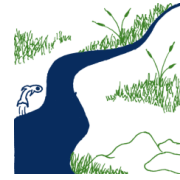


Friends of Herring River



The Importance of Reconnecting Herring River with the Marine Environment

The health and productivity of our coastal salt marshes and near-shore waters depend on regular daily flooding with tidal seawater. Tides flowing into salt marshes carry relatively clean oceanic water, rich in dissolved oxygen, for fish, crustaceans and invertebrates like oysters and clams. This clean water helps reduce bacterial pollution from wetland wildlife by simple dilution; also high salinity shortens the life span of enteric (gut) bacteria.

Flood tides, and especially storm tides, over time transport massive amounts of sediment onto the marsh surface, helping it to rise and keep above the rising sea level. This sediment also promotes the growth of salt marsh grasses that convert solar energy and carbon dioxide to organic matter at rates almost unmatched on this planet. High tidal range also ensures that a marsh drains efficiently during low tides, allowing air into the peat and further invigorating salt-marsh grasses. The productivity of Atlantic coast salt-marsh grasses is in fact directly related to the local tidal range.

A high tidal range ensures that estuarine fish can access the salt marsh surface during high tides and follow the tide seaward during the ebb. These fish, especially killifish (*Fundulus* spp.), not only eat and thereby transport the organic products of the marsh to near-shore waters (and into the jaws of their predators), but also consume flood-water mosquito larvae. Unfettered tidal exchange also eases the passage of migratory fish, e.g. river herring, eels, and white perch, that need to travel between salt and fresh water habitats in order to spawn and complete their life cycles. High tides ease the movements of many other groups of animals that regularly feed or reproduce in the marsh, from silverside minnows to lobsters, bluefish, bass, terrapins, and even seals and dolphins.

High tidal range allows ebbing tidal waters, high in plant nutrients and organic detritus from the marsh and creek sediments, to enrich near-shore waters and feed resident fish and shellfish. Marshes export nitrogen in a form (ammonium) that can be readily used for growth by phytoplankton, a major food of filter-feeding shellfish. The organic detritus coated with nutritious microscopic life flows out with the tides providing another important shellfish food.

Wellfleet's Herring River has of course many specific problems created by 100 years of blocked tidal flow, all of which should be reduced with restored tidal exchange. The problems include surface-water acidification, oxygen depletion, fecal coliform pollution, and chronically high nuisance mosquito production. Keeping salt marshes and the coastal waters naturally connected provides extremely desirable benefits to both.