Delaware Bay Estuary Project

Restoring aquatic connectivity in the Delaware River Watershed

DBEP supports and promotes restoring aquatic connectivity in the Delaware River Watershed by returning pathways for organisms, nutrients, and sediment to more naturally and freely flow from one place to another in water. This can mean restoration of movement upstream and downstream as well as laterally between streams and their floodplain.

Unlike most major rivers in the northeast/Mid-Atlantic, the main stem of the Delaware River has not been dammed. However, numerous tributaries in the watershed have been dammed over the centuries to power industrial activity and create reliable water supplies. The dams in many cases are no longer needed. They remain in our streams and rivers, we are used to seeing them there, and they are sometimes not easy to remove.

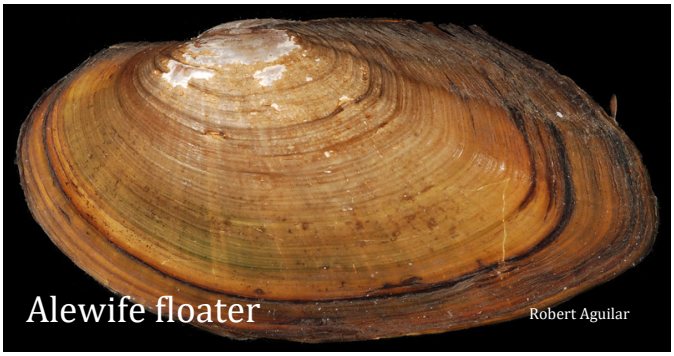
Dams are part of the recent history of the watershed compared to the populations of diadromous fish, such as shad and river herring, that have been here since the glaciers left and that rely on both the ocean and the upper reaches of our streams to complete their life cycle. These migratory fish have been a major part of the natural history of the watershed well before the first humans settled the area. The dams block the migration of these fish between upstream freshwaters and Delaware Bay and prevent the completion of their life cycle.

Barriers to free flowing water not only create barriers to the migration of fish and movement of other wildlife, they also can degrade water quality, exacerbate flooding, and disrupt sediment transport. In some cases they also create safety hazards.

DBEP works with our partners to remove barriers to fish passage throughout the Delaware River Watershed. For example, we can help find funding sources or provide field and technical assistance.

Ideally dams like this one in Brandywine Creek in Wilmington can be removed. However, sometimes this will be difficult due to existing uses so other creative measures will be necessary to enhance aquatic connectivity. For example, while not as effective as removal, well-engineered fish ladders and rock ramps allow fish to move upstream while allowing dams to be left in place.

DBEP focuses on fish barrier projects that primarily benefit four diadromous species (American eel, American shad, blue-back herring, and alewife) but removing barriers to fish passage benefit many other species.



A variety of organisms rely on aquatic connectivity. Unique relationships exist between organisms that depend on aquatic connectivity. Freshwater mussels are a good example. The alewife floater disperse by a parasitic stage that attaches to the gills of the alewife. If alewife cannot get upstream neither can the mussels. Partly for this reason, freshwater mussels as a group are some of the more endangered organisms in the North America.

The Delaware Bay Estuary Project is part of the Coastal Program, a habitat conservation program of the U.S. Fish and Wildlife Service that focuses on conserving the ecological integrity of beaches, bays, estuaries, and coastal watersheds. We work through voluntary partnerships with a variety of public and private entities, such as private landowners, land trusts, municipalities, states, and other federal agencies, to enhance, restore, conserve, study, and monitor habitat for key federal trust wildlife resources in the Delaware River and Delmarva Peninsula ecosystems.

Since the first colonists arrived in the watershed and ever since, people have worked to straighten, widen, and deepen streams. These alterations result in lost fish and wildlife habitat, streams ineffective at moving sediment, and floodplains disconnected from their streams. Similarly, wetlands have been ditched and drained resulting in lost habitat and lost flood storage capacity or lost exposure to the tidal cycle. DBEP works with partners to restore these floodplains and wetlands.

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