



Late Triassic Vertebrate Tracks Discovered at Petrified Forest NP

By Vincent L. Santucci and Adrian Hunt

Fossilized tracks of Late Triassic reptiles were discovered in April 1993 at Petrified Forest NP. Although paleontological field work has been conducted in the Chinle Group of Arizona since the turn of the century, these are the first fossil vertebrate tracks discovered. The presence of fossil tracks in association with fossilized bone brings us closer to identifying tracks with track-makers.

Two different track types have been identified in 220-million year old channel sandstone blocks. The sandstone unit represents a shallow stream with episodic flow that meandered across a broad plain. Tiny five-toed tracks called *Rhynchosauroides*, produced by a small, lizard-like animal, were the first vertebrate tracks to be discovered in the park. This fossil vertebrate track type is known from rocks in New Mexico, Utah, and Colorado. A swimming trace of a larger reptile, possibly a phytosaur, was located during a secondary survey. This trace preserves scrape marks where the reptile claws scratched the substrate.

Fossil invertebrate tracks, trails, burrows, and other traces are abundant within the park. A type specimen of horseshoe crab track, (*Kouphichnium arizonae*), was described in 1944 by Kenneth Caster. Steve

This five-toed track produced by a small lizard-like animal was among the first of the vertebrate tracks to be discovered in the park.

Hasiotis, a graduate student at the University of Colorado at Boulder, is involved with a comprehensive survey of the park's ichnofossils (trace fossils). Steve recently collected and described the earliest known fossil termite nest from the Petrified Forest Formation in the park.

The importance of trace fossils and their identification has increased dramatically over the last two decades. Trace fossils have been reported from many National Park Service units. In addition to these found at Petrified Forest NP, vertebrate tracks occur at Arches NP, Badlands NP, Canyonlands NP, Colorado NM, Death Valley NM, Dinosaur NM, Glen Canyon NRA, Grand Canyon NP, Montezuma's Castle NM, Pipe Spring NM, and Zion NP. There is even a stone bridge at Gettysburg NBP that has a dinosaur track in one of the quarried blocks.

Recently it has been recognized that vertebrate tracks are not randomly distributed throughout Late Triassic rocks of the western United States. Most tracks are in the uppermost (youngest) strata of this age (e.g., Dinosaur NM, Canyonlands NP, Colorado NM). The tracks at Petrified Forest NP are several million years older than the other known Late Triassic tracksites in the western U.S. The high density of associated skeletal remains in the park produces a rare opportunity to correlate the track with the track-maker.

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