

ORAL PRESENTATION

DIATOM DIVERSITY AS A POLLUTION INDICATOR: AN INQUIRY-BASED LAB ACTIVITY FOR UNDERGRADUATE ECOLOGY COURSES

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Species diversity is a widely used biological indicator of pollution, and a topic widely covered in undergraduate courses in ecology for both majors and general education students. This talk will present a lab activity for undergraduate science courses in which diatoms are used to investigate this topic. The activity was designed using the principles of open-ended inquiry-based learning in lab design and engages students fully in the scientific method. Students apply theory that they have learned in lecture to a real-world example, and then work in teams to develop the hypothesis, design the experiment, collect and analyze the data, and then use the results to test the hypothesis. The lab structure is adaptable for use by students at different levels of sophistication in science. In this activity, light microscopy of live material, a practicable diatom morphospecies concept, and the metrics of species richness and Simpson's diversity index are used to compare of the diatom flora of two water bodies near the University campus in St. Paul, Minnesota. Specific details and results from Fall semester will be provided. This activity has the obvious additional pedagogical benefit of engaging students in the careful examination of this complex and charismatic taxonomic group. Diatoms rule!