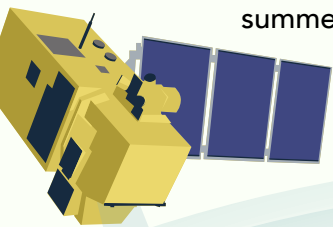


# Algal Bloom Monitoring in Alberta Lakes

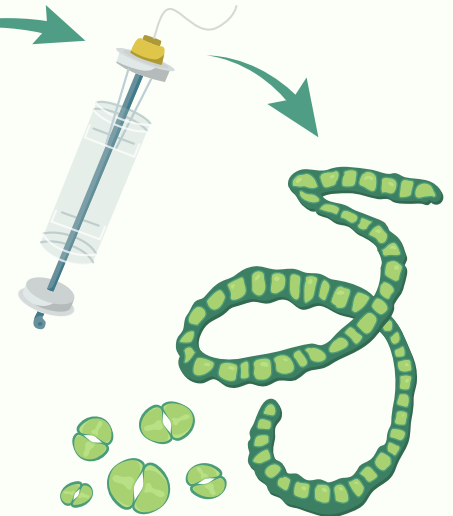
During the summer, nutrient-rich lakes can develop large blooms of phytoplankton. Some types of phytoplankton, like cyanobacteria (blue-green algae), can produce harmful toxins. Knowing *when*, *where*, and *why* harmful blooms occur is important to scientists, policy makers, stewards, and lake enthusiasts.



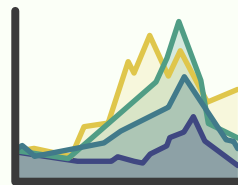
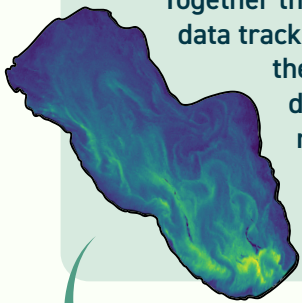
Six lakes in Alberta, Canada, are being monitored by 11 collaborating organizations over several summers. Lake water samples are collected by volunteers and staff of these organizations while the Sentinel-2 satellite flies directly overhead and collects imagery. By combining the data, researchers hope to better understand how algal blooms respond to variations in environmental factors like temperature, nutrients, wind, light, and more.



Lake water samples are collected at the same time the satellite passes. Sampling is planned on days that are free of clouds and wind.



Together the water samples and satellite data track algal blooms appearing on the lakes. By combining this data, researchers can develop models of current and historical blooms, and eventually predict future blooms, too!



Satellite data is used to estimate chlorophyll-a levels (a green pigment found in algae) across the lake.

Water samples are analyzed at the University of Alberta to identify types and concentrations of algae or cyanobacteria present, and to test water quality.



In the future, anyone will be able to visualize algal bloom conditions predicted by the models for the six lakes using a free online app.

Researchers anticipate releasing the first version of the algal bloom app in 2025, and hope to expand the project to include more lakes in Alberta. Stay tuned for future project updates and announcements!

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