Hudson River Submerged Aquatic Vegetation

Hudson River SAV

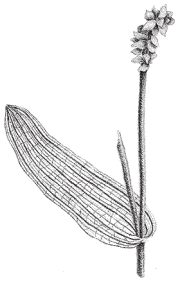
What Are SAV Beds?

Submerged Aquatic Vegetation (SAV) beds are subtidal plant communities that occur in water as much as six feet below low tide.

Common Species

Hudson River SAV include water celery (*Vallisneria americana),* clasping leaved pondweed *(Potamogeton perfoliatus),* and such non-native plants as curly pondweed (*Potamogeton crispus)* and Eurasian water milfoil *(Myriophyllum spicatum).*

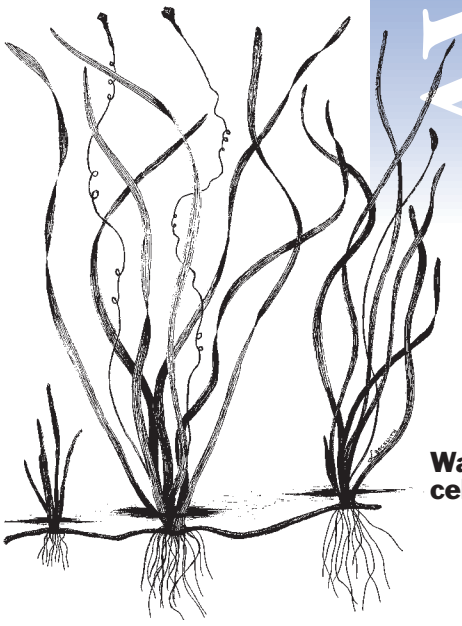
Clasping pondweed



Pondweed inflorescence (flower cluster)

Abundance

Abundance of SAV varies dramatically among different reaches of the Hudson River, with maximum coverage of approximately 20 percent of the river area between Kingston and Catskill. Distribution of plants is light-limited with the highest abundances in water less than three feet deep at low tide. Water celery is by far the most common species. Water chestnut is a conspicuous plant but does not occupy nearly as large an area as SAV.



Water celery

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Importance of SAV Beds

The ecological functions of SAV beds are diverse. They act as nurseries for numerous larval and juvenile fish including alewife, banded killifish, white perch and carp and produce organic matter that is an integral part of the Hudson River food web. SAV beds also improve the clarity of the river. The submersed plants take in nutrients through their roots and leaves thus reducing the likelihood of algal blooms. During calm periods in the river they can filter suspended sediments leading to increased water clarity.

SAV communities also provide important habitat and feeding areas for waterfowl. A number of diving ducks rely on the Hudson's SAV beds. The canvasback (*Aytha valisineria*) eats more plants than other waterfowl and, as suggested by the duck's scientific name, water celery is a favorite food. Bufflehead, common goldeneye, merganser and scaup feed on plants, fish and invertebrates in the vegetated shallows. Wading birds such as the snowy egret and the great blue heron have been frequently observed feeding in SAV at low tide.

The Hudson River SAV Project

The Hudson River SAV project began in 1993 with a workshop to identify information gaps and research needs. Good information on abundance, distribution and ecological functions of SAV is necessary for understanding and managing this important resource. Mapping bed location and extent was a valuable and important first step.

Initially, beds were identified and mapped using true color aerial photographs for a 45-mile area extending from Norrie Point to Castleton. Large-scale maps were created and data were field-verified with sampling of SAV beds to describe biomass and species composition. Presently underway is the larger and final phase of mapping which covers the area from the Troy dam to Castleton and from Norrie Point south to Hastings-on-Hudson.

Detailed spatial analyses may be completed once the entire estuary is mapped. Other factors affecting SAV such as exposure and proximity to sources of sediment or degree of human disturbance can then be measured. Ultimately, repeat mapping is likely to become part of the NYSDEC Hudson River Estuary Program monitoring plan to track changes in cover and species composition in the future.

References

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Hudson River Foundation, 1988.

Web addresses:

New York Sea Grant web address:
www.nyseagrant.org

NOAA's Coastal Change Analysis Program:
www.csc.noaa.gov/ccap

Institute of Ecosystem Studies:
www.ecostudies.org

NYSDEC Hudson River National Estuarine Research Reserve:
www.dec.state.ny.us/website/hudson index.html

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