Nankin Lake Habitat Restoration

In partnership with:

Funded by a grant from the U. S. Environmental Protection Agency (USEPA) Great Lakes Restoration Initiative (GLRI) of approximately $3.5M received by Wayne County.

The Nankin Lake Habitat Restoration:

- Will restore ecosystem function to Nankin Lake, increasing aquatic diversity throughout the Rouge River for fish species and other native aquatic life.
- Addresses Rouge River Area of Concern (AOC) Beneficial Use Impairments (BUIs) for Loss of Fish and Wildlife Habitat, Degradation of Fish and Wildlife Populations, and Degradation of Benthos.

Wayne County received funding from an USEPA GLRI grant for the Nankin Lake Habitat Restoration project as part of its effort to delist the Rouge River AOC. The Rouge River Advisory Council (RRAC) approved a list of projects that need to be completed in order to remove the Rouge AOC habitat BUIs. The list identifies the restoration of Nankin Lake as having a significant impact on the removal of the BUIs within the AOC.

Over the years, Nankin Lake, an impoundment located in Livonia, Michigan along the Middle Branch of the Rouge River, has slowly filled in with sediment. Due to this buildup, the lake is shallow in many areas and has visible depositional areas and islands, decreasing the total acreage of water and habitat present by approximately 1.5 acres. Sedimentation and the invasion of phragmites and narrow-leaf cattail has degraded the shallow water habitats. Overall, fish productivity and the carrying capacity of the lake have declined dramatically. Flow during storm events effects the impoundment and downstream habitats significantly. The ability to reduce damaging storm flows will significantly aid in creating and maintaining habitat in the Middle Rouge River.

The Nankin Lake Restoration project restored the ecosystem functions the lake provides; including valuable spawning, nursery, and cover habitat for fishes and other aquatic species of all life stages. As part of the restoration efforts, sediment was removed and the reservoir basin reshaped to create more open water habitat, restore shallow water habitat, and provide over-wintering deep water habitat. The completed habitat restoration provides habitat for pike, yellow perch, salamanders, sunfish, black crappies, frogs, aquatic insect and more. In terms of vegetation, invasive species management was conducted within the current vegetation corridor, targeting invasive species such as garlic mustard, buckthorn and Siberian elm. Additionally, native vegetation was planted in shallow water areas and around the lake for habitat and to improve the overall water quality of Nankin Lake.

Conditions at Nankin Lake Prior to Restoration

Conditions upstream of lake

Invasive phragmites

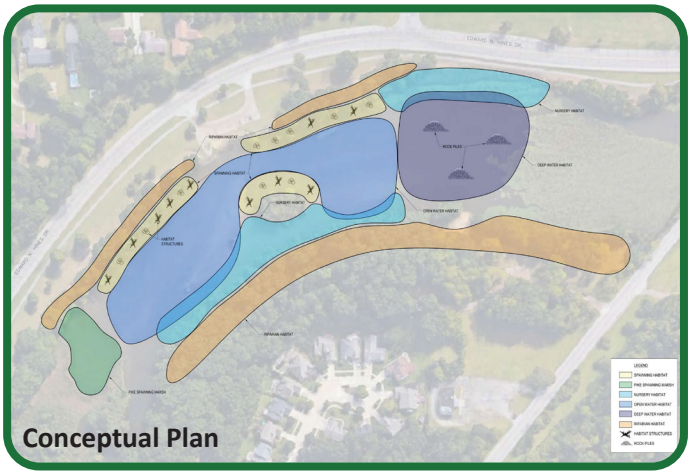
Shallow lake conditions due to sedimentation & erosion

This project is funded through a grant from the USEPA Great Lakes Restoration Initiative (grant number GL-00E02040-0)

Habitat Restoration at Nankin Lake

Restoration Outcomes

- 35,000 yds³ sediments removed & reshaped basin creating more diverse habitat.
- Diversification of aquatic benthic substrates using sandy gravels providing spawning substrate, attachment points, & cover for fishes, insects, crustaceans, & fauna.
- Planted native submerged, emergent, & floating aquatic vegetation to create habitat.
- Woody debris in the form of felled trees placed offshore to increase habitat diversity.
- Boulders added off-shore for spawning fish that require deeper water and add cover & feeding areas.
- Wayne County Parks, through Millage funds, provided upgraded park amenities (kayak launch/storage, dock, trails, parking lots, etc.)



Loading of stone for fish substrate placement

Native aquatic plantings

Aerial view of sediment dewatering operation

Erosion bank stabilization with pedestrian access

Wayne County amenities added including kayak storage

Wayne County amenities added including dock and kayak launch

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