POSTER PRESENTATION

CYCLOTELLA RESPONSE TO CLIMATE CHANGE DURING THE HOLOCENE: AN ANALYSIS OF THE DIATOM PALEOECOLGY OF A PRISTINE ALPINE LAKE IN GLACIER NATIONAL PARK

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Hidden Lake is a small, alpine lake located in an isolated, pristine region along the continental divide in Glacier National Park, Montana. In July 2007, we recovered a 65-cm core from the lake, as part of a series of lakes in alpine and subalpine settings, to evaluate variations in fossil diatom assemblages and potential environmental controls on paleoecological transitions in the fossil record. Despite the relatively short sediment archive, the base of the core dates to roughly 8,000 years ago; the core was sub-sampled continuously every 0.5 cm (each sample represents approximately sixty-eight years). Fossil diatom assemblages throughout the core are dominated by *Cyclotella comensis*, *Cyclotella bodanica* var. aff. *lemanica*, *Pseudostaurosira brevistriata*, and *Staurosirella pinnata*. During periods of warming and cooling *C. comensis* and *C. bodanica* var. aff. *lemanica* trend inversely. *Cyclotella bodanica* var. aff. *lemanica* is most abundant from ~600 to 1500 AD, corresponding approximately to the Medieval Warming Anomaly. During this period, *C. comensis* is found in relatively low abundances. *Cyclotella comensis* begins to increase in abundance at ~1450 AD, corresponding to the onset of the Little Ice Age. *Pseudostarurosira brevistriata* and *S. pinnata* are colonial benthic species commonly found in alpine lakes with low nutrient levels, and variations in their relative abundances are often difficult to interpret. Both taxa show declining abundances coincident with the increase in *C. comensis* at ~1450 AD. Results from this study will be compared with Holocene records from other lakes from Glacier National Park and a series of alpine and subalpine lakes in the Beartooth Mountains of southern Montana.