

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!

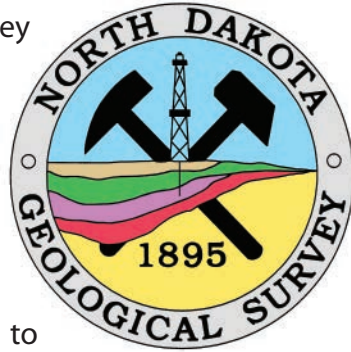
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<https://www.dmr.nd.gov/ndfossil/kids/>

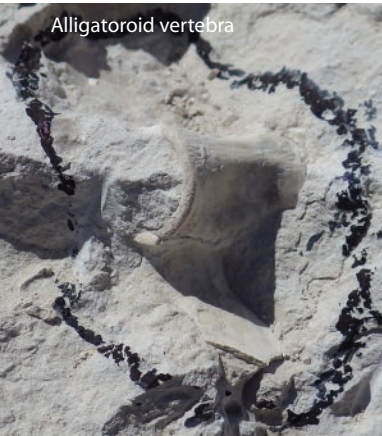


Public Dig Report - 2017

This has been a record-breaking year for us! The summer of 2017 had the most attendees, at 299 people between the digs. We also found not one, but two beautiful *Tyrannosaurus* teeth. We had to initially reduce the number of digs we offer due to budget cuts; Whiskey Creek and Pembina Gorge were dropped. The agencies we partner with really came through, and we were able to reopen the Pembina Gorge dig at the last-minute.

Dickinson Area: This year we teamed up with the South Dakota School of Mines and Technology, who spent a whole extra week on site with us. The second week, which was open to the public, was very productive. Becky Barnes spent nearly the whole time slowly chiseling out a block of alligator material. We relocated the alligator bones that had been excavated

in 2016, then kept going. There was indeed more! At least a few more vertebrae, and what is hopefully the sacrum (lower back). John Hoganson came back to visit, and while wandering over a section we had been walking by for years, came across the start of a



Alligatoroid vertebra

Stylemys tortoise. It will have to be pulled out in the 2018 season. Trissa and Rachel Ford found a massive deposit of the rhino *Subhyracodon*. We had an added bonus this year – a photographer from the New York Times came out with us as well!

Medora: The air was a little hazy with the nearby grassfires, but the digging went well. This was by far our hottest dig, with daily temperatures above 100F. Speaking of record-breaking, on day one, we had a group of high schoolers out with us. One found the largest crocodile tooth from the site thus far, and another found the smallest mammal jaw – without magnification! Crazy! Other fossils found during the week include fish jaws, champsosaur and crocodile limb



Photo courtesy of Mike McCleary



Fish jaw

bones, a giant salamander vertebra, a cache of plants, and of course a plethora of poop.

Bismarck Area I: We have spent the last couple years working this site without the public, slowly cleaning off the upper layers of bits and rubble. The site has gotten to the point where now we can use help – and wow is it ever producing bones! This first year with the public was quite a bit of work. We had to push all the weathered surfaces down to a common layer, in order to create a quarry wall. By

the end of the week we pulled out 27 plaster jackets of bones. Dinosaur



Tiny mammal jaw



Crocodilian femur



ribs, toes, and bits. We knew we would have to go back before the end of the dig season, with so much material exposed at the surface...

Pembina Gorge: The heavy equipment was coming out to push the hillside back, so everyone was working hard to clear their areas of fossils. We pushed the quarry wall back, behind the 2015 mosasaur site (which was dubbed Eustace). More bones emerged, which was wonderful. We were worried that all there was would be a skull, but were heartened to see more of the body uncovered. Maybe paddle bones? We won't know until we clean them back in the lab. As with most fossil sites, we always find something at the last hour of the last day. This site was no exception. We



Fish vertebra

found a THIRD mosasaur (dubbed Evinrude) after the heavy equipment cut the hillside back. With the dirt fresh and still moist, nothing was visible. As the dirt dried in the sun, a large tail vertebra peeked out. Looks like we have our work cut out for us next year. To cap things off, a couple of diggers also found limb bones from an ultra-rare swimming bird. Perhaps *Hesperornis*?



