

Mussel and Bivalve Mollusk Surveys

Mid-Atlantic States

Princeton Hydro has extensive experience in conducting mussel surveys throughout the Mid-Atlantic states, employing a variety of methodologies. Mussel diversity in the eastern United States is remarkably high although many of the indigenous mussels are imperiled by reduced water quality, loss of habitat, and exotic invasives. Mussels are an important biological indicator in many freshwater ecosystems and have the ability to improve water quality as well as provide important forage to both fish and wildlife. The following sections provide a small sampling of the variety of mussel survey services.

Princeton Hydro was contracted to remove the first four obstructions on the lower reaches of Darby Creek, a tributary to the Delaware River, as well as stabilize the banks. An initial phase of the project involved an intensive mussel survey upstream and downstream of each of the targeted obstructions to identify any mussel populations, develop engineering designs and salvage solutions to minimize impacts, and provide a valuable baseline to investigate future recovery of mussel populations.

The Stony Brook, running through Hunterdon and Mercer Counties, NJ is a small river reported to contain several T&E mussel species, including the last known occurrence of one species in the state. Princeton Hydro evaluated the habitat suitability for mussel populations in relation to the impoundment on this reach of the stream relative to higher quality reaches upstream. An intensive snorkel survey was conducted over 1.5 river miles to document all bivalves in the river. Changes in hydrology and sediment composition were detrimental to mussel colonization as only two native mussels were identified in this silty reach as well as the invasive Asian Clam.

Princeton Hydro developed a series of Preservation Plans for several embayments of Lake Ontario in Wayne County, New York. To accurately model the ecology of the bays, including nutrient dynamics, Princeton Hydro conducted a series of surveys to accurately characterize the extent of Zebra Mussel colonization in the bays' littoral zone. Mussel density and biomass were used to model nutrient cycling, biological assimilation, and nutrient release following seasonal senescence of the exotic mussel.

