities. Two of the most pressing management issues wildlife agencies face in the Mid-Atlantic region are: 1) eagle collisions with military and civilian aircraft and 2) the potential negative impacts that commercial wind facilities may have on eagles due to strikes with turbines. Both of these issues are important to human safety and economic development, as well as conservation of VA's natural resources. In addition, although bald eagle populations have recovered, human activity still impacts them and it is important to understand the scope and consequences of these impacts to eagles.

*Air-strike:* The extremely high abundance of non-breeding eagles and the high density of breeding pairs in the coastal plain of VA correlate with an increase in the number of eagles struck by aircraft in the commonwealth over time (4 collisions with aircraft in 2010, 2 in 2011, greater than 6 in 2014, and several in 2015). Due to the large size of Bald Eagles they are ranked as an extremely high air-strike hazard to civilian and military aircraft (Dolbeer and Wright 2009). Currently, DGIF, USDA-WS, and Norfolk International Airport (NIA) are dealing with ongoing efforts to reduce the risk of air-strikes with a nesting pair of eagles near NIA. Although, none of these bird strikes has led to human fatalities, the risk is always present and the economic damage is significant. The DGIF and USDA-WS are faced with novel management challenges, not only at NIA but throughout the Commonwealth, related to issues concerning reduction of strike hazard with eagles. Due to a lack of scientific information concerning ranging behavior and flight characteristics of Bald Eagles, scientifically sound management recommendations are at present, challenging to make or implement. The first goal of this project is to acquire information that will enable wildlife managers the ability to make sound and scientifically based decisions to abate air-strikes with Bald Eagles. The primary way this project will acquire these vital data is to model risk to aircraft from bird strike using highly detailed data on how Bald Eagles fly and use airspace. These models will include elements of circadian rhythms, interactions with weather, and the influence that landscape has on eagle behavior. We proposed to telemeter 30 adult individuals from nesting pairs, 30 nestlings, and 30 non-breeding eagles with high resolution GPS-GSM telemetry systems. These units provide data on the birds GPS location, including location and flight altitude, at 15-minute intervals. We will also program units so that one day out of every two weeks they will collect data at 30 second intervals, so we can sample intimate details of eagle flight. With these data in hand, we can then evaluate the risk that Bald Eagles pose to aircraft at different times of year. Risk assessment will provide managers and pilots with quantitative information on relative probabilities of encountering Bald Eagles at certain times of day, year, and altitude. Further, flight data and ranging behavior of eagles can be used for the following: 1) Identify time periods (daily and seasonally) when strike potential is high for military training exercises, 2) evaluate flight paths at military and civilian air stations in the context of space used by the local eagle population, 3) determine the effectiveness of and need for nest removal near airports, 4) identify weather conditions and landscape features that increase strike potential. The information we provide can then be incorporated into comprehensive BASH programs at the numerous military and civilian air stations across VA and will serve as a model for nationwide programs. To date, DGIF biologists have telemetered approximately 30 Bald Eagles of every age class. Delays in the purchasing of telemetry equipment have severely impacted our ability to deploy telemetry. In spite of these delays, we believe we have been moderately successful in moving towards completion of objectives. Fortunately, DGIF funded a two-year extension of the project to deploy the remaining 60 transmitters. A sample of maps and movement analyses we have provided is attached (Figures 1, Table 1 & Figures a through f). Telemetry data and home range output will be used as the foundation for statistical and probabilistic models that identify risk to birds from aircraft and wind turbines. Key data are landform (habitat and Ecological Land Unit (ELU) datasets), weather data (such as NCEP reanalysis weather datasets) and data on aircraft flight patterns and existing proposed wind turbine locations. This modeling exercise will initiate once we have approximately two years of telemetry data as the foundation for our modeling.

*Assessing human impacts to eagles:* Human impacts to wildlife are an important part of conservation biology. Construction over the past decade of a county boat ramp at Wilcox Wharf on the James River has been an issue

of great concern due to the proximity of nesting Bald Eagles and communal eagle roosts and the high eagle use along the shoreline by summer migrant eagles. The section of shoreline up-stream and down-stream from Wilcox Wharf is considered one of the most significant segments of the James River Bald Eagle Concentration Area. Historically, boat traffic and near-shore boating are known to be negatively associated with eagle shoreline use. Installation of the boat ramp will result in increased boating activity and may impact eagle use along this section of the river. We plan to evaluate these impacts through a variety of methods, including a Before-After-Control-Impact (BACI) survey design. We conducted boat-based surveys at Wilcox Wharf 4 times per month during the summer of 2013. These surveys encompassed the area of 5 miles up-stream and 5-miles down-stream from the existing ramp. During surveys, we recorded all observations of both eagle and human activity. Survey data will enable us to evaluate impacts (if any) of human activity on eagle abundance and distribution with a traditional BACI study. Finally, we are also in the process of assessing historic survey data over the past decade to evaluate distributional and abundance changes along this segment of the James River. Expected results from this research will include: 1) detection of changes (if any) in distribution and abundance of Bald Eagle use along the 10 mile shoreline segment at Wilcox Wharf, 2) documentation of changes in boat traffic and near-shore boat use along this shoreline segment, 3) evaluation of changes in eagle distribution and abundance from historic levels (1990's), and 4) a final statistical model that evaluates the influence that increased boating may have on eagle shoreline use. A final report for this project should be available in the December of 2016.

