

THE RIVER

Air Force, Navy and National Aquarium Restore Native Seagrasses

IS BACK

The background of the page features a detailed illustration of seagrass. On the left, several long, thin blades of eelgrass curve upwards. On the right, a larger, more complex structure, likely a seed pod or flower, is shown with multiple pointed lobes and a textured surface. The entire illustration is rendered in a light, sketchy style against a dark green background.

The river is back. Native seagrasses have been restored in the Back River thanks to efforts from personnel from Langley Air Force Base [Hampton, VA], Naval Air Station (NAS) Patuxent River (Pax River) [Patuxent River, MD], and the National Aquarium [Baltimore, MD].

For the past three years, the National Aquarium has joined forces with Langley personnel to re-establish a native eelgrass (*Zostera marina*) bed in the Back River. In October 2003, the partnership extended to include staff from the Environmental Department at Pax River. Aquatic resources and conditions are comparable at the two military installations. As such, Pax River personnel were interested in participating in and learning about the restoration efforts. As a result, execution of the fall 2003 grass project evolved into a joint services effort that focused on both training and restoration.

Seagrass, or submerged aquatic vegetation (SAV), plays a vital role in maintaining the health of the Chesapeake Bay and its tributaries. From erosion control and water quality enhancement, to fisheries nursery and waterfowl food, SAV is important environmentally and economically. Locally, eelgrass is an essential

habitat component for many aquatic species. The grass provides much needed cover and habitat for crabs, fish, and the native Chesapeake Bay seahorse, which is extremely sensitive to water quality conditions. The ultimate goal of this restoration project is to successfully re-establish the eelgrass to a density that would function as seahorse habitat and would allow for the seahorse to naturally colonize.

Research into historic submerged aquatic vegetation locations turned up a 1968 map detailing eelgrass beds in the Back River. After two years of water quality monitoring to qualify an acceptable planting site, Langley was given the opportunity to host test plots for eelgrass installed by a coalition of forces that included the National Aquarium and the Alliance for the Chesapeake Bay. After several years of successful planting and growth of test plots, Langley was ready for a larger planting effort. Another partner entered—Dandy Haven Marina (Dandy), a local marina. Dandy wanted to dredge the channel leading to the marina to accommodate larger boats. The Army Corps of Engineers agreed to this request but required Dandy to mitigate the impacts to the surrounding SAV that would result from the dredging by replanting seagrasses in another, nearby location at Langley.

VIRGINIA



With this particular need identified and the planting location chosen, Langley, Dandy, and the Virginia Marine Resource Commission staff came up with an action plan that allowed for the dredging and the relocation of the grass to Langley. Volunteers participating in the project included local watermen, a high school environmental class, the Boy Scouts, marina staff and neighbors, airmen and natural resources staff from Langley and the dedicated staff and volunteers from the National Aquarium.

In October 2003, Langley invited several Environmental Department personnel from Pax River to join the project and train with the staff at Langley as well as the staff and volunteer divers from the National Aquarium. This allowed Langley to share its project with another interested military service (the Navy) and provide a volunteer program model for future aquatic efforts.



Female blue crab, Chesapeake Bay.
Photo by Mary Hollinger, NOAA



Young seahorse found in the Patuxent River.
Photo by Mary Hollinger, NOAA

The ultimate goal of this restoration project is to successfully re-establish the eelgrass to a density that would function as seahorse habitat and would allow for the seahorse to naturally colonize.

Patsy Kerr provides a diver with a unit of seagrass for planting.



Patsy Kerr and Lt. Travis Monson of Langley Air Force Base.



