

CLIMATE TALK

Rising Lake Superior water temperatures threaten lake trout – and our future

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The Lake Trout season closed early this year in the Apostle Islands region of Lake Superior.

The abrupt end to our recreational Lake Trout season was a reminder that restoring a sustainable fish population is an ongoing process – a process that has successfully allowed Lake Trout to recover, after being almost eliminated from Lake Superior during the 1950s and 1960s.

The next step in this ongoing process is starting right now, as the Wisconsin Department of Natural Resources begins to prepare a new Lake Superior Fisheries Management Plan.

Managing the cold water fishery will be especially challenging, because Lake Superior is one of the fastest-warming lakes on the planet. Lake Superior has been warming at a rate of 2°F per decade, which is three times the global average for lakes – and much faster than the rate of increase in ocean temperatures. This Lake Superior warming trend is projected to continue throughout the 21st century.

Rising water temperatures could make Lake Trout and other cold water fish species less abundant in Lake Superior. Spawning activity, growth rates and survival of yearlings are directly impacted by water temperature. Warming summer surface water temperatures could also significantly reduce dissolved oxygen levels in Lake Superior, by interfering with the Spring and Fall “turnover” that brings oxygen from the surface to deeper waters. Deepwater Lake Trout (Siscowet) and other fish that depend on Lake Superior’s cold, well-oxygenated deep waters may struggle to survive.

Sea Lamprey – the invasive species that nearly eliminated Lake Trout from Lake Superior in the mid-20th Century – thrives in water that is 50°F or warmer. Surface water temperatures around the Apostle Islands have reached or exceeded 50°F at least 130 days in recent years. In those conditions, these parasitic “Great Lakes vampires” have the potential to grow larger and kill more fish than ever before in Lake Superior.

So what can we do about this?

We need to update Wisconsin’s fishery management strategies and intensify Sea Lamprey control programs. The new DNR Lake Superior Fisheries Management Plan must recognize the threat that increasing water temperature poses for cold water species and implement new measures to minimize negative impacts. Failure to do so, will jeopardize the self-sustaining populations of Lake Trout that we have worked so hard to establish in Lake Superior – through decades of Sea Lamprey control efforts, harvest regulations and fish stocking programs.

At the same time, we all need to support policies that reduce greenhouse gas emissions that contribute to the warming of our planet -- and the warming of the Big Lake that holds ten percent of the planet’s

freshwater. It's bad enough that the past three years have been the hottest on record for the planet. What's worse, is that Lake Superior surface water temperatures have been rising even faster than the rate at which our atmosphere is heating up.

There is not only an urgent need for government action, there is a need for voluntary personal action, as well. We all can choose to make small changes in our daily lives that, added together, can result in big reductions in greenhouse gas emissions. Many of these simple steps also can save you money and improve your health – actions like limiting food waste, eating a plant-rich diet and walking instead of driving.

If we fail to take steps to limit greenhouse gas emissions, Lake Superior will continue to get warmer. The abundance of Sea Lamprey and other invasive species will increase. The abundance of Lake Trout and other cold water species will decrease. As a consequence of these changes, there may also be significant economic repercussions for communities along Wisconsin's Lake Superior shoreline.

It's up to us. We need to work together to adapt fisheries management strategies so that they are effective in warmer waters and we need to implement actions to reduce greenhouse gas emissions that contribute to further increases in water temperature. If we don't do both, Lake Trout could be virtually eliminated from Lake Superior. Last time that happened, the cause was a parasitic invasive species. If it happens again, we would have only ourselves to blame.

Susan Hedman lives in Bayfield. She works for Clean Wisconsin and serves on the advisory panel that DNR has convened to develop a new Lake Superior Fisheries Management Plan.