### *Peregrine Falcons*

Peregrine falcons formerly bred throughout the Appalachian Mountains of the eastern US, but were extirpated as breeders throughout this region by the early 1960s. National recovery efforts starting in the 1970s were successful in establishing a breeding population in VA's Coastal Plain and less successful in returning the species to its former range in the mountains. Current conservation efforts in VA are focused on both populations. Coastal Plain peregrine monitoring and management is executed through a partnership with the Center for Conservation Biology at the College of William and Mary & VA Commonwealth University (CCB), as well as a number of stakeholders. The total VA peregrine population consisted of 26 pairs (B. Watts, personal communication), including a coastal population of 23 pairs. Evidence of breeding (2 grounded juvenile birds) was also documented in the Reston area within the northern Virginia Piedmont. DGIF also monitors and manages a pair which has bred in downtown Richmond since 2003 (included in the coastal total; see <http://blog.wildlife.virginia.gov/falcon-cam/> for breeding season blog). Re-establishment of the cliff-nesting peregrine population in the western part of the state includes annual hacking of chicks from the VA Coastal Plain. Chicks are obtained from nest sites where productivity is low because of high mortality during fledging events and are hacked at Shenandoah National Park (SNP). Six males and five females from three VA bridge sites (James River Bridge, Norris Bridge and Chesapeake Bay Bridge Tunnel) and from the Reston area were hacked at SNP in 2015 (L. Mojica, personal communication). Surveys and monitoring at several sites in western VA continued in 2015 through a partner network that includes DGIF, the Conservation Management Institute at Virginia Tech and West Virginia University (via contract), National Park personnel/Student Conservation Association interns and the US Forest Service. For the first time in several years, a breeding pair was not documented at SNP (one individual only was seen there early in the season). Two sites had breeding pairs (Breaks Interstate Park and White Rocks at Cumberland Gap National Historical Park). The eyrie at Breaks was actively monitored by CMI and DGIF and was documented to fledge two juveniles. The location of the White Rocks eyrie remained unknown despite survey efforts, and no evidence of breeding was documented.

### *Red-cockaded Woodpeckers*

The Piney Grove Preserve in Sussex County is owned by TNC and represents the only known red-cockaded woodpecker site in VA and the northernmost population of the species across its range. Management and monitoring of this population is conducted annually by the CCB with support from DGIF and other partners. Monitoring is conducted via a post-breeding winter survey and a spring pre-breeding survey, in addition to annual nest monitoring and banding activities; results are reported to us on a calendar year basis. Wilson et al. (2015) report the following. A total of 83 red-cockaded woodpeckers were identified in 2014, including 60

adults and 23 fledglings produced in 2014. During the breeding season there were 56 birds distributed into 13 breeding clusters and one cluster comprised only of males. Surveys in the early winter identified 66 birds roosting in 14 cluster areas, including 52 birds that were produced on site before 2014 and 15 of the 23 birds that fledged in 2014. In 2010 DGIF acquired Big Woods WMA, a property abutting Piney Grove Preserve. The WMA is actively managed to create and maintain open pine savanna to provide supporting habitat for the Piney Grove woodpecker population and/or for expansion of that population, as well as a host of other species including Northern Bobwhite. Habitat management actions on the property during the performance period are described elsewhere in this document. In FY15 DGIF also took part in planning activities with the USFWS, The Nature Conservancy and the Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University for the reintroduction of red-cockaded woodpeckers in the Great Dismal Swamp in FY16. This effort seeks not only to re-establish a breeding population in an area in which it historically occurred, but to better secure the viability of the Virginia population by expanding its range beyond the one current known site, which is vulnerable to potential stochastic events.

#### *Radar Analysis of Bird Migration Stopover Sites on the Lower Delmarva Peninsula*

In July 2013, DGIF entered into a 2-year contract with the University of Delaware to (1) identify and map important migratory landbird stopover sites along the lower Delmarva Peninsula in a Geographic Information System (GIS) framework using data collected by the NPOL radar and (2) use radar observations to assess and validate previously developed statistical models of predicted important stopover sites for the northeastern US.

