

Healthy Waters in the Coastal Zone  
FY16 Task 8  
Final Report, Grant Period October 1, 2016 to Sept 30, 2017  
Grant# NA16NOS4190171  
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: NA16NOS4190171 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 VA DCR, considerable effort was made to meet and exceed progress on the advancement of the Healthy Waters Program.

#### **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 measureable, 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. The focus of the sampling season was focused on the Chickahominy River in support of other CZM funded projects.

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. Data delivery to update the State-identified Healthy Waters was provided to the Bay Program and a vulnerability assessment was initiated. The vulnerability assessment is intended to identify those healthy sites most likely to be affected by changes in land use or land cover, resulting in a loss of healthy sites. This assessment is being conducted by the NHP staff under the Data Management Section and will be shared with the Bay Program to inform the Management Strategies to ensure 100% of State identified healthy waters remain in 2025. Additionally, an analysis and prioritization of the SCUs was initiated to result in an identification of those SCUs deemed “most valuable” 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 course would build 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). The outcome would bridge the Heritage Sections of Healthy Waters, Assessment, Protection and Stewardship.

The VDCR HWP began the process to develop and submit a proposal to the US Endowment of Forestry and Communities to support the Healthy Waters Program. The proposal, in concept would support assessment work that has been completed under other grant funding and implement conservation measures on the ground to ensure the protection of ecologically healthy aquatic conditions are protected. This proposal would include 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. Likely partners on an application will include Nature Conservancy, Albemarle-Pamlico National Estuary Partnership, North Carolina Department of Environmental Quality, VA DEQ, and VA DOF.

The Watershed Integrity Model, used and developed by the Natural Heritage Division and VCU, was updated and streamlined to improve the utility and integrate new data from the latest sampling. The new model referred to as the ConservationVision Watershed Model, includes four primary components are: Watershed Integrity, Landscape Position, Soil Sensitivity, and Land Cover. A survey was distributed to stakeholders and potential users of the new model to obtain feedback on the changes and proposed weighting of various parameters. The components of the model were informed by the integration of factors and weighting of parameters that included hydrological zones, topography, and pollution potential. Presentations by Heritage staff have been made at several venues to vet the new model.

Through funding from EPA 319, the Program Manager continued to manage the process by

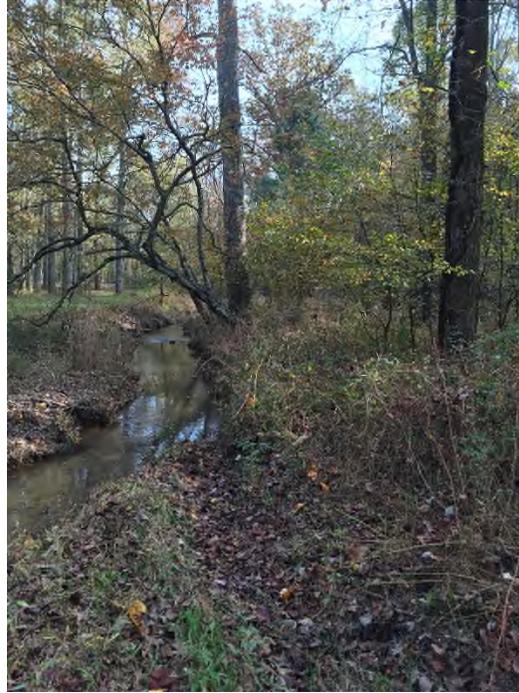
which watersheds and waterbodies are identified as Healthy and how the Program communicates outward. Continued effort was put toward sharing and communicating the Stream Ecological Health Assessment for the Chowan River Basin, Virginia and North Carolina; Watershed-based Ecological Health Conservation Plan for Raccoon Creek. While not a coastal basin, this project will have significant influence on the development and implementation of conservation planning activities specifically related to Healthy Waters. The Albemarle-Pamlico National Estuary Partnership invited the Program Manager to present at the November Albemarle-Pamlico Sound Ecosystems Symposium on the work in the Chowan Basin.

