

Ecosystem Services

Marshes

Marshes are transitional areas between upland and sub-aqueous lands. They provide habitat (food and shelter) for both aquatic and terrestrial animals such as blue crabs, small fish and marsh birds. They are highly productive systems and contribute to aquatic food webs through the growth of algae and the export of detritus. Marshes also improve water quality and help reduce erosion. Grass roots help to improve water quality by filtering groundwater and holding sediment in place. The shoots remove sediment from overland flow and help to attenuate wave action.

Saltbush

Saltbushes provide habitat for wildlife, particularly for nesting birds. Saltbush roots help to stabilize sediments, slowing erosion.

Mown wetland vegetation

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Marsh Spits

Unvegetated wetlands

Unvegetated wetlands provide foraging areas for shorebirds, crabs and young fish. Although important habitat, they tend to be less productive than vegetated subaqueous and intertidal areas.

Undercut bank with forested riparian area

Riparian trees provide habitat for birds, mammals and fish and contribute to water quality by slowing runoff, taking up groundwater, and stabilizing sediments. In addition, unvegetated intertidal areas also provide unique habitat and water quality functions.

Beaches and Sandy Shorelines

Sandy shorelines are a dynamic component of tidal rivers, the Bay and Atlantic shoreline. They are typically associated with moderate to high-energy conditions and can contribute to local sediment dynamics through two processes. There is sand that moves along the shoreline that comes from eroding bluffs and sand that moves on and off shore between the flats, the shallows and off shore bars. As sand moves on and off shore beaches also interact with primary and secondary sand dunes and sandy berms. Beaches can provide natural shoreline protection by forcing waves to shoal and break before reaching the upland. Beaches are habitat for benthic animals and microalgae living on or within the sand. The beaches serve as refuge and forage area for finfish, blue crabs and wading shorebirds.

Dunes

Coastal primary sand dunes serve as protective barriers from flooding and erosion, provide reservoirs of sand to replenish the beach zone, and provide habitat for a variety of plants and animals. Plants adapted for life on coastal primary sand dunes must tolerate very limited amounts of fresh water, constant salt spray, and withstand marked variations in temperature. The natural vegetation occurring on sand dunes can act as a baffle, slowing wind speed and causing wind-borne sand to settle and be trapped in the vegetation resulting in accretion of the dune.

Structures can adversely affect the structure, form and function of dunes because they interfere with wind and sand deposition patterns and natural dune building processes. Structures may also shade or displace dune vegetation.

Tidal intrusion behind bulkhead

Landward of the deteriorating bulkhead, tidal intrusion has created mudflat wetlands. Mudflats can be a foraging area for both waterfowl and aquatic animals and play an important role in nutrient cycling. The mudflats on this property are very small and aquatic access is blocked by the bulkhead, therefore they are expected to have limited habitat value but may still contribute to other ecological services.

Landward of the deteriorating bulkhead, tidal intrusion has created vegetated wetlands. Wetlands provide habitat (food and shelter) for both aquatic and terrestrial animals such as blue crabs, small fish and marsh birds. They are highly productive systems and contribute to aquatic food webs through the growth of algae and the export of detritus. Marshes also improve water quality and help reduce erosion. Grass roots help to improve water quality by filtering groundwater and holding sediment in place. The shoots remove sediment from overland flow and help to attenuate wave action. The wetlands on this property are very small and aquatic access is blocked by the bulkhead, therefore they are expected to have limited habitat value but may still contribute to other ecological services.

Forested Riparian

Forested riparian zones provide habitat for birds, fish and terrestrial animals. They intercept rain and runoff, helping to slow erosion, and intercept groundwater flow, removing nutrients. Their roots help to stabilize banks and reduce erosion.

Eroding Banks

Eroding banks contribute to the sediment budgets of rivers and the Bay. High levels of clay in the water may contribute to turbidity; however, sandy bluffs are frequently the sand source for adjacent and neighboring beaches. Stabilizing these banks permanently removes the sediment source from the system. Sand flats can provide natural shoreline protection by forcing waves to shoal and break before reaching the upland. Sand flats are habitat for benthic animals and microalgae living on or within the sand. The flats serve as refuge and forage area for finfish, blue crabs and wading shorebirds.

SAV

Submerged Aquatic Vegetation (SAV) beds are highly productive ecosystems which provide food and habitat for several fisheries species and help improve water quality by stabilizing sediments and reducing turbidity. The range of SAV beds in the Chesapeake Bay watershed has been greatly reduced from the range in the 1930s, which makes these beds of prime concern for conservation.

Oyster Reef

Oyster reefs are highly productive ecosystems which provide food and habitat for several fisheries species and help improve water quality by reducing turbidity. The number of oyster reefs in the Chesapeake Bay watershed has been greatly reduced from the range in the 1930s, which makes these beds of prime concern for conservation.

Subaqueous shallows

Subaqueous shallow areas provide erosion protection for upland and intertidal areas by forcing waves to break, reducing wave energy. They provide habitat for forage fish, juvenile fishery species, and several invertebrates. Although important habitat, they tend to be less productive than vegetated subaqueous and intertidal areas.

