

## Community Questions and Answers

# Te Roto o Wairewa

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There are a lot of unknowns about the issues of public health around the lake and other environmental risks. The community who live around the lake want to be informed. The following is a short list of questions that have come from the community.

1. What do we do if some child is swimming in the canal or lake at the time of a bloom?

There should be no swimming in the canal or the lake during a bloom. You should inform them that there is a bloom and explain the associated risks. The warning released by Community and Public Health is to warn people about the potential health risks if they come into contact with the affected waterbody. The guidelines we follow are not mandatory and are used to address the risk to public health from cyanobacteria in recreational waters.

### Facts about cyanobacteria:

- The algae occur naturally but can increase rapidly during warmer months.
- If the water is cloudy, discoloured, or has small globules suspended in it, avoid all contact.
- Not all cyanobacterial blooms are visible to the naked eye and toxins can persist after the blooms disappear.
- Cyanobacterial concentrations can change quickly with changing environmental conditions (e.g. wind). If a health warning is in place, avoid contact with the water.
- If a warning is in place, people and animals should not drink the water from the lake at any time, even boiled water.
- Exposure to an algal bloom can cause skin rashes, nausea, stomach cramps, tingling and numbness around the mouth and fingertips. If you experience any of these symptoms visit your doctor immediately and please let your doctor know if you have had contact with lake water when there is a health warning in place.
- Cyanobacteria can be lethal for animals such as dogs.

Further information can be found at <https://www.ecan.govt.nz/your-region/your-environment/water/cyanobacteria-warnings/>

2. What does it mean when the lake goes blue? and how concerned do we need to be?

Some cyanobacteria species have the ability to produce natural toxins called cyanotoxins which potentially affect people and animals if present in drinking water or if people and animals come into contact with water during recreational activities.

The iridescent/neon blue, like what was observed in 2016, generally indicates that the species of toxic cyanobacteria, *Nodularia* is present at high enough concentrations that form scums on the water surface. A warning can be put into immediate effect based on the presence of these scums- we don't need to wait for lab results, however samples will be taken to confirm the species and concentrations present. If you see these iridescent/neon blue scums (or the green "paint-like" scums characteristic of the toxic *Anabaena* species), call the Environment Canterbury customer services team (0800 324 363) or the Pollution Hotline (03 366 4663 or 0800 765 588)

### *Pollution Hotline*

Reports from the individuals on potential incidents are prioritised based on risk to the environment or risk to the public. We take action on all reports we receive however this action may range from an investigation by an officer through to logging the incident on our database for future reference and analysis. Incidents are dealt with by our monitoring and compliance team. Priority is given to cases that pose a significant risk to the public or environment. Some incidents may result in alleged offences under the Resource Management Act 1991 and lead to enforcement or prosecutions so we need clear details and some essential information to support our investigations. Essential information includes:

- date and time the incident is witnessed
- how long the activity has been occurring
- location description, address if known and include landmarks if necessary
- photographs and video if possible
- details or descriptions of vehicles and /or possible offenders
- how you were affected by the activity.

3. What is known about the Aerosol health risk of blue powder? and What is known about the Aerosol health risk of water spray?

A study conducted by Wood & Dietrich<sup>1</sup> during a *Nodularia* bloom in Lake Forsyth found aerosolized nodularin concentrations do not represent an acute or chronic hazard to humans via inhalation. Skin irritations may still occur as a result of aerosolized cyanotoxins.

<sup>1</sup> Wood & Dietrich. (2011). Quantitative assessment of aerosolized cyanobacterial toxins at two New Zealand lakes. *Journal of Environmental Monitoring*, 13, 1617.

4. The signage that has gone up is a huge improvement, but the blue scum was on the Bossu Road side of the canal and there is no sign at the end of Bossu Road, some recreationalists approach the area from the Bossu Road direction. Will there be a sign placed there?

Unfortunately we are not able to monitor and erect signs at all entry points. Christchurch City Council, who are responsible for signage, completed a review of signage positions last year and added in a number of additional sites.

