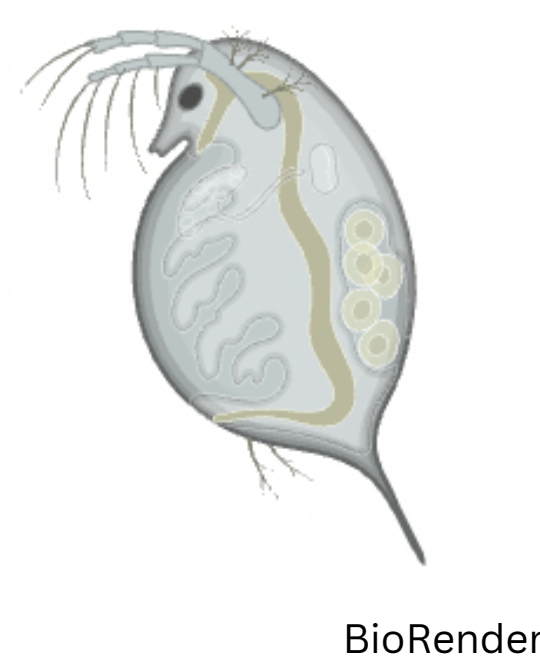
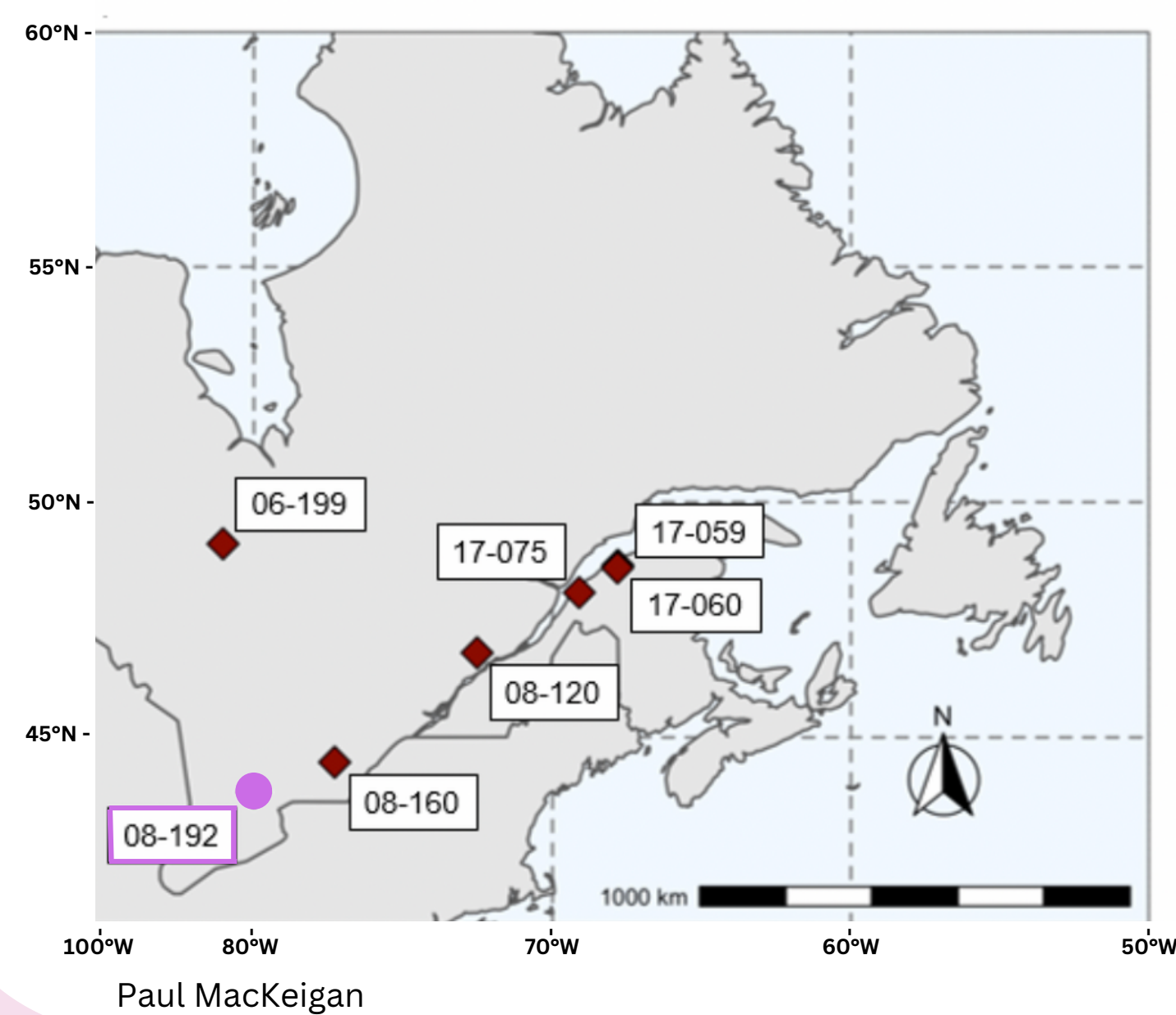


