

POSTER PRESENTATION

DIATOMS EPIPHYTIC ON *SPHAGNUM* MOSS IN MIDWESTERN QUAKING BOGS: USE AS PALEOLIMNOLOGICAL INDICATORS

Jennifer Slate¹, Zak Zillen¹, Michael Vujanovic¹, Ryan Pierce², Peter Zieba²

¹Department of Biology, Northeastern Illinois University, Chicago, Illinois 60625

²Analytics Lounge, 4910 West Grand Avenue, Suite 200, Chicago, Illinois 60639

Sphagnum moss creates a moist microhabitat capable of hosting diatoms due to specialized cells that hold water. These epiphytic diatoms can also be recovered from *Sphagnum* samples preserved in herbaria, providing a record of environmental conditions at the time of collection. To determine their potential as paleoindicators, we compared epiphytic diatoms from herbarium *Sphagnum* samples to diatoms growing on *Sphagnum* in quaking bogs today. We also compared the epiphytic assemblages to diatoms in nearby bog sediments. From a 100-km radius spanning parts of Wisconsin, Illinois, and Indiana, we collected live *Sphagnum* samples from Beulah Bog, Volo Bog, and Pinhook Bog. The herbarium samples, collected from the same region over the past one hundred years, were obtained from the Field Museum of Natural History. Diatoms were plentiful on both the live and herbarium *Sphagnum* samples, and were dominated by *Eunotia nymanniana*, *Eunotia paludosa*, and *Pinnularia hilseana*. *E. nymanniana* was not observed in surface bog sediments, suggesting an adaptation to living on the subaerial habitat of *Sphagnum*. The species may thus be a useful paleolimnological indicator of when quaking bogs with floating *Sphagnum* mats developed. Because herbarium samples are labeled with the date of collection, our results also show the potential of using epiphytic diatoms in high resolution paleolimnological studies to infer recent anthropogenic impact.