

Cyanobacteria working group  
GLEON 8, Hamilton, New Zealand  
Prepared 5 February 2009 by Cayelan Carey & Ina Bloch

Members:

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**Introduction and Objective:** Our cyanobacterial working group met for the first time in Hamilton, NZ during the GLEON 8 meeting and proposed the following question as the focus of our conversations and activity: "Do patterns in physical buoy variables exist that occur before or after cyanobacterial blooms in repeatable ways for the four major cyanobacterial groups?" Specifically, we are interested in examining if there are potential buoy variables that are drivers of cyanobacterial blooms and also how the buoy variables respond to cyanobacterial perturbations of aquatic ecosystems.

We divided cyanobacterial blooms into four major groupings, based on physiological identities:

- 1) *Gloeotrichia*
- 2) N-fixing filamentous species
- 3) *Planktothrix/Oscillatoria*
- 4) *Microcystis*

We hypothesized that different drivers may exist for each of the four groupings; hence our classification system based on physiological mechanisms and our plan to look at each of the groups separately.

**Research Plan:** Our research plan is for the four of us to work separately on our own lakes, examining forcing in buoy variables preceding and following cyanobacterial blooms, similar to the method used by Honti et al. (2007). We will examine if these forcings exist for multiple years on the same lake and then compare data among lakes. Our ultimate goal is for us to expand this analysis to all GLEON lakes that have available data and cyanobacterial blooms.

**Implementation:** The four members will report back on their individual analyses by March 13, 2009 and will share findings and discuss the expansion of the analysis to other lakes. Ina and Cayelan will work on extracting more data on other lakes from GLEON members via email.

**Group recommendations for GLEON:** We highly encourage individual sites to update and expand their Lake Database profile on the GLEON website to include biological characteristics, including major macrophyte, phytoplankton, zooplankton and fish groups, and presence or absence of cyanobacterial blooms.