

Summary of December algal boom, Lake Taupo, for Joint Committee meeting, Friday 15 Dec 2017

- On Monday 4 Dec – about 10 days ago – WRC received reports of unusual algal growths being visible in the shallow, near-shore waters of one of the beaches near Taupo. The weather at the time was unusually warm, sunny and calm.
- WRC staff investigated, taking photos and collecting water samples from five beaches on Tues 5 Dec, and again on Wed 6 Dec. Preliminary indications from this were that large quantities of algae were present at the beaches, and that some of these were potentially harmful cyanobacteria.
- This information was passed on to the health authorities on Thurs 7 Dec. The medical Officer of Health issued a health warning for the five beaches on Thurs 7 Dec. The warning was subsequently extended to include a sixth beach.
- The initial lab results, together with advice from experts at the Cawthron Institute, indicated that the routine sampling techniques for algal blooms needed to be modified to deal with the particular characteristics of the blooms in the nearshore waters.
- On Fri 8, Sat 9, Wed 13 and Thu 14 Dec, WRC staff used a modified approach to determine the amount of algae present at the beaches and collect samples (33 altogether) to allow the dominant algal species to be identified.
- The results for all of surveys were available on Thu 14 Dec. These showed that the blooms were unusual, and hadn't been previously-documented at Lake Taupo.
 - They were neither planktonic scums nor benthic mats. Instead they were loose aggregations of a mixture of algal species that had accumulated near the bottom in the warm, shallow nearshore waters during the extended period of calm, warm weather.
 - They were highly variable in extent. For example, at one of the beaches, large quantities were present Tues 5 and Wed 6 Dec, but none was observed on Fri 8 Dec.
 - They were easy to disturb, for example by wading through the material
 - The type of algae present was also highly variable. In each case, a variety of types were present, ranging from harmless diatoms and green algae to potentially harmful cyanobacteria. And the relative amounts of these different types also varied. For example, potentially harmful cyanobacteria comprised between <1% to 60% of the total algal material (average of 33 samples was 16%).
 - And several (8) different types of cyanobacteria were observed, and these were also present in different proportions in the 33 samples.
- This information was provided to, and discussed with, the health authorities on Thurs 14 Dec. The health authorities are considering whether to lift the health warnings.