Permanent signs are at the following sites:

- The window of the CCC service centre/post office in Little River.
- The gate opposite the Little River Hotel.
- Catons Bay - the picnic area on the lake side of the main road before the Little River Hotel.
- Lake front on two posts at Birdlings Flat.
- Rail Trail at the Lake Junction.
- Carpark at Birdlings Flat.
- New Brighton Power Boat Club building.
- North end of rail trail opposite the Little River Hotel.
- The Lake Terrace road entrance.
- Entrance to the Councils Regional Park.
- Bossu Road carpark.

We also communicate the warnings via local papers, and on a number of websites and social media platforms.

5. The signage says that in a period of high risk people should not sail, swim, let dogs swim or drink the lake water. In medium risk times, the sign says: do not swim or let dogs swim. In periods of low risk there is no warning. What does this mean? It is Okay to drink the water in periods of low or medium risk? What about the fish? Can people eat the fish?

When the signage indicates the lake is in the high risk/red zone, toxic cyanobacteria are exceeding guidelines for contact recreation. Contact with the affected waterbody is not recommended. In the medium risk/orange zone, cyanobacteria are present but not at high enough levels to action a warning. This generally occurs when there has been a bloom early in the summer season and it is possible it may go into bloom again later on. Favourable conditions including the right combination of warm temperatures, sunlight, low or stable river flows and nutrients indicate the bloom risk is still high. Cyanobacteria abundance can increase rapidly (particularly in the summer months) therefore the purpose of the medium risk/orange zone is to alert the lake users to be more cautious and assess the situation before entering the water.

Cyanobacteria toxins are not removed by boiling, normal filtering systems or by adding household disinfectants.

CDHB advice is that if you choose to eat fish from waters containing toxic cyanobacteria, you should eat them in moderation. Avoid eating internal organs, such as the liver and kidney of the fish, as this is where accumulation of toxins may be the greatest. Affected fish may taste earthy. Avoid contact with the water while fishing and wash all fish in clean water.

6. What monitoring is being done and can Ecan make that monitoring data publicly available through their website?

Environment Canterbury conducts monthly water quality monitoring off SH75, west of Catons bay (by the lake level recorder). The national LAWA (Land Air Water

Aotearoa) website displays data from this monitoring site ( <https://www.lawa.org.nz/> ). We also have a monitoring station at this site which records continuous data. This site is due for an upgrade and new monitoring equipment is in the process of being deployed. Once this is in, we hope to make that data publically available on our website along with monitoring data from Lake Ellesmere/Te Waihora.

7. When is the plume monitoring going to be undertaken?

We currently do not undertake monitoring of the plume of nutrient rich freshwater as it enters the coastal water of either Te Roto o Wairewa or Te Waihora when the lakes are opened. We also do not monitor the saltwater wedge that enters both lakes.

8. Has Ecan or the zone committee or anyone considered taking drone photography to record how the bloom changes and cycles in the lake, and what happens to it on the coast?

We are always looking for cost effective monitoring techniques. The suggested “monitoring” looks like an intensive investigation that is possible but we have no plans for this as part of our normal monitoring. We work closely with the University of Canterbury and will suggest this to them as a possible research project.

9. Can Tuna and fish toxin monitoring be done annually

This is not part of our routine monitoring and would require a considerable addition of resources to be added. The work done by Dr Dolamore at Ara Institute showed that even during a high cyanobacterial bloom the flesh of tuna was safe to eat (but not the liver).

10. Is there any environmental monitoring of the marine environment being undertaken or being planned? eg shellfish toxins, algal build up on rocks

MPI monitor shellfish toxins along the NZ coastline. More information found here: <https://www.mpi.govt.nz/travel-and-recreation/fishing/shellfish-biotoxin-alerts/toxic-algal-blooms/>

11. When is the bridge going to be built?

Currently planned for spring/summer 2017.

12. When is the next annual community information day where community can hear and ask questions? We understood that this is required once a year. The last one was over a year ago.

We provide regular updates on the health of the lake through the zone committee, local newspapers and community email network. The LAWA site provides the latest monitoring data on Te Roto o Wairewa as well as other lakes and rivers around New Zealand <https://www.lawa.org.nz/explore-data/canterbury-region/lakes/lake-forsythwairwa/>