Investigating Cladoceran Assemblages in Eastern Canadian Lakes over the Past 200 years

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Introduction

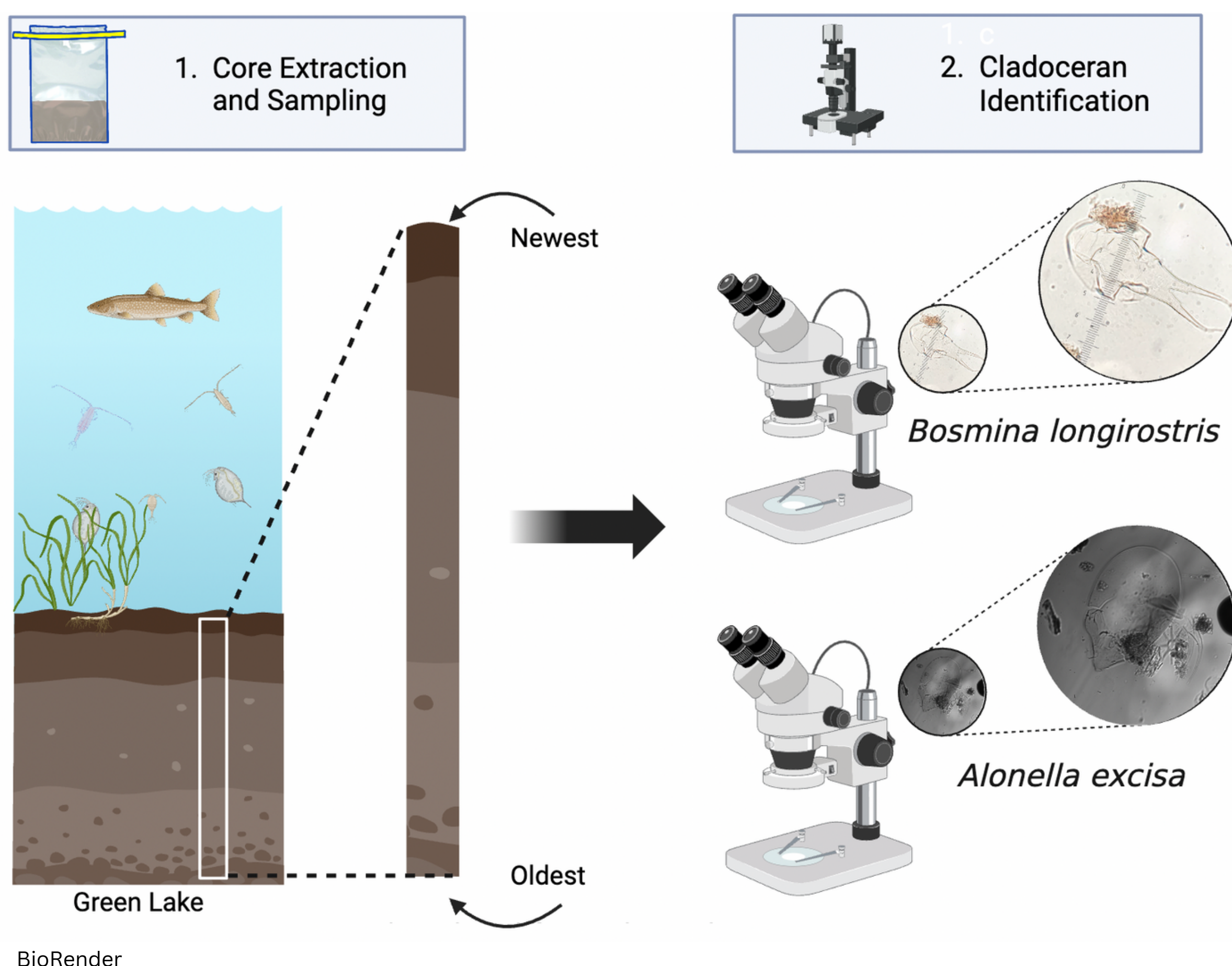
- Freshwater ecosystems are highly vulnerable to biodiversity loss.
- Zooplankton** are indicators of environmental change because they respond quickly to disturbances.
- Paleolimnology:** extracting sediment cores from the bottom of the lake, where the deeper layers of the core can be dated back to **pre-disturbance periods**.
- For this project, we utilized sediment cores and data from the LakePulse Network.
- Snapshot contemporary and pre-industrial era samples allow for one taxonomist to investigate a large sample size, but what's happening in between these points?



