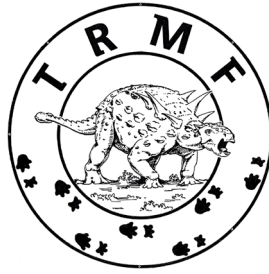


**TUMBLER
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MUSEUM
FOUNDATION**

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FOR IMMEDIATE RELEASE

March 10, 2022

The Ancient Giant Crocodiles of Northeastern British Columbia

Tumbler Ridge, British Columbia, Canada – In October of 2020, a massive fossil recovery by LaPrairie Crane took place along the highway between Tumbler Ridge and Chetwynd in northeast British Columbia. It disrupted traffic and had several groups working together for the purpose of saving four giant rocks that Tumbler Ridge Museum researchers had excitedly identified as a new and important discovery. And now... A recently published article in the international journal *Historical Biology* features the results from the site: the first track evidence and swim trace evidence ever reported of giant crocodiles. Research was conducted at a number of sites in river valleys and canyons north of Tumbler Ridge. The crocodiles had been swimming and scratching the muddy bottom with their claws, creating 'swim traces'.

The traces are from the Dunvegan Formation from the Cretaceous Period (Cenomanian stage, 95–97 million years old). The large swim traces may represent a precursor to *Deinosuchus*, found in the fossil record from the U.S.A. and Mexico, but the northern BC crocodiles are older by at least 13 million years. Evidence suggests the animals found around Tumbler Ridge were about 9 metres long, and possibly as long as 12 metres. By comparison, the record length of crocodiles living today is 6 metres.

In addition to the crocodile swim traces, many ankylosaur tracks were identified, along with ornithopod tracks and turtle traces. The delta environment inhabited by these Cretaceous creatures would have been lush with heavily vegetated wetlands, shallow lakes, and river channels on a flood plain. The area was subject to multiple alternating phases of flooding and exposure, and was about 100 kilometres inland from the marine shoreline of the Western Interior Seaway that linked the Gulf of Mexico with the Polar Ocean.

While the Tumbler Ridge area has become well known for its dinosaurs, there is something special about crocodiles. They did not become extinct at the end of the Cretaceous, but have 'survivor status', and are still with us today with a recognizably similar body plan.

The Tumbler Ridge Museum extends a special thank you to researchers and authors Guy Plint, University of Western Ontario Faculty of Science, Earth Sciences, Charles Helm, Tumbler Ridge Museum, and Martin Lockley, University of Colorado, Dinosaur Tracks Museum. Special recognition goes to the many Tumbler Ridge Museum volunteers, including Tiffany Hetenyi and Lisa MacKenzie, who contributed extensively to the fieldwork performed at these sites.

The Tumbler Ridge Museum, located in the Tumbler Ridge UNESCO Global Geopark in Treaty 8 Territory, researches, displays, and archives over 300 million years of Northeast BC history. It features displays on dinosaur and other fossils, tracks and traces, offers trackway tours, and programs for children and families. The Tumbler Ridge Museum Human History Gallery is housed in the Community Centre with free access during regular Centre hours.

UNESCO Global Geoparks are grassroots initiatives, characterized by sites and landscapes of internationally significant geology where all aspects of our interactions with the earth are celebrated. The Tumbler Ridge UNESCO Global Geopark received its official designation in 2014. With glaciated Rocky

Mountain peaks and 75 million year-old tyrannosaurid trackways, the Geopark is an outdoor adventure lovers' paradise surrounding the community of Tumbler Ridge, BC.

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Article:

Title:

Crocodylian and dinosaur trace fossil assemblages from crevasse splay/levee and floodplain lake environments: middle Cenomanian Dunvegan Formation, northeast British Columbia, Canada.

Journal:

Historical Biology

Authors:

Guy Plint, University of Western Ontario Faculty of Science, Earth Sciences

Charles Helm, Tumbler Ridge Museum

Martin Lockley, University of Colorado, Dinosaur Tracks Museum

Guy Plint is a sedimentologist from the University of Western Ontario, who has been studying sedimentary outcrops in the Peace Region for decades.

Charles Helm is a founding member and scientific advisor to the Tumbler Ridge Museum Foundation, and Ph.D. candidate.

Martin Lockley is an ichnologist from University of Colorado Denver, with extensive experience with crocodile and ankylosaur tracks and traces.

This publication in *Historical Biology* follows on a publication in *Cretaceous Research* in 2021 of exceptionally well-preserved 112 million-year-old swim traces made by much smaller crocodylians at the Quintette Mine site near Tumbler Ridge.

Blog post on 2020 recovery: <https://www.trmf.ca/news/a-dramatic-close-to-2020-field-season>

Blog post on Quintette Mine discovery: <https://www.trmf.ca/news/the-tumbler-ridge-crocodylian-swim-traces>

Media:

7B caption: An example of giant crocodile swim traces made by a crocodile's claws scraping the bottom of a river channel; scale bar = 10 cm.

Juvenile ankylosaur: 3D photogrammetry image showing a trackway made by a juvenile ankylosaur on the left, and on the right a hybrid between a crocodile track and swim trace; horizontal and vertical scales are in metres..

10G: 3D photogrammetry image of a crocodile swim trace showing curved claw-tip impressions; horizontal and vertical scales are in metres.