

Burbot and the Lota lota love song

The Sea Grant Files, fresh news about fresh water.

Hi, I'm Olivia Dehler and you are listening to the Sea Grant Files.

Lush, lawyer, ling, mudblow, eelpout, poor man's lobster- These are all nicknames for a deepwater inhabit of the great Lake Superior- the burbot fish. The burbot, or lota-lota, from the French word for codfish can be found in most of Minnesota's northern lakes and rivers and has made its way as far south as Mississippi.

Native to all five of the Great Lakes, Burbot can live to be 15-20 years old and can weigh up to 60 pounds in other areas of the world. In MN, the largest burbot on record was pulled from Lake of the Woods. Larger than the average Thanksgiving turkey, it weighed a whopping 19 lbs. 3 oz. However, the typical burbot found in Minnesota is under 8 lbs. and less than 28 inches long.

A...let us say "quirky" looking fish in appearance, burbot resemble an eel more so than any other freshwater fish. These slimy fish are mostly accidental byproducts of a fishing trip for walleyes. Anglers who haven't handled burbot before are often surprised when the fish uniquely but harmlessly wrap themselves around his or her forearm.

Burbots are not actively managed in Minnesota, nor do they have a special conservation status, but they are celebrities around this neck of the woods in the winter. Folks near Walker MN likely know this freshwater codfish as the eelpout. For the past 36 years, crowds upwards of 5,000 have gathered on Leech Lake in Walker, MN for three days in February to celebrate this peculiar looking fish and attempt to bring up the largest burbot through the ice. The International Eelpout Festival was ranked 13th of the 'top 15 Weird Midwestern Festivals You Never Knew Existed'. The Eelpout really is something to celebrate for many reasons! One of which is its uniqueness in mating.

Burbot's spawning ritual is a rare sight, but those who have witnessed it note its almost mythical qualities. In early February, burbot migrate from deep water into shallow muddy areas and sandy shoals to spawn. They then conglomerate into a single moving cluster of 10-100 bodies moving in an out of a living sphere releasing eggs and spawn. Famous North woods naturalist, Sigurd Olsen, happened upon the burbot spawning spectacle through an open patch of ice and described it, "We...saw such a sight as few have ever seen—a struggling, squirming mass of fish, the long brownish snaky bodies twisting around each other, the entire contorted mass turning over and over, beating the water into a foam."

During this time of year the song of the burbot is most frequently sung. I'll save myself the embarrassment of an impersonation of the noise. Instead, you'll have to listen carefully, to this underwater recording of a burbot singing a love song: (insert 5 or so seconds of burbot noise here). A revving a motorcycle? The drumming of a ruffed grouse? No, that's a burbot as recorded under the ice by researcher Dr. Peter Cott from the Department of Fisheries and Oceans Canada. These under-ice acoustic signals are produced when burbot rapidly contract drumming muscles on their swimming bladders. Vocal calls are thought to be vitally important to the burbot because their visual cues are limited by lack of light under the ice. However, this has never-before been documented because of the difficulty seeing, or hearing, beneath thick ice.

When they are not busy...umm...”churning the water”, burbot are among the top predators in the food chain. Researchers have found smelt, bloater, nine spine sticklebacks, perch, lake trout, fish eggs and various crustaceans in the bellies of burbot collected in Lake Superior. However, burbot largely prey on sculpin, which are known to eat lake trout eggs. In return, bass, smelt, lake trout, and muskies eat burbot. Smelt, yellow perch or other small fish may snatch a young burbot up if they aren’t careful. Burbot also make a good catch for humans!

Its meat contains plenty of omega-3, fatty acids, and vitamin D. Burbot’s vitamin rich liver is held high in the eyes of French connoisseurs, either made into pâté or poached in white wine. Burbot soup was even included in Leo Tolstoy’s novel, Anna Karenina, as a dish fit for royalty. The meat of the burbot is codlike too. When boiled in sugar water and dipped in butter, burbot is said to taste similar to lobster, hence the nickname ‘poor man’s lobster. Your taste buds AND body will thank you for serving up burbot.

The discovery of burbot liver oil was made right here in Minnesota In the 1920’s by Ted and Joe Rowell, commercial fishermen on Lake of the Woods. They used burbot as feed on Joe’s fox farm and noticed the quality of the fox’s fur had improved. They then extracted some liver oil and found that burbot has six to eight times the potency in vitamin A and vitamin D, than “quality grades” of cod liver oil. The Rowell’s founded Burbot Liver Products Company, which later became Rowell Laboratories, Inc., of Baudette, Minnesota.

Unlike elsewhere, Lake Superior burbot populations have remained relatively stable. Integrated biosciences graduate student at the University of Minnesota Duluth and American Fisheries Society member Trevor Keyler told us that a decline of the burbot occurred in the 1950’s. He said, ”Due to sea lamprey, the burbot and lake trout populations crashed. After the 60’s and the control of sea lamprey, both populations have recovered significantly. However, because of the relationship between trout and burbot (the relationship being that trout eat juvenile burbot) lake trout are recovering rapidly, and burbot are lagging behind a bit. But burbot populations, especially in Lake Superior, *are* stable and no one is really concerned. Especially in offshore deep water spots, the burbot are doing just fine”, he said “They are the messiest fish I’ve ever studied-our tanks were covered with slime from them-but they sure are tasty!” Keyler added.

Burbot population stability can’t be matched in other Great Lakes. A possible explanation for the stability in Lake Superior may be that the non-native alewives (herring species) haven’t had a robust population in Lake Superior due to the hungry, coldwater lake trout. Extensive efforts to control the non-native parasitic sea lamprey may also be a contributing factor.

Burbot are listed as a rough fish, meaning that there are no restrictions on fish size or on bag limit. So poor-man’s lobster could find its way on to your dinner table quite often if you’re lucky! They’ve got a face only a mother could love and more slime than the lettuce you forgot about in the back of your refrigerator- but burbot...how fascinating.

This episode of the Sea Grant Files was produced by Olivia Dehler, Sharon Moen, and Maija Jensen. For more information, or to listen to other episodes of the Sea Grant Files visit the Minnesota Sea Grant website at www.seagrants.umn.edu. You can also follow the Minnesota Sea Grant on Facebook or Twitter. Thanks for listening.