

CBC RADIO ONE – JULY 2019 – MOIRA DONOVAN INTERVIEW WITH SARAH KINGSBURY, MEGHAN FRASER AND LINDA CAMPBELL AT LOON LAKE, DARTMOUTH (ON SITE)

[TRANSCRIPT BY MOIRA DONOVAN]

The **Chinese mystery snail** has a lot of names: the trapdoor snail, oriental mystery snail, Japanese mystery snail.

But no matter what name you choose, in Nova Scotia, there's one thing you have to call it.:

An invasive species.

And that's the label that brings researchers here, to Loon Lake in Dartmouth.

Sfx lake

They're armed with a variety of tools, from a probe to measure temperature and pH.

to a bucket with a clear bottom and some rope

**CLIP: Yeah like that's really expensive. This is really not expensive.**

Saint Mary's University student Meghan Fraser takes the bucket and wades out into the lake.

With the bucket as a kind of periscope, she's counting snails that she sees underwater, and calling out the numbers.

**CLIP: So Megan did you have another one? OK. Four more.**

On the shore, Saint Mary's Masters student Sarah Kingsbury jots the findings down on a clipboard.

She says this information will help with the

**CLIP: the **Chinese mystery snail** project is taking the lake chemistry so whether there's calcium or P.H. or whatever data is available, conductivity, mixing it in with anthropogenic Lake usages, so if there's boating, fishing, recreational lake usage, distance to highways, and putting it all together to try and predict where the mystery snails either are now or where they're likely to go next.**

Loon Lake isn't the only lake they're monitoring.

But because the team can't be everywhere at once, they're asking citizen scientists to get involved, by keeping their eyes peeled for the snails.

And the work they're doing here today is designed to help them narrow the search.

**CLIP: we don't want to send people to go look in that area if they're they're in deep water and they're not going to see them anyway.**

**So we're looking to see what times of year the mystery snails are in shallow water.**

There's ample evidence of the presence of snails here.

Shells litter the shoreline. Sarah points out a couple that show how big they can get.

**CLIP: this is the smallest. Now it's maybe two centimetres long which is about the same size as our largest native species the pointed Campalonia. And then it goes all the way up to a larger size**

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a snail that we'd find. **Chinese mystery snails** can get up to seven centimeters in length, which is you know, two to three times larger than our native species. But when they're born there they're even smaller than this. So just a couple millimeters big

Even though they look harmless enough, Sarah says they're a serious threat to ecosystems like this one.

**CLIP: One is that they change the pH. And the nitrogen in the water. So if they increase that the the nitrogen and phosphorus and then we could have something like algae blooms. They also are in competition with native species. So one thing the Loon Lake has is a lot of mussels and native snail species that live in the lake and **Chinese mystery snails** can compete with both sets of of types of species so they can eat either by scraping up food off of the bench those which is the bottom of the lake which is putting that that species in competition with native species or they can eat by filter feeding where they take in nutrients by filtering out water and just taking in the nutrients by drinking the water. And that's how mussels consume their nutrition. So puts him in competition with both both types of species.**

As the name suggests, the snail is originally from Asia. The 'mystery' part comes from how they give birth - up to 100 in each brood, which 'mysteriously' appear, as tiny, fully developed snails.

It was first introduced to North America for the Asian food market in the 19th century.

Since then, it's been making steady progress across Canada.

Recently, it showed up in Nova Scotia.

Here's Saint Mary's University environmental science professor Linda Campbell, speaking via an interpreter.

**CLIP: In 2013/2014 we were looking for freshwater mussels for an experiment, and we thought Loon Lake would be a good place to go for those because we had found some shells previously. We came to Loon Lake with a summer student looking for those mussels and to our surprise we found one snail that was very large and I was just going what is this type of snail I had no idea what this was. And so my student found another one and then we found two more and then she found five more and we're looking at all of these snails and we couldn't find any mussels that we intended to find. We did find a few shells, but no mussels alive and we were like OK so something's happening here in the lake. We looked into it some more and we identified the type of snail. And then we were then we knew there was a situation on hand in Loon Lake.**

Canada doesn't have comprehensive monitoring system for invasive species - so even though the snail had already been detected in several provinces BEFORE it showed in Nova Scotia, there was no advance warning

The fact that it was discovered at all was basically a fluke.

Campbell says the issue is partly bureaucratic: invasive species are a lot of people's business, and no one's particular responsibility.

But she hopes that's changing.

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**CLIP: At the university level and provincial level, part of the challenge with invasive species is it falls under so many jurisdictions. For example DFO is responsible for freshwater, and Canadian Food Inspection Agency is responsible for monitoring aquarium trade. Agriculture Canada is responsible for monitoring crops and so there's no effort yet to bring all of those groups together but it is coming, I feel, and so that's good news for them.**

In the meantime, the **Chinese Mystery Snail** project is trying to make sure they know where the snail is and will turn up next, at least in Nova Scotia.

And for that purpose, they've created an app.

**CLIP: So if you go and download the app which the instructions are a step by step on our Web site and you open it up you'll have a different map options. One is called **Chinese mystery snail observations**. So that's the map that we ask people to report to when you open up the app it'll go directly to your location. (fade down)**

The app allows people to report sightings of the snail, as well as the circumstances in which they find it.

The team will then go out and verify.

**CLIP: Let's look at this one right here near Sullivan's pond, so Sullivan's pond has a report right now that's a little pink star. And that means has been verified. (fade down)**

Soliciting these reports via the app is a way to gather valuable information from people who spend time in these lakes - who know them better than anyone.

And - given that the snail can be spread by the movement of boats, or by people dumping their aquariums in freshwater - it serves another purpose.

**CLIP: also it's really important for people to be involved because one of the best ways to prevent invasive species from spreading between different water bodies is to tell people like, hey there is this invasive species here. Please stop spreading it.**