

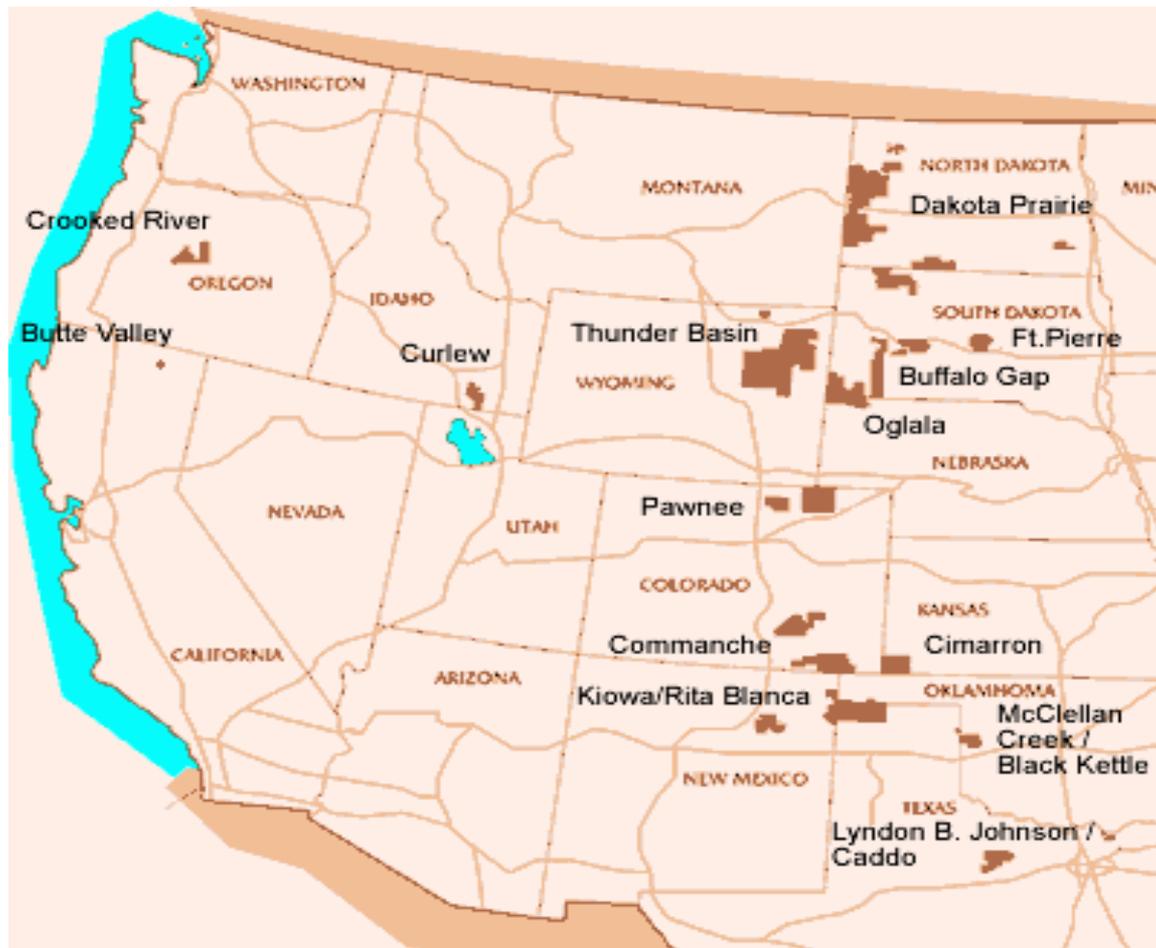
GIS in the Paleontology

Notes from the field

By Vincent Bruscas

SECRET STUFF

- ***SEC. 6309. CONFIDENTIALITY.***
- *Information concerning the nature and specific location of a paleontological resource shall be exempt from disclosure under section 552 of title 5, United States Code, and any other law unless the Secretary determines that disclosure would--*
- *(1) further the purposes of this subtitle;*
- *(2) not create risk of harm to or theft or destruction of the resource or the site containing the resource; and*
- *(3) be in accordance with other applicable laws.*



MAP OF GRASSLANDS

Paleo digs in Thunder Basin, Buffalo Gap, and Oglala National Grasslands.