Bird limb bone

Bismarck Area II: We did indeed end up going back to the dinosaur site – this time, with the film crew from the NBC Today Show. By the end of the dig, another whopping 15 plater jackets came out, making



our total for the site 42! During the dig, Jessica of the ND State Historical Society uncovered the nicest, most complete *Tyrannosaurus* tooth we had ever seen on a dig. Then, not 20 minutes later

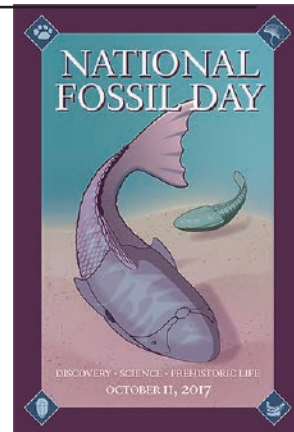
Errol revealed yet another *Tyrannosaurus* tooth – this one larger than anything in the State Fossil Collection. A phenomenal finish to our record-breaking year!



For information on our 2018 dig season, please visit our website: <https://www.dmr.nd.gov/ndfossil/>

National Fossil Day 2017

Join us this year at the ND State Museum and Heritage Center to celebrate National Fossil Day. Activities will run from 10am to 4:30pm outside the Adaptation Gallery: Geologic Time. Paleontologists will be on hand to help you identify any rocks or fossils you have lying around. From 10:30-11:00am and 3:30-4:00pm, come take photos with our resident *Tyrannosaurus* mascot. From 12:30-1:30pm, construct adorable fuzzysaurs.



If art is your thing, we will also be holding another art contest (see website above for more details). The theme is: Caring for our fossil heritage.

V.I.P (Very Important Paleontologist) Amanda Person

Amanda Person is a vertebrate paleontologist with a Master's degree in paleontology. She has collected fossils in many states across the western US and has collected on three continents including Australia and Antarctica. She studies fossil birds and is currently working on a publication naming a new species of bird from Antarctica.



You went to school at the SD School of Mines & Technology - how did you end up going to Antarctica?

My major professor had been to Antarctica several times, and my thesis fossil was collected during one of his earlier visits. When it came time to gather a field crew to go back in 2003, I was asked to attend. Of course, I knew it would be difficult, but also an amazing opportunity, so I jumped at the chance to go.

Many of our readers are used to ND winters - how was Antarctica different?

I left for Antarctica several days before Thanksgiving, 2003, which is our winter, but the southern hemisphere's summer (the austral summer). Although it was very cold when we were in the field (and we had several days of snow and blowing wind), the Antarctic summer was much milder than a North Dakota winter!

Did you find any fossils? What did you learn?

We traveled to Antarctica on an ice breaker - a ship which is able to plow through sea ice - and it took us a week just to sail from the tip of South America to the Antarctic peninsula. We ran into several storms and had to re-route a few times, but the most important lesson I learned was to be flexible, especially when dealing with things you can't control, like the weather! We ended up on a different island on the Antarctica peninsula than the one we originally intended to study, as we could not get to the original island because the

sea ice was right up to the island, and we needed open water to get on shore. We went to a nearby island which had not been prospected for fossils before - there was a possibility that the fossil-bearing rocks were not on the surface and we would be doing nothing for several weeks! As it turned out, we did find fossils, including skull elements of a small theropod dinosaur.

What would you tell someone new about to travel to Antarctica?

There are many opportunities to work in Antarctica - not just scientific research either! Sailors on the ice breaker, computer experts, and many other support staff are in high demand to work with the US Antarctic Research Program. Having dealt with North Dakota winters, any one of YOU could be well-qualified to apply!!

