

A Jurassic Discovery

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Laurel, Maryland, is a diverse bedroom community located between Washington D.C. and Baltimore. It is in a transitional zone between the coastal plain to the east and the piedmont to the west. Laurel sits upon a unique geological formation called the Arundel Formation, composed of iron bearing clays.



Everyday people can join paleontologists in searching for bones at Laurel, Maryland's Dinosaur Park. Photos Courtesy Donald K. Creveling

These clays beneath Laurel were formed 110 million years ago, during the Cretaceous Period, when the area was delta-like, similar to the environment of southern Louisiana today.

Historically a source of iron ore, the clays were mined and the ore was processed as cast iron and steel. Laurel's powerful Snowden Family made their wealth from the iron industry from the late 1600s until the mid-1800s.

But along with the iron ore was another resource—Dinosaur Bones!

The Maryland-National Capital Park and Planning Commission's (M-NCPPC) Department of Parks and Recreation in Prince George's County opened Dinosaur Park in October of 2009. Dinosaur Park features a rare deposit of fossils from the Early Cretaceous Period, about 110 million years ago.

Here, paleontologists have unearthed fossilized bones of several kinds of dinosaurs, early mammals, and fossils of trees and flowering plants.

English scientist Sir Richard Owen coined the term "dinosaur" in the early 1800s to describe the ancient reptiles that roamed the earth from 230 to 65 million years ago. Since then, the discovery of dinosaur bones has captured the public's interest and fueled our imaginations!

Most people in the United States associate dinosaur finds with the western states. However, significant finds of dinosaur bones have been found at Dinosaur Park, making it one of the most important

dinosaur sites east of the Mississippi River, and a place where ordinary citizens can work alongside paleontologists.

African American iron miners discovered the first dinosaur bones in open pit mines in nearby Muirkirk in 1858. The clays of the Muirkirk Deposit at Dinosaur Park were a source of siderite, or iron ore, and iron furnaces operated in the area as early as the late 1600s. The most prominent furnace was the Muirkirk furnace located about one half mile south of Dinosaur Park. It operated from the mid-1800s until the 1920s.

Among the first scientists to become interested in the Muirkirk Deposit was Maryland State Geologist Phillip Thomas Tyson. He brought some of the “strange bones” discovered in the iron mines to a meeting of the Maryland Academy of Sciences in 1859. There they were identified as dinosaur teeth.

Academy member and dentist Christopher Johnston named the dinosaur *Astrodon* for the starburst pattern in the cross section of the teeth. The species name *johnstoni* was later added to reflect Johnston’s role in identifying Maryland’s first dinosaur, *Astrodon johnstoni*.

Astrodon johnstoni was the first dinosaur found in Maryland. *Astrodon* was a long-necked plant-eating dinosaur and may have been a type of sauropod called a brachiosaur or a titanosaur. Like all dinosaurs, *Astrodon johnstoni* walked erect with legs situated under its body (unlike lizards, which have sprawling legs that stick out to the side).



Dinosaur bones are plentiful at this former iron-mining site.

Dinosaurs were reptiles and *Astrodon* was an extremely large reptile. Scientists estimate that *Astrodon* was at least sixty feet long and weighed several tons. In fact, a six-foot-long, 220-pound femur (thigh bone) was uncovered at the Muirkirk Deposit in the 1990s, confirming *Astrodon*’s enormous size.

In May of 1998 the Maryland State Assembly named *Astrodon Johnston* the Maryland State Dinosaur.

Another scientist interested in the dinosaur finds in Maryland was dinosaur expert Professor O.C. Marsh of Yale University. In the winter of 1887–1888, Professor Marsh sent an assistant, John Bell Hatcher, to collect dinosaur bones from iron mines in Maryland.

Hatcher collected at the Muirkirk deposit and recovered hundreds of bones and teeth, including those of turtles and crocodiles. One specimen was a small sauropod named *Pleurocoelus*. Some scientists believe *Pleurocoelus* to be a juvenile *Astrodon*.

Collection of dinosaur bones in Maryland continued in the 1890s with Arthur Bagnold Bibbins, whose findings were added to the collections of the Smithsonian Institution.

Fossil collecting at The Muirkirk Deposit essentially stopped when the iron industry died out in the early twentieth century and was not revived until the 1980s when dinosaur enthusiasts rediscovered this fascinating resource.

At Dinosaur Park, everyday people have the chance to work alongside paleontologists to discover Maryland's ancient past. Dr. Peter Kranz, a stalwart supporter of the development of Dinosaur Park and educational programs for children and adults, is the experienced paleontologist who staffs Dinosaur Park.

With a team of dedicated volunteer paleontologists, Dr. Kranz offers bi-monthly open houses at the park to allow the young and old, experienced and inexperienced, to participate in discovering the past.

Since opening to the public in October of 2009, several significant discoveries have been made by visitors to the park. In 2010, a nine-year-old girl found a thumbnail-sized fossil bone that turned out to be the section of vertebra from a 110-million-year old raptor!

Also, a young boy recovered a partial jaw of a meat-eating dinosaur. Dozens of children and adults have found fossilized sequoia cones, crocodile teeth and armor, and turtle shell.



Education and research are equally important parts of the park's mission.

The M-NCPPC Department of Parks and Recreation vision for Dinosaur Park is three-fold:

- To protect and preserve the fossil deposits from development and unrestricted collecting;
- To provide an outdoor laboratory where scientists can discover new species of dinosaurs and plants;
- To provide a place where the public can work alongside professional and amateur paleontologists.

Dinosaur Park is open to the public year round on the first and third Saturdays of the month from noon to 4 p.m. In addition, group tours (school, Scouts, clubs, or family outings) and activities can be arranged for a fee upon request.

A fenced-in area at the park is where fossil collecting takes place. But Dinosaur Park also features an interpretive garden with plants reminiscent of dinosaur times and four interpretive wayside signs, that describe dinosaurs in Maryland, the State dinosaur *Astrodon johnstoni*, the industrial past of area, and the lives of the African American miners who worked the iron mines and found the first dinosaur bones at what is now Dinosaur Park.

Due to the popularity of Dinosaur Park, funds have recently become available to add running water for sifting clay in a sluice box to recover fossils, a comfort station, and an educational area and play area.

Though not everyone who visits Dinosaur Park finds an exciting piece of bone or a tooth, almost everyone discovers something. Dinosaur Park is a place where dreams come true and imaginations are fueled.

To visit:

Dinosaur Park

13201 Mid-Atlantic Boulevard

Laurel, MD 20708

Information for tours 301-627-7755; TTY 301-699-2544

History.pg parks.com

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The Maryland-National Capital Park and Planning Commission

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