

Fossils In North Dakota

FIND is a newsletter dedicated to helping young readers (in age or spirit) express their love of fossils and paleontology, and to help them learn more about the world under their feet. Each issue will be broken up into sections including Feature Fossils, Travel Destinations, Reader Art, Ask Mr. Lizard, and more!

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<https://www.dmr.nd.gov/ndfossil/kids/newsletterkids.asp>

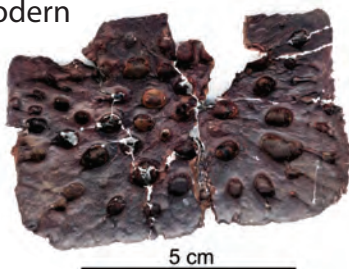


Feature Fossil: *Borealosuchus*

Borealosuchus was a crocodile that lived 60 million years ago during the Paleocene. North Dakota during that time was a very warm, swampy place, similar to the Florida Everglades. *Borealosuchus* has been found at a number of fossil sites in western North Dakota, including near Medora (one of our Public Fossil Dig sites). They had slightly longer, more narrow snouts than crocodiles today, indicating they would have eaten a lot of fish. Crocodile **coprolites** (dung) support this, as many have been found with the bones and scales of fish. However, these animals were similar to modern crocodiles and probably ate anything they could get their teeth on. We have even found fossil turtle shells with crocodile tooth marks in them.

Much like modern crocodiles, *Borealosuchus* was also protected by **dermal** (skin) armor called **scutes**, which are small squares of bone (osteoderms) embedded in the skin of the animals. These are what give crocodiles a square-scaled appearance.

Borealosuchus was a medium sized crocodile, and could reach lengths of 10-12 feet long. Tooth numbers of individual animals vary, but average around 40 teeth per skull. Like modern crocodiles, they grew new teeth throughout their life.



Public Fossil Digs 2012:

We had a successful summer this year leading our four Public Fossil Digs. We started off June in Marmarth, ND, **prospecting** (hiking and searching) the hills for signs of new fossils, and returned to some of the areas visited in previous years. It was warmer than usual, but we still brought back some fossil parts of dinosaur, crocodile, fish, and more.

July was extremely busy with two digs. We spent over a week in the Pembina, Gorge area, near Walhalla, ND, excavating a partial **mosasaur** (big sea lizard, like a komodo dragon with flippers) skeleton which was found on the first day. We had to leave before all of the bones were excavated, so more will have to be unearthed later on.

The Medora Fossil Dig is always a nice treat – beautiful crocodile and fish fossils, great scenery, and another hatching of short-horned lizards running around. We even found another ever-rare *Piceoerpeton* (giant salamander) **vertebra** (piece of backbone).

Our last dig was northwest of Medora, ND, at the Whiskey Creek site in August. We managed to remove from the rock a number of smaller **jacketed** (plaster-wrapped) fossils, including a *Borealosuchus* crocodile skull! We made sure to get video footage of the find, the plastering, and transportation, and are currently working on a timelapse of cleaning the fossil. Look for the whole video next year in the new Heritage Center expansion!



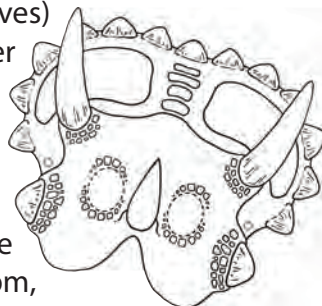
Upcoming Events:

Come be a part of our Prehistoric Parade! The Heritage Center is closing their gallery exhibits in preparation for our move to the new galleries. Thursday, **October 11th** through Sunday, **October 14th**, we will be having a "Last Hurrah!" party for the public. One last chance to take a tour through the old gallery, before things are torn down in preparation for the new exhibits. The party will include storytelling, dinosaur talks, dancing, tours, a prehistoric parade, and ends with a closing ceremony on Sunday.



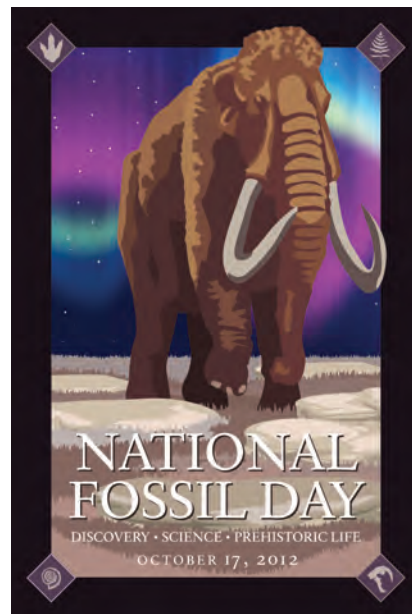
So what is a prehistoric parade?

Well – families will be encouraged to dress their kids up (and themselves) in their favorite prehistoric critter costumes, and make a grand march through the gallery at 11am on Saturday, October 13th. Don't have a costume? There will be mask-making areas available on Friday (Oct 12th) from 3-7pm, and on Saturday (Oct 13th) from 9-11am. Our hope is to see a whole menagerie of scary smilodons, dynamic dinosaurs, monstrous mosasaurs, and more! Prehistoric puppets are also encouraged.



National Fossil Day 2012:

National Fossil Day this year will be held on Wednesday, October 17th. With all the upcoming work surrounding the expansion and new galleries of the Heritage Center in Bismarck, the North Dakota Geological Survey will not be holding any special events on that day. With the new exhibits opening next year however, you can look forward to a fantastic day of fossils!



Mission: National Fossil Day is a celebration organized by the National Park Service (and cosponsored by many organizations in this country, including the North Dakota Geological Survey) to promote public awareness and stewardship of fossils, as well as to foster a greater appreciation of their scientific and educational values.

For more information on National Fossil Day, and where you can participate in events, please visit:

<http://nature.nps.gov/geology/nationalfossilday/index.cfm>

Ask Mr. Lizard...

Why did the name "Brontosaurus" stop being used?

In 1877, Othniel Charles Marsh described and named the dinosaur *Apatosaurus* (deceptive lizard). Two years later he found and named a second dinosaur "Brontosaurus"

(thunder-lizard). Both skeletons had no head, so Marsh substituted skull bones from another dinosaur called *Camarasaurus* to fill in the gaps. In 1903, the skeletons were found to be from the same genus of animal first called *Apatosaurus*, but by then the public had already fallen in love with the name "Brontosaurus," which is now an obsolete name.

Just Imagine...

The *Borealosuchus* propelled itself along the lagoon edge, using powerful strokes with its thick tail. The water levels had dropped again this year, shrinking the once vast swamp into pockets of **stagnant** (not flowing; foul) water. Some animals had moved on to more lively areas – the birds that could fly, the mammals that could walk. The rest however, such as the slow moving salamanders and turtles, and the fish trapped in water, were stuck in the area. While their habitat was vanishing around them, the crocodiles found it a buffet. Prey would be easy picking for the crocodiles, until the water completely dried up. Then they, too, would have to find a new home.

For now, the crocodile was **sated** (satisfied), and wished to cool off in the summer heat. Lumbering to the shore, the animal was not as graceful on land, and crawled slowly out of the stinking mud-filled water. While it could run on land if provoked, nothing else was around to threaten the **domain** (territory) of this top predator. Relaxing under the shade of an outstretched magnolia tree, it opened its mouth wide. The cool air moved around the scale covered animal, pulling away heat from its open mouth. While terrifying to behold this mouth full of pointed teeth, the animal had no **malicious** (harmful) thoughts.