



# Public lands hold clues to the past

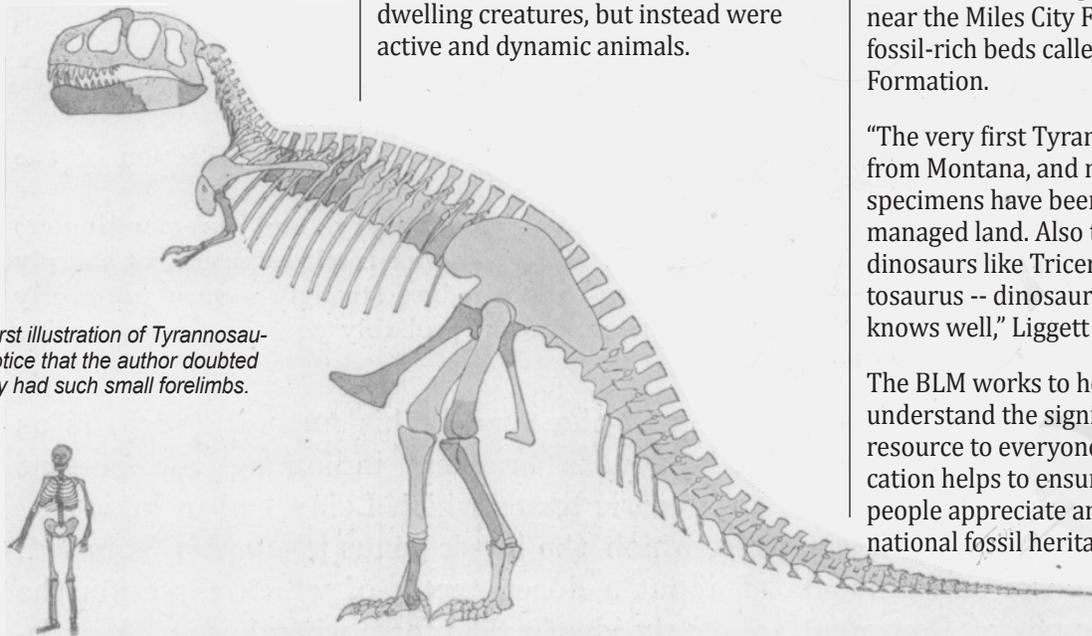
Few things excite the imagination like prehistoric creatures. The BLM Montana/Dakotas State Office is working to get the word out about the important role of public lands in our quest to understanding the past.

Recently, State Paleontologist Greg Liggett took a reporter from local television station KTVQ to the south of Billings near Bridger, Mont., to explore the rocks and fossils.

"Within a relatively small area we can explore 280 million years of Montana history," Liggett explained. "Many exciting fossils have been found from this region over the years, and the BLM plays an important role in their management."

The earth is not static. It continuously changes on a geologic time scale so that where today is a high desert was many times in the past a coastal lowland or even ocean. And at each of these different points in time, different prehistoric beasts left their remains to be found by scientists today.

At one stop, called the Mother's Day Quarry, literally thousands of bones from the long-necked dinosaurs known as sauropods have been collected over the last decade by the Cincinnati Museum Center.



*The very first illustration of Tyrannosaurus rex. Notice that the author doubted that it really had such small forelimbs.*

**Fig. 1. Rough outline showing scale of size of *Tyrannosaurus rex*. By W. D. M. The association of the small forearm is probably incorrect.**

"We work with researchers and museums all around the country to manage the public fossil resources," Liggett said. "We ensure that the fossils are well collected and cared for, and scientists and museums give them value by conducting research on them and educating the public. It really is a partnership."

Research on the Mother's Day fossils show that the site records many individual dinosaurs, all juveniles, who died around a dried up watering hole 150 million years ago. Juveniles died because they are the most susceptible to being weakened by a lack of water, whereas adult animals could resist drought conditions better.

Not far from the Mother's Day site, but separated from it by at least 10 million years of time, is another noteworthy locality—the place where the first raptor-type dinosaurs were found in North America. These dinosaurs are smaller than the massive sauropods, and their kind were made famous in the Jurassic Park movies, being the dinosaurs with the sickle-shaped claw on their hind feet.

Those Montana fossils, found in the 1960s by researchers from Yale, helped fuel the revolution in our thinking that dinosaurs were not big, dumb swamp-dwelling creatures, but instead were active and dynamic animals.



*State Paleontologist Greg Liggett talks with a reporter about the fossils on BLM land south of Billings. Photo by Brad Purdy*

"The skeletons of the smaller carnivorous dinosaurs show that they are active hunters, using their dangerous claws to kick at and wound their prey. Imagine if they did hunt in packs—that must have been a terrifying sight," Liggett wondered.

And on BLM-managed lands to the east, near the Miles City Field Office, are fossil-rich beds called the Hell Creek Formation.

"The very first *Tyrannosaurus rex* came from Montana, and many of the known specimens have been found on BLM-managed land. Also the well-known dinosaurs like *Triceratops* and *Edmontosaurus* -- dinosaurs almost every kid knows well," Liggett said.

The BLM works to help the public understand the significance of the fossil resource to everyone. Outreach and education helps to ensure that the American people appreciate and take pride in our national fossil heritage.