

DIATOMS OF NORTH-CENTRAL PENNSYLVANIA

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The initial goal of this study was to inventory the diatom flora associated with the least impaired waters in the State of Pennsylvania, USA. Although the North-Central region has been impacted by logging and mining, the development has been minimal compared to most of the State. Many watersheds and water bodies have been restored to a state similar to their natural condition. This region has the lowest population density and the largest proportion of forested lands in Pennsylvania. 310 diatom samples were collected from 140 sites in streams, lakes, and wetlands in 2009. From these samples we identified 622 diatom taxa including at least five species new for science and several rare, and possibly endemic species. In comparison with other regions of the United States, the native diatom flora of North-Central Pennsylvania is characteristic of low-nutrient, soft waters. The most common diatom species in lake plankton are *Asterionella ralfsii* var. *americana* Körner, *Tabellaria quadrisepata* Knudson, and *Eunotia romanowii* Siver. Benthic diatom communities are characterized by the high diversity and abundance of *Eunotia*, *Tabellaria*, and *Pinnularia*. Aerophytic diatoms include rear and new species of the genera *Nupela* and *Diadesmis*. The current rapid increase of gas well drilling in the region is expected to stress aquatic ecosystems by decreasing their overall water volume and by increasing amounts of inputs of dissolved solids from wastewater runoff. We are continuing to monitor diatom assemblages in the region using the data obtained in 2009 as baseline for assessing environmental effects of the drilling and other human impacts.