

Audio Recording

CBC Information Morning with Portia Clark
Species at Risk in Nova Scotia – Freshwater species

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Speaker Key:

PC Portia Clark
BN Brooke Nodding
LC Linda Campbell

Timecode	Speaker	Text
00:00:06	PC	Of all the creatures we've talked about in our Species At Risk series on Information Morning, none may be more vulnerable than the Atlantic whitefish, so today we're looking at that critically endangered species as well as other fish and mussels at risk of just disappearing. Brooke Nodding is working to save the Atlantic whitefish. She's the Executive Director of the Bluenose Coastal Action Foundation.
00:00:26		Linda Campbell's a Professor of Environmental Science at St Mary's University. She specialises in Aquatic Ecosystems. Professor Campbell is deaf. Two St Mary's staff interpreters worked with us to provide access in both American sign language and in English. Good morning to you all. Good to see you.
00:00:42	BN	Good morning.
00:00:43	LC	Good morning.
00:00:43	PC	Well, first of all, to you, Brooke. Why is the Atlantic whitefish considered critically endangered?
00:00:49	BN	The Atlantic whitefish is found in only three lakes in the entire world. This is the last wild population, the last known wild population left, um, in the world and so what remains of the population is in these three lakes, um, part of the Town of Bridgewater's water supply watershed within the Petite Rivière in Lunenburg County, so Hebb, Millipsigate and Minamkeak Lakes.
00:01:13	PC	And what has brought them to the brink of extinction? What have been some of the factors in that?

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00:01:17	BN	Loss of habitat range in terms of barriers to fish passage, ah, a lot of dams throughout the system. They were previously found in the Tuskent system in Yarmouth, which has been heavily dammed. Um, a lot of freshwater systems in Southwest Nova are heavily impacted by acid rain and so they're very high in pH and so acidity levels have also impacted, um, available fish habitat. And most recently, um, especially in the lakes that we work on, is the impacts from invasive species, so chain pickerel and smallmouth bass, ah, directly predating on the fish.
00:01:50	PC	And, Professor Campbell, there's also a snail, I gather, that's an invasive species that's causing problems in freshwater lakes. Tell us a little bit more about the, about this snail.
00:01:59	LC	Absolutely. We've been finding a snail, it's called the Chinese mystery snail, and it's about the size of a golf ball, this snail, and it's brown, it's quite large. I have a shell here in the studio. I can't show you on the radio, unfortunately, but I can share it around with, ah, those in the room.
00:02:14	PC	Thank you. Yeah, it's quite large.
00:02:17	LC	It is.
00:02:18	PC	And so what does it do? Why is it a problem?
00:02:20	LC	Its very high reproductive rate. You have maybe up to 200 young, ah, life-bearing. So, they don't lay eggs, they're life-bearing snails and so you have these 200 baby snails and they're the size... Again, I brought in an example here to the studio, they're much smaller.
00:02:35	PC	Okay, yeah, a lot smaller. A fraction.
00:02:38	LC	Ah, you know, it looks almost like a speck of sand, these young, and they are born live and the numbers go up quite quickly and they eat algae. They're eating the algae and then they're going to change the nutrient cycle of the lake. So, we're not too sure what the impacts do look like but we do have more algae blooms regionally in the Halifax lake area, so we wonder if this is a function or a factor of those issues. And they're introduced through aquarium trades. A lot of people buy them as... you know, as pets in the pet store and they don't want these aquariums anymore, so they release what's left back into the lakes. So, the aquarium trade is one of the top sources of invasive species, um, in our ecosystems across Canada.

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00:03:19	PC	Mmh, and what species are they affecting, Professor Campbell?
00:03:22	LC	They're reducing the amount of food that fish and other species living in that lake have available to them. There are many impacts with these particular snails and we only just started doing our research on them. We're finding them in more and more lakes than we had previously realised. So, they might be more widespread than we think.
00:03:39	PC	And so it doesn't sound like maybe they're a factor when it comes to the whitefish and, just coming back to you, and the, the invasive species that are a problem for whitefish and other, ah, fish in Nova Scotia, the pickerel in particular. Ah, tell us a little bit more about how that's affecting, ah, fish in our province, especially the whitefish.
00:03:57	BN	Chain pickerel are non-native to our province, to our area. Um, they're pretty much... Ah, they're voracious [?] predators, so they, they attack anything that moves, from what our experience has been. They... Not only do they compete and, and directly predate on, on native fish species but they also predate on small mammals, um, amphibians, reptiles, um, anything that moves pretty much in, in a water system.
00:04:22		So, they've been known to clean out, ah, watersheds quite quickly. For the past three or four years we've been doing stomach content analysis of, ah, both, ah, smallmouth bass and chain pickerel and a couple of years ago our field staff actually, when they opened up a chain pickerel, found two baby snapping turtles. Um, they were still alive and so we were actually able to take them, um, and reintroduce them back into, ah, the water, a small success story on our part, trying to save snapping turtles from the pickerel.
00:04:51	PC	There's other species that your foundation, the Bluenose Coastal Action Foundation, is, is trying to save here in, ah, the Atlantic region. What are they?
00:04:59	BN	We have, ah, three fish species that we're currently working on, um, the Atlantic whitefish which is critically endangered; the Southern Upland Atlantic salmon, which is currently under review by the Federal Government as listed as endangered; as well as the American eel, which right now has been under review for a threatened species.
00:05:18	PC	Professor Campbell, you were talking about freshwater mussels as well, when it comes to threatened species and maybe people don't

