

Healthy Waters in the Coastal Zone  
FY17 Task 8  
Final Report, Grant Period October 1, 2017 to Sept 30, 2018  
Grant# NA17NOS4190152  
Compiled by Todd Janeski, VCU, Department of Life Sciences  
Virginia Department of Conservation and Recreation,  
Division of Natural Heritage

This project was funded by the Virginia Coastal Program at the Department of Environmental Quality through Grant FY16: NA17NOS4190152 of the National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Management, under the Coastal Zone Management Act of 1972, as amended.



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#### Overview

The VCU Environmental Scientist/Analyst, as retained by the Virginia Department of Conservation and Recreation, Division of Natural Heritage, served as the Program Manager of the Virginia Healthy Waters Program (HWP). The VA HW Program Manager maintains access to the facilities and expertise of the VDCR and continued to integrate the skills and abilities of the VCU Center for Environmental Studies (CES). The position also serves as a liaison between DCR and the CES at VCU to promote joint, applied research and outreach projects. This includes the oversight of programs, projects, grants and grant budgets, providing technical support to VDCR Natural Heritage Division and the Virginia Coastal Zone Management Program, as it relates to coastal zone ecology, management, and restoration.

Additionally, this grant supported the VA Oyster Shell Recycling Program at the VCU Rice Rivers Center as an effort of Healthy *Estuarine* Waters to reclaim waste oyster shell and return it to the Chesapeake as part of Bay restoration activities.

Despite the late award due to unfortunate internal issues at the VCU, considerable effort was made to meet and exceed progress on the advancement of the Healthy Waters Program and the complete the work on time, as per the contract.

#### **Healthy Waters Program**

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.

The Healthy Waters Program, at the VDCR Natural Heritage Division saw significant growth during the reporting period. Programmatically, the assessment of program resources and needs has been an ongoing process of discussions regarding staff resources with senior staff, data collection to support a statewide expansion and the development of internal staff capacity. Data gaps and data integration continued to be priorities to integrate existing VCU collected INSTAR data into the NHD data explorer with 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, the resource and staffing needs to conduct field assessments and the ability to result in measurable, on the ground conservation actions. This reporting period contributed to supporting a small percentage of two field staff from the NHP Assessment Section through the sampling season. This improved capacity permits the collection of data by additional field personnel aside from specific grant related activities and staff at VCU.

The collection of data will be in the raw form still requiring the development of models to interpret such information to make relevant to the Program as a whole. This process provides the Healthy Waters Program the ability to identify and track trends in Healthy Waters

During the reporting period, the Program Manager continued to participate in the Chesapeake Bay Program, Goal Implementation Team for Healthy Watersheds. As part of this GIT, the Program Manager put considerable effort toward the Chesapeake Bay Management Strategy development process, this included the coordination of VA Departments of Conservation and Recreation, Environmental Quality and Forestry. To continue the progress being made by the Commonwealth, the HW Program Manager coordinated with the Heritage Division staff to begin the process of conducting a threat assessment to the 2014 HW sites in the Chesapeake Bay. The outcome is an identified list of HW sites that are most vulnerable to changes and most likely to be lost to future changes to meet the goal of protecting 100% of the 2014 list by 2025.

An analysis and prioritization of the SCUs, for the purpose of identifying those SCUs deemed “most valuable”, continued to be a team effort to guide conservation planning on a watershed scale ensuring ecologically healthy aquatic conditions are maintained. This effort would be a slightly divergent tack from the more opportunistic approach of conservation targeting and direct efforts into specific areas of the Commonwealth. This builds upon the efforts in the Chowan basin and development of the *A-I Criteria for Ecologically Healthy Watershed Conservation* to identify conservation actions in Raccoon Creek (Nottoway River) and bridges the Heritage Sections of Healthy Waters, Assessment, Protection and Stewardship. To support this approach, the VDCR HWP developed and submitted a proposal to the US Endowment of Forestry and Communities to support the Healthy Waters Program. That proposal included a field position that would directly work in support of conservation and protection actions to ensure ecologically healthy aquatic conditions are maintained under the Healthy Waters Program and would have established a land trust to manage those protected resources. However, DCR was informed that despite the high ranking of the proposal, it was not awarded. Constructive feedback from the proposal indicated that the high ranking was due to the articulated need being met but was not funded because the region was considered too small. This poses a new challenge of identifying an appropriate amount of field work for field personnel to result in protected lands and directly, protected healthy waters sites. The partners of this application included the Virginia Chapter of the Nature Conservancy, Albemarle-Pamlico National Estuary Partnership, North Carolina Department of Environmental Quality, VA DEQ, VA DOF and a private land broker.

