Dozens of dinosaur footprints reveal ancient ecosystem of Alaskan Peninsula

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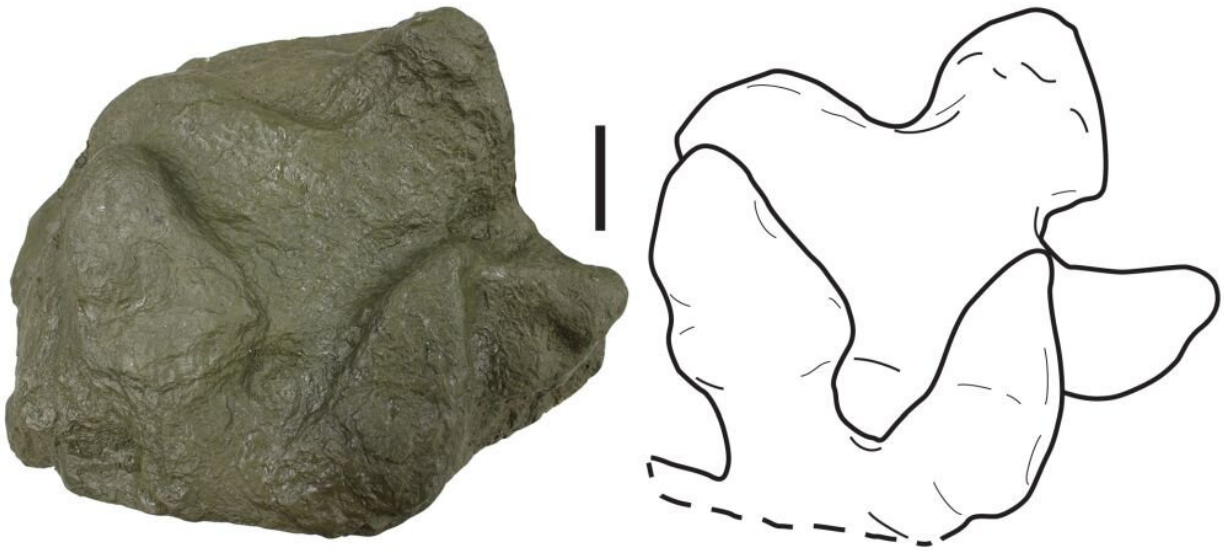

Hadrosaur double prints. Credit: Fiorillo et al, 2019

Abundant dinosaur footprints in Alaska reveal that high-latitude hadrosaurs preferred tidally influenced habitats, according to a study released October 30, 2019 in the open-access journal *PLOS ONE* by Anthony Fiorillo of the Perot Museum of Nature and Science in Texas and colleagues.

Dinosaur fossils are well-known from Alaska, most famously from areas like Denali National Park and the North Slope, but there are very few

records of dinosaurs from the Alaskan Peninsula in the southwest part of the state. In this study, Fiorillo and colleagues document abundant dinosaur trackways from Aniakchak National Monument, around 670km southwest of Anchorage.

The trackways were preserved in the Chignik Formation, a series of coastal sediment deposits dating back to the Late Cretaceous Period around 66 million years ago. Survey work from 2001-2002 and 2016-2018 identified more than 75 trackway sites including dozens of dinosaur footprints. Based on the anatomy of the prints, the authors identified two footprints of armored dinosaurs, one of a large predatory tyrannosaur, and a few footprints attributable to two types of birds. The remaining 93% of the trackways belonged to hadrosaurs, highly successful herbivores which are typically the most common dinosaurs in high-latitude fossil ecosystems.

Previous research on skeletal dinosaur remains in northern Alaska has found that hadrosaurs were most abundant in coastal habitats. The trackways documented in this study reveal that the same trend was true in southern Alaska. The authors suggest that understanding habitat preferences in these animals will contribute to understanding of how ecosystems changed through time as environmental conditions shifted and dinosaurs migrated across northern corridors between continents.

Fiorillo adds, "Our study shows us something about habitat preferences for some dinosaurs and also that duck-billed dinosaurs were incredibly abundant. Duck-billed dinosaurs were as commonplace as cows, though given we are working in Alaska, perhaps it is better to consider them the caribou of the Cretaceous."

More information: Fiorillo AR, Kobayashi Y, McCarthy PJ, Tanaka T, Tykoski RS, Lee Y-N, et al. (2019) Dinosaur ichnology and sedimentology of the Chignik Formation (Upper Cretaceous),

Aniakchak National Monument, southwestern Alaska; Further insights on habitat preferences of high-latitude hadrosaurs. *PLoS ONE* 14(10): e0223471. doi.org/10.1371/journal.pone.0223471