

# H2O

## Mukwonago River a hidden ecological gem

*"It's like wading in an aquarium."*

By Craig Helker

John Lyons, fish net at the ready, puts the metal tip of a five-foot electro-probe into the Mukwonago River and thumbs the on-switch. The roar of the electrical generator towed behind him lowers a notch, and, instantly, small multi-colored darters tumble by on the river bottom, lured from their hiding places by 140 volts of electricity. Sunfish show their sides in bright flashes, then float, stunned, to the surface. A northern pike rockets out from the submerged shoreline vegetation, a green torpedo under the water, drawn to the electro-probe tip.

Lyons, research biologist with Wisconsin's Department of Natural Resources and adjunct curator of fishes at University of Wisconsin's Zoological Museum, has been monitoring fish populations on the Mukwonago River since grad school in 1981. He's been conducting formal surveys annually since 2003. This year's sampling found 3,679 fish, of 35 different species, including five special concern, threatened or endangered species.

For comparison, Lyons notes in the survey report, "Statewide, most stream stretches of similar length yield fewer than 20 fish species, and any stretch with more than 25 is exceptional."

"Everyone thinks the important environments are up north," Lyons said. "But, they have one in their own backyard. The Mukwonago River is one of the finest rivers in the state, and the Midwest."

### A Special Stream

In 2010, the Southeast Wisconsin Regional Planning Commission completed a protection plan for the Mukwonago River. Its principal author, Tom Slawski, past president of the American Fisheries Society and UWM graduate, explained why the Mukwonago is in such good shape compared to other rivers in our area. "The Mukwonago River bucks the trend of so many



Longear sunfish sign. -photo Brooke Robinson



A trumpeter swan on the Mukwonago River. Trumpeter swans are a species of special concern. -photo Brooke Robinson

### Learn More

The Nature Conservancy in Wisconsin  
- [nature.org/wherewework/northamerica/states/wisconsin/preserves/art5037.html](http://nature.org/wherewework/northamerica/states/wisconsin/preserves/art5037.html)

Friends of the Mukwonago River  
- [mukwonagoriver.org](http://mukwonagoriver.org)

Waukesha County Land Conservancy  
- [waukeshalandconservancy.org](http://waukeshalandconservancy.org)

Mukwonago River Watershed Protection Plan, SEWRPC  
- [maps.sewrpc.org/publications/capr/capr-309-mukwonago-river-watershed-protection-plan.pdf](http://maps.sewrpc.org/publications/capr/capr-309-mukwonago-river-watershed-protection-plan.pdf)

Milwaukee Riverkeeper  
- [mkeriverkeeper.org](http://mkeriverkeeper.org)

Southeastern Wisconsin Watersheds Trust  
- [swwater.org/home](http://swwater.org/home)

of our southeastern watersheds," according to Slawski. "There are limited numbers of road crossings, large tracts of continuous lands. For whatever reason, its river corridor is mostly intact. It is diverse in its gradients and river bottom substrates. And it is groundwater-fed."

10,000 years ago, the retreating lobes of the Wisconsin glacier deposited massive amounts of gravel and sand as it melted. Now, waters from within those gravel and sand deposits emerge as coldwater springs to help feed the Mukwonago and keep it cool. Fish, such

as brook trout and mottled sculpin, requiring the high levels of oxygen that cold water supports, thrive in these spring areas. Furthermore, the clean, clear water promotes good water quality, something that game fish such as northern pike, rock bass, and longnose gar require. Lyons notes that his sampling typically finds 10-12 game fish species. For Wisconsin streams in general, a game fish population of eight species would be considered highly diverse.

### More Life Than Fish

And fish are not the only species to thrive in the Mukwonago. Lisie Kitchel, WDNR conservation biologist, studies freshwater mussels. "The Mukwonago River contains the most diverse assemblage of mussels in southeast Wisconsin," she said.

In their juvenile state, mussels require a specific fish species host, attaching to the fish's gills as a parasite. When able to function independently, the mussel releases and settles down to the river bottom. "Since the critical link in the mussel life cycle is its fish host," according to Kitchel, "the diversity of the fish population in the Mukwonago goes hand in hand with the diversity of the mussel population. The

greater the diversity of fish available, the greater the chance that the different mussel species can find their suitable host species."

