



ALL EYES ON THE WATER

Volunteer lake monitors keep close watch on northwestern Montana lakes.

What are they finding? **By Becky Lomax**

Just as southwestern Montanans boast of their beautiful trout rivers, so do northwestern residents take pride in their sparkling blue lakes. The clear water, clean beaches, plentiful fish, and thrilling cry of loons on lakes like Whitefish, Swan, and Flathead draw wildlife watchers, anglers, boaters, and people looking for lakeshore vacation homes.

Essential to each lake's value is the quality of its water. No one wants to emerge from a swim covered in algae or boat through mats of floating vegetation.

Keeping the region's lakes clean and clear requires constant vigilance. Water can be degraded by old or faulty residential or community septic systems, agricultural runoff, erosion from poor land-use practices, or aquatic invasive species such as zebra mussels and Eurasian watermilfoil. "If we can identify a threat early enough, there's a good chance it can be solved before becoming a huge

problem," says Josh Gubits, an environmental scientist with the Whitefish Lake Institute, a nonprofit organization that conducts research and develops programs that benefit Whitefish and other local lakes.

State and federal agencies lack funding and staff to monitor water quality on all Montana lakes. Fortunately, dozens of volunteers with the Northwest Montana Lakes Volunteer Monitoring Network donate their time on 41 regional waters. Gubits oversees the program, a partnership of the institute, Montana Fish, Wildlife & Parks, the Flathead Basin Commission, and the Flathead Lake Biological Station. "The program gives citizens a great opportunity to participate in the ecological future of the places where they live," he says.

The volunteers—lakeshore residents, college students, paddlers, and others—help keep local lakes healthy. Just as important, many say the hours spent closely observing the water also deepens a personal relationship

with their beloved lakes and fosters a stronger sense of environmental stewardship.

The Whitefish Lake Institute isn't the only organization enlisting water quality volunteers. Montana State University, University of Montana, Salish Kootenai College, and other organizations run programs in which student volunteers from grade school to graduate school collect lake, stream, and river water samples and analyze the contents.

STRONGER ATTACHMENT

Much of the volunteer work on Montana's northwestern lakes is technical. Gubits teaches the roughly 50 volunteers how to

QUALITY CHECK Whitefish Lake Institute environmental scientist Josh Gubits and a volunteer collect water samples on Beaver Lake near Whitefish. Roughly 50 volunteers donate their time to monitor water quality on 41 northwestern Montana lakes.



disk, used worldwide to measure water transparency, into the lake and records the depth at which the black and white quarters become indistinguishable from each other. By tracking the “Secchi depth” over time, scientists and local communities can identify trends such as more nutrient loading or algae production that help identify sources of lake contamination.

The keen-eyed volunteers can also be the first to notice the appearance of aquatic invasive species (AIS) such as Eurasian watermilfoil, zebra or quagga mussels, New Zealand mudsnails, and flowering rush. If they spot what looks like an AIS, volunteers report the GPS coordinates and a brief physical description to Gubits, who then conducts follow-up monitoring with FWP and Montana Department of Agriculture

ment among lakes could spread hidden aquatic invasive species, Gubits thoroughly inspects, washes, and dries his boat, motor, and monitoring equipment between each visit. “Educating the public about the importance of decontaminating watercraft and equipment is part of our goal,” he says.

Volunteers often help Gubits take water samples that are then mailed to a laboratory for analysis of phosphorus, nitrogen, and chlorophyll. Plankton samples are analyzed for microscopic larvae of invasive zebra or quagga mussels. Gubits also lowers into the water a narrow, 2-foot-long cylindrical device called a Hydrolab that measures and records temperature, dissolved oxygen, and acidity.

SEVERAL USES

The data gathered by Gubits and the volunteers is used in several ways. One is to track water quality trends over long periods of time. A steady increase in phosphorus and nitrogen over the years could indicate leaking septic systems or the presence of human-introduced fertilizer or detergents. Another use of the monitoring information is to alert public agencies of recent changes in aquatic environments that

monitoring is to detect AIS and begin containment. When Eurasian watermilfoil was first detected in Beaver Lake in 2011 by a state employee, the discovery came early enough to combat the infestation. Soon after, an AIS task force representing state agencies, county weed districts, nonprofits, and consultants was formed. Bottom barrier mats and dredging got rid of most of the plants. The lake continues to be monitored for any reappearances. “If we detect invasives like Eurasian watermilfoil early enough, the likelihood of controlling them increases substantially,” says Wachsmuth. “The quicker we find out about something like AIS, the quicker we can respond. And that’s one reason why this volunteer program is so critical.” 🐾

To volunteer with the Northwest Montana Lakes Volunteer Monitoring Network, visit nwmtlvmn.org.

KEEPING IT CLEAN Below: Students take water quality samples for a lake and stream monitoring workshop. Opposite page, top: A volunteer measures water clarity by lowering a Secchi disk into Halfmoon Lake near West Glacier. Bottom: Clean water is essential for a wide range of fish and wildlife, including bull trout, cutthroat trout, and common loons.

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officials. “We also give volunteers PVC pipe sections to serve as artificial substrates,” Gubits adds. “They place the pipes in fixed underwater locations and regularly check for colonization by invasive mussels.”

Steph Paidas of Whitefish joined the program in 2013 after buying a kayak. She tagged along with a friend who monitored nearby Murray Lake and then “inherited” the lake’s monitoring duties when her friend moved away. “The more I connect with ‘my’ lake, the more it feels like it’s a part of me,” she says. Even though it’s not part of her monitoring duties, Paidas also picks up trash along the shoreline. “Murray Lake has become my place, and I feel protective of it,” she says.

In addition to reports from volunteers, Gubits conducts more-detailed surveys of all 41 lakes twice each year, once in summer and again in fall. Because so much move-

could affect fishing, swimming, or drinking water. “That’s why these folks are so valuable,” says John Wachsmuth, an FWP conservation specialist closely involved in the volunteer program and AIS management in northwestern Montana. “You need a regular monitoring program to detect things that affect clean water and healthy habitat, because those are key to maintaining healthy fish populations.”

For instance, says Wachsmuth, lakes with high calcium and alkalinity are more susceptible to mussel infestations. “Knowing which lakes are most susceptible to invasive species infestations helps us make better use of our time and funding,” he says.

Yet another value of lake

Longtime Montana Outdoors contributor Becky Lomax lives in Whitefish.



CLOCKWISE FROM RIGHT: BECKY LOMAX; CHUCK HANEY; BETHANN GARRAMON; MERKLE; BETHANN GARRAMON; MERKLE