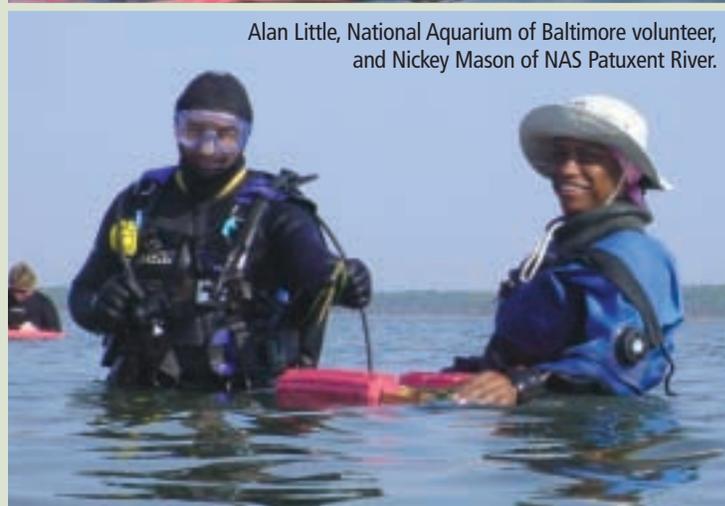
Jackie Smith and Jim Swift of NAS Patuxent River.



Kevin Weinelt of Pax River and Bill Harris of the National Aquarium in Baltimore.



Alan Little, National Aquarium of Baltimore volunteer, and Nickey Mason of NAS Patuxent River.



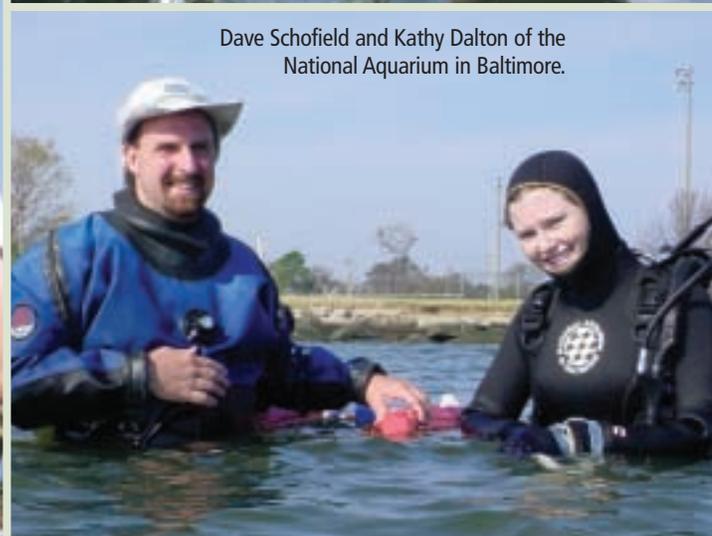
Patsy Kerr and Christine Garrett of Langley Air Force Base.



Judy Gresser, NAIB volunteer, and Laura Bankey of NAIB.



Dave Schofield and Kathy Dalton of the National Aquarium in Baltimore.



THE BASICS ABOUT EELGRASS

Named for its ribbon-like leaves, eelgrass (*Zostera marina*) is unique among other submerged aquatic vegetation (SAV) species in the Chesapeake Bay in that it is a true “seagrass.” Although it can tolerate salinities that are about one-third that of seawater, eelgrass is most commonly found in the high salinity regions of the lower Chesapeake Bay. It generally grows in sandy substrates and occurs most abundantly in the cooler months of spring and fall. In fact, it can continue to grow, albeit more slowly, in the winter. This is another trait that sets eelgrass apart—it will often die off in the summer heat favored by other species of SAV.

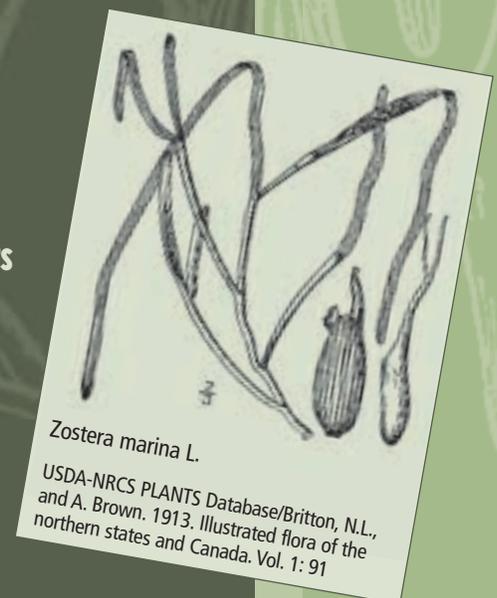
Eelgrass beds are ecologically important to the aquatic environment in a number of ways. They are an important habitat for many small fish and invertebrates, such as Blue Crabs and snails. Also, eelgrass is a valuable food source for migrating waterfowl (such as American Black Ducks, American Wigeons, and Redheads) in the fall and winter, and will occasionally be eaten by Green Sea Turtles in the summer. In addition, eelgrass beds improve water quality through oxygen production, sediment filtration, nutrient removal and shoreline erosion control.



