Each year, Gull Chain of Lakes Association volunteers lower a white “secchi” disk from their boat and measure the depth at which it disappears into the darkness. This single measurement, the point where the lake swallows the light, reveals a deeper story. It not only indicates the health of the lake. It’s also a remarkable indicator of the economy surrounding it.

Bob Goff has been coming to Gull Lake near Nisswa since he was eight years old. It’s a tradition his wife, Rosemary, happily embraced, driving there on weekends from the Twin Cities and eventually buying property in 1991. Today, their cabin is more than a summer place—the Goffs retired in 2002 and now live in the three-bedroom house year-round. This is home. “Nice neighbors and a nice place to live,” said Rosemary.

That deep attachment to the lake inspired Rosemary to become a leader with the Gull Chain of Lakes Association, which has been working on shoreline restoration projects designed to reduce runoff from lakeside frontages. The group spent five years testing water in the five streams that come in to the Gull Chain of Lakes to establish a baseline for water quality. So it was a crushing blow when one day last fall Bob pulled buoys out of the lake and discovered they were encrusted with zebra mussels, an invasive species.

Central Minnesota lake associations have been on the forefront (or shoreline, if you prefer) of water quality for years. That’s thanks in part to a program the Initiative Foundation introduced in 1999 called the Healthy Lakes and Rivers Partnership (HLRP), which has provided leadership training, strategic planning and grants to lake associations. Nearly 250 lake and river organizations and over 1,500 individuals throughout Minnesota have participated in the program.

“Good stewardship of a lake protects not only an individual’s property values, but also the economy of the county and region,” said Don Hickman, vice president for community and economic development for the Initiative Foundation and a former water biologist. High-quality shoreland property attracts retirees,
tourists and skilled workers to an area.

Throughout central Minnesota, forward-thinking lake associations like that on Gull Lake have been testing their water quality, measured by using a tool called a Secchi disk that shows the lake’s clarity. Many counties have also been involved in drawing up plans designed to help shoreline property owners reduce stormwater runoff and plant buffer zones along the water’s edge, which filter pollutants and help protect shorelines from erosion. Even with lakeshores becoming more crowded and modest old cabins giving way to massive new houses, there are signs that these strategies are improving or at least maintaining water quality.

**SEARCH FOR A CURE**

Keeping local waters as clean as possible isn’t just about the environment. “There’s a great deal of economic value attached to property values due to lake quality,” said Patrick Welle, Ph.D., an economics professor at Bemidji State University. In 2003, Welle co-authored a report with BSU colleague Charles Parson, Ph.D. that studied Minnesota lakeshore property in eight counties along the Mississippi River, looking as far south as Morrison County. The report concluded that “lakes with better water clarity are getting more economic value because people are willing to pay more for the lakeshore property,” Welle said. “That, of course, carries into a stronger economy and also affects units of government, because higher value property generates more property taxes.”

The Bemidji State research team calculated how property prices would change if water clarity decreased by one meter (or about three feet). Brainerd’s Gull Lake, for example, would decrease nearly $53 per frontage foot for a total change of more than $8.8 million across the entire lakefront. By improving water quality, Gull’s property prices could increase more than $39 per frontage foot for a lake-wide total of more than $6.5 million. Considering a lakehome as an asset, that’s a serious capital investment to protect.

Welle has been following up on the study, based on a smaller number of lakes. Though it’s a work in progress, the early findings are similar to those of the 2003 report. “Those main economic forces are still operating,” he said. “Lakes with better water quality are commanding higher property values, all else being equal.”

Has the report heralded a new era of higher water quality? “It has raised awareness of enough local government officials and—in partnership with lake associations—a trend towards degradation of water quality has been prevented,” Welle said. He’s not sure that overall, lakes and streams in the region are clearer. “There are some lakes that have lost a yard or meter of water clarity in the last 15 years,” he said. Still, the practices of counties and lake association “are helping.”

Lake Legacy:
Bob & Rosemary Goff are actively involved in the Gull Chain Preservation Endowment Fund, a charitable fund hosted by the Initiative Foundation.
Unfortunately, these practices won’t have much effect against aquatic invasive species, as many lake residents have already discovered. Where water quality was once the top concern among Long Lake owners in Longville, former president of the property-owners association, Jerry Lerom, said that invasives are now “the hot-button issue.”

