NEOTOMA PALEOECOLOGY DATABASE: DIATOMS

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What is Neotoma?
The Neotoma Paleoecology Database (www.neotomadb.org) is a community-curated data resource that supports global change research. It enables broad-scale studies of taxon and community distributions, diversity and dynamics during large environmental changes of the past. In addition to diatoms, it includes data on pollen, ostracods, insects, plant macrofossils, vertebrates, geochronology and other sediment characteristics. By consolidating many kinds of paleoecological data into a common repository, Neotoma lowers costs of paleodata management, makes paleoecological data openly available, and offers paleoecologists a high-quality, curated data resource. Neotoma also supports different platforms and software to allows users to access and manipulate data once it is uploaded.

What Diatom Data are Available?
Neotoma contains diatom data for over 350 sediment cores and over 600 surface samples. Collectively, they represent over 1000 datasets.

How Can I Use the Data?
You can use Neotoma tools to download individual or combinations of datasets and to help address site-specific or large-scale ecological issues.
- What sites have been studied in a particular region?
- What is the geographic distribution of individual taxa or groups of taxa?
- What are their ecological characteristics?
- What can diatom stratigraphies tell me about climate change, eutrophication, acidification?
- Can look at individual taxa/ groups of taxa / lakes.
- How have ecological conditions changed in large regions since pre-disturbance times?
- Which surface samples would be good to include in a new regional calibration dataset?

How Can I Contribute Data?
Neotoma depends on voluntary submissions from the diatom paleoecology community. We encourage you to contribute to Neotoma so your data will be accessible and can be used for further research by the scientific community.

- Data of most interest are:
  - Diatom counts
  - Diatom inferred values
  - Geochronology, chronology, LOI, lithology
  - Water chemistry
  - Site Metadata
  - Contributor names

You can contribute data tables in spreadsheet (e.g., Excel, Tilia) or database format. Taxa names and other data will be uploaded in the same form in which you published them. Data uploads to Neotoma are handled via the Tilia software program; its automated systems check data conformity and completeness, and match taxon names with those in the master list. Data are usually uploaded by data stewards, but you can enter data into Tilia yourself before submitting them (though this is not necessary). We try to make the process as easy and efficient as possible.

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Education and Student Activities
ANSP is producing a standards-based lesson plan using diatom data from Neotoma to allow students to investigate earth systems changes, develop an understanding of past biotic responses to climate change, and apply knowledge gained to current rates of environmental change. They will pilot the lessons with its Women in Natural Sciences program (WINS), a free after-school summer science enrichment program for high-school girls.