The Program Manager continued to meet with both the James River Association and the Friends of Rappahannock River to discuss how the INSTAR data and HWP might inform their protection actions in their respective regions. Currently, the James River Association was basing 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/>).

#### Photos of INSTAR Sampling



*Aphredoderous sayanus* (Pirate Perch) and *Clinostomus funduloides*



*Luxilus cornutus* (Common shiner) *Etheostoma olmstedti* (Tessellated darter)

### **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 broadening of the geography of the collection to include applied restoration. The majority of support sustaining the Program is from charitable contributions through the VCU Foundation, Keep Virginia Beautiful, Virginia Green

Travel Alliance, Dominion Energy and other small donations.



The partnership, which began in 2016, with the WE Kellum Oyster and the Friends of Rappahannock resulted in the restoration of a historic oyster rock in Carter's Creek using recycled shell. A one acre reef was deeded and shell was applied by the VOSRP and WE Kellum Oyster with a dedication that took place at the Tides Inn during June, 2017. The reef was also selected by the VA Department of Conservation and Recreation as a Virginia Treasure and renamed from Carter's Rock to Ellery Kellum Rock in memory of the founders of WE Kellum Oyster.





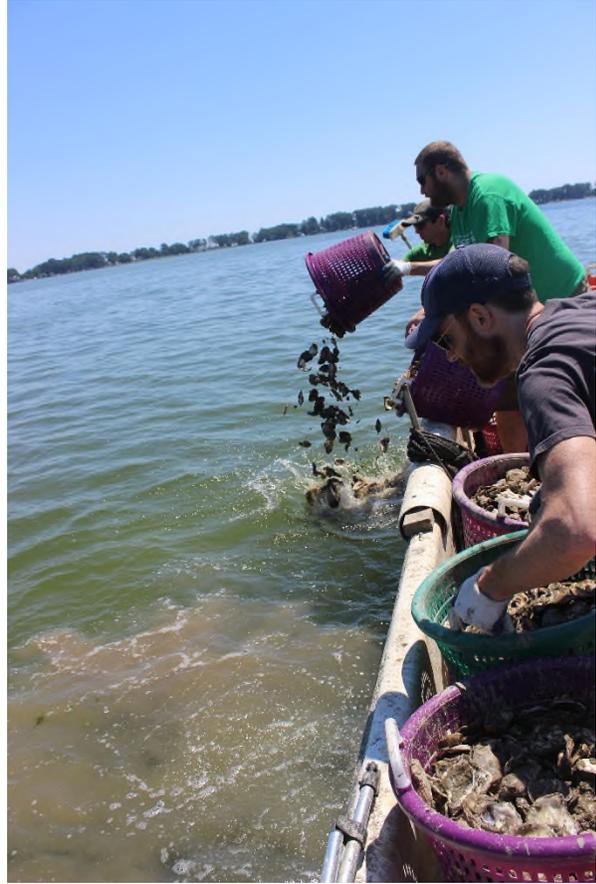


The Program brokering of a relationship with the seafood industry resulted in a partnership with Island Seafood/J&W Seafood of Deltaville resulting in a very successful first season of applied restoration. Island Seafood, located on Gwynn's Island, contains two 4000 gallon spat setting tanks that were used for the setting of larval oysters on recycled shell. During the spring, 2017 the shell were seeded with 8M eyed, diploid oyster larvae that were planted in the Piankatank River. Richmond CBS affiliate, Channel 6, joined the VOSRP to provide very valuable media coverage of the effort.









The VOSRP was visible at several additional events during the reporting cycle, including the Williamsburg Winery for their Swine and Brine, at the Back to the Bay Day including installing a new shell bin at Mason Neck State Park, the Shockoe on the Halfshell, two Ducks Unlimited oyster roasts, the Oystoberfest event and on the CBS6 on the Virginia This Morning Show.

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