In August 2013, NASA began operating NPOL 5 nights per week and agreed to do so into November. However, data collection for NPOL was interrupted to a great extent due to a damaged power supply and fan motor that needed to be repaired for the radar to operate. Furthermore, an unintended lack of remote communications access meant that a technician had to manually collect data at the radar. Data collection was also interrupted by the federal government shutdown for 17 days in October. All data collection interruptions were not anticipated *a priori*. In total, data collection occurred on only 18 (21%) of 84 nights from NPOL during the first migration season. In preparation for the 2014 fall migration season, the principal investigators (PIs) worked with radar NASA to address some of the software glitches and equipment-related constraints. In 2014, data were collected for 56 (66%) of 85 nights. However, only 26 nights (31%) were useable for analyses as the remaining data were considered contaminated (i.e. consisted of only noise or dominated by insects) or collected after the time of peak exodus. During both seasons, data collection was limited by severe beam blockage at the lowest tilt angle and much of the remaining areas also suffered from noticeably-variable degrees of partial beam blockage.

Because of the effects of partial beam blockage, the PIs did not rigorously pursue a comparison of NPOL observations with predicted stopover distributions from other predictive modeling efforts. Development of new predictive maps had not been completed in time for the final report; therefore, only a qualitative comparison of NPOL observations with preliminary predictive model output can be provided in this performance report. The current preliminary predictive models produced areas of high bird density that broadly matched those observed by NPOL near the seaward fringe of the lower Delmarva Peninsula. Barrier islands and bayside coastal marshes had the lowest observed and predicted bird densities. The area of high observed bird density west of Salisbury around the Choptank River was relatively greater than in the predictive model. In general, broad geographic location and landscape composition variables were the most influential in the models, with finer-scale landscape composition variables having the least influence.

Visual inspection of the scans revealed that vertical distributions of birds were relatively consistent during the onset of migration, but became more variable in space as migration progressed. In addition, the displacement of birds (i.e. premature flushing of birds prior to exodus) from ground sources was minimal at the time of sampling, based on the sparse presence of birds aloft (i.e., displaced) over water at peak exodus. Areas of high migrant density almost exclusively coincided with patches of hardwood forest and forested wetland and areas with low bird densities were largely located over agricultural fields. More broadly, the region along the Atlantic

coastline of the Delmarva Peninsula supported consistently high numbers of nocturnally-migrating birds during fall and bird stopover densities along the Chesapeake Bay coastline were much lower in comparison within the radar observed regions.

The capability to produce high resolution maps of migrant stopover distributions over a broad region with NPOL has far-reaching implications for understanding the ecology and conservation needs of migrating landbirds. Future attempts to use NPOL observations for mapping stopover distributions of migrating birds should consider raising the antenna height to avoid partial beam blockage by nearby trees for low tilt angle beams that are necessary to sample birds close to the ground. FINAL REPORT AVAILABLE.

### *King Rail and Clapper Rail*

The king rail, a priority species in the VA Wildlife Action Plan, is primarily associated with freshwater marshes. The lower-ranked clapper rail is associated with coastal saline marshes and is more abundant than the king rail in VA. Due to the secretive nature of these species during the breeding season, they are most effectively documented via their responses to call-broadcast surveys. However, the vocal characteristics of the two species overlap broadly, such that it is difficult to distinguish between them with reliability and consistency. In fact, identification to species is most often surmised based on characteristics of the surrounding habitat. This problem is further complicated because the two species can hybridize in areas of co-occurrence, further adding to the potential for misidentification. Within Virginia, the two species are thought to be abundant, sympatric and potentially hybridizing on the Mattaponi and Pamunkey Rivers in an area of intermediate salinity. Addressing conservation efforts toward the higher-priority king rail in this geographic area requires reliable information on its status, distribution, abundance and habitat use. This in turn requires a methodology to reliably identify the species in the field or through post-field analysis of the data collected. This is being addressed through a three-year contract with West Virginia University (WVU) with participation by DGIF. This project will draw on links between acoustic monitoring, genetics, morphology and ecology. This study will also lay the ground work for a more complete geographic assessment of the distribution, abundance and status of king, clapper and hybrid populations, to allow for more effective monitoring and conservation planning. In its pilot year on the Pamunkey River, rails were captured at night using a dip net from an airboat in October 2013, and field personnel experimented with other trapping techniques in June 2014. Additional trapping via airboat was conducted in August 2014. In 2015, autonomous recording units were deployed in target marshes on the Pamunkey River, and playback surveys targeting the two rail species in these same marshes. The recorded data will be used in acoustic analyses and, with the results of the surveys, will be used to create occupancy models for the two species. Also during the performance period, preliminary genetic (mitochondrial DNA) analyses were conducted on the samples obtained via airboat captures in 2013, and environmental DNA samples were collected in the target marshes on the Pamunkey River. Data collection in 2016 will shift to marshes along the Mattaponi River.