A number of agencies and organizations are working to protect the fish, mussels, and overall natural species diversity of the Mukwonago River watershed, among them the Nature Conservancy, Friends of the Mukwonago, Waukesha County Land Trust, WDNR, and private citizens.

Between all partners, over 2,780 acres have been permanently preserved or put into protective easement to date. Protecting so much land in the watershed has served to protect the groundwater recharge areas that ultimately keep cold water flowing into the river. The undeveloped land also provides natural vegetated buffer areas that filter out pollutants before they can get to the water.

When asked what people can do to keep the Mukwonago high quality, Lyons said, "If you have a stake, get involved in local groups. But, in a broader sense, be supportive of the philosophy of protection for remaining sanctuaries. The Mukwonago watershed is one of the places in Wisconsin that should be maintained as best we can, lest it die the death of a thousand cuts."

### Natural Inspiration

The Mukwonago is a valuable reminder of what a Wisconsin river can be when people place a value on its quality and work to protect it.

The Mukwonago is pristine in contrast to the Kinnickinnic, Menomonee, and Milwaukee rivers, which have road culvert crossings that are impassable to fish, agricultural row cropping that goes right to the river's edge, or high amounts of impervious concrete in their watersheds. These impairments, these "thousand cuts," keep these rivers from reaching their ecological potential.

As local groups such as Southeastern Wisconsin Watersheds Trust and Milwaukee Riverkeeper work to improve these waterways, they can take some inspiration in the gem that is the Mukwonago, where implementing a philosophy of protection and taking a watershed-wide approach have made a difference.

To experience the Mukwonago River yourself, drive the 35 minutes from Bay View to the Highway 83 crossing in the Village of Mukwonago. Bring some sandals or hip-waders and you can have a firsthand look at an environment the Nature Conservancy has designated as one of the highest quality waterways in the state. "It's like wading in an aquarium," Slawski said. "There's no way to describe how cool it is."

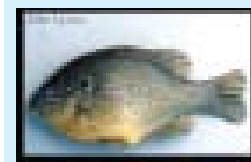
Craig Helker is a water resources biologist with the Wisconsin Department of Natural Resources.

### Species of the Mukwonago



#### Rainbow Darter (*Etheostoma caeruleum*)

This colorful fish averages 2.5 inches in length and prefers medium to fast flowing streams and river. Requires clean water.



#### Longear Sunfish (*Lepomis megalotis*)

Listed as a Threatened species in Wisconsin. Prefers clear, shallow, and still waters of streams, and occasionally lakes.



#### Rainbow Shell (*Villosa iris*)

A mussel listed as Endangered in Wisconsin. Found in shallow, flowing, clean small streams with stable gravel substrate. The known host fish include smallmouth, largemouth, and rock bass.



#### Ellipse (*Venustaconcha ellipsiformis*)

A mussel listed as Threatened in Wisconsin. Found in shallow, flowing, clean small streams with stable substrate. The host fish are mostly small stream species, including rainbow darters, Johnny darters, and mottled sculpin.

**Tamarack Waldorf School**  
**Holiday Fair & Open House**  
 unique hand-crafted gifts including jewelry, pottery, handblown glass, fair trade items, toys and clothing  
 10am to 5pm • Sat. Dec. 4th  
 1150 E. Brady St. • [tamarackwaldorf.com](http://tamarackwaldorf.com) • 414-277-0009

**Brew City IMPACT**  
 Ready for a different kind of workout?  
 - Personalized group training  
 - Metabolism boosting exercises  
 - Body sculpting weight training  
 - Energizing, women-only social atmosphere  
 Monday, Wednesday, Friday / 5:30-6:25 a.m.  
 St. Luke's Lutheran Church, 6705 Northway, Greendale  
 For more information or to register, visit [Fit4eBODY.com](http://Fit4eBODY.com) or call (414) 840-7276.

**ONE MAN PAINTING**  
 Quality interior painting done by one professional painter.  
 No job too small  
 Never a mess!  
 Rooms starting at \$99.99  
 414-294-3796  
 262-902-1582