

Digital imagery of diatoms from the Upper Ohio River Basin and selected tributaries, a work in progress

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Abstract

As a cosmopolitan group of organisms, algae are important water quality indicators. Diatom taxonomy has been recorded from many aquatic systems all over the world. Distinguishing between diatom species involves observations of detailed physical characteristics and specific measurements. We are compiling a taxonomic database of diatom images from the Ohio River Basin as a baseline for identifying common species. The Ohio River was sampled every 5 miles from Pittsburgh, Pennsylvania, to Rising Sun, Indiana, including selected tributaries. The samples were collected using a 10 μm mesh plankton net during the first week of August 2001 and 2002. Samples were boiled in concentrated nitric acid to remove all organic material to ensure an unobstructed view of diatom physical characteristics. The diatoms were mounted in Naphrax® mounting medium and counted under oil immersion (1000x) using a compound light microscope. The images were captured using an Olympus D-12 digital camera. Common taxa consisting of mostly centric forms include five species of *Aulacoseira* and five species of *Cyclotella*, which are found throughout the length of the river. These species or varieties can be difficult to identify. This database will be useful to help researchers distinguish among similar species found in the Ohio River Basin so that indicator species can be identified more easily.