



# Fossils on America's Public Lands

BLM



*Tyrannosaurus rex*. *Allosaurus*. *Triceratops*. The mere words send the imagination soaring. Public lands in the American West contain a vast array of evidence of ancient life, often in extensive badlands, which are arid and deeply eroded terrain. *Allosaurus*, *Stegosaurus*, *Deinonychus*, and *Pentaceratops* once roamed what is now public land.

Other fossils, perhaps less vivid in the imagination than dinosaur skeletons, but no less wonderful, include: perfect leaves and flowers; dinosaur tracks on a 165-million-year old beach; schools of fish filleted by scavengers; forests of ancient redwoods; and the oldest known parrot. All are preserved on our public lands or housed in museums.

## What are Fossils?

Fossils are the remains or traces of activity from any organism preserved in the earth's crust. Generally, fossilization occurs as organic material is replaced by minerals. Paleontology is the study of those remains.

## Why Is Studying Fossils Important?

Scientists get clues from the tiniest bacteria to the largest creatures, which help solve the fascinating riddles of life on Earth and tell us about the physical changes in the Earth itself. Fossils have shown us the ways in which all life forms are interdependent and affected by the environment. Through careful collection and study of our nation's fossils, scientists learn the story of origins and endings--life, death, and change--played out over nearly 3.5 billion years of the Earth's 4.5 billion-year history.

Fossils provide clues to a myriad of important and intriguing questions, from the "hot" topic of dinosaur extinctions to studies of plate tectonics (the geology of the Earth's structural deformation). Consequently, public lands provide great outdoor laboratories and classrooms for the study of paleontology and also contribute significantly to public exhibits found in museums.

For example, BLM's Cleveland-Lloyd Dinosaur Quarry in Utah has produced fossils that are exhibited in over 40 museums worldwide. Undamaged, fossil resources can reveal not only how plant and animal communities have changed, but how the face of the earth has been altered by the movement of continents, the uplift of mountain ranges, the appearance and disappearance of ice caps, and the flooding and drying of huge areas of land.

## Can I Collect Fossils?

On public lands, people may collect a reasonable number of invertebrates [animals without backbones, such as trilobites, ammonites, and brachiopods], plant fossils, and petrified wood specimens for personal, non-commercial use, without a permit. Several important invertebrate and plant fossil sites and other special management areas have restrictions on collecting and access; amateur collectors and enthusiasts should stop by the nearest BLM office to check on local conditions before collecting.

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Permits are required to collect fossil remains and traces of animals with backbones (vertebrates). Vertebrate fossils are fragile and complex; and permit applicants must show a level of training and experience in order to be approved. Because vertebrate fossils collected under a permit belong to the people of the United States, the specimens must be kept in an approved repository for scientific study, display, and educational purposes, thus ensuring that the materials will be available for future study.

### What Can I Do?

Members of the public have made important vertebrate fossil discoveries on public land. Each summer, museums and universities conduct field expeditions to BLM lands in the West under permits. Fossil enthusiasts can get involved and contribute to paleontology by volunteering at museums and educational institutions to study and work alongside trained paleontologists. Discovery, fieldwork, preparation, and curation are all components of such paleontology work. And casual visitors can help protect unique resources by reporting the location of any vertebrate fossils found on BLM lands to the nearest BLM office. <<<

