

Paleobiology Database



Revealing the History of Life

Paleobiology Database

Mission Statement

The **Paleobiology Database's** mission is to collect information on the distribution of fossil organisms in time and space. Published scientific literature and field collections are used to document the history of life, its ecological and environmental contexts, morphological traits, and evolutionary relationships. Paleobiology Database holds these data in trust for use by researchers, students, and the general public and makes them freely available to all.

Our mission is to document all fossil occurrences, along with associated data, and make these data available to everyone.

Web address: paleobiodb.org

Paleobiology Database

What data is in the PBDB?

- **Fossil distributions in time and space**
- **Basic ecological information on fossils**
- **Rock units the fossils are found in**
- **Environment of deposition of the fossils**
- **References from which the data are derived**
- **LIMITED measurement data**
- **LIMITED images of fossils (from iDigBio via ePANDDA)**

Paleobiology Database

What data is NOT in the PBDB?

- **Sizes of organisms (for the most part)**
- **Images (but some are available via ePANDDA)**
- **Many occurrences (dinosaurs, insects, marine mammals are all complete)**
- **Specific diet information**
- **Information on museum specimens***

***Hold that thought...**

Paleobiology Database

Resource Types

- **Web Apps**
- **Mobile Apps**
- **Lesson Plans and Activities**
- Introductory Tutorials
- Data Entry Tutorials
- R Packages & Scripts
- Presentations
- API Resources
- Others

Paleobiology Database

How can students use PBDB?

- **view and visualize fossil data**
- **interact with fossil data**
- **test hypotheses with fossil data**
- **analyze fossil data**
- **perform research projects with fossil data**
- **collect and enter fossil data**



Need to be a member

Paleobiology Database

Paleobiology Database Guest Menu

Please **login** to enter new data records or edit existing records and taxonomy

Search

- Search for a reference
- Search for collections
- Search for nexus files
- Search for a stratigraphic unit
- Search for a taxon
- Print a taxonomic hierarchy

Download

- Download records of all types
- Download data archives

Entry functions

- External resource submission

Guest Menu Interface

Paleobiology Database

PBDB User Types

User Types

- **Administrator***
- **Authorizer***
- **Enterer[†]**
- **Student[†]**

Permissions

- **Everything & more**
- **Supervise Enterers & Students**
- **Enter all data types**
- **Enter references & collections**
- **Upload resources**

***Needs PBDB approval**

[†]Associated with an Authorizer

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PBDB User Types

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- Administrator*
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Lets all do this now!

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Paleobiology Database

Lesson Plans and Activities

Using Range Through Charts: Constructing a Diversity Curve

Katherine Bulinski

A hands-on assignment for a non-majors geology class that illustrates when different groups of organisms originate, persist and go extinct in geological time. Students will be able to construct and interpret a diversity



Diversity and Extinction in the Phanerozoic

Phoebe Cohen

A key question in paleobiology is how diversity, origination, and extinction have changed over time. Given that species are missing from the fossil record this is hard to determine directly. However, we can measure how



teachPaleobiology

Andrew Zaffos

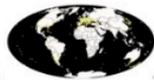
This repository contains lectures, lab assignments, an R tutorial, a GitHub tutorial, a Paleobiology Database API tutorial, reading assignments and additional resources for an upper-level Quantitative Paleobiology course



The Pangea Puzzle

Mark D. Uhen

Students will learn how to use the Paleobiology Database (PBDB) to produce maps of fossils on the present-day Earth's surface, as well as past continental configurations. They will then use these maps to



Counting Critters: Using the Paleobiology Database to track fossil diversity through geologic time

Rowan Lockwood

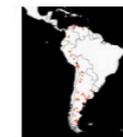
Students learn how to use the Paleobiology Database (PBDB) to develop a diversity curve showing changes in global biodiversity through time. They then use this curve to explore major events in the history of life,



The Panama Passageway: Using the PBDB to constrain the timing and extent of the The Great American Biotic Interchange

Callan Bentley

Students learn how to use the online Paleobiology Database to map changes in the distribution of fossil vertebrates in the Americas through time. They will generate distribution maps for several key fossil groups



Tracking Sea Level and Paleoenvironments with Fossils

Peter Berquist

Students use the Paleobiology Database Navigator to examine changes in sea level in southeastern North America throughout the Cretaceous, Paleogene, and Neogene Periods. They will plot the change in distribution



Life through Time: Investigating biostratigraphy with the PBDB

Christian O. George

Students learn how to use the Paleobiology Database (PBDB) to investigate the basic principles of biostratigraphy, including, index fossils and how fossils were used to construct the geologic timescale.



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Contributing Resources

Resource Submission

Send us your Paleobiology Database related apps, lesson plans, research tools and other contributions. Research publications should NOT be submitted here, but if you have a PBDB related publication in preparation, you can get an Official PBDB publication number by emailing the PBDB ExCom secretary [here](#).

[Click here to edit one of the 5 resources you have already submitted.](#)

Resource Title:

Resource Description:

Link to Resource:

Image to Display: no file selected (Images will be resized to 150x150 pixels)

Type of Resource:

- Web app
- Mobile app
- Lesson plan or educational activity
- Educational tutorial
- Data entry tutorial
- R script or package
- Presentation
- API
- Other

Intended Audiences:

- General audiences
- Primary school
- Middle/high school
- Undergraduate, introductory
- Undergraduate, advanced
- Graduate/professional
- Other

Author Information:

Name

E-mail

Affiliation

ORCID (optional)

Keywords: (Separate multiple terms with semicolons or commas)

Topics

Taxonomic Groups (start with a capital letter then select)

Time Interval to (start with a capital letter then select)

On submission, the PBDB Education and Outreach chairperson will review this resource. When approved, it will be visible on the main resources page. Thank you for contributing to the PBDB community.

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Additional Data Sources



ELC API

earthlifeconsortium.org

Includes data from Neotoma & PBDB. Good for ice age projects.



ePANDDA API

ePANDDA.org

Includes data from iDigBio & PBDB. Good for projects that include living species.

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Please go & play!
For about 15-20 minutes.

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Explore activities

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Create activities

- **List several learning outcomes that PBDB might be able to address**
 - **Get an idea or ideas for a PBDB-based activity to achieve one or more learning outcome**
 - **Add your activity to the list on the board**
 - **Get feedback on feasibility from a moderator**
 - **Outline your activity, and try it out**
-
- **Formalize your activity using the template**
 - **Upload your activity and submit to PBDB**

Paleobiology Database

I want more!

- **Pedagogy and Technology in the Modern Paleontology Classroom**
- **GSA 2018 Indianapolis, Saturday, November 3rd from 9am-5pm**
- **More info: <https://paleosoc.org/2018-ps-short-course/>**
- **Register here: https://wmsas.qualtrics.com/jfe/form/SV_1ANYpn3N2JPpyOV**
- **The goal is to get the entire paleontological community excited about education and to help participants brainstorm effective strategies for teaching paleontology and earth history.**