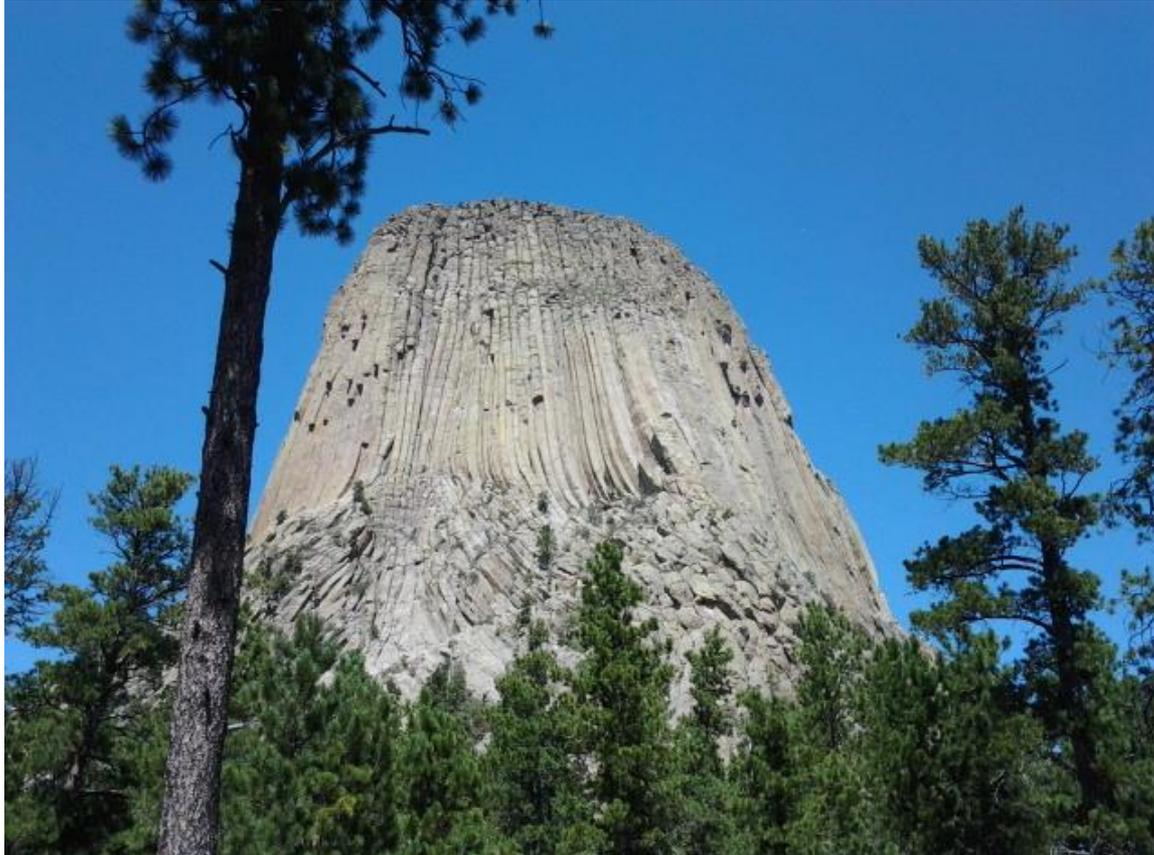
FS has a geodatabase program for Paleo that is called PaleoEX. The “ex” is an arcmap extension. The database has fields ranging from specific site location, geology, stratigraphic markers, types of fossils, preservation of fossils, unauthorized collection evidence, to the museum side with accessioning and even site mitigation. The program also allows to store photos of sites, reports, theft reports, court documents, etc. and it will produce reports as well. Needless to say it is way too cumbersome for 2 paleos to keep up to date.

VOLUNTEER OPPURTUNITY, INTERESTED?