The HW Program Manager met with a regional land broker to identify opportunities to inform land protection and direct acquisition. Several basins were identified with a specific focus on the Chickahominy River. The HWP Manger met with faculty to develop an internship, course or special study to permit those data to be cross-walked with INSTAR to inform the identification of opportunities most beneficial to the HWP. The 2017 sampling season included a focused assessment of the Chickahominy River in support of other CZM funded projects and was completed and delivered to DCR in 2018. The Program Manger oversaw the delivery of products and data, to support this project.

Through funding from EPA 319, the Program Manager continued to manage the process by which watersheds and waterbodies are identified as Healthy and how the Program communicates

outward. Continued effort was put toward sharing and communicating the Stream Ecological Health Assessment for the Chowan River Basin, Virginia and North Carolina. More recently, the APNEP Director requested assistance from the HWP Manager in drafting an improved MOU between the states of NC and VA that would advance land conservation goals, protection of aquatic integrity and implement the APNEP Comprehensive Conservation Management Plan.

Through funding from the Chesapeake Bay Implementation Grant (CBIG), the HWP manager, DCR staff and VCU focused efforts into two new assessment areas. The first is to look at the protection measures implemented by local partners to protect lands in the Dragon Run watershed with the outcome to determine if lasting effects would be realized on identified healthy waters sites. This GIS-based change analysis will be an important tool for TNC, Natural Heritage, and DEQ to determine if land conservation actions will have a direct benefit on maintaining ecological health in aquatic systems. Second, the team partnered with DOF to develop an analysis of those areas with applied forestry BMPs to be surveyed to determine if those protection and conservation actions have resulted in maintaining those sites identified as ecologically healthy. DOF shared an extensive geospatial coverage of harvested catchments in the Chesapeake Bay basin of Virginia to inform this analysis. VCU will use GIS tools to identify timbered (clear-cut) catchments that were assessed by INSTAR/HWI during previous years, thus providing the unique opportunity to conduct pre- and post-harvest stream assessments based on standardized protocols for ecological assessment. This work will be the first such assessment conducted in Virginia and represents a unique opportunity to partner with DOF on possible logging impacts to aquatic resources. Conversely, the work could validate established protocols for low-impact timber harvest in Virginia. The Commonwealth has committed to the Chesapeake Bay Program Healthy Watershed Goal of protecting 100% of those healthy waters sites identified in the 2014 data. The Commonwealth has few opportunities for direct comparison across years with the added benefit of using similar methods and datasets. These results will inform and outline a planned approach to land conservation in an important Chesapeake Bay watershed but also to meet the Bay Program Healthy Watershed Goal.

The Program Manager continued to meet with both the James River Association to discuss how the INSTAR data and HWP might inform their protection actions in their respective regions. Currently, the James River Association continues to base protection recommendations on guidance from the Eastern Brook Trout Joint Venture that generalizes conclusions about watershed condition and habitat suitability for brook trout. Improved data sharing of the INSTAR and prioritizations of SCUs would do much to advance those efforts. The HWP also met with USEPA Region 3 Office to discuss better integrating HWP data into the Watershed Resources Registry (<http://watershedresourcesregistry.com/>).

### **Healthy Estuarine Waters-VA Oyster Shell Recycling Program**

A small portion of the grant from the VA Coastal Zone Management Program to the VCU Rice Rivers Center's VA Oyster Shell Recycling Program. The goals are to reclaim waste oyster shell and return it to the Va portion of the Chesapeake. The grant supported the development of banners, stickers, purchase of containers and supported the bulk movement of shell from local storage sites to the VCU Rice Rivers Center. The Program saw considerable growth during the project period with expansion of operations that included a continued broadening of the

geography of the collection and to fully engage in applied restoration. The majority of support sustaining the Program is from an anonymous charitable contribution but also is supported through assistance from the VCU Foundation, Keep Virginia Beautiful, Virginia Green Travel Alliance, Dominion Energy and other small donations.



The program's growth into applied restoration took a significant increase in effort. Partnerships with the commercial fishing industry continues to realize benefits to returning shell to the ecosystem. The partnership with J&W Seafood increased to include support from EJ Wade Construction to assist in bulk movement of shell from the Rice Rivers Center to Gwynn's Island. This increase in capacity allowed a planting season which resulted in returning nearly 7 million oysters to the Piankatank. The program expansion also included a new partnership with TNC and MRC to develop 15 new acres of sanctuary reef with crushed stone that was covered in a veneer of spat on shell from recycled program shell. A press event was held in the summer, 2018 to celebrate the partnership and creation of new areas.





The VOSRP was visible at several additional events during the reporting cycle, including a private event at the Virginia Executive Mansion, two Ducks Unlimited oyster roasts, the Oystoberfest event and several times on CBS6 and on the Virginia This Morning Show. The VOSRP manger met with Chesterfield County to explore expanding the program into the County and began conversations with the Northern Virginia Regional Commission to develop northern Virginia.

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