

What is 'lake snow'?

Lake snow is an invasive freshwater diatom (*Lindavia intermedia*) that is in Lakes Rotoiti and Rotoroa

In late 2019 *Lindavia intermedia* was found in the Buller River headwater. It has now been confirmed to be in Lakes Rotoiti and Rotoroa, Nelson Lakes National Park.

This microscopic algal species is a relatively recent introduction to New Zealand, first found in 2002. It is becoming increasingly common in New Zealand lakes, to date known from lakes in Otago and Canterbury, and several in Waikato on the North Island. In the northern South Island it is only known from Lakes Rotoiti and Rototora and Maitai Reservoir.

Under certain conditions, *Lindavia intermedia* can produce lake snow – a sticky, mucus-like substance that hangs under the water and can be a nuisance because it sticks to fishing gear, boats, motors, and people. Fortunately, it is not toxic to humans or livestock and poses no risk from food sourced from the lakes.

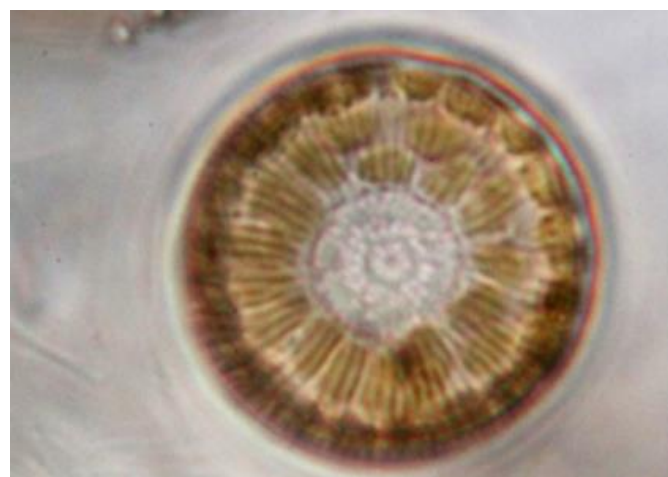
Little is known about the potential impacts of *Lindavia* on the ecology and health of the lakes. DOC is working with scientists and other agencies to develop monitoring and research.

How was it detected in Nelson Lakes?

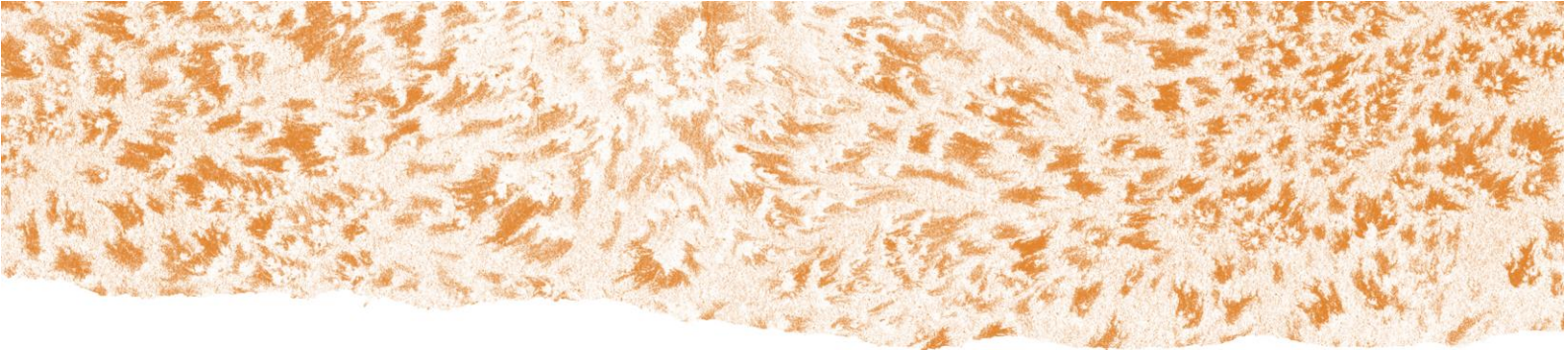
Over the summer of 2020/21, DOC rangers worked with Tasman District Council (TDC) and Manaaki Whenua - Landcare Research to take samples from Lakes Rotoiti and Rotoroa.

It was found that there is *Lindavia* in both lakes but the diatom is not producing lake snow. The diatom was at a higher density in Lake Rotoiti and increasing, so experts predict that it could produce lake snow there in the near future – possibly in summer 2021/22.

Lindavia does not always produce lake snow. In some lakes, such as Lake Wanaka, lake snow is regularly formed, whereas in other lakes it is only occasional. It is unknown what will happen in Lakes Rotoiti and Rotoroa in the long term.



Lindavia intermedia under magnification (top, photo by Phil Novis, Manaaki Whenua Landcare Research) and lake snow on a filter (bottom, source: www.waikatoregion.govt.nz)



What is being done to control Lindavia and prevent it spreading?

There are no known control or eradication methods for *Lindavia intermedia*. Sadly, now that it is in Lakes Rotoiti and Rotoroa, it is there to stay.

The priority now is to prevent the further spread of *Lindavia* from these lakes. It is spread between lakes on contaminated watercraft, trailers, clothing, boots, animals, and tramping and fishing equipment. It only takes one droplet of contaminated water or one small piece of the 'slime' to infect a new water body.

DOC, TDC and Ministry for Primary Industries (MPI) are working together to set up biosecurity information, signage and infrastructure at the lakes to try and prevent it being spread to other lakes in the region.

Lindavia prefers lakes with high water quality, which is concerning for the Nelson Lakes alpine tarns including Rotomairewhenua/Blue Lake, Rotomaninitua/Lake Angelus and Rotopōhueroa/Lake Constance.



Snowtowing: Snow tows show how much lake snow is in the lake

Where to learn more

- [Report on sampling from Lakes Rotoiti and Rotoroa](#) - www.envirolink.govt.nz
- [Lindavia information is available on Tasman, Otago and Waikato Regional Council websites.](#)

How can you help?

Help prevent it spreading by following the **Check Clean Dry** protocol before and after entering a different lake or waterway. Do this for any gear that touches waterways, including boats, trailers, water sport equipment, tramping and fishing gear.

Also, keep an eye out for lake snow in areas where it hasn't been detected. It's unlike any other algae found here (e.g. didymo) as it isn't attached to anything and floats just below the water surface. If you find it, please take a photo and let the local DOC office know.



Check: Remove any plant matter from your gear and leave it at the site (the river or lake bank) or put it in the rubbish. Don't wash plant material down any drain.

Clean: You can use dishwashing detergent, nappy cleaner, bleach, hot water or freezing. [Visit the MPI website](#) to learn more.

Dry: Ensure your gear is completely dry to touch, inside and out, then leave dry for at least another 48 hours before you use it.

Further Check Clean Dry information is available from the MPI website - www.mpi.govt.nz