Submerged Aquatic Vegetation (SAV) survey methods

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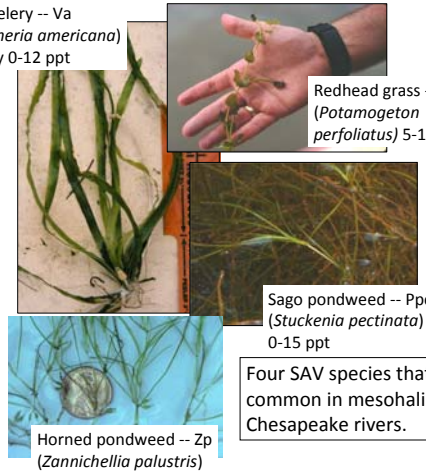
Methods

SAV surveys of tidal waters of Chesapeake Bay are conducted annually by the Virginia Institute of Marine Science (VIMS) using aerial photography. While giving accurate estimates of SAV area and density, these surveys do not identify the species present, they miss the smallest and sparsest beds, and they miss any species that grow in spring only, mainly horned pondweed. These gaps can be filled by volunteers doing surveys in small boats.
Two types of surveys are useful:

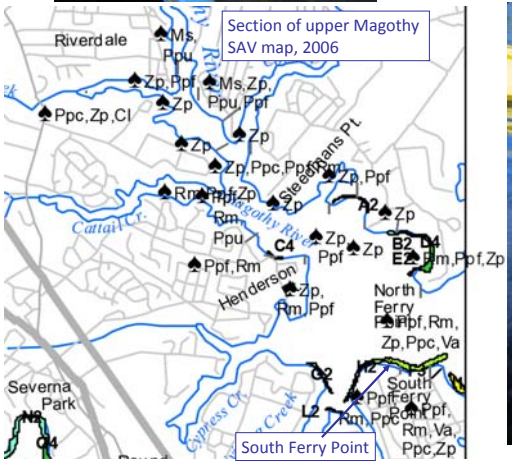
1. **"Free form" surveys with small rakes and GPS**
   These surveys can be done by anyone who has a small skiff, canoe, or kayak, and a rake, SAV guide, and GPS. Areas likely to have SAV are visited at low tide, SAV are collected by raking and identified, and locations (as GPS waypoints) and species are recorded on data sheets. Results are sent to VIMS and the points are added to their maps.

2. **SAV transects with oyster tongs**
   These surveys require more specialized equipment, but volunteers can help with them. They were started by MD DNR in 2007. Small oyster tongs are used to collect SAV samples along fixed transects. The samples are sorted by species and the wet volume of each is measured using graduated cylinders. Volume is used to estimate biomass by species. Results are analyzed to compare abundance among sites and at the same sites over time.

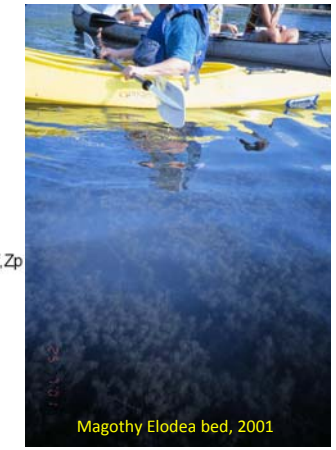


Four SAV species that are common in mesohaline Chesapeake rivers.

"Free form" surveys



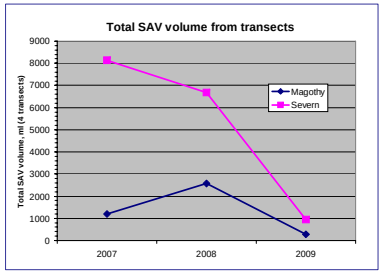
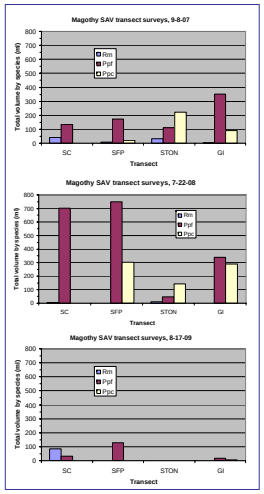
Section of upper Magothy SAV map, 2006



Transect surveys

Results & Discussion

Data points from **free form surveys** have been added to the VIMS SAV maps for many years. They help managers identify areas for SAV protection and planting, and help document changes in the distribution of each species. They also augment the survey results where they identify SAV beds that were too sparse, too deep, or too short-lived to be mapped in the annual survey (see the section from the 2006 Magothy SAV map on this poster). As an added bonus, the citizens who do the surveys get to know their river and some of its valuable habitats better.

Results from the **transect surveys** are not included in the VIMS SAV survey, but their results are useful in tracking changes in SAV abundance by species in one or more rivers over time. See below for samples of graphs of transect data.

Transect survey results