

Researchers recommend ways to fight lake trout invasion in Glacier National Park

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Sean Townsend paddles across Kintla Lake in Glacier National Park. (Photo by Michael Meeuwig).

Natural barriers like waterfalls play an important role in preventing lake trout from spreading through Glacier National Park, so maintaining those barriers should be a priority, Montana State University researchers said after conducting a four-year study in the park.

Park workers might have to remove ice, logs or debris to keep the water from rising behind those barriers, said graduate student Michael Meeuwig and his adviser Christopher Guy. If they don't, lake trout will have an easier time swimming up the rivers and invading new lakes.

Monitoring and maintaining natural barriers are easier than trying to get rid of lake trout after they've entered a lake, Guy said. He pointed to the expense and effort spent at Yellowstone National Park where lake trout prey on native cutthroat trout in Yellowstone Lake. In Glacier National Park, lake trout compete with native bull trout.

Guy, assistant unit leader for the Montana Cooperative Fishery Research Unit at MSU, heads the Glacier research project with Wade Fredenberg of the Creston Fish and Wildlife Center near Kalispell, Mont. The U.S. Geological Survey funds the research.

Non-native lake trout were introduced into Flathead Lake about 100 years ago and are believed to be the source of the lake trout that are threatening Glacier's native bull trout population. Meeuwig's and Fredenberg's work have found that lake trout have since invaded eight lakes on the west side of the park: Bowman Lake, Harrison Lake, Kintla Lake, Lake McDonald, Logging Lake, Lower Quartz Lake, Quartz Lake and Rogers Lake.

"Quartz Lake was one of the last big lakes on the west side of the park that had intact native species assemblages," Meeuwig said. "That was a little bit of a surprise to find lake trout there."

Guy said visitors can be awed by Glacier National Park's scenery without realizing the unfolding drama within its lakes.

"What's going on in those lakes is a train wreck," Guy said. "A non-native species is replacing a native species."

Meeuwig said he doesn't have all the answers about potential competition between lake trout and native bull trout, but both are top-level predators and grow to similar sizes. Bull trout are getting "pinched" by downstream threats like lake trout and upstream threats such as

reduced runoff from glaciers.

To study Glacier's fish, Meeuwig spent the summers of 2004 through 2006 in the park. He camped in the back country and floated across mountain lakes in innertubes and kayaks. Together with one or two technicians per year, he hiked to 17 lakes on the west side of the park. In addition to the previously-mentioned lakes, they counted fish and collected samples in Akokala Lake, Arrow Lake, Cerulean Lake, Lake Isabel, Lincoln Lake, Middle Quartz Lake, Trout Lake, Upper Kintla Lake and Upper Lake Isabel.

To get to those lakes, Meeuwig and his team stumbled through streams, bushwhacked their way through the back country, carried loads of equipment, and endured snow and cold. Some of the lakes were so remote that they had never been sampled before and had no trails to them.

"It's a tremendous amount of work," Guy said. "The reason we didn't have a data set like this before is because of all that hard work.

The Glacier National Park study had two purposes, Guy said. One was to develop management recommendations for the park, which Guy and Meeuwig presented to park managers in January. Besides maintaining natural barriers, they suggested establishing a sampling program that would allow scientists to document changes in the bull trout populations.

The second goal of the Glacier study was to advance the scientific knowledge regarding the interaction between the park's landscape and bull trout population genetics. This will be covered in Meeuwig's doctoral dissertation.

Source: Montana State University

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