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BLM Public Affairs

2009 active season for Eastern Montana dino hunters

JORDAN, Mont. --- Summer is on the wane and excavation crews from across the nation are headed back to their labs after a summer field season extracting fossils from eastern Montana's fossil-rich formations.

This year in Garfield County, the St. Louis Community College-Meramec from Missouri was among those federally permitted institutions working on BLM-public land. Field Supervisor and Physical Science-Geology faculty member Carl Campbell has been overseeing excavation operations north of Jordan.

Campbell worked with several groups of students and volunteers this year, which rotated through the area in June and July, working several locations. One of the more unique work sites is a "bone bed" situated in the lower Hell Creek Formation within the Snow Creek drainage. Bone beds are relatively uncommon in northeast Montana. Rarer still is finding the remains of multiple species in one location.

According to Campbell the bone bed has produced various parts of Tyrannosaurus rex, Triceratops and Torosaurus as well as fragmented plant remains. Interestingly, some of the bones appear to have been burned prior to being buried—as a thin charcoal layer was in the clay at the level where the bones were discovered.

"These Torosaurus and T. rex are very, very early, maybe the earliest ones ever found," said Campbell. "They're in the very lower part of the Hell Creek formation."

Torosaurus are particularly unique. The debate is fresh amongst scholars as to whether or not they are a separate species –or just another phase in Triceratops development. Torosauraus --the name meaning "perforated lizard"-- are part of a group of plant-eating, parrot-beaked dinosaurs touting some of the largest skulls known.

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Specimens have two large holes in the massive frill. The location of the holes roughly corresponds to "thin spots" present on about half of recovered sub adult triceratops specimens, hence the debate. Some paleontologists suggest that Torosaurus just might be mature Triceratops who have reached sexual maturity and developed larger frills as a type of display.

"We thought we had a Triceratops. The (Torosaurus) lower jaw was extremely gracile, along its full length; it's real delicate looking," said Campbell. "The T. rex seems to be based on the bones of a sub-adult; it had very long legs and feet but wasn't bulked out yet, kind of like a teenager."

The St. Louis Science Center preparation lab has been processing material from the bed; brow horns, disarticulated skull bone fragments, ribs, vertebra, tibula, fibulae and femurs. The lab is in a publicly-accessible setting where museum visitors can watch the preparators separate bone from rock and ask questions.

Campbell has been working on the bone bed since its discovery in 2006.

"We've been staring at these rocks for five years out here and finally, it clicked; we could see the channels cutting in and kind of visualize what it looked like 67 million years ago," said Campbell. "This is a river system that would have been three times bigger than the Mississippi river system."

Concordia College from Moorhead, Minn. was also working under BLM permit in Garfield County. Staff from the Museum of the Rockies were excavating and gathering data this summer near Haxby Point, as well.

Also in the field this year; crews from the Burpee Museum from Rockford, Ill. were sampling the fossil-bearing layers of the Hell Creek Formation in Carter County. Museum field staffers and volunteers have been working to recover the remains of "Homer"--a juvenile Triceratops or "Trike"—as Triceratops are commonly called. So far, the group has discovered three promising locations containing the remains of Edmontosaurus (a type of crestless duck-billed dinosaur), Therapods (bipedal, primarily carnivorous species) and Trike specimens.

The Burpee Museum is credited with the discovery of "Jane" in Carter County in the summer of 2001. For a period of time the specimen created quite a stir in the scientific community and was initially considered to be a new species. At first dubbed "Nanotyrannus lancensis" or "Pygmy Tyrant" Jane was later classified as a juvenile T. rex.

Jane, named after a museum benefactor, is 51 percent complete and considered one of the finest specimens of its kind. A full-sized cast of Jane's skull is on permanent display at the BLM office in Miles City.

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The BLM issues permits primarily for vertebrate fossil specimens (organisms with a backbone), and scientifically significant invertebrate (organisms without a backbone) and plant fossils. The permits are generally issued only to professional paleontologists, who must agree to preserve their finds in a public museum, a college, or a university because of their relative rarity and scientific importance.

Visitors to public lands are welcome to collect reasonable amounts of common invertebrate and plant fossils without a BLM permit. No permit is needed for plant fossils, such as leaves, stems, and cones, or common invertebrate fossils, such as ammonites and trilobites. Petrified wood can be collected too for personal use —up to 25 pounds each day, plus one piece, but no more than 250 pounds in any calendar year.

These materials must be for the finder's personal collection and cannot be sold or traded.

For more paleontology and fossil collecting information call the BLM Miles City Field Office at (406)233-2800 or visit us on the web at: http://www.blm.gov/wo/st/en/prog/more/CRM.html.

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Photos and Cutlines:

High-resolution copies of the following photos are available by contacting Mark Jacobsen at: mark_jacobsen@blm.gov or (406) 233-2831.

Photo caption: 090714-stlcc (27)

St. Louis Community College-Meramec Field Supervisor and Physical Science-Geology faculty member Carl Campbell (right) examines exposed fossil bone fragments or "float" with Aaron Jacobsen (left), a field crew volunteer from Miles City, July 14. Campbell has been supervising several groups of volunteers and working in the Snow Creek area north of Jordan this summer.

Photo caption: 090714-stlcc (59)

St. Louis Community College-Meramec Field Supervisor and Physical Science-Geology faculty member Carl Campbell (right) discusses the remains of a Triceratops under excavation with Aaron Jacobsen (left), a field crew volunteer from Miles City, July 14. Crews have been working over several seasons to uncover the bones, which are headed into the hillside. The uncovered remains have been covered with a plaster jacket intended to support the bones and prevent further deterioration until they can be removed to a preparation lab for processing and preservation.