

Should you collect or buy fossils?

Fossils are an inanimate part of our natural world, like minerals and gemstones. They tell stories about the earth of long ago. Some make great decorator pieces.

If you are collecting fossils, be aware of local and federal laws. Many countries have complete or partial restrictions on exporting fossils. Morocco and Madagascar are primary sources of fossils today, and they do not.

Locally, do not collect in parks or preserves unless it is explicitly allowed. Get permission before collecting on private property. Be courteous. If you find something you cannot identify, get help. The most important data on any fossil is where it was found. If you know nothing else, it can be learned with locality data. Buy or go to the library and read fossil books. Join a local geology club if one is available. Most have field trips to places fossils can be found.



Amphoracrinus tenax — found by a local fossil collector, shared with a scientist, studied, published, and deposited in the Smithsonian where it can be studied in the future.

The following list of contacts can help you get fossils identified. Remember to call or write before you bring the fossils in to be identified!

Falls of the Ohio State Park

201 W. Riverside Dr.
Clarksville, IN 47129

812-280-9970 (Alan Goldstein, park paleontologist)
on.IN.gov/falloftheohio

Digging the Past, a paleontology event in late August, is a great place to get fossils identified.

Indiana State Museum

650 W. Washington St.
Indianapolis, IN 46204

317-232-7172

indianamuseum.org

Cincinnati Museum of Natural History & Science

Union Terminal

cincymuseum.org

University of Kentucky

Department of Geological Sciences

101 Slone Building

Louisville, KY 40506-0053

859-257-1401

Kyana Geological Society

Louisville area hobby group.

Meets 3rd Tuesday, 7:30 pm at the

Louisville Nature Center, across from Zoo

kyanageo.org

Kentucky Paleontological Society

Dan Phelps, President

uky.edu/OtherOrgs/KPS/

Also on Facebook

Mid America Paleontological Society

An international amateur organization

midamericapaleo.org/

The Paleontological Society

Mostly professionals, some serious amateurs.

paleosoc.org

Are fossils important?



Fossils serve an important purpose in modern society. Consider the fossil fuels -- oil, natural gas and coal. They are created by the decay of marine plankton. Coal is formed by the compression of the remains of land plants. Oil shale can form from life in marine, freshwater, or bog environments.

Fossil-bearing rocks are widely used in building stone. Indiana limestone, which is most plentiful around Bedford in Lawrence County, is one of the most widely used building stones in the North America. It covers the Empire State Building, the Pentagon in Washington D.C. and many churches, homes, and university buildings. It shouldn't come as a surprise that it is used in the Falls of the Ohio State Park Interpretive Center. Look at the white rock close-up. Those grains of "sand" are really microscopic fossils! Cell phone cameras can magnify to give you a better view.

What can we learn from fossils?

Fossils tell us about life long ago. A fossil is the evidence or remains (usually in rock) of previously existing life. More than just a curiosity of nature, in the proper context, a fossil can tell us about environments and organisms that lived long ago.

By studying fossils, we can learn about the climate and weather when that organism was alive. We can decipher current flow in ancient oceans or streams by the alignment of fossils. We can discover if an area was covered by oceans (such as at the Falls of the Ohio), lakes, or deserts by the type of fossils observed in the rock. That's just the beginning.

Fossils give us insight into the development of organisms. Which life forms came first? Which share a common ancestry? How have certain organisms changed over time? Fossils can help answer these questions.

Evolution is the process by which life changes over time. With the exceptions of viruses and bacteria, this process is almost undetectable over the life spans of many human generations. At least a million years is needed for a species to change to a new one. Yet the outcomes, extinctions and changes that evolve new species, can be found throughout nature.

Changes may evolve from sudden catastrophic phenomena such as meteorites like the impact that hastened the demise of dinosaurs, major volcanic

eruptions bigger than anything we see today. Changes can also evolve through gradual processes like continental drift, mountain building or shifts in the climate. Whatever the cause, change is a constant force in nature.

Are fossils valuable?

Some can be. Rarity does not always play a role in the value. Some fossils are rare. Other fossils are widespread.

Some expensive fossils are pricey because of the time it takes to remove sediment to expose the hidden fossil. The dollar value is assigned by the market, how much someone is willing to pay for it.

An example is complete dinosaurs are rare. Their value in scientific terms is immeasurable, but in dollars they are expensive. However, dinosaur bones are not rare in certain rock layers. It is possible to purchase a



Edmontosaurus dinosaur leg bone

chunk of something unidentifiable for a couple of dollars. Some are polished for jewelry.

Dinosaurs aren't the only rare fossils. There are plenty of examples. Rare species don't have monetary value just because few fossil collectors have an interest. The most "valuable" fossils are typically sought because they look cute or beautiful.

Most paleontologists are only concerned about scientific value and worry that monetary value puts important specimens in private hands, making them inaccessible for research. While some museums have endowments to purchase fossils from dealers and private collectors, most do not. Like artwork, there are probably many great pieces in private hands. Private ownership is okay to a point. Eventually, some will end up in museums, while others will be discarded or destroyed due to lack of knowledge by the owner, or the loss of locality data, making the fossil scientifically worthless.

Should fossils be considered as a renewal or non-renewable resource?

It largely depends on the nature of the rock and location. In many places, fossils are quickly destroyed by the natural forces of erosion, weathering, and human intervention (construction, quarrying) much faster than they can be salvaged by professional and amateur paleontologists. There are places where fossils are discovered, collected professionally, and then made available for private use without getting permits or permission. In some places, fossils erode very slowly and collecting destroys them.

There are only enough paleontologists to preserve a tiny percent of the fossils exposed by nature or humans. While there are unique individual fossils, most paleontologists consider them to be renewal resources.

Where can I get fossils identified?

No paleontologist can identify every fossil. There are hundreds of thousands of species across the world, and paleontologists tend to specialize in specific organisms. However, most can provide general assistance and lead you in the right direction to get something identified with at least a general name.

In recent years, professional paleontologists have become scarcer. Jobs in the petroleum industry are drying up and universities, colleges, and museums have been eliminating positions. Government and park paleontologists are fewer, too. In some states the number of professional paleontologists can be counted on one hand. They end up in other geoscience or education fields.

Amateur paleontologists may be better able to identify different kinds of fossils because more are "generalists" with personal collections broad in scope. Some amateurs are as knowledgeable as professionals and contribute to the scientific literature.

In the Ohio Valley, paleontologists can be found scattered across the region. The Falls of the Ohio State Park, the Indiana State Museum, Cincinnati Museum Center, Indiana and Kentucky Geological Surveys, Indiana University, University of Cincinnati, University of Kentucky, and some other regional universities have fossil experts.