### *Atlantic Slope Freshwater Mussel Propagation*

The Virginia Department of Game & Inland Fisheries continued its cooperative Atlantic Slope freshwater mussel propagation facility with the U.S. Fish & Wildlife Services' Harrison Lake National Fish Hatchery in Charles City, which marks the 8<sup>th</sup> year of production and 9<sup>th</sup> year of operation at the VA Fisheries and Aquatic Wildlife Center (VFAWC). Propagation started in March and ended in mid-August resulting in the production of over 1.1 million juvenile mussels from nine species (Table 1), which was well over our target number of 586,000 juveniles. VFAWC also propagated the federal and state endangered James spinumussel (*Pleurobema collina*, JSM) at the facility for the first time, bringing the total number of species we have worked with to twelve. As with 2014, we again expanded our propagation coverage from the Nottoway River watershed to include the Rappahannock and, Pamunkey River watersheds, as well as the Meherrin and James River watersheds. While most of the species propagated at VFAWC are not listed as threatened or endangered but listed as a species of greatest conservation need in Virginia's Wildlife Action Plan or as a species of concern by the USFWS, we did continue to work with the state threatened green floater (*Lasmigiona subviridis*) to develop successful grow-out techniques and added JSM to species propagated. We continued to release propagated

mussels from our 2013 and 2014 stocks, with over 34,000 tagged mussels of 3 species released in the lower Nottoway River, near Franklin; Rappahannock River near Fredericksburg; Pamunkey River near Putneys Mill; and Meherrin River in Emporia. Additional mussels from our 2013 and 2014 stocks will be released in October and November 2015 with any remaining mussels released in 2016. Juvenile mussels from our 2015 stock will start to be released in 2016. All mussels were or will be tagged for future monitoring of survival and reproduction.

Table 1. Infestation information for 2015 propagation season.

Species	River	Propagation Plan	Actual Number of Juveniles
<i>Alasmidonta undulata</i>	Mill Creek	1,000	*
<i>Anodonta implicata</i>	Nottoway River	50,000	208,425
	Pamunkey River	100,000	426,250
<i>Lampsilis cariosa</i>	Nottoway River	50,000	149,388
<i>Lampsilis radiata</i>	Meherrin River	50,000	74,722
	Nottoway River	**	35,775
	Pamunkey River	50,000	1,951
<i>Lasmigona subviridis</i>	Meherrin River	50,000	42,971
	Tye River	50,000	56,474
<i>Leptodea ochracea</i>	Appomattox River	50,000	*
	Nottoway River	50,000	41,483
<i>Ligumia nasuta</i>	Nottoway River	60,000	115,736
<i>Pleurobema collina</i>	John's Creek	5,000	*
	Rock Island Creek	**	16,805
<i>Villosa constricta</i>	John's Creek	20,000	19,302
<b>Total</b>		<b>586,000</b>	<b>1,189,282</b>

\* No adult brooding females collected. \*\* Adult brooding females collected and one or more infestations took place.

Table 2. Mussel release information

Species	Date	Stream	Mean Size (mm)	Number
<i>Anodonta implicata</i>	7/22/2015	Rappahannock River	42.5	9,635
<i>Lampsilis radiata</i>	9/11/2015	Pamunkey River	41.8	2,225
	9/22/2015	Meherrin River	43.7	8,909
<i>Ligumia nasuta</i>	8/28/2015	Nottoway River	36.9	13,351
<b>Total</b>				<b>34,120</b>

#### Eastern Shore Bat Acoustic Survey

Five acoustic stations have been established on the Eastern Shore to document passage rates and species assemblages during the active season, March through November. Anabat detectors are placed on existing towers or lighthouses at Cedar, Hog, Chincoteague, and Smith Islands and on the South Rappahannock Light Tower off Silver Beach. The objectives of this project are to 1) gather baseline data on bat passage rates in relation to climatic variables, and 2) determine species assemblages and potential changes through the active season. Data are currently being recorded and no analysis of data has been completed.

## SECTION B.3 FEDERAL CONSISTENCY

During the period of April 1, 2015 and September 30, 2015, the Office of Environmental Impact Review/Federal Consistency (OEIR) reviewed 83 development projects and management plans for consistency with the Virginia Coastal Zone Management Program (VCP). This represents 79% of the total amount of projects reviewed (105) during this period. Major state projects accounted for 22 projects, 40 were federal actions, and 43 were federally funded projects. The 40 federal actions included 15 federal agency activities, 25 federal licenses and approvals, and 0 outer continental shelf projects. The 15 federal agency activities included 6 projects submitted under the residual category pursuant to the federal consistency regulation (15 CFR 930.31(c)), all of which consisted of U. S. Department of Housing and Urban Development (HUD) mortgage insurance projects. All federal consistency determinations and federal consistency certifications were completed within the established legal deadlines.

The OEIR continues to provide informal training on federal consistency requirements to consultants who prepare consistency documents for federal agencies and applicants for federal permits and maintains a website for Federal Consistency Reviews which can be accessed through DEQ's main webpage or found at <http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx>. The OEIR webpage is updated weekly.

Table 1 depicts federal projects in Tidewater Virginia reviewed from 10-1-14 to 3-31-15.

<b>TYPE OF FEDERAL PROJECTS REVIEWED*</b>	<b>NUMBER OF PROJECTS COMPLETED</b>	<b>REVIEW PERIOD</b>
*Direct Federal Actions	15	30-60 Days
** Federal Activities (approvals & permits)	25	90 Days
***Federally Funded Projects	43	30 Days
Outer Continental Shelf	0	45-60 Days
<b>TOTAL</b>	<b>83</b>	<b>30-90 DAYS</b>

\*Includes 6 FCDs reviewed under the residual category of Subpart C of the Regulations. (eg. HUD Mortgage Insurances and USDA assistance projects).