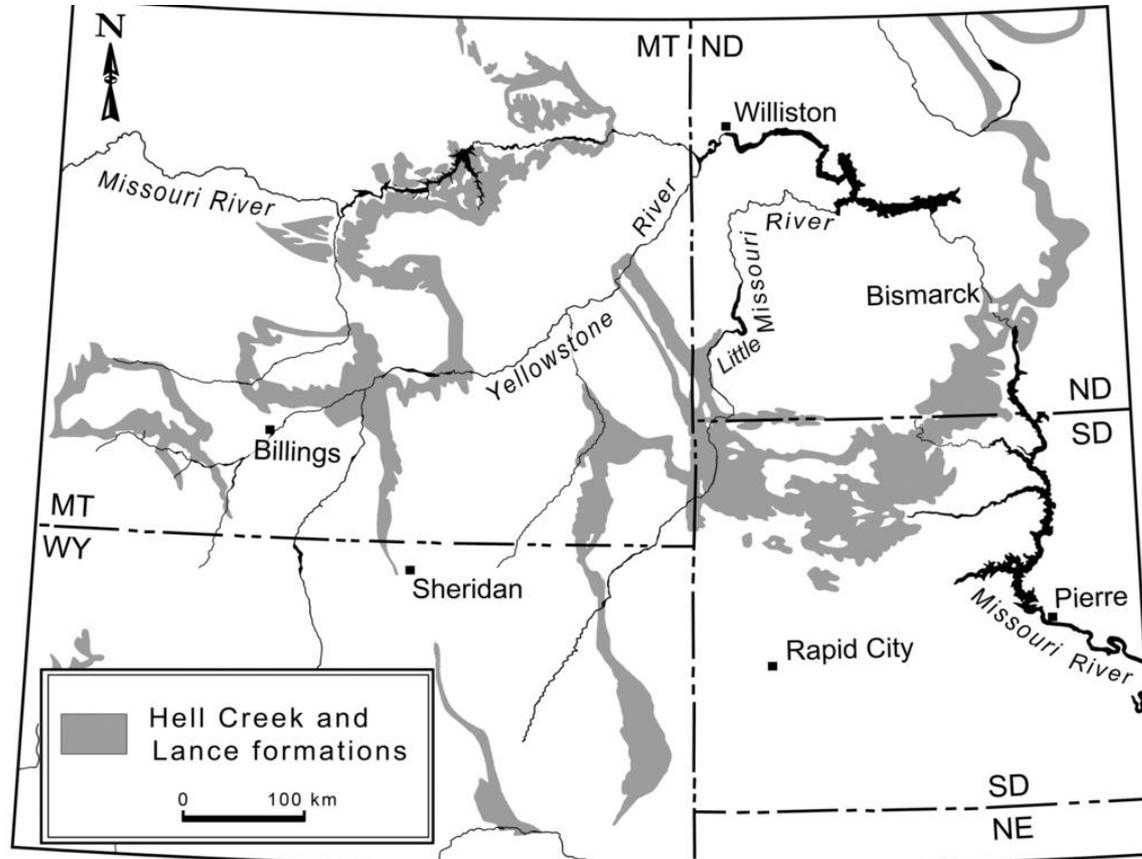
Wyoming

First dino dig with JR. It was his first year at University of Idaho. We packed all of his dorm stuff with camp equipment. He was a little stuffed.



Devil's Tower

Interesting geological feature in the area. All of the area's we work in are part of the Lance Creek or Hell's Creek formation.



Geology formation

The **Hell Creek Formation** is an intensively-studied division of mostly [Upper Cretaceous](#) and some lower [Paleocene](#) rocks in North America, named for exposures studied along **Hell Creek**, near [Jordan, Montana](#). The [formation](#) includes portions of [Montana](#), [North Dakota](#), [South Dakota](#), and [Wyoming](#).



Camping in the grasslands.

The tent did not survive the 70 mph winds of the grasslands.



Shade house next to dig.



PIT (Passport In time)

PIT is the organization that manages volunteer project for USFS. It also a good description of the projects.



Metatarsal from Edmontosaurus

The duck bill dinosaur was the size of a small city bus.



Bone in situ.



Portion of brow horn from TriCeratops.



Cover to protect site overnight.

Overburden was hand shoveled down to bone layer.



Field jackets on bones.

1. Expose the bone.
2. Pedestal around bone.
3. Jacket bone.



Storm moving through area.



Everett Transit

Everett Transit provide transportation to the site.



Jaw bone

Jaw bone from a Brontotherium.



Fossilized fungi.



Hell's creek formation.



Aftermath

Dino digs are not for the faint of heart. Storm with 70 mph+ winds knocked over porta potties that rebarred into the ground.



Mornings are spectacular on the grasslands.



Wild animals stop by to check out the action.



Digging up a little higher in the Lance Creek Formation.

Safety rules where required for the natural occurring asbestos.



Lab specimen.

Field finds are sent to the Paleo Research Lab at the South Dakota School of Mines. They keep this brontotherium and he is decorated every year for homecoming.



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Camp in North Dakota



Long walk to dig site.

3 mile round trip hike to dig site. But the temp was only in the low 80s.



Chance for some learning.

My wife, school teacher, getting instruction from Dr. Sambria USGS geologist.



At the famous KT boundary.

K-T boundary is the point in between the Cretaceous and Tertiary periods. Geologists have dated this period to about 65.5 million years ago.



Junior search for dino's.

Most of the dinosaur finds are found by erosion exposure. In surveying we look for bones poking out the side of mountains.



Galapagos Islands

Saddle back tortoise male showing dominance.



Teenage turtles.



Galapagos snake.



Sea Iguanas hanging out.



Blue footed booby.

The Humboldt current provide plenty of food. One or two eggs are normal, three eggs are pretty extraordinary.



Guess where?

Isla Isabella

The end.