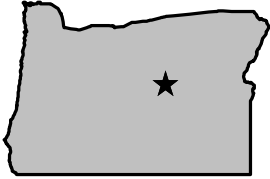


CHAPTER 6—JOHN DAY FOSSIL BEDS

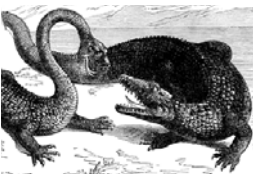
A Prehistoric Biome



Locked among the sedimentary rock of the eastern Oregon badlands lays a 40-million-year-old record of plant and animal life that once inhabited this region. The fossil beds are named after an early pioneer geologist, Thomas Condon, who was one of the first to recognize the importance of fossils found near Sheep Rock in 1865. Many specimens Condon recovered were lost, stolen or destroyed. Concern for the remaining fossils spurred establishment of the **John Day Fossil Beds State Park** in 1930 and the National Monument in 1975. Today the park spans over 14,000 acres in three separate park units. Over 50 species of birds, 40 species of mammals, 14 species of reptiles, 6 species of amphibians, and 10 species of fish use the park either seasonally or yearlong. Over 240 plants and flowers have adapted to the growing conditions found here. Millions of years of animal and floral fossils show the evolution of this region from an ocean bottom to a maritime wet climate, to the present day semi-arid climate.



Saber Toothed Tiger (*Smilodon gracilis*) One of the smaller of the three primary saber toothed cats, these creatures lived more than 2.5 million years ago. The fossil records support the theory that these animals lived and hunted in groups, perhaps in a manner similar to modern day lion prides. Working in groups allow these large cats to hunt larger species of mammals, such as buffalo, that would otherwise be too large for individuals to kill. This social behavior would also aid in the rearing of young and in the care of the sick or injured.



Early Crocodile (*Terrestrisuchus*) Believed to evolve out of the Triassic period over 210 million years ago, these reptilian creatures are thought to be the direct ancestors of modern day crocodiles. Unlike modern crocodiles, it is believed that the early forms of this creature lived primarily, if not exclusively, on land. The *Terrestrisuchus* has very long legs and feet bones and is believed to have fed on insects and other lizards.

Early Oak (*Quercus consimilis*) Evidence of this early species, related to the more common oak species known today, can be found in several fossil beds in North America, including the John Day Fossil Beds. The leaves of this prehistoric tree resembled those of the modern Black Oak and are believed to have grown over 100 feet high. The fossil remains of oak seed bodies or acorns are not uncommon and were likely a staple food source for many prehistoric rodents.

Volcanic Ash: Many volcanic eruptions during the formation of the John Day Fossil Beds provide today's scientists with a method for determining the age of the fossils they unearth. Radiometric dating allows the scientists to determine how rapidly the species that lived in this region changed in response to their environment. Volcanic ash is primarily made up of silicon, aluminum, magnesium and iron. However, small amounts of potassium or carbon in the ash are examined to determine the dates of past eruptions.

Fossil Exploration Activity: Visit a local museum, invite a curator to your school or interact with one via email. Have your class develop questions in advance that focus on a) What fossils are, b) How they are collected, and c) How collections are cared for. Involve your students in a series of virtual field trips offered by the larger museums and universities. Build relationships with university programs that would allow students to be virtual pen pals to graduate students that are doing field research in actual fossil beds. The goal for this activity should be to provide students with a deeper understanding of paleontology beyond “dinosaur bones.”

<http://www.ucmp.berkeley.edu/>

<http://www.priweb.org>

<http://www.ucmp.berkeley.edu/fosrec/Resources.html>