\*\*These are projects reviewed under Subpart D of the Regulations. These projects include individual permits issued pursuant to Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers. Nationwide and regional general permits are certified every five years or as requested by the Norfolk District U.S. Army Corps of Engineers.

\*\*\* These include federal assistance to state and local government reviewed under Subpart F.

## FEDERAL PROJECTS REVIEWED FOR CONSISTENCY WITH THE VCP from 4/1/15 to 9/30/15

### I. Federal Agency Projects

*The following projects are examples of federal agency projects subject to Subpart C of 15 CFR 930.33(a).*

Dolphin Wahoo Amendment 7 and Snapper Grouper Amendment 33 - Dolphin Wahoo Amendment 7 and Snapper Grouper Amendment 33 would allow dolphin and wahoo that are lawfully harvested in Bahamian waters to be exempt from the requirement that they be maintained with head and fins intact in the Atlantic exclusive economic zone (EEZ), provided valid Bahamian fishing and cruising permits are on board the vessel, and the vessel is in transit through the Atlantic EEZ. A vessel is in transit through the Atlantic EEZ when it is on a direct and continuous course through the Atlantic EEZ and no one aboard the vessel fishes in the EEZ. All fishing gear must be appropriately stowed, terminal gear (i.e., hook, leader, sinker, flasher, or bait) must be used with an automatic reel, bandit gear, buoy gear, hand line, or rod and reel must be disconnected and stowed separately from such fishing gear. Sinkers must be disconnected from the down rigger and stowed separately. All persons aboard the vessel must also have stamped and dated passports to prove that the vessel passengers were in The Bahamas. DEQ concurred that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Chesapeake Bay Native Oyster Restoration Project on the Piankatank River in Mathews and Middlesex Counties - The Norfolk District of the U.S. Army Corps of Engineers (Corps) has submitted a draft Environmental Assessment for the Chesapeake Bay Native Oyster Restoration Project on the Piankatank River in Mathews and Middlesex Counties. The proposal consists of the construction of new sanctuary reefs at 6-12 feet mean lower low water (MLLW) in the lower Piankatank River. The reefs will be built using artificial substrate materials, or a combination of the alternative substrate and oyster shell to construct new sanctuary oyster reefs. Considering post-construction settling of material, reefs will be built to an elevation of one foot above existing bottom. If settling occurs post-construction, additional material may be placed on these reefs as an adaptive management measure to ensure the height of the reef is at an elevation of one foot above the existing bottom. Specific locations for the placement of reefs will be based on conditions where settling is not anticipated. Using data collected by National Oceanographic and Atmospheric Administration (NOAA) and information provided by Virginia Marine Resources Commission (VMRC), it is estimated that the project area contains more than 130 acres appropriate for the construction of new oyster reefs. New sanctuary reefs would be constructed on unvegetated sites that do not contain existing oyster reefs or remnants of previously existing reefs. Alternative substrate materials that could be used to construct the new oyster reefs include concrete rubble (recycled concrete) and related “materials of opportunity” generated by demolition of concrete structures, granite, limestone marl, and shaped concrete structures (reef ball type structures, pyramids, modules, and “castles,” for example). The draft EA states that alternative substrate materials that could be used to construct the new oyster reefs include concrete rubble (recycled concrete) and related “materials of opportunity” generated by demolition of concrete structures, granite, limestone marl, and shaped concrete structures (reef ball type structures, pyramids, modules, and “castles,” for example). However, the Virginia Marine Resources Commission expressed concern over the possible use of “materials of opportunity” as a substrate for the oyster restoration sites and stated that it is unlikely to support the use of the material. However, design drawings the Corps submitted with its Joint Permit Application show the use of VDOT A1 granite material, which VMRC would support. Accordingly, DEQ conditionally concurs that the proposal is consistent to the maximum extent practicable with the Virginia Coastal Zone Management Program provide the Corps obtains and complies with VMRC’s authorization. In accordance with the Federal Consistency Regulations conditional concurrence becomes an objection under 15 CFR Part 930, section 940.43 should the condition of the concurrence not be met.