Long Lake has been training volunteers to be present at launches, asking boat owners where they’ve come from and doing quick inspections for signs of invasive stowaways. The great challenge in battling zebra mussels and other species, Lerom noted, is that on many lakes there are numerous launches, often overseen by a variety of entities, including municipalities, the DNR, resorts, campgrounds and private property owners.

Cass County, Lerom’s home county, is now developing an invasives management plan. He’s also heartened by the new Aquatic Invasive Species Cooperative Research Center at the University of Minnesota, which is focusing on zebra mussels and Asian carp. Lerom said that this is where a real solution needs to be found: “It’s like coming up with a cure for cancer.”

SEEKING CLARITY

While news about invasive species is unsettling, the work of ordinary citizens does make a difference when it comes to water quality. The legacy of the Initiative Foundation’s HLRP program lives on in the activities of many lake-property owners. Lerom, now the president of the Association of Cass County Lakes (which represents 60 associations) credits the initiative with persuading many associations to become serious about something more than how the fish are biting. On Long Lake, Lerom and other trained volunteers took water samples and Secchi disk readings, and developed lake management plans based on the data they gathered.

“We took a look at those things we have control of that influence the quality of water,” Lerom said, referring to shoreline vegetation buffers and septic-system inspection and improvements. Because the association is a voluntary organization that can’t dictate its member’s decisions, the group focuses primarily on education. Sometimes, those efforts have gone beyond the information. A few years ago, the Long

![Impact of Water Clarity on Property Values](chart.jpg)

Source: Bemidji State University
Lake association offered property owners free native plants for planting inside the 20-foot buffer zone along their shorelines. About 250 property owners took part.

Lerom said that recent water samplings show minimal quantities of phosphorus, a fertilizer component that can stimulate destructive algae blooms, in Long Lake: “I think we’re feeling good that we’re maintaining a good water quality level,” he said. What’s more, water testing and lake association activism to maintain water quality are now “the norm” throughout Cass County.

In many counties, local governments have joined ranks with lake associations. This June, the National Association of Counties recognized Crow Wing County with an innovation award for its study of lakeshore impervious surface research conducted in 2012.

The study grew out of revisions to the county land ordinances that became effective in April 2011 and have clearer, consistent “performance standards” for septic systems and shoreline buffers. “We knew we needed more local data about our lakes,” said Chris Pence, the county’s land services supervisor. The ordinances state that the standards become in force when impervious coverage takes up 15 percent of the property’s surface. But one thing the county didn’t know—which properties had such coverage, or might be in danger of crossing that line with new construction?

Aided by grants from the Initiative Foundation and the University of Minnesota’s Center for Regional and Urban Affairs, Crow Wing County began to inventory the impervious coverage on property along lakes of 500 acres or greater in size. County staff collected information about what portion of a property is covered with buildings, driveways and other impervious surfaces. Simply stated, the more that lakeside property is covered, the more likely the lake is to have problems with water quality, since there will be more runoff. The data gives the county a much clearer sense of which lakes are at risk and also allows quicker permit turnaround for, say, adding a garage.

The county’s ordinances have the force of law only on unincorporated land in the county, or on new development or additions where the landowner applies for construction permits. If a proposed improvement pushes the property “over 20 percent impervious, they’re going to have to have a stormwater plan and a buffer down by the lake at the same time,” Pence said. The ordinance doesn’t enforce its requirements on existing coverage, but “we provide incentives and education so that [property owners] choose” to make improvements.

In May 2012, the Crow Wing County board authorized an update of its water plan, which Pence said will soon be completed. The plan has two goals: to help drive local policy on keeping lakes, rivers and groundwater clean; and to better position the county when applying for improvement grants from the state’s Legacy Fund.

“The county is putting together the water plan, but it’s not just the county’s water plan,” Pence noted. The different groups can use the information and help garner some grant dollars to encourage property owners to make needed property improvements.

Group efforts like this are what will ultimately lead to higher shoreline property values and cleaner lakes for everyone to enjoy—current and future generations. And that’s something the Goffs are onboard with as their kids and grandkids frequent the lakehome. “We want to make Gull Lake nicer for future generations, so that they can enjoy the lake as much as we have,” said Rosemary.