

Lake Nokomis landscape restoration projects

Before the development of the city of Minneapolis, the waterbody now called Lake Nokomis was actually a marsh. Originally formed in a depression scraped out by the receding glaciers, this wetland was characterized by a limited open-water area at its center surrounded by concentric rings of plants adapted to increasingly shallow water depths. In an extensive littoral or emergent (shallow-water) zone, plants grew with their



Lake Amelia prior to dredging

roots in the lake-bottom muck and their tops above water. This zone was dominated by bulrushes, cattails, and the grass-like sedges. Many animals found a home in this highly productive environment. These included muskrats, ducks and other waterfowl, red-winged and yellow-headed blackbirds, frogs, toads, turtles, fish, dragonflies, and damselflies.

Early in the 20th century, this landscape changed radically as Lake Nokomis and its surrounding parklands were created. The wetland was dredged and the dredged materials used to enhance the topography of the surrounding area. These changes have provided us with open water for fishing, boating, and swimming, surrounded by parklands suitable for picnicking, jogging, sunning, and ball-playing. However, over time, the shoreline of Lake Nokomis has become severely eroded and the quality of the lakewater itself has deteriorated. These changes are a result of the increased volume, speed, and contaminant load of stormwater runoff entering the lake from the densely-developed surrounding watershed and of the limited buffering capacity of the parklands around the lake. In addition, there has been extensive loss of habitat, with a few weedy plant species replacing the original diversity of native plants along the shoreline. To address these issues, the Minneapolis Park and Recreation Board has undertaken the phased installation of native plant buffer zones adjacent to the lake.

Savanna restoration and Native Gardens

In 1998, the steep hillside southeast of the Nokomis Community Center was planted in grasses and wildflowers to restore the original oak savanna ecosystem. The native plants used in this restoration are effective in stabilizing erosive soils on steeply sloped sites, while their dense root systems augment the permeability of the soil and help the uptake and filtering of stormwater pollutants. This project also included the creation of three native-plant perennial gardens near the intersection of Lake Nokomis Parkway and 50th Street East. Native plants, which are adapted to local soil and climate conditions, can thrive without fertilizers or heavy use of pesticides and herbicides. Phosphorus runoff from fertilizer use in the adjacent neighborhoods is a major contributor to the poor water quality of Lake Nokomis, and these gardens are intended to provide residents with ideas on how to use native plants in their own yards in lieu of turfgrass and other plantings which require chemical supplements.



Shoreline restoration

As a second phase of the establishment of a vegetated buffer around Lake Nokomis, the shoreline at the northeast side of the lake was restored starting in fall 2001. Funding for project design and implementation was pooled from a number of sources, including the Nokomis East Neighborhood Association, Department of Natural Resources Aquatic Plant Restoration and Conservation Partners grants, and Minneapolis Park and Recreation Board internal funds. Project planning started in 1997 and involved an extensive series of public input and education meetings. The project has enjoyed strong neighborhood support and participation.

The area restored in this project consists of a corridor 860 feet in length, with an average width of 60 feet, for a total area of over 51,000 square feet. First, the site was prepared by careful removal of undesirable species, leaving the valuable larger trees. Mixtures of native grasses and wildflowers were then seeded in an upland buffer zone between the paths and the water's edge. Area of the beach were planted with live stakes,



cuttings of short shrub species which root quickly and control erosion well.

In the emergent (shallow-water) and aquatic (deep-water) zones at the edge of the lake, over 10,000 "plugs" (small plants) of appropriate species were hand-planted within protective fencing called live cells and protected from wave action by constructed wave breaks. These protective devices remained in place through the first several seasons of growth and were removed once the young plants had matured. Maintenance was contracted during the critical initial plant establishment period; contracted maintenance runs through 2006. Maintenance activities including mowing or burning each year, spot-removal of weeds, and cutting of woody saplings. An informal stone-flagged

shore access was built to accommodate the need for public access to the lakeshore in the restored area. Once established, this shoreline area will add both to the health of the Lake Nokomis ecosystem and to the enjoyment of park visitors.