Victory Center - The U.S. General Services Administration (GSA) has issued a Request for Lease Proposal for office space to house the Transportation Safety Administration (TSA). In response, EREH Phase I, LLC (applicant) is planning to construct the Victory Center in the City of Alexandria. The GSA is seeking up to 625,000 rentable square feet of space to serve as the headquarters of the TSA. The GSA is considering a potential lease site that is approximately 16 acres, located along Eisenhower Avenue, east of Van Dorn Street, in the City of Alexandria. The project area is currently nearly all impervious, with an existing office building with 563,635 square feet of above ground gross floor area, along with 1,289 parking spaces. The proposed project would utilize the existing building and add a new 158,000 square foot building to the site, along with structured parking. This plan is in keeping with plans previously approved by the City of Alexandria for redevelopment of the site. DEQ concurred that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Replacement Small Arms Range at USCG Training Center Yorktown - The United States Coast Guard proposes to demolish the existing outdoor small arms firing range and its associated offices, classroom and support spaces at the U.S. Coast Guard Training Center Yorktown. Three small storage buildings in the immediate vicinity of the range that provide range support will also be demolished. The demolition phase of the project includes removal of the approximately 16-foot high earthen berm around the existing outdoor firing range. A new 23,000 square foot indoor range facility will be constructed within the footprint of the existing facility. The structure will also house staff offices, classrooms, locker rooms, and all other personnel support spaces required for the firing range. Ammunition will continue to be stored in existing ammunition storage lockers located to the east and immediately adjacent to the existing range. This consistency determination is submitted as a federal agency activity pursuant to the federal consistency regulation 15 CFR 930.31(b). DEQ concurred that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

## **II. Residual Category**

*The following consistency determinations were submitted as a residual category of Subpart C pursuant to the federal consistency regulation 15 CFR 930.31(c).*

Freeman Drive Apartments - The U.S. Department of Housing and Urban Development (HUD) proposes to provide a loan under HUD Section 221(d)(4) to Oppenheimer Multifamily Housing and Healthcare Finance to finance the construction of the Freeman Drive Apartments. The Section 221(d)(4) program assists private industry in the construction or rehabilitation of multifamily rental and cooperative housing for moderate-income and displaced families. HUD has submitted a Federal Consistency Determination for the proposed construction of a five- building, 295-unit multi-family apartment complex with five associated detached garage buildings. The proposed site is a previously cleared 9.97-acre parcel of land in the City of Hampton, Virginia. Access to the site will be via Freeman Drive. The property is bounded by undeveloped land and residential properties to the north; Freeman Drive and undeveloped wooded land to the east; undeveloped wooded land and multi-family apartments to the south; and Coliseum Drive to the west. This consistency determination is submitted as a residual category pursuant to the federal consistency regulation 15 CFR 930.31(c). DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Church Street Station Studios - The U.S. Department of Housing and Urban Development (HUD) proposes to provide HOME Investment Partnerships Program (HOME) funding and a Community Development Block Grant to Virginia Supportive Housing to finance the development of the Church Street Station Studios Project. The HOME program provides formula grants to fund activities including building, buying, and/or rehabilitation of affordable housing for rent or purchase by low-income people. The proposed project involves the construction of one five-story building containing studio units, along with associated parking and exterior community space. The development, located at 2000 Church Street in the City of Norfolk, will provide housing units for low-income and homeless adults. The site is a 1.2-acre parcel of undeveloped land, surrounded by light

industrial and commercial properties. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

### **III. Federal Activities (Permits, Licenses and Approval)**

*These projects were reviewed pursuant to Subpart D of the Consistency Regulations (15 CFR §930.53)*

Kroger at Grassfield - The Norfolk District of the U.S. Army Corps of Engineers is reviewing a Joint Permit Application submitted by Kroger Limited Partnership 1 (applicant) for the issuance of an individual permit pursuant to Section 404 of the Clean Water Act (CWA) (Public Law 95-217) for impacts to jurisdictional waters of the United States from the proposed Kroger at Grassfield in the City of Chesapeake. The project is located on an approximately 24-acre site at the southeast corner of the intersection of Dominion Boulevard (Route 17) and Cedar Road (Route 165) in the Great Bridge section of Chesapeake. The project site was part of a farming community that was under cultivation for decades. Currently the majority of the parcel consists of mowed grassland, a small woodlot, overgrown field and approximately 2.1 acres of non-tidal wetlands and open waters. The proposed grocery facility will include store buildings, a fuel center, parking lots, drive aisles, utilities, stormwater best management practices (BMPs), and appurtenant structures necessary to support a grocery store and fuel center. The applicant proposes to fill 0.729 acres of emergent wetlands, 0.638 acres of scrub/shrub wetlands, 0.683 acres of forested wetlands, and 0.058 acres of open waters. Unavoidable impacts will be mitigated through the purchase of mitigation credits at an approved mitigation bank serving the watershed. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Middle Peninsula Regional Airport T-Hangar Development - The Middle Peninsula Regional Airport Authority (applicant) is seeking approval from the Federal Aviation Administration (FAA) to add hangars to the Middle Peninsula Regional Airport located in King and Queen County, Virginia. The airport must meet FAA requirements and is seeking a Categorical Exclusion from a formal environmental review via the completion of a CATEX Form. Since the site is located in Virginia's Coastal Zone, a Federal Consistency Certification was submitted to DEQ. The proposed project includes the construction of two T-hangars and associated infrastructure (taxi-lanes and relocated access road). The hangars will be located adjacent to existing hangars. Each hangar will be 7,497 square feet and will be divided into six separate units for the storage of small aircraft. The hangars are located on land that was previously disturbed during the construction of the airport in the 1940's. The project includes the construction of 4,450 square yards of asphalt taxi-lanes adjacent to and between the hangars. The total area of land disturbance is approximately one acre. This consistency certification is submitted pursuant to the federal consistency regulation 15 CFR 930 Subpart D - Consistency for Activities Requiring a Federal License or Permit. The applicant certifies that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Columbia Gas Honeywell MD-831030 Replacement - Columbia Gas Transmission (Columbia Gas) is proposing the replacement of existing turbine meters at its Honeywell Measuring Station 831030 with ultrasonic meters in the City of Hopewell. The activity has been previously authorized by the Federal Energy Regulatory Commission (FERC), under Columbia Gas's Blanket Automatic Authority Certificate. The project will be submitted to FERC at the end of the year and will need to include proof of compliance with the Coastal Zone Management Act. Therefore, Columbia Gas submitted a federal consistency certification (FCC). The project includes the installation of a new building and the removal and replacement of existing turbine meters. The building will be used to meter and measure the inflow and outflow of gas as it comes into and out of the building. The project site consists of a fenced gravel lot that includes several small buildings as well as aboveground pipeline. All work will occur within the existing fenced lot and will have a total earth disturbance of 0.07 acres. According to the FCC, the project is consistent with the enforceable policies of the Virginia

