(*Urochloa ramosa*) in bare areas, then covering with netless excelsior fiber, followed by heavy woven coir matting anchored by 12-inch (30-cm) wooden stakes at 2-ft^2 (0.18 m^2) intervals. Subsequent monitoring within two years revealed well-established vegetation and persistent erosion control.

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Restoration Potential of Submerged Aquatic Vegetation in the Tidal Pocomoke River (Chesapeake Bay)

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Since the signing of the *Chesapeake 2000* agreement (Chesapeake Executive Council 2000), water clarity habitat criteria have been established for submerged aquatic vegetation (SAV) in the Chesapeake Bay and SAV restoration sites have been prioritized based on these criteria. However, factors other than water clarity control SAV distribution and contribute to restoration potential. The goals of this study were to 1) locate a site where no SAV were present and determine whether adjacent vegetated areas contribute propagules (plant fragments with attached seeds or tubers) and 2) assess seasonal water quality (April to October) and restoration potential by conducting SAV transplants at an unvegetated site (Rehobeth, Maryland) in the oligohaline Pocomoke River.

Shoreline surveys of the oligohaline Pocomoke River conducted during the spring and fall of 2001 were consistent with earlier studies that did not detect SAV in this portion of the river. Propagule availability was measured at two unvegetated sites in the river over a 48-hour period by deploying six 1-m^2 wire traps at each site. No propagules were recovered from the 12 traps. These results suggest that the absence of SAV in the oligohaline Pocomoke River may be due to a lack of propagules reaching suitable sites.

Poor water quality may also limit SAV distribution. Although the Rehobeth site met the 15 mg/L SAV habitat criteria (Kemp et al. 2000) for chlorophyll-*a* concentration (Chla) in both 1999 (15 mg/L) and 2000 (8 mg/L), the level of total suspended solids (TSS) in 2000 (35 mg/L) exceeded the maximum criterion of 15 mg/L. Data were not available for TSS levels in 1999.

To determine SAV survival at a site with historically marginal water quality, we conducted two transplant experiments during the 2002 growing season using wild celery (*Vallisneria americana*) seeds, lab-reared seedlings, and wild adult plants. The seeds used in this experiment were collected in fall 2000 and chilled in a sealed container of water until 2002. Lab-reared seedlings were grown in a nitrogen and phosphorus free culture solution (Smart and Barko 1985) on Pocomoke River sediment and placed on a 14-hour day and 10-hour night cycle for approximately eight weeks. To avoid salinity stress on the seedlings, the salinity of the culture solution was raised gradually to that of the transplant site. A 2-m tall, plastic mesh exclosure protected both sets of transplants from grazers. On May 29, we planted lab-reared wild celery seedlings in three 1-m^2 plots (plant density = 50 plants/m^2) and seeded three additional 1-m^2 plots with a mixture of one cup of sand and one teaspoon of wild celery seeds. By July 2, none of the seeds had sprouted and none of the spring transplants remained, which suggested that the unsecured seeds and seedlings had washed away. We then modified our technique for the August transplants by moving our site 0.3 m deeper to assure that plants were not exposed during extremely low tides.

On August 28, we collected wild celery plants from the oligohaline Potomac River and attached them to three 0.4-m^2 wire frames (plant density = 140 plants/m^2) staked into the sediment (Davis and Short 1997). We planted three additional 0.3-m^2 plots with sods of lab-reared wild celery plants (plant density = 80–140 plants/m^2). By the end of October, 6 percent of the lab-reared seedlings and 33 percent of the wild plants remained. Water quality data from July to October 2002 showed that the median light attenuation coefficient (4.8), Chla (26 mg/L), and TSS concentrations (50 mg/L) did not meet the minimum criteria for SAV growth. However, the results of the summer transplant suggest that water quality conditions at Rehobeth enabled secured, mature, wild plants to survive for a short time. We did not find any wild celery the following spring (June 2003), possibly due to poor water clarity and lack of tuber formation during 2002.

The transplant results have provided insight into improved methodologies that may increase the success of future seagrass restoration efforts. We found it useful to monitor the site weekly, use numerous transplanting techniques, and conduct transplanting during multiple seasons. This last step may be especially critical when working in areas with marginal water quality where the best window of opportunity for successful transplants varies widely seasonally and yearly due to vacillating water clarity and salinity conditions. Additionally, securing plants to a frame inside an exclosure helped prevent loss from erosion and grazing. Because of the age difference between lab-reared (8 weeks) and wild plants (about 16 weeks), future experiments are needed to compare transplant survival of lab-reared and wild plants along a gradient of plant ages. Finally, additional sites in the oligohaline Pocomoke River need to be monitored to determine if water quality conditions favor SAV growth.

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