

Salt in Mirror Lake

■ *As a result of road salting, one of the Adirondacks' most scenic water bodies is heavily tainted with sodium chloride.*

By Mike Lynch

Located behind the bustling Main Street in Lake Placid, Mirror Lake is one of the most well-known water bodies in the Adirondack Park. It also has a high concentration of road salt (sodium chloride), a fact that is drawing increased attention from local conservationists and elected officials.

In 2014, researchers with Adirondack Lake Assessment Program (ALAP) found that the average concentrations of sodium and chloride were, respectively, 22 milligrams and 39 milligrams per liter of water—substantially higher than the concentrations found in Adirondack lakes that lie away from roads.

Water with high concentrations of road salt can be toxic to many forms of aquatic life, including fish, macro-invertebrates, insects, and amphibians. It poses a risk to health, growth, and reproduction. In some cases, it leads to lower levels of dissolved oxygen in water bodies.

ALAP says lakes away from roads have concentrations of about 0.5 milligrams of sodium and 0.24 milligrams of chloride per liter. Mirror Lake has more road salt in its water than 97 percent of roughly seventy water bodies studied by ALAP, which is a volunteer-driven water-



Photos by Nancie Battaglia

Lake Placid Mayor Craig Randall calls Mirror Lake the centerpiece of the village.

are centered on the village itself,” Randall said. “It really is the centerpiece of the village in many respects, in terms of recreational activities, fishing. Those sort of things.”

One fear is that heavier salty water will settle to the

Watershed Association President Bill Billerman. “We’re going to have to try to start cutting back and actually eliminate salt on all of the areas around the watershed because it drains right into the lake.”

quality-monitoring program run by Protect the Adirondacks and the Adirondack Watershed Institute.

Mirror Lake's road salt content puts it up there with Lake Colby in Saranac Lake and the Cascade Lakes located off Route 73 south of Lake Placid, said Dan Kelting, executive director of AWI.

"I think it makes pretty good sense," Kelting said. "It has a small watershed and a lot of impervious surfaces that are salted. There's little opportunity for the meltwater to percolate into the soil to be retained. It basically shoots down into the lake."

In addition, the lake has only one small outlet, which drains into the Chubb River, so there's little opportunity for the contaminated water to leave the system.

Mirror Lake is surrounded by storm drains that send contaminated water straight into the lake. This is especially problematic on Main Street, which receives large quantities of salt from state Department of Transportation trucks. On other roads around the lake, the village uses a de-icing mix that contains mostly sand and some salt.

Mayor Craig Randall said the village is working to redirect the storm drains away from the lake as it upgrades its water and sewer infrastructure. He also said the village is experimenting with an alternative de-icing solution—consisting of corn syrup and road salt—on its Main Street sidewalks.

Mirror Lake is a vital part of the village, heavily used by anglers, paddlers, and swimmers in the warmer months.

"Mirror Lake is absolutely central to the activities that

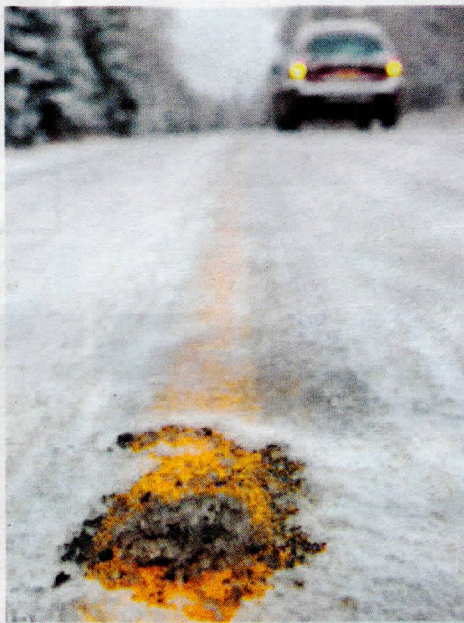
bottom, creating a chemical stratification that could impede the natural turnover of the lake in the spring and fall, when well-oxygenated surface water mixes with less-oxygenated water in the depths. Without this turnover, oxygen levels could fall in the summer in the lower parts of the lake, making the depths less hospitable to cold-water fish such as lake trout.

Early indications suggest this might be happening. Brendan Wiltse, coordinator of the Ausable River Association, said tests performed last summer found that Mirror Lake loses dissolved oxygen in the summer earlier than expected. However, he cautioned that this happens naturally in some lakes and additional testing is needed to understand the situation.

"Right now we don't know which of the two Mirror Lake is," Wiltse said. "We just know that it loses the oxygen in the bottom pretty early on in the season, and by the time you reach the end of summer, there's about a meter or two of what you'd consider ideal habitat for lake trout."

One of the problems with this situation is that even if Lake Placid officials can figure out a way to stop most of the road salt from getting into the lake, the concentration levels likely won't improve overnight. Studies by organizations, such as the Adirondack Watershed Institute, have shown that road salt stays in the environment for years, even decades. So the shorelines and nearby groundwater could continue to leach road salt into Mirror Lake. In addition, Mirror Lake's ability to flush itself is limited.

"It's a problem that is going to take time to fix because things like this don't happen overnight," said Mirror Lake



Road salt

Overall, in recent years, there seems to be more public acknowledgement that road salt is harmful to the environment, in part because of campaigns by groups such as AdkAction and the Adirondack Council. Those two organizations, along with Paul Smith's College, organized a road-salt conference at the college in the fall of 2014.

"There's a growing awareness," Randall said. "Meetings we're going to, we're hearing more and more about trying to find alternatives to salt."

DOT has also made attempts to curb its use of road salt. It has reduced usage from 225 pounds per lane-mile to 194 pounds in the Park. In addition, it has experimented with using magnesium-treated salt in place of conventional road salt on portions of Route 73 and Route 86 in the Lake Placid area, including Main Street. In the fifteen-mile test area, DOT also has reduced speeds of its trucks to lessen the amount of salt bouncing off the road and is using trucks with both front-end and underbody plows to improve the removal of snow and ice.

DOT is also part of a working group born out of the Paul Smith's College gathering, but the group's progress has been limited. Kelting said the group may be trying to tackle too big of a geographic area. He suggested that it might make more sense to focus on smaller areas, such as Lake Placid and Lake George and work from there.

On the other hand, road-salt contamination has already impacted numerous water bodies in the Park and the potential for more is large because of the connectivity of the region's water bodies. At the Paul Smith's conference, Kelting said that 77 percent of the Park's surface water and 52 percent of its stream mileage is hydrologically connected to paved roads.

"It's daunting because the problem is so pervasive," said Adirondack Council Executive Director Willie Janeway. "The other thing that is daunting is that the incremental steps that have been taken, while good, are not going to cut it. That has become clear. Two years ago there was a hope that we make some adjustments here and there and we will solve this problem. It's going to take a much more aggressive approach." ■