

Assessing the effects of eutrophication on lakes in Nova Scotia, Canada, using subfossil midges

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The mink fur farming industry of southwestern Nova Scotia is one of the top agricultural exports in Nova Scotia. This industry has sparked recent debate on water quality declines in surrounding lakes, such as Nowlans Lake, which has experienced reoccurring algal blooms and very high measures of nutrients. Midges from Nowlans Lake were used as bioindicators of environmental change due to their sensitivity to dissolved oxygen concentrations (DO), which can be significantly depleted as a result of eutrophication. Midges were recovered from a lake sediment core spanning the ~1900s to present. Visible reflectance spectroscopy (VRS) chl-*a* was also measured from sediments as a proxy of whole-lake primary production. Preliminary results indicate that chironomid taxa associated with lower DO (e.g., *Chironomus plumosus* and *Glyptotendipes spp.*) show increasing trends coinciding with greater VRS chl-*a*. Taxa associated with higher DO (e.g., *Stempellina*) displayed decreasing trends from the ~1900s to present. This research will help fill the missing gap of long-term limnological data by using paleolimnological approaches to reconstruct past environmental changes and determine pre-disturbance conditions necessary to investigate mink farming's contributions to water quality declines in southwestern Nova Scotia.