

A Crash Course on Fossil Hunting

The fossil record paints a portrait of rising and falling kingdoms of living things. The longer we stare at that picture, the more we learn about life's value, its fragility, and how to preserve it. Paleontology reveals our place in deep time and our connection to other living things, both genetically and within an ecosystem. It can show us the mechanisms that allow organisms to adapt to change, and how quickly they can respond to new challenges. Studying how Texas has transformed over time not only helps us understand the forces that drive extinction, but how we can defend against or even guide those forces when they run out of control. To unlock the power of paleontology, here is a crash course on fossil hunting basics.

To find fossils, first we must understand what they are. Normally when something dies, nature breaks it down. But sometimes remains are buried before they can decay naturally. Then, one of two things happens—either the remains leave an impression, forming a *mold*, or minerals seep into and replace those remains, forming a *cast*.

So where can we find fossils? Anywhere remains can be buried! Sedimentary rock like sandstone, mudstone, or limestone preserves fossils better than rocks formed by heat. The [USGS Pocket Map](#) shows geologic strata at a street level, so anyone can type in an address to find out if the ground under their feet is fossil bearing. Starting out, it's best to search where erosion is naturally unearthing fossils, like in ditches or river gravel. Mineral Wells, Post Oak Creek, and Ladonia Fossil Park on the North Sulphur River make great first-time daytrip destinations.

Fossil hunting comes with its own ethical code. In the US, you can legally search for fossils and keep what you find almost anywhere except on private property or in government parks. Be careful not to disturb heritage sites—if you come across Native American artifacts or remains, leave them be and contact your local tribal authority. Finally, remember that fossils are a nonrenewable resource. Leave some fossils behind for the next guy and resist the urge to excavate. Unnecessary digging causes erosion that damages the site and destroys the fossils you expose.

When collecting, always record location. Fossils without context are scientifically worthless. The age of the rock and what kinds of fossils can be found nearby are critical for identification. If you discover something you think may be special, be a good citizen scientist. Show it to someone at a museum or university, and if it turns out to be significant, consider donating it to research.

Now that we know how to behave, it's time to go fossil hunting. But how can we tell what's a real fossil and what's just a cool-looking rock?

First, ask yourself what is possible in the area. What age is the strata where you're searching, and what kind of environment did it used to be? For instance, you will probably not find T. rex teeth on an ancient ocean floor dated before dinosaurs existed—but there's a good chance you'll find some seashells.

When you find a rock with an interesting shape, look closer. Does it have symmetry or patterns? Organic textures? Give it a lick. Does it stick to your tongue? If it does, it's likely porous, which is a good sign. If it's any combination of these, it could be a fossil.

Fossil bone and modern bone look very similar. To tell them apart, try tapping your find against glass. Does it clink like a marble? That could mean that the once-organic materials have been replaced by minerals, so it might be a fossil. If you're still not sure, hold a lit match under your find. Does it smell like burning hair? If so, the organic materials haven't yet mineralized, so it's definitely modern bone. In general, fossil bone from the Cretaceous and earlier will often be discolored.

A Field Guide to Fossils by Charles E. Finsley is a great resource for identifying fossils. There are also many forums and Facebook groups for fossil identification online. You can email photos to the Dallas Paleontological Society's [F.B.I.](#) (the Fossil Bureau of Investigation) or contact a paleontologist at a museum or university. Remember to provide something for scale in your pictures, and most importantly, share the fossil's original location. Often, even a city name will do.

Now that you're equipped to learn about Texas' past, you can truly appreciate nature in the present—and maybe even shape our future. Happy hunting!