



## **Forest harvesting as a trigger to toxic algal blooms; implications for lake foodwebs**

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Changes in phytoplankton and zooplankton communities were studied in 16 lake-years during a large-scale experimental before-after study as part of the Terrestrial Riparian Organisms Lakes and Streams (TROLS) project. After forest harvesting, phytoplankton biomass and especially cyanobacterial biomass increased in some of the experimental lakes, up to an order of magnitude. Although the response of phytoplankton was not directly related to the intensity of forest harvesting, this large scale experiment provided a unique opportunity for studying the effects of an increasing gradient in cyanobacterial biomass on zooplankton communities. Cladoceran size structure and biomass were negatively correlated with cyanobacterial biomass, suggesting that large cladocerans and especially daphnids were inhibited by the increase in cyanobacterial biomass. The increase in cyanobacterial biomass seems to have caused a significant reduction in the size structure of zooplankton communities. As no correlation was found between cladocerans and cyanotoxins, our results point more towards feeding inhibition by filamentous and colonial cyanobacteria, as a possible cause for the decline in the size structure and biomass of zooplankton communities. These results suggest that the increase in cyanobacterial biomass is likely to cause a shift in the size of zooplankton communities which will lead to a profound change in functioning of lake systems.