A single blade of *Zostera marina*, eelgrass, seen from underwater.

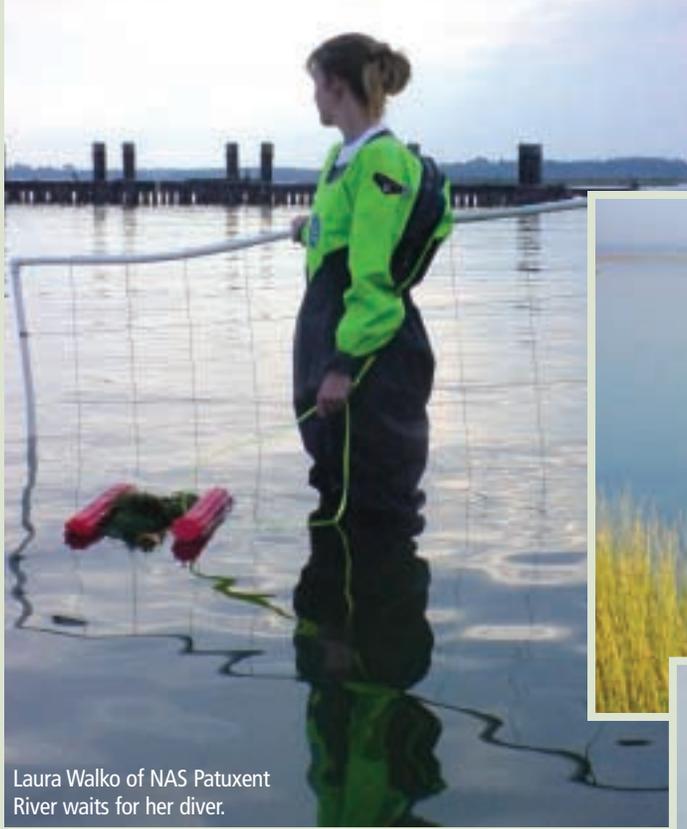
Photo by Jay Preshoso, NOAA

- Kingdom** **Plantae – Plants**
- Subkingdom** **Tracheobionta – Vascular plants**
- Superdivision** **Spermatophyta – Seed plants**
- Division** **Magnoliophyta – Flowering plants**
- Class** **Liliopsida – Monocotyledons**
- Subclass** **Alismatidae –**
- Order** **Najadales –**
- Family** **Zosteraceae – Eel-grass family**
- Genus** **Zostera L. – eelgrass**
- Species** **Zostera marina L. – seawrack**



Zostera marina L.

USDA-NRCS PLANTS Database/Britton, N.L., and A. Brown. 1913. Illustrated flora of the northern states and Canada. Vol. 1: 91



Laura Walko of NAS Patuxent River waits for her diver.



The SAV planting site.

Diver and handler return from the restoration site, while others continue planting.



Michael Turner of Langley AFB.

The weeklong training and restoration endeavor was a great success, and a true model of environmental stewardship, education and outreach. Pax River personnel were able to involve themselves in all aspects of the eelgrass relocation:

- Harvesting of the grass from the donor channel,
- Sifting and separation of the grass,
- Counting and bundling of the grass into units for planting, and
- Final relocation to the other side of the river at Langley.

“We applaud the Pax River staff and look forward to partnering again for future natural resource projects,” said Langley project manager Patsy Kerr. “If we help each other, share ideas and methods, we all become much more capable of

successfully managing our natural resources.”

She continued, “As stewards of the natural resources on Langley, we are constantly reminded of our part in preserving, protecting, enhancing and restoring the native habitats in our neighborhood—the Back River, tributary to the Chesapeake Bay.” ⚓

Back River eelgrass restoration project photos by Glenn Markwith.

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