North Carolina
National Estuarine Research Reserve

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Submerged Aquatic Vegetation

Underwater grasses play a vital role in many coastal ecosystems by providing habitat, food and shelter for a variety of organisms. These plants, once considered a nuisance, actually help keep coastal waters healthy by absorbing excess nutrients, producing oxygen, inhibiting wave action that erodes shorelines, and filtering and trapping sediment. Commonly referred to as "submerged aquatic vegetation," or SAV, these grasses are found in shallow aquatic environments around the world.

SAV includes vascular plants that grow entirely underwater and rely on buoyancy to support their stems and leaves. These underwater rooted flowering plants colonize primarily soft sediment in coastal, estuarine and freshwater habitats. Submerged aquatic vegetation can only survive in shallow areas where light levels are high enough to allow for growth. Many SAV species are annuals which produce flowers and seeds each year prior to dying. These seeds persist in the sediment until the following spring when growing conditions are more favorable. Other species of SAV are perennial and can live for several years. Most SAV species can propagate and spread through vegetative, or asexual, reproduction. This occurs when new plants sprout up from existing ones.

Food and Shelter in the Estuary

SAV provides food and habitat for waterfowl, fish, shellfish and invertebrates. It also serves as nursery habitat for many fish species. Blue crabs hide in grasses after they molt and juvenile scallops use the grasses to hide from predators. A single acre of seagrass may support as many as 40,000 fish and 50 million small invertebrates. Because seagrasses support such high biodiversity, and because of their sensitivity to changes in water quality, they have become recognized as important indicator species that reflect the overall health of coastal ecosystems.

Speckled trout in eelgrass bed (Photo courtesy of NC Division of Marine Fisheries)

The North Carolina National Estuarine Research Reserve is a cooperative program between the North Carolina Department of Environment and Natural Resources, Division of Coastal Management and the National Oceanic and Atmospheric Administration.

SAV at Rachel Carson

The Rachel Carson National Estuarine Research Reserve in Beaufort is home to three different seagrasses: *Zostera marina* (eelgrass), *Halodule wrightii* (shoalgrass) and *Ruppia maritima* (Widgeon grass). Because of their requirements for high light levels, seagrasses are restricted to shallow coastal areas where human-induced disturbances that can damage or kill them are common. Excessive pollution from sewage discharge and stormwater runoff can harm seagrass beds. In addition, physical destruction of seagrass beds occurs during dredging activities, from boat propellers, anchors and inappropriate fishing methods. Unfortunately, once seagrasses die, the sediments they help stabilize may re-suspend into the water column, causing lower light levels, which inhibits the plant's recovery. Prop scarring often fragments the habitat making the seagrass beds more susceptible to erosion effects.

Protect SAV

Boaters should be aware of the water depth requirements of their boats and avoid navigation through shallow grass beds.

Swimmers - stay off the grass! Walking through SAV meadows damages the root system.

Restrict ***dredging*** near SAV beds.

Do not ***overuse*** fertilizers, pesticides and herbicides.

Put up ***silt fences*** around construction sites or bare ground to capture the fine sediments before they reach the water.

Avoid overboard dumping of boat heads. Find a ***Clean Marina*** near you that has a pumpout facility.

Scallop in eelgrass Photo courtesy of NC Division of Marine Fisheries

You can learn more about SAV and other estuarine habitats when you visit www.ncfisheries.net/habitat

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