

Scientists say invasive elodea at Alexander Lake threatens salmon



PHOTO/HEATHER STEWART/ALASKA DEPT. OF NATURAL RESOURCES

Elodea, an invasive aquatic plant, was spotted at Alexander Lake by Alaska Department of Fish and Game researchers this summer and work has begun on an eradication plan. The plant, which has been found at other lakes around Alaska, is a concern because it can outcompete vital salmon habitat and serve as prime habitat for the northern pike ADFG scientists are trying to eradicate.

By Molly Dischner
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Researchers working on a pike eradication project in Alexander Lake this summer encountered an unexpected species.

Elodea, an invasive aquatic plant, was spotted at the lake when the Alaska Department of Fish and Game team went to check minnow traps there, said Heather Stewart, a natural resource specialist for the Alaska Department of Natural Resources Division of Agriculture.

Stewart and her colleagues surveyed the lake in early September after ADFG notified them of the invader. For now, the plant's presence is "pretty sporadic," she said, estimating that it covers about 10 acres in the 650- to 700-acre lake.

The weedy species makes prime pike habitat, Stewart said, and outcompetes the plants that are ideal for salmon, making it especially problematic for a lake where the ADFG is trying to mitigate pike and ensure salmon survival.

Elodea is found in 18 waterbodies in Alaska, but Alexander Lake is the first place it's turned up in the Mat-Su, Stewart said.

"This is the first infestation we've found in the Mat-Su, and we speculate it came from Anchorage and one of the infested lakes in Anchorage," Stewart said.

Stewart said she's working on a grant for a project to eradicate it, and also talking to the Matanuska-Susitna Borough Assembly about the possibility of funding it.

Economist Toby Schwoerer said aquatic invasives are typically more expensive to eradicate than their terrestrial counterparts because more equipment is required, and because the herbicides required have a higher cost. But a small infestation caught early, like the elodea at Alexander Lake, is much cheaper to address than a larger infestation.

Not taking care of it also has a cost, Schwoerer said. Schwoerer works at the University of Alaska Anchorage Institute for Social and Economic Research, and does research on the economic impact of invasives. According to a 2012 paper he authored, an average of \$5.8 million was spent on invasive species in Alaska from 2007 to 2011.

Salmon concerns are a primary focus, but there are other associated costs as well.

Schwoerer said the impacts on salmon habitat are complex, and no there's no paper that serves as a definitive source on exactly what happens when the species invades, or the precise salmon impacts.

But there's a general understanding of the basic impacts, including predation and habitat impacts. Elodea is good habitat for pike, a predator. It can also affect the substrate quality and change dissolved oxygen levels, so that the lake is less ideal for salmon.

Salmon concerns are typically a priority because so many industries and individuals in the state depend on salmon, Schwoerer said. But there are also other costs if elodea spreads — including to the ecosystem, recreation and even property values.

In the Lower 48, home values have diminished by as much as 10 percent to 15 percent once lakefront property is tainted by invasives, he said.

"If I buy a home before an infestation and then I have to sell it, I'm taking a hit," he said.

Recreation also suffers. Swimming in a weedy lake just isn't as desirable, Schwoerer said. Fairbanks' Chena slough was once a prime spot for canoeing, he said. Now, it is totally impassable, due to the growth of elodea.

"You can stand a paddle up-right in it," he said.

Although an eradication plan for Alexander Lake is still being developed, Stewart said that individuals can help in the meantime by taking precautions not to spread invasives, and also by reporting any sightings to the state.

"Make sure they clean, drain and dry all of their equipment," she said, from boats to float plane rudders — anything plants could hang off of.

Other regions identify, eradicate elodea

Elodea is a newcomer in the valley, but resource managers in other parts of the state have already faced the challenge.

Kenai National Wildlife Refuge biologist John Morton said the story was similar on the Kenai Peninsula. The weed was found

while ADFG was treating Stormy Lake, in Nikiski, for pike. Eventually managers realized it was present at two other area lakes — Daniels and Beck.

"We decided right from the get go that we were going to try and eradicate it on the Kenai Peninsula," he said.

Delaying the project would likely have increased the cost, and decreased the chance of successfully eradicating elodea, Morton said.

Morton said the project is about more than removing the elodea at the three contaminated lakes.

"If you let that go, it was going to affect 4,000 lakes on the western Kenai Peninsula," he said.

Managers decided on a plan of four treatments of the herbicide fluridone per lake, spread over three years.

The first two treatments, applied this year, were largely successful. No elodea was seen at Daniels Lake this fall, and the abundance decreased at Beck. The Stormy treatment occurred later, so the results aren't yet available, he said.

The second treatment was applied just before ice-in. Elodea can photosynthesize under the ice, and the chemical is meant to stop that process from occurring this winter.

The project cost about \$600,000, or \$1,000 per acre. A large chunk of the funding came from the Kenai Peninsula Borough. The work is a joint effort between the refuge, ADFG and others.

Elodea has also been spotted in the Copper River valley — another region where salmon habitat is a major concern. According to information from the Copper River Watershed Project, the focus there is on preventing it from spreading from Eyak Lake to other parts of the region; eradication there is unlikely to be successful.

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