

Commonwealth Coastal & Marine Policy Fellowship

2021 Host Office Descriptions

FELLOWSHIP PROGRAM DESCRIPTION

Virginia Sea Grant (VASG) and the Virginia Environmental Endowment (VEE) are now soliciting applications for the 2021 Commonwealth Coastal & Marine Policy Fellowship. This twelve-month paid fellowship is intended to provide educational and professional development opportunities for post-graduates interested in Virginia's coastal and marine resources. In addition to learning about state-level policy and management processes, fellows receive on-the-job training with a Virginia state agency or non-governmental organization (NGO), working to address important coastal and marine resource issues. Selected finalists for the fellowship will interview with prospective host offices to find the best match. VASG, VEE, and their partners anticipate supporting a minimum of two post-graduate fellows starting on October 1, 2021. This announcement and guidance on how to submit your application can be found at: <https://vaseagrant.org/>

PARTICIPATING HOST OFFICES

Each office listed below has expressed interest in hosting a fellow during the 2021 fellowship year. Additional host offices and projects may be added before the fellowship application deadline. Please visit <https://vaseagrant.org/fellowship-research-funding/commonwealth-fellowship-home/> for the current list.

Department of Conservation and Recreation

- *Project: Verification of Shoreline Management BMPs for Chesapeake Bay TMDL Pollutant Reduction Credits*

Department of Environmental Quality

- *Project: Watersheds & Local Government Assistance Program Technical Methods and Policy Improvement for Specific Water Quality Impairments: Dissolved Oxygen and pH*

Department of Wildlife Resources

- *Project: Climate Change Preparedness and Planning*

Office of the Secretary of Natural Resources

- *Project: Commonwealth of Virginia Coastal Master Plan Initiative*

The Nature Conservancy

- *Project: Advancing Responsible Offshore Wind Development in Virginia*

Applicants are strongly encouraged to visit host office websites for more details on their missions and activities. Each host office has shared descriptions of potential projects available to finalists during their fellowship. While final projects may vary based upon the requirements of the host office and the skillsets of the selected fellow, these examples do provide a representation of the host office's current needs.

In Collaboration With



VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION SHORELINE EROSION ADVISORY SERVICE

Project Title: Verification of Shoreline Management BMPs for Chesapeake Bay TMDL Pollutant Reduction Credits

Location: Division of Soil and Water Conservation Eastern Area Office, Tappahannock, VA

Description of Host Office

The Department of Conservation and Recreation (DCR) is the state's leading natural resource conservation agency. DCR protects what Virginians care about—natural habitats, parks, clean water, dams, open space, and access to the outdoors. DCR enables and encourages people to enjoy and benefit from natural and cultural resources. Through its Division of Soil and Water Conservation, DCR works with 47 soil and water conservation districts, farmers, urban and suburban landowners, and other land managers to reduce nonpoint source water pollution. DCR works to reduce nutrients and sediment that can impact the quality of waters, including the nation's largest estuary, the Chesapeake Bay. The Shoreline Erosion Advisory Service (SEAS), a program of DCR, provides unbiased, science-based technical assistance on shoreline management alternatives to property owners (including agricultural and residential), localities, and state/federal agencies experiencing erosion on tidal shorelines or non-tidal streambanks and impoundments. The services provided by SEAS include site investigation and analysis, written advisory reports, review of engineering designs and construction plans, on-site construction inspections, and guidance on available financial incentive programs. SEAS has over 40 years of programmatic service as a resource for shoreline landowners and communities.

Project Background

Shorelines are in constant states of change and erosion is a natural ecosystem process in the Chesapeake Bay. Shoreline erosion is primarily caused by wind-driven waves and is exacerbated by the rapid rate of sea-level rise. Erosion of banks supplies sand to beaches and marshes, helping them to keep pace with rising sea levels. However, excess sediment and associated nutrients can negatively affect submerged aquatic vegetation and overall water quality. Human activity, such as agriculture and urban development, can drastically accelerate the natural rate of shoreline erosion. According to the U.S. Geological Survey, erosion of shorelines is the dominant source of sediment to the Chesapeake Bay, accounting for 57% of the total load.

The suite of solutions to shoreline erosion that a property owner can employ varies along a continuum of green-to-grey infrastructure—marsh grass plantings, marsh toe revetments of coir logs or oyster shell bags, stone sills with sand nourishment and marsh grass plantings, offshore gapped breakwaters, riprap revetments, wood or vinyl bulkheads. Living shorelines are the Commonwealth's preferred shoreline stabilization practice.

SEAS is working to identify shoreline management practices (e.g., living shorelines) across tidal Virginia that qualify for Chesapeake Bay Total Maximum Daily Load (TMDL) pollutant reduction credits, verify that installation of these practices meets the specifications set out by the U.S. Environmental Protection Agency, and quantify and report the earned pollutant reduction credits as part of the Commonwealth's efforts to meet goals established in the Watershed Implementation Plan (WIP). SEAS has verified installation of practices at 1,199 specific sites protecting 46.1 miles of shoreline. At these sites,



SEAS has reported annual pollutant reduction credits of over 17,900 tons of sediment, over 21,800 pounds of phosphorus, and over 31,300 pounds of nitrogen.

Potential Fellowship Project

The Commonwealth Fellow will work with SEAS team members to provide technical assistance to property owners who are experiencing erosion. The fellow may participate in conducting site investigations, construction inspections, and reviewing plans and designs for stabilization practices. The fellow may contribute to other Division goals and activities. The fellow will identify installed shoreline management practices that qualify for TMDL pollutant reduction credits, verify these practices meet specifications, and calculate the earned pollutant reduction credits utilizing protocols developed by SEAS. The fellow will conduct data analysis with Geographic Information Systems (GIS), collect field data to verify best management practice installation, and have the opportunity to engage with partnering agencies and organizations, and interact with the general public.