

## POSTER PRESENTATION

### A PRELIMINARY INVESTIGATION INTO DIATOM ASSEMBLAGE RESPONSE TO HYDROTHERMAL EXPLOSION EVENTS, YELLOWSTONE LAKE, WYOMING

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Yellowstone Lake in Yellowstone National Park is the largest high-elevation lake in North America, at an elevation of 2,357 meters and with an area of 344 square kilometers. Yellowstone Lake is strongly influenced by hydrothermal systems, with over 650 vent structures on the lake floor. Hydrothermal explosion events are a catastrophic response to forcing where subsurface fluids flash to steam, and several events have been documented during the Holocene from shoreline deposits. The objective of this study is to assess the effect of localized hydrothermal explosions on the diatom community in Yellowstone Lake. An outcrop on the northern shore of Yellowstone Lake was subsampled for diatom analysis above and below the Turbid Lake hydrothermal explosion breccia, dated from ~10 ka BP. Twenty-six sediment samples were analyzed, and eight diatom species had >5% abundance in the sequence. The diatom assemblage is dominated by *Aulacoseira subarctica* throughout most of the record, with moderate percentages of benthic species. The diatom assemblage showed little response to the hydrothermal event, which occurred during an interval of low lake levels. Counts of *Aulacoseria subarctica* initial valves may aid in deciphering conditions before and after the explosion event, and the shoreline record will be complemented by multi-proxy analyses of a continuous sediment core from within the lake.