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		focus as much on, on freshwater mussels in this part of the world as, as you do. Tell us what's happening with them and, ah, what it says about the health of our lakes.
00:05:33	LC	Freshwater mussels are really important to many lakes. They help filter the water and they change over the nutrients in the lake. They also are food for many fish species. So, they are fundamental for many lakes across Eastern Canada but, unfortunately, the numbers of many of those species are really going down. There are several species that are threatened. One good example is the yellow lampmussel in Cape Breton. The challenge with those mussels is that their lifecycle depends on fish.
00:06:05		So, for example, with the young spawning, they come out and they float, you know, they're, they're moving around in the water column and they're very active compared with the adults that just, you know, stay within the, the sediment. So, they're moving around and they catch onto these fish that are swimming by. They grip into the gills of these fish and so often when you look at the gills, they're, they're covered in these young mussels and then they just ride along on their taxi fish until they're ready to come off and then, when they drop off, ah, they're in different locations within the lake or wherever the fish had gone.
00:06:37		So, a lot of the mussels have a preference of, ah, several fish species that they can host to. Um, so those mussels here, ah, the yellow lampmussels, they prefer white perch, which is a native species here in Nova Scotia. So, um, that's their taxi. They drive them around wherever they need to go but, unfortunately, ah, with the, ah, chain pickerel being introduced, they're eating a lot of the white perch in the lakes and so now the yellow lampmussels, where's my ride, where's my perch taxi, and the numbers are going down and so that means that the young, they can't travel as freely and so they might be dying off and it is a real concern for many places here in Nova Scotia.
00:07:19	PC	In terms of saving these freshwater species, Professor Campbell, what is the solution? Obviously bringing up those perch populations and other fish populations but it's, as we've heard, complicated.
00:07:31	LC	My first step would be to, um, to clean your boat so that you're not spreading invasive species. When you're taking your water...waders out of the water, clean those off. And to make sure you're not carrying those invasive species between lakes, chain pickerel is a popular sport fish and so people like to introduce them into various lakes and I do not recommend that because later on those lakes

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		that they're being introduced, the other fish that are living there are going to be damaged and it's not good for long-term investment into the lake. Don't spread chain pickerel around. Those would be my suggestions.
00:08:07	PC	I, I see Brooke is nodding her head.
00:08:10	BN	I agree wholeheartedly.
00:08:11	PC	Right. Ah, what are your thoughts about what Professor Campbell was saying there in terms of helping... I mean, it sounds like the whitefish is, um, not a foregone conclusion but desperate, certainly. What are your thoughts around, um, preservation of the habitat?
00:08:24	BN	Well, I agree wholeheartedly with, with what Professor Campbell had to say about the impacts of invasive species and, you know, there are dire consequences to the native, native fish and other species in these systems. Um, I think it's been about four years now since the, ah, introduction of chain pickerel. Once we found chain pickerel in those lakes, then that is a complete gamechanger. Ah, it wasn't directly put into the three Atlantic whitefish lakes, it was a connecting lake, but they've since found their way into these lakes and so now it's, ah, directly impacting, ah, a, a critically endangered species.
00:08:58	PC	Well, we can certainly talk about this, ah, much more but I appreciate the conversation we have had around this, and I'm sure our audience as well. Thank you so much.
00:09:05	BN	Thank you.
00:09:05	LC	Thank you.
00:09:06	PC	And Brooke Nodding in the Executive Director of the Bluenose Coastal Action Foundation and Linda Campbell is a Professor of Environmental Science at St Mary's University. Professor Campbell is deaf. Two interpreters, interpreters, pardon me, provided American sign language and English translation and that conversation or that story is up on our website or will be soon as part of our Species At Risk, Sharing the Planet series. You can find it on the main page and also under the features section of other stories we've been doing on this in the last week and a half.