

Read this article about how the marine life in the coastal bays of Virginia is being threatened. Then answer the questions that follow.

SAVE THE SEAGRASS, SAVE THE SEAHORSE

by Nicole Groeneweg

1 In late May, a boat carrying scientists and volunteers skims across the water of Virginia's coastal bays. The boaters, including Bo Lusk, a scientist with The Nature Conservancy, are there to harvest seeds from the eelgrass growing inches below the water's surface. Eelgrass and other seagrasses around the world are quickly disappearing. Working closely with the Virginia Institute of Marine Science (VIMS) and local volunteers, Lusk is in a race to restore the eelgrass habitat for an array of marine animals, including the lined seahorse (*Hippocampus erectus*).

2 The only seahorse living off the Virginia shore, the lined seahorse depends on eelgrass for survival. (The species ranges from Nova Scotia to Argentina and throughout the Gulf of Mexico.) Predators often overlook seahorses that are camouflaged by ribbons of the grass. Tails curled around the blades anchor these striped fish to the safety of the eelgrass jungle. Lined seahorse fathers release their eggs in these beds.

3 Among the many other saltwater animals that thrive in eelgrass meadows are brine shrimp. The shrimp are abundant and provide nutrition for growing seahorses. By changing colors to match their eelgrass habitat,



seahorses can ambush their unsuspecting prey. Then the tiny crustaceans (krah-STAY-shuns) are slurped up through the seahorses' strawlike snouts. Blue crabs, scallops, and juvenile fish also call the eelgrass meadow home. Even diving ducks and Brant geese feed on this grass. The eelgrass habitat supports many species.

4 Eelgrass grows in shallow waters where light can easily penetrate. "Because it does not have the ability to survive long periods of exposure to air," says Lusk, "eelgrass grows only in areas that are deep enough to remain below water at low tide. Eelgrass grows in beds or meadows and requires more light than most land-dwelling plants."

5 This submerged aquatic vegetation flourishes in estuaries and shallow bays around Virginia's Eastern Shore and up the Atlantic coast to New Brunswick, Canada. Unlike seaweed, it flowers and has a vascular system that transports food to all parts of the plant. *Zostera marina* is the perfect scientific name for eelgrass. *Zostera* comes from the Greek word for "belt," *zoster*, and describes its bandlike leaves. *Marina* refers to the marine nature of the plants.

6 Scientists worry as the number and size of eelgrass beds decrease. Natural disease has been a culprit* in the past. Lusk notes, “A slime mold weakened or killed most eelgrass in the North Atlantic in the early 1930s,” but the eelgrass recovered naturally. Hurricanes have wreaked havoc on eelgrass, too, muddying up water and blocking out needed sunlight. According to Lusk, warming ocean temperatures can also kill eelgrass. “Extreme summer temperatures in the bays where eelgrass grows are becoming more common,” he says. Eelgrass kills, due to high temperatures, have been recorded in the Chesapeake Bay in recent years.

7 The main reasons for the eelgrass decline are *sedimentation* (settling of suspended solid particles) and *eutrophication* (YOO-truf-i-kay-shun)—too many nutrients in the water that increase algal growth. Human activities such as housing construction and poor farming practices wash sediment and nutrients into the water. The sediment can cloud the water and reduce the amount of light the plants receive. Lusk believes people can change this trend.

8 In the past, restoring eelgrass beds involved transplanting healthy plants into dying meadows. “Our work uses seeds instead of whole plants,” says Lusk. “We have found this strategy gives us more bang for our buck in the Virginia Coast Reserve.”

9 Lusk and his volunteers collect flowering shoots from the blooming eelgrass in late spring. The shoots are held in tanks over the summer, while the seeds mature, are released from the plants, and settle to the bottom of the tanks. Then the seeds are moved to special tanks until they are ready to be planted in September and October. “We plant the seeds by broadcasting them by hand from a boat,” says Lusk, a process he calls similar to “feeding chickens.”

10 Working together, The Nature Conservancy and its partner VIMS are restoring eelgrass in hopes of preventing the loss of a crucial habitat for seahorses and other marine animals. Here’s how you can help.

- Learn as much as possible about eelgrass and other seagrass restoration projects.
- Educate others about the projects.
- Remind boaters to use care when riding over seagrass beds and dispose of their waste properly by using pump-out stations.
- Encourage your coastal neighbors to avoid using fertilizers and weed killers on lawns and gardens or to use them sparingly in the fall, when chemicals are less harmful to coastal environments.
- Plant beach grasses on shores to prevent erosion and cloudy coastal waters.

* *culprit* — a person or thing responsible for a negative action