

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/>



Friends of NDGS Paleo

With each year of public fossils digs, new ideas are generated by staff, participants, and friends. One of the ideas that popped up was to start a Friends group that would be able to lessen some of the load our paleo staff has taken on. All the little things that add up, like registrations, fundraising, advertising - all really important stuff - but time consuming projects that eat into fossil preparation and research. This wasn't a problem when 30 people were attending digs over the course of the summer. However, with over 600 people attending... well, I'm sure you understand.

Enter: Trissa Ford and Katy Brooke - long time dig participants and lab volunteers, who love fossils and want to see the dig program grow and evolve into more of its potential. They started up a nonprofit group to help out the NDGS paleo department, called the Friends of NDGS Paleo. In the future if you're interested in more behind-the-scenes videos, early registration, participating in digs, and extra goodies they're still brainstorming, please make sure to check them out on Facebook @ndpaleofriends or on the web at <http://ndpaleofriends.org/>

FRIENDS OF
NDGS PALEO 

Dig-out-your-own fossil block

With various tours and presentations held at the North Dakota Heritage Center & State Museum, paleontology has access to displays, exhibits, collections, lab spaces - all kinds of props and things to make it work. What happens when we go out-and-about? We can't exactly take the museum with us. For some events, a simple travel box of "touchable fossils" accompanies us. These are fossils that are more durable, or casts of more fragile things, that people can touch or hold to get a better idea of what they feel like.

We were recently asked to put together a presentation for Gateway to Science that included an activity. Something the kids could take home, and get a better idea of what we do. At first we thought casting up their own fossil - but if done in plaster it takes time to cure, and once it's done... well... now what? The kids learned to pour a copy, but not how the mold was made, or the fossil was excavated... wait! Excavation! We can find all kinds of "dig out your own dinosaur" blocks in gift stores - why not make one with casts of real fossils?

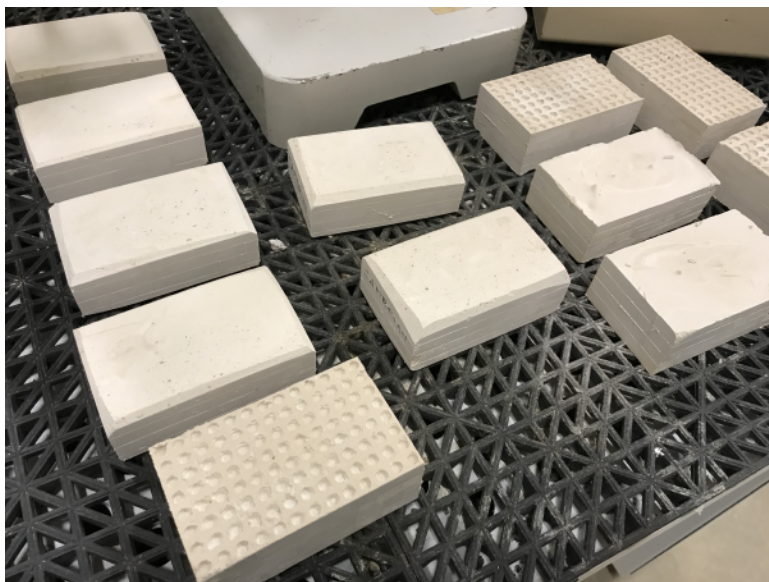
Parents and educators - this is a great project you can do at home too! Just make sure you have enough space and time to dry the blocks. First, we cast up several smaller bones and shells. Using LEGOs, we build uniform sized voids to make the blocks in. We love LEGOs in the lab - they're reusable, we can make them into any shape of border or wall when casting - they're just great. Then we mixed up a batch of mud-plaster. The plaster to help quickly solidify the muck, and the mud to weaken the plaster. If you want to do a really nice job, and have the time, you could also use just plain mud without the plaster - but we were strapped for time and needed to speed things along.



After the plaster-mud set, we could remove the blocks from the LEGOs. At this stage they're very soft, and warm due to the exothermic reaction of the plaster – but they're not very stable. They need to dry fully. You can tell when they're completely dry when they're no longer cool to the touch due to evaporation. Placing them on a wire rack, like what is used to cool cookies, works great for air circulation. Adding a fan is a plus too!



Once the blocks are ready, you can use simple tools such as a popsicle stick and brush to carefully excavate the “fossil.” Depending on the age group you're working with, you can imbed casts, or even plastic dinosaur models.



The event ended up being a success - the hour presentation turned into at least a couple hours, with kids carefully excavating their mystery blocks. A fair warning however - this activity creates a lot of dust! So be prepared for a little cleanup afterwards.

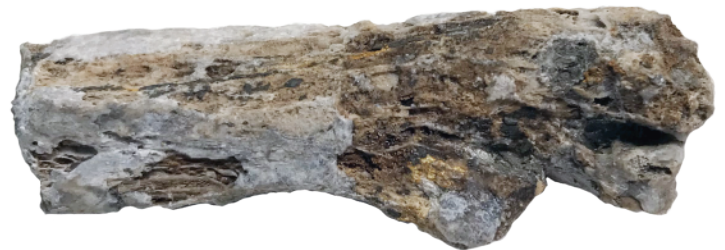
Feature Fossil: *Hesperornis*

Something was a-foot in the Pembina Gorge this May. Paleontologists Clint Boyd, Becky Barnes, and preparator Trissa Ford headed up North to check the Pembina Gorge site before the start of the official digs this August. While there, Clint made quite the discovery – a bird foot! More specifically, a swimming-bird related to *Hesperornis*. The bone is part of what we call a “**tarsometatarsus**” – a fusion of **metatarsal** bones (the flat part of our foot, between our toes and ankle). This is the part of the foot that gives people confusion over the “backwards knees” of birds – their knees face the same way as ours (bending forward), but they're simply hidden beneath all those floofy feathers. This means what sticks out of the feathers is the tibiotarsus and tarsometatarsus. Believe it or not, the “backwards knee” is actually the ankle of a bird! So really birds are just walking on their toes, not the flat part of their feet.

This particular find is very exciting – over the years we've found quite a few bird bones at the Pembina Gorge fossil site. Just last fall Becky pulled out a partial bird neck. During one of the first years Dr. John Hoganson removed a partial hip and leg. They may not be common – but they're out there.



NDGS 10307



The bone (along with most other bones from the site) is preserved with gypsum - the same soft material that makes plaster or sheetrock. This means the bone is VERY fragile, and not all of the gypsum coating can be removed, for fear of damaging the bone. Any preparation needs to be done using a microscope, with very small tools.