Objective

Investigate the change in cladoceran assemblages and their interactions along with the geochemistry of lake 08-192 over the past ~200 years.

Methods



Results

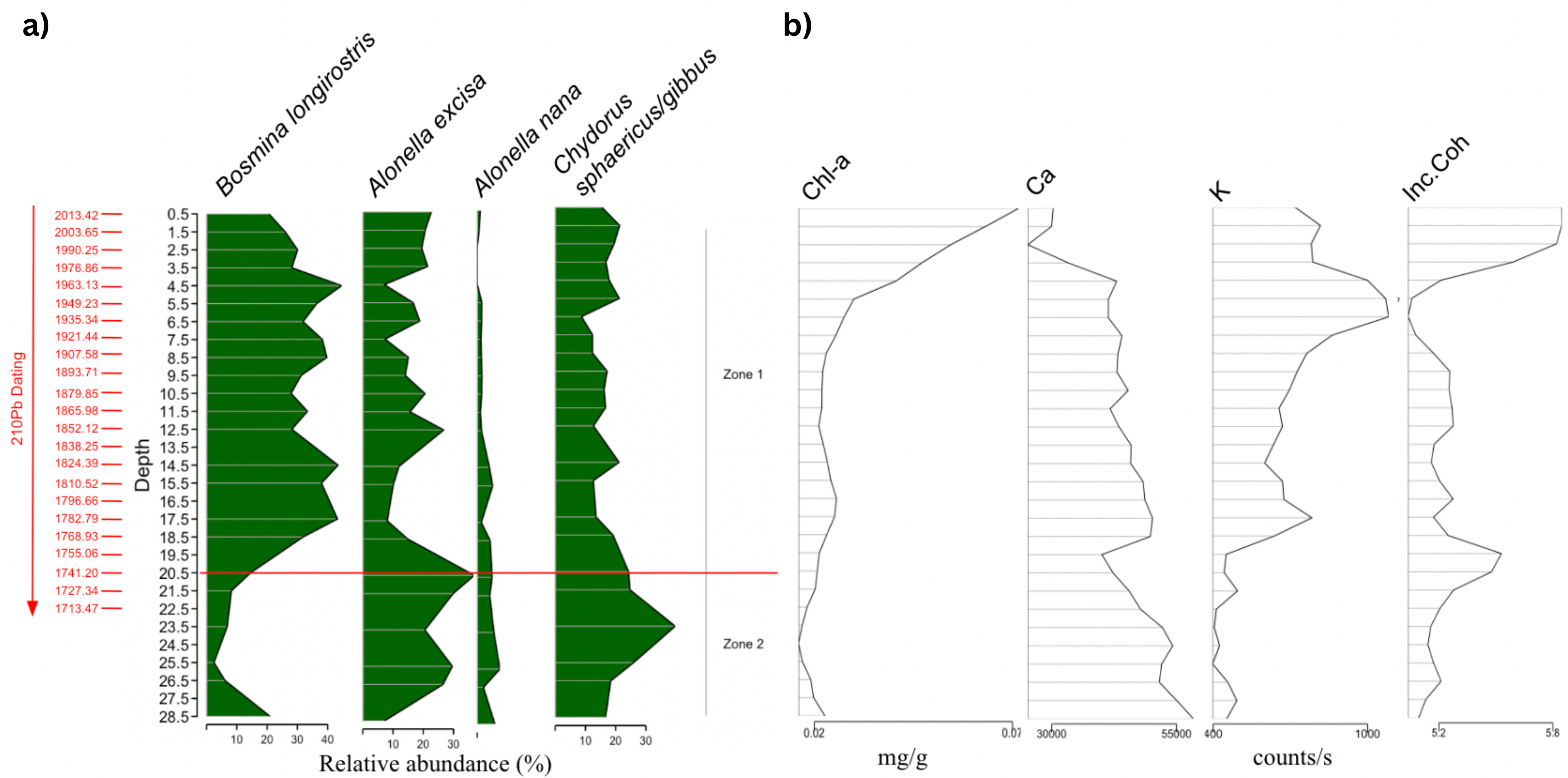


Figure 1: a) Relative abundance of major species present in lake 08-192. Each depth interval corresponds to a year in the 210Pb dating. Distinct zones were delineated using a cluster analysis. b) Chlorophyll-a and geochemistry of lake 08-192, measured with a micro-X-ray fluorescence scanner, provided by David Zilkey.

