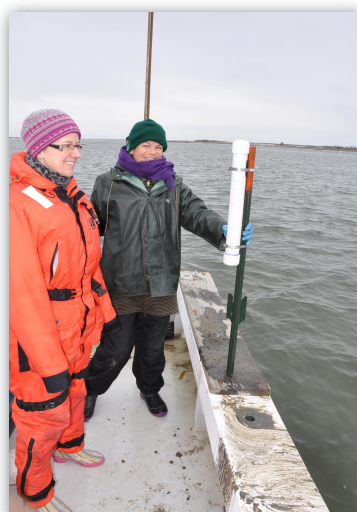


# Impacts of Oyster Aquaculture Gear on Submerged Aquatic Vegetation Recruitment and Recruitment Processes

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Oysters and submerged aquatic vegetation (SAV) provide important ecosystem services, although natural populations of both are in decline. Population recovery may be enhanced by harnessing the positive benefits of the oyster aquaculture industry towards SAV recruitment and recruitment processes, namely water movement and soil resuspension. Essentially, SAV needs a particular type of soil and moderate currents so seagrass seeds can settle

into the soil and grow into adult plants. Currents that are too fast can lead to seagrass seeds not settling and/or getting washed out of the system before they can settle. An understanding of the positive impacts of aquaculture on SAV can be used to increase the growth of SAV, an essential fish habitat, and assist managers with permitting decisions, particularly as cultured regions which increase SAV coverage are more beneficial ecologically than bare habitat. Our hypothesis was that the



presence of aquaculture gear facilitates the recruitment of seed into cultured leases as the gear slows currents, which encourages seed settlement and retention of larger soil grains (e.g., sand content); and, in the absence of gear, minimal to no natural recruitment occurs.

Coordinating with Forty North Oysters, baseline data were gathered on the overall hydrodynamics, sedimentation rates and submerged aquatic vegetation presence before and after aquaculture gear were deployed in bare, seagrass bed, and a region set with rack-and-bag aquaculture gear. Later this gear was switched to a floating bag system, which had the unintended consequence of drawing in seabirds as roosting material. Preliminary results indicated SAV cover increased significantly during the second year of the study; however, there was no significant difference between GEAR and BARE sites. Understandably, the SAV site had the highest percent cover of seagrass and seed counts. Soils and hydrodynamics in the experimental areas (GEAR, SAV, and BARE) were highly variable and did not follow anticipated trends regarding sand content and current velocity between areas. Additional data processing is necessary prior to determining any final conclusions.

