



PROJECT PROFILE

MARTIN AND TYPO LAKE CARP BARRIERS



Lake
Restoration



Project Summary

This project improves water quality and habitat in Martin and Typo Lakes by controlling carp with strategically placed barriers and increased commercial harvests. Both lakes fail to meet state water quality standards due to excessive phosphorus, which fuels algae blooms. Carp are a major cause of poor water quality and lack of habitat in these lakes.

Barriers are an effective strategy for carp control because Typo and Martin Lake each provide something important for carp, and moving between the lakes is important to their success. Martin Lake is deeper, and good for overwintering. Typo Lake and Typo Creek are shallow and good for spawning. Stopping migrations between the lakes with barriers will reduce overwintering survival and spawning success. Even more, barriers will allow successful commercial carp harvests.

Stepped up carp harvests are planned once barriers are in place. Past commercial carp harvests on these lakes have had short-lived benefits. Harvests were limited to one lake, and carp quickly recolonized from the other lake, creek, or nearby wetlands. With barriers are in place, commercial carp harvests on both lakes will produce greater and longer lasting benefits.

Four locations for carp barriers were identified. These include the Typo Lake outlet, north inlet of Martin Lake, south inlet of Martin Lake, and Martin Lake outlet. Funding for this project was provided by the Sunrise River Watershed Management Organization (WMO), Martin Laker's Association, and Conservation Partners Legacy (CPL) grant. The project has been organized through in-kind efforts of the Anoka Conservation District (ACD).



Martin Lake in mid-summer



Typo Lake in mid-summer

Why Carp are Bad

- Disturb the bottom when feeding and spawning, stirring phosphorus and sediment into the water column.
- Uproot plants important to water quality and game fish.
- Have poor digestive systems, so they eat a lot and fertilize the water with nutrient-rich manure.
- Often become abundant, producing 300,000 eggs per female in a single spawn.

Carp are not the only cause of poor water quality, but are a significant contributor.



Carp exclusion curtain on Lake Wingra, WI shows potential water quality improvement when carp are controlled.

Sites 1,3,4 Project Expenses

Engineering	\$16,510
Materials and Construction.....	\$375,829
Coordination.....	\$25,835
Mileage	\$1,314
Total.....	\$419,488

Site 2 Expenses

Engineering	\$3,688
Materials and Construction.....	\$27,317
Coordination.....	\$3,543
Total.....	\$34,548

Project Funding

CPL	\$372,559 + \$31,407
Sunrise River WMO	\$35,149 + \$2,500
Martin Laker's Assoc.	\$5,000 + \$0
Metro Conservation Districts	\$6,780 + \$0
ACD*.....	\$0 + \$641
Total	\$454,036

*ACD contributed numerous pre-project planning & coordination hours.

Barrier Designs



Site 1: Martin Lake outlet
Vertical swinging bars allow passage of debris but prevent carp from jumping from the creek into the lake.

Site 2: Martin Lake south inlet

Vertical swinging bars on the downstream end of culverts allow passage of debris but prevent carp from swimming upstream.



Site 3: Martin Lake north inlet

Ten sets of horizontal, removable screens. Diversion posts keep debris and floating bogs away from the structure.

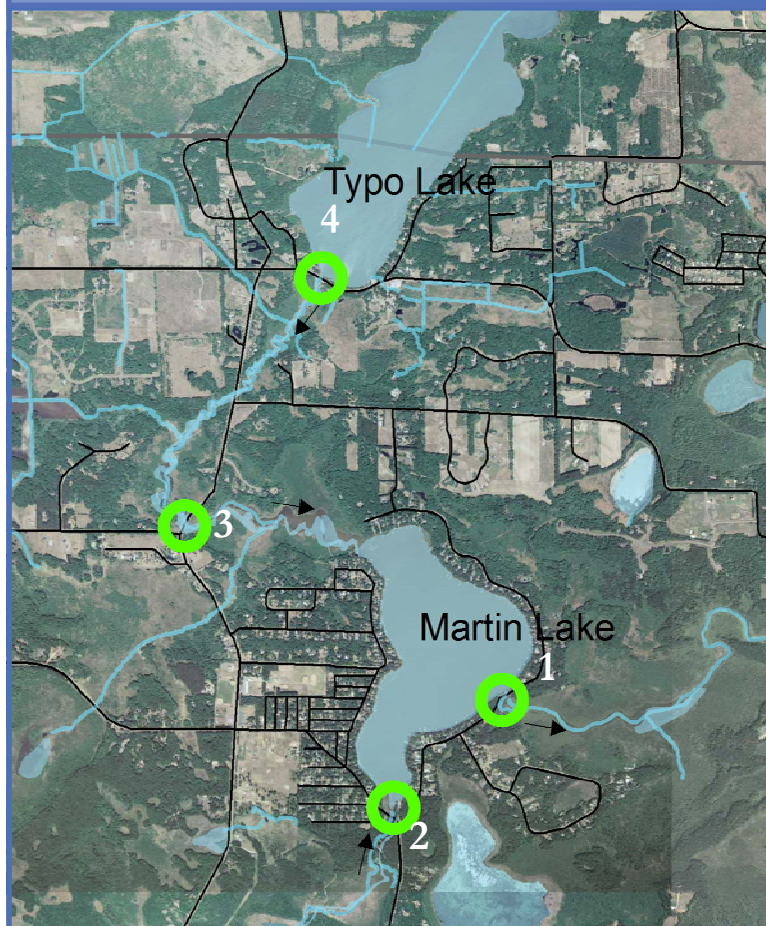


Site 4: Typo Lake outlet

Five sets of horizontal, removable screens. Diversion posts keep debris and floating bogs away from the structure.



Carp Barrier Locations



Commercial Carp Harvest



Funding has been secured for carp harvests in 2017-2019 will be aided by radio tagging to allow carp schools to be located for harvest. Winter seining (Martin Lake) and box traps (Typo Lake) will be used.

Maintenance and Safeguards

All carp barriers require periodic inspection and removal of debris with a garden rake. Linwood Township owns the barriers and performs maintenance. All are designed to maintain the current lake and stream hydrology, even when partially clogged, allowing the passage of the same water volumes at the same rates and with the same outlet elevations as occurred before this project. Emergency overflows provide redundant protection.

Project Partners



Sunrise River Watershed
Management Organization

MARTIN LAKERS
ASSOCIATION