

**EVALUATION OF SUBMERGED AQUATIC
VEGETATION (SAV) HABITAT IN SOUTHERN NEW JERSEY**

May 20th, 2002

WORKSHOP REPORT



National Estuarine Research Reserve

**EVALUATION OF SUBMERGED AQUATIC VEGETATION (SAV) HABITAT
IN SOUTHERN NEW JERSEY**

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**This workshop was sponsored by the Jacques Cousteau National Estuarine
Research Reserve, the NJ Department of Environmental Protection's Coastal
Management Program and Island Beach State Park**

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Issue/Background

Submerged aquatic vegetation (SAV) is a term used to describe a variety of bottom-dwelling marine plants including seagrasses. SAV provides a substantial amount of primary production for the Barnegat Bay-Little Egg Harbor estuary, and it serves as critically important habitat for benthic epifauna and infauna. Some organisms graze on SAV (e.g., gastropods, fish, ducks, muskrats). Benthic macrovegetation (e.g., *Zostera marina*) also provides valuable spawning, nursery, and feeding grounds for finfish populations in the estuary. They likewise stabilize the benthic habitat by baffling waves and currents and mitigating substrate erosion. In addition, they play a role in nutrient transformation.

The occurrence of SAV species in the estuary strongly depends on environmental conditions. Each species has its own requirements for and tolerances of physical characteristics, such as temperature, salinity, sediment composition, water velocity, and turbidity. The location of SAV beds is often dynamic and patchy due to naturally occurring cycles, as well as changing distribution and abundance through the growing season and between years. External stresses due to disease, algal infestation, dredging, boating, and water quality problems are contributing to a long-term decline in SAV abundance and distribution.

The spatial distribution, abundance and health of SAV are important environmental indicators of the overall status of the Barnegat Bay-Little Egg Harbor. Existing GIS maps provide a baseline of information concerning the spatial distribution of SAV in the estuary over the past four decades. Remote sensing (aerial photography and digital scanners) in combination with *in situ* sampling is needed to undertake comprehensive monitoring of SAV.

When an individual applies for a permit to construct a dock or a bulkhead, SAV habitat is a consideration when receiving the permit. The staff members of the NJ DEP's Department of Land Use and Regulations (LURP) are charged with assessing the ecological importance of areas before a permit is granted or denied. Due to the ecological variability and comprehensive evaluations of SAV habitats in the winter months, the LURP staff members rely on 1969 maps and field checking when making their ecological impact assessments. This staff should be well versed in the importance of SAV as a habitat, as well as the wealth of current information and resources that are available on the geographic extent and ecology of past and present SAV habitats, so they are able to make the most informed choice when reviewing Land Use Permits.

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Workshop Summary

The SAV workshop was held on May 20th, 2002 at the Interpretative Center at Island Beach State Park. Together the NJ DEP and the JCNERR developed a day-long workshop designed to provide the DEP Land Use and Enforcement staff with the most current and relevant scientific data regarding submerged aquatic vegetation (SAV). The workshop included:

- A review on the importance of SAV, along with biology and the major impacts on SAV
- An update on the current state of knowledge on the restoration of SAV
- An overview of the GIS products that are available for mapping SAV from the Center for Remote Sensing and Spatial Analysis (CRSSA)
- Explanation of a scientific model to predict SAV habitat
- Techniques on evaluating SAV habitat in the winter
- A field trip to SAV habitats around Island Beach State Park
- A discussion of Conservation Zoning

Workshop participants also received a binder with follow-up resources from NOAA's Coastal Services Center, Rutgers Center for Remotes Sensing and Spatial Analysis, SeaGrant, EPA and various other sources.

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Workshop Agenda

8:30 a.m. **Continental Breakfast**

9:00 **Welcome** Jim Merritt & Bill Vippert – IBSP, Dorina Frizzera – Coastal Programs, and Janice McDonnell, Jacques Cousteau National Estuarine Research Reserve (JC NERR)

The Biology of Submerged Aquatic Vegetation (SAV) and the Current State of Knowledge on Assessing Habitat- Dr. Ryan Davis

11:00 **Evaluating and Predicting SAV habitat Using Geographic Information Systems (GIS)-** Dr. Rick Lathrop, Center for Remote Sensing and Spatial Analysis, Rutgers University

12:00 Catered Lunch

1:00 **Walk through of the Coastal Services Center CD-ROM “Submerged Aquatic Vegetation: Data Development and Applied Uses”** - Dr. Rick Lathrop

2:00 **Roundtable Discussion on Evaluating SAV Habitat Using the CZM Rules**

- **Current Rules** Helen Fasano, DEP
- **Use of Current Maps** Michael Sellestino, DEP
- **Seasonal Assessment of SAV-** Dr. Paul Bologna, FDU

2:15 **Break**

3:15 **Field trip to SAV habitat and Discussion of Conservation Zoning at Island Beach State Park** – Jim Merritt and Bill Vippert

Discussion on how Marine Protected Areas (MPAs) can be used to achieve resource protection – Dorina Frizzera, DEP

5:00 **Conclude Workshop**

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Resources

NJ Department of Environmental Protection's Land Use Regulations Program
<http://www.state.nj.us/dep/landuse/index.html>

Island Beach State Park
<http://www.state.nj.us/dep/forestry/parks/island.htm>

Rutgers' Center for Remote Sensing and Spatial Analysis
<https://www.crssa.rutgers.edu>

NOAA's Coastal Services Center
<https://www.csc.noaa.gov>

Evaluation of SAV Habitat in Barnegat Bay
<http://crssa.rutgers.edu/projects/runj/sav/>

Dr. Fred Short's SAV Research
<http://marine.unh.edu/jel/fred/short.html>