Coastal Zone Management Program. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Tangier Island Airport, Proposed Terminal Building - The Tangier Island Airport (applicant) has submitted a Federal Consistency Certification (FCC) for the proposed construction of a replacement airport terminal building at the Tangier Island Airport (TGI) located on Tangier Island, Virginia. The terminal will replace a terminal building that was removed approximately ten years ago due to its deteriorating condition. The new terminal will consist of a prefabricated structure that will be barged to Tangier and set in place on pylons. The new terminal will measure approximately 1,000 square feet and include restrooms, a flight planning area, janitorial closet, storage room, and an open area for passengers. The terminal will be located in the same location as the previous terminal that was demolished, adjacent to the existing airport apron and airport access road. A ramp for handicap access and porch will be included within the footprint of the proposed terminal and located along the west side of the building. The proposed project will occur entirely on airport property and totals approximately 0.2 acres of direct impact while the indirect Area of Potential Effect (APE) is approximately 4 acres. A terminal construction staging area will be provided on the existing apron (within the indirect APE) and immediately north of the terminal site. The applicant has submitted a Federal Consistency Certification that finds the proposed action consistent with the enforceable policies of the Virginia Coastal Zone Management Program. DEQ determined that the project was consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

I-564 Intermodal Connector Project - Cherry Hill Construction, Inc. plans to construct a four-lane divided highway, local connectors, bridges, overpasses, stormwater management areas and other infrastructure associated with the Interstate-564 Intermodal Connector project in the City of Norfolk. The project includes the reconfiguration of the commercial vehicle inspection station for Naval Station Norfolk. The project qualifies for an Individual Permit from the U.S. Army Corps of Engineers, which necessitates review under federal consistency regulations. Unavoidable permanent impacts associated with the project total approximately 4.44 acres of permanent impacts to water of the United States. The project will be constructed on land owned by the Norfolk Southern Railway Company, United States of America, Virginia Port Authority and the Commonwealth of Virginia. The Federal Highway Administration is administering the project. According to the federal consistency certification (FCC), the project will be consistent with the enforceable policies of the Virginia Coastal Zone Management (CZM) Program. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Antares 200 Configuration Expendable Launch Vehicle - The National Aeronautics and Space Administration (NASA) is proposing to authorize the Virginia Commercial Space Flight Authority (VCSFA) and Orbital ATK to process, static fire test, and launch the 200 Configuration Antares Expendable Launch Vehicle (ELV) from Wallops Flight Facility. NASA has prepared a draft supplemental EA, including an FCD, to address impacts on this new ELV, which is a proposed upgrade to the Antares ELV that suffered a catastrophic failure shortly after liftoff in October 2014. In response to this mishap, Orbital ATK has proposed an accelerated introduction of an enhanced version of Antares, which is called the 200 configuration. This version was not considered in the original environmental analysis for the construction and operation of the launch area. The EA also addresses events in case of a launch failure. According to the FCD, the project will be consistent with the enforceable policies of the Virginia Coastal Zone Management (CZM) Program. NASA does not anticipate direct impacts to wetlands or dunes. Static fire tests and launches would generate emissions; however, the air emissions would be temporary and infrequent. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

#### **IV. Outer Continental Shelf Activities**

No projects were reviewed during the time period of this report for this category.

