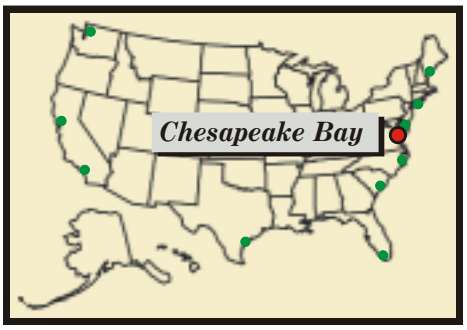
U.S. Fish & Wildlife Service

The Coastal Program

Success in Chesapeake Bay



Caring for Our Coastal Habitats

Like a canary in a coal mine, SAV is an indicator of water quality in the Chesapeake Bay watershed. Healthy grass beds can actually improve water quality by absorbing nitrogen and phosphorus nutrients which, when present in excess, promote harmful algae blooms. Like all green plants, underwater grasses produce oxygen, a precious and sometimes decreasing commodity in many aquatic ecosystems.

Bud Jenkins, an SAV Hunt volunteer since 1987, with a crab net used to find wild celery. Photo by Peter Bergstrom/USFWS

Saving SAV

Since the early 1970s, many people interested in Chesapeake Bay—waterfowl hunters, fishermen, oystermen, ecologists, researchers, and waterfront residents have been concerned about the apparent decline of underwater bay grasses, also known as Submerged Aquatic Vegetation (SAV), in the Bay. Underwater plants such as eelgrass, widgeongrass, water stargrass—all generally called SAV—provide food for waterfowl and homes for fish, crabs, and invertebrates; improve water quality; and protect shorelines from erosion.

Bay grasses once formed immense underwater meadows, covering up to 600,000 acres in the Chesapeake Bay and its tidal tributaries. Then, with increasing development and nutrient pollution in the late 1960s and early 1970s, and Tropical Storm Agnes in 1972, the huge grass beds began to decline. This decline forced some species of waterfowl (such as canvasbacks and redhead ducks) to change their feeding habits or move out of this region in search of more suitable habitats. The decline of aquatic plants is an indication of serious deterioration in the health of the Chesapeake. It is likely that the loss of the grasses has affected commercial fisheries in the Bay.

The Virginia Institute of Marine Science (VIMS) takes aerial photographs each year of the plants growing under the surface of the shallow water in Chesapeake Bay. The photos are used to map and determine the status of SAV beds in the Bay, including the extent of "scarring" (areas recently depleted of grasses by clam harvest or propeller damage). Scarring foretells trouble for the many fish and wildlife species that depend on the grasses for their habitat needs.

Protection Takes Shape

Since the 1950's, softshell clamming using hydraulic dredges has been a tradition in Maryland's portion of Chesapeake Bay. More recently, the Chesapeake fishery was expanded to include razor clams, hydraulic dredging for hardshell clams started in Maryland's coastal bays, and a heavy towed dredge started to be used to harvest hardshell clams in Virginia's northern coastal bays. In all three areas, there were no regulations prohibiting dredging for clams in SAV beds.

It's A Jungle Down There!

These underwater grass beds serve as critical habitat for many types of aquatic life. Barnacles and scallop larvae attach to the leaves and stems of eelgrass in the salty waters of the lower Bay. Fish such as bluegill and largemouth bass live in the freshwater grasses of the upper Bay. Minnows, small anadromous fish like juvenile striped bass, and blue crabs seek protection and food in the grass beds. Microscopic zooplankton feed on the decaying underwater plants and, in turn, are food for larger Bay organisms, such as fish and clams. In the fall and winter, migrating and wintering waterfowl search the sediment for nutritious seeds, and roots, and tubers.

In 1996 and 1997, biologists and citizens began to suspect the scarring of SAV in some areas was being caused by clam harvesting. The aerial photos taken by VIMS confirmed their suspicions, and the citizens sought the attention of the state legislature in Maryland. Testimony was taken from U.S. Fish and Wildlife Service (Service) Chesapeake Bay biologist, Peter Bergstrom, who spoke before the Maryland Senate committee considering legislative action (SB 398) to prohibit clam dredging in SAV beds. His testimony was used to strengthen several protections recommended in the bill, which was passed and signed in April 1998. Under this bill, Maryland Department of Natural Resources (MD DNR) set up a task force to recommend the areas with SAV that would be closed to clam dredging.

Working together on this task force, a combination of citizens, academics, Federal and state environmental staff, and watermen were able to achieve consensus on recommended closure lines that will, if accepted by DNR Secretary John Griffin, protect about 13,000 acres of SAV and adjacent shallow bottom in Maryland's coastal bays and about 10,000 acres of SAV in Maryland's portion of Chesapeake Bay. Similar protection was achieved through new regulations in Virginia, enacted by the Virginia Marine Resources Commission (VMRC) to protect about 8,900 acres of SAV and adjacent shallow bottom from clam dredging in Virginia's northern coastal bays. Added to the acres of protected area in Virginia, more than 32,000 acres of SAV and adjacent shallow waters have been protected from clam dredging in Maryland and Virginia since the beginning of 1998. This represents over half of the total area of SAV mapped in Maryland's portion of Chesapeake Bay, Maryland's coastal bays, and Virginia's coastal bays in 1997 (about 60,000 acres).

Economic Implications

The success of the protection efforts in the coastal bays is especially exciting because bay scallops, which are dependent on SAV for their survival, are starting to return to the coastal bays after an absence of over 50 years. Watermen appear to have realized that the whole fishery could be closed if the environmental damage from dredging continues. The fact that the watermen "came on board" with the new restrictions was crucial to the passage and implementation of the legislation and regulations, to the future of SAV beds, and to the future of the fishery.

Citizens Get Involved to Help SAV

The aerial surveys conducted by VIMS have certain limitations: they miss small beds; don't tell you what species are growing; and sometimes what looks like an SAV bed in the photo turns out to be something else entirely. "Ground truthing" is needed to fill in the missing information. To ground-truth the results of the SAV aerial survey conducted by VIMS, the Service coordinates an annual volunteer effort called "The SAV Hunt." Armed only with small rakes, citizens venture into waist-deep, sea-nettle infested creeks off the Chesapeake Bay to search for the underwater grasses. The results of locating, identifying and mapping the SAV are invaluable. Natural resource agencies use the SAV Hunt information to help target SAV protection and restoration efforts, and local planning agencies use it when considering whether to approve construction projects that may affect aquatic resources. Other ongoing Service efforts to protect and restore SAV in Chesapeake Bay include doing SAV planting projects in Maryland, providing technical assistance for SAV planting and a USGS study of mute swan impacts on SAV, and working with partners to reverse a recent major decline in SAV in the Tangier Sound area.

Blue crabs rely on SAV beds. Females about to shed go there for protection, and males seek them out to mate. Photo by Peter Bergstrom/USFWS