

Mirror Lake Remediation and Restoration

Dover, Delaware



from top: Tidal wetland bench (left background) immediately after planting; Installation of sand utilizing a Telebelt®; Placement of SediMite™ from a boat using compressed air

Mirror Lake is located along the St. Jones River, a tributary to Delaware Bay. With its placement along a main thoroughfare, it is considered one of the primary gateways to historic Dover, Delaware, and it is a prominent feature of Dover’s urban landscape. Over the last several decades, however, Mirror Lake has suffered from stormwater runoff, increased nutrient loading and chemical contaminants from within the watershed. The contaminate levels have a detrimental effect on the many plant and animal species within the lake and the predators that feed on these species. The contamination in the lake has also led to restrictions of fish consumption. The contaminants are bound to the soil in the lake, however

Water quality and habitat are restored to a severely distressed and contaminated urban lake.

when large storms, hurricanes, and Nor’easters stir up the sediments in the lake bottom, these contaminants remobilize and are able to drift downstream, thereby affecting other portions of the St. Jones River and the Delaware Bay.

As part of a multi-phase effort to improve water quality in the watershed, the Delaware Department of Natural Resources and Environmental Control (DNREC) initiated the restoration of Mirror Lake. The project began with remediation. Activated carbon was placed within the lake and surrounding riverine areas in order to bind contaminants in the sediment. Once the carbon was in place, it was the desire of DNREC to also improve the local habitat as well as nutrient cycling within the lake. For help in crafting the design, DNREC turned to Biohabitats.

Biohabitats’ designed a tidal wetland planting area in order

to improve both the aesthetics of the area as well as the water quality within the lake. Biohabitats also developed a planting plan for the tidal wetland area to restore native vegetation within the lake that will also provide additional habitat for the species that thrive amongst the wetland vegetation.

The 4.9 acre restoration will not only enhance habitat and aesthetics, it will provide additional, ongoing water quality improvement as the wetland plants take up nutrients from stormwater that will likely remain part of this urban river system. One year after implementing the restoration, monitoring revealed a 60 percent reduction in baseline contaminants.

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