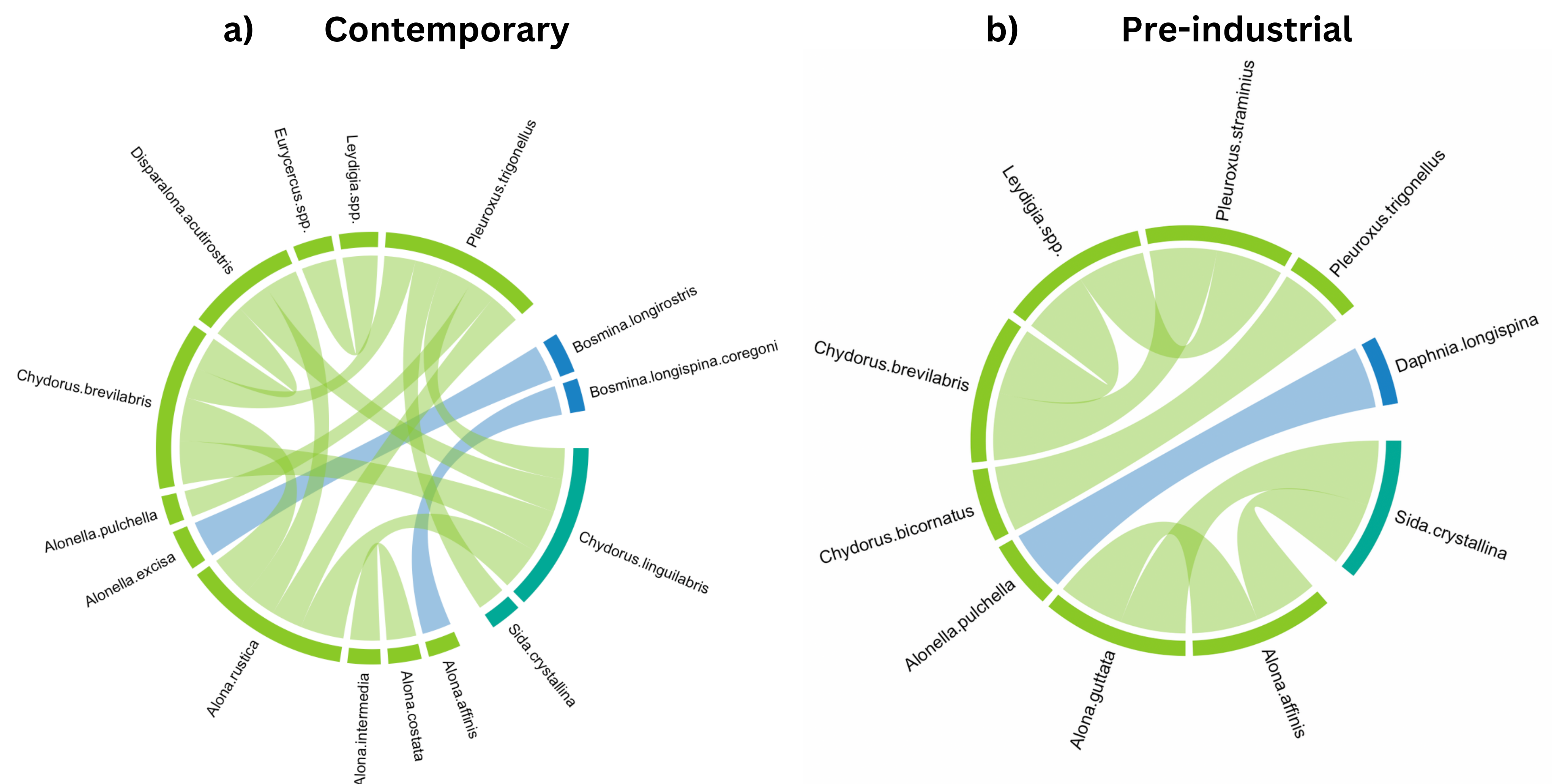


Figure 2: Network analysis showing a) higher nodes and edges but lower connectance and modularity, b) lower nodes and edges but higher connectance and modularity.

Implications

- Lake 08-192 has experienced fluctuations in relative abundances of major cladoceran species and a decrease in connectance since pre-industrial periods, indicating changing zooplankton community dynamics over time.
- Cladoceran and geochemical time-series can be used in-tandem to infer past environmental and biotic changes in the lake.