## V. Federal Funds

DEQ completed the review of 43 projects from April 1 to September 30, 2015 that were submitted under 15 CFR, Part 930, Subpart F for federal financial assistance to state and local governments. The projects break out as follows:

- 3 new home constructions
- 13 home rehabilitations/weatherizations
- 3 new multifamily housing constructions
- 6 multifamily housing redevelopments
- 2 demolitions of blighted property
- 6 community/state park improvements and land acquisitions
- 2 wastewater collection system improvement
- 1 ICPRB EPA grant application
- 2 water line construction
- 1 fire station improvement
- 1 broadband infrastructure installation
- 3 land acquisition projects

### **Examples of Federally –funded projects which were reviewed:**

Westervelt/TNC Acquisition by the Virginia Department of Game & Inland Fisheries - The Virginia Department of Game and Inland Fisheries (DGIF) plans to utilize federal financial assistance through DGIF's Statewide Land Acquisition Initiative Grant (W95L) to purchase 2,046 acres of wetland and upland habitat in Sussex County known as the Westervelt/TNC tract. The property would expand the adjacent Big Woods Wildlife Management Area (WMA) by nearly 100%, adding an additional 2,046 acres to the existing 2,200-acre WMA. The Westervelt/TNC tract is comprised of approximately 1,565 acres of upland pine forest and 435 acres of mature swamp forest. The tract has been managed as industrial timberland for over 30 years. It is currently comprised of plantation loblolly pine stands aged 1-25 years and floodplain swamp forest which is over 100 years in age. The location of the Westervelt/TNC tract, its prior history of use, resident natural communities and topography indicates habitat enhancements will likely focus on forest management activities, with emphasis on the continued development and maintenance of pine savannah systems. Commonly accepted practices consistent with forest management Best Management Practices will be employed. Once the site is acquired and added to the Big Woods Wildlife Management Area, DGIF will open the area for public access wildlife viewing, fishing, and hunting. No construction is proposed. DGIF has submitted a Federal Consistency Certification that finds the proposed action consistent with the enforceable policies of the Virginia Coastal Zone Management Program. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

CDGB, HOME, and Capital Fund Housing Projects - The Alexandria Redevelopment and Housing Authority seeks a determination of the applicability of requirements under the Coastal Zone Management Act of 1972 and the Virginia Coastal Zone Management Program, for the Home Rehabilitation Loan Program; Flexible Homeownership Assistance Program; Alexandria Neighborhood Stabilization Program; Rental Accessibility Modification Program; Housing Development Assistance; and Capital Fund for the development, financing, and modernization of public housing. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Roxbury Industrial Park Broadband - Charles City County is applying to the Virginia Department of Housing and Community Development to fund the construction of broadband network infrastructure through the U.S. Department of Housing and Urban Development's Community Development Block Grant Program. The

project consists of 8 miles of conduit and fiber network construction in the Roxbury area, in the northwestern portion of the County. The approximately 8 miles of linear fiber construction will start at an existing tier of one provider's network, at the intersection of U.S. Route 60 and State Route 106. The route will follow the road right-of-way south for 1 mile, and cross the Chickahominy River and its associated wetlands via an aerial suspension. From there, the network will continue south for one more miles and cross the CSX Railroad, proceeding to the northern entrance of the Roxbury Industrial Park. DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Single-family Home Construction at 14 Fulton Street - The Hampton Redevelopment and Housing Authority (HRHA) proposes to use grant funds from the U.S. Department of Housing and Urban Development's HOME program for a Community Housing Development Organization (CHDO) affordable home construction project for low-income residents. Specifically, Peninsula Habitat for Humanity plans to construct a new single-family house on a vacant lot at 14 Fulton Street in Hampton, using as much as \$35,000 of matching HOME grant funds. The house will be sold to a low- to moderate-income buyer. The construction plan calls for a ranch-style 3-bedroom, 2-bath house in a design named "The Janet Model." DEQ determined that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

## **SECTION B.4 PROGRAM CHANGES**

Program changes to the Virginia CZM Program's enforceable policies are necessary to address previously identified issues related to state-listed threatened and endangered species and updates to code and ordinances for erosion and sediment control, the Chesapeake Bay Preservation Act and others. More changes to state legislation are expected during the upcoming General Assembly session. A previous draft program submission for the Department of Game and Inland Fisheries also raised questions from NOAA staff about which code and ordinance sections could be considered as enforceable policies.

During a conference call between Virginia staff and the NOAA Federal Interest Team in June, 2015, the merits of developing new narrative policies to replace the current code and ordinance based policies were discussed. Call participants agreed that this approach has many advantages and could help address the program change issues described above. Advantages of narrative policies would include: 1) reducing the number of enforceable policies and clarifying their intent, and 2) minor changes to the policy would not require the entire policy to be updated. A hybrid approach, combining narratives and statutes together, could also be used.

Virginia CZM staff presented a recommendation to the Coastal Policy Team on September 29, 2015 to move toward developing narrative enforceable policies for Virginia to replace the current policies. The Policy Team agreed that this would be beneficial and directed staff to use available funds to begin this process. The Virginia CZM Program has \$30,000 available in FY 14 and another \$30,000 in FY15 that are earmarked for work in this area. Next steps include briefing leadership at the Department of Environmental Quality on this recommendation, and if approved, moving forward with a grant scope of work for a pilot project to develop new narrative enforceable policies.