



## Ancient crocodile's last meal was a dinosaur

How the preserved last meal of a new crocodile species is broadening our understanding of Cretaceous ecology.

- Today the Museum announced the discovery of *Confractosuchus sauroktonos* (the broken dinosaur killer), a new genus and species of crocodile from Winton, Queensland.
- The partly digested remains of a young ornithomimid were found in the stomach of a 2.5m-long Cretaceous-aged crocodile.
- *Confractosuchus sauroktonos* is the second crocodile to be named from the Winton Formation.
- The ornithomimid is the first skeletal remains of an ornithomimid reported from the Winton Formation and the first evidence of crocodile/dinosaur predation in Australia.
- The discovery of an ornithomimid inside the stomach of a crocodile suggests that dinosaurs were an important resource in the Cretaceous ecological food web.

The Australian Age of Dinosaurs Museum (the Museum) today announced the discovery of *Confractosuchus sauroktonos*, a new genus and species of crocodile from western Queensland, Australia. The fossilised bones were recovered from a sheep station located near the north western margins of the Winton Formation, a geological deposit that is approximately 95 million years old. The paper naming the new crocodile was published on Friday 11 February in *Gondwana Research*, the Official Journal of the International Association for Gondwana Research published by Science Direct: <https://www.sciencedirect.com/science/article/pii/S1342937X22000338?via%3Dihub>

The crocodile specimen was discovered on Elderslie Station, near Winton, and excavated by staff and volunteers from the Museum in 2010. Preserved in a soft siltstone concretion, the fossil was partially crushed by a front-end loader during the removal of overburden from a sauropod dinosaur excavation site. Numerous small bones exposed within the fractured concretion revealed the partial skeleton of a small Cretaceous animal.

*Confractosuchus sauroktonos* (or the broken dinosaur killer) is the second crocodile to be named from the Winton Formation, while its last meal is the first skeletal remains of an ornithomimid from the Winton Formation and the first evidence of crocodile/dinosaur predation in Australia. The discovery of a small juvenile ornithomimid in the gut contents of a Cretaceous-aged crocodile is extremely rare, as only a handful of examples of dinosaur predation are known globally.

Research on *Confractosuchus* was led by Australian Age of Dinosaurs Museum Research Associate Dr Matt White through the University of New England in collaboration with the Australian Nuclear Science and Technology Organisation (ANSTO). The small densely packed and fragmented bones in the concretion were too fragile for rock to be removed from them by conventional mechanical preparation methods so, in order to identify the animal, the fragmented concretion was placed in the care of Dr Joseph Bevitt, Senior Instrument Scientist at ANSTO. Dr Bevitt used neutron and synchrotron X-ray micro-CT scanning technologies to identify where bones were located within the concretion. The scan data files were then used by Dr White to digitally prepare the specimen, a process that involved ten months of computer processing, so that a 3D reconstruction of the bones could be made.

According to Dr White, the number of bones present in the concretion was staggering, with 35% of the crocodile preserved. The skeleton of *Confractosuchus* includes a near-complete skull with dentition and semi-articulated postcranial skeleton, though its tail and hindlimbs are missing. "At the

time of its death this freshwater crocodile was around 2.5m long and still growing,” Dr White said. “While *Confractosuchus* would not have specialised in eating dinosaurs, it would not have overlooked an easy meal, such as the young ornithopod remains found in its stomach.”

Given the condition of the partly digested ornithopod and the limited comparable material in Australia, an exact classification hasn't been possible. However, at the time of its death the ornithopod was only a juvenile, weighing up to 1.7kg. As the small ornithopod bones show evidence of fossil articulation, *Confractosuchus* either directly killed the animal or scavenged it quickly after its death. While being eaten one of the ornithopod's femurs was sheared in half and the other femur was bitten so hard that a tooth mark was left on the surface of the bone.

According to Dr White, this find suggests dinosaurs were intrinsically part of the Cretaceous ecology as scavengers, predators and prey. “It is likely dinosaurs constituted an important resource in the Cretaceous ecological food web,” Dr White said. “Given the lack of comparable global specimens, this prehistoric crocodile and its last meal will continue to provide clues to the relationships and behaviours of animals that inhabited Australia millions of years ago.”

*Confractosuchus sauroktonos* joins several significant specimens at the Australian Age of Dinosaurs Museum including *Australovenator wintonensis*, Australia's most-complete carnivorous dinosaur, *Ferrodraco lentoni*, Australia's most-complete pterosaur, and bones from the large sauropod species *Savannasaurus elliottorum* and *Diamantinasaurus matildae*. The Executive Chairman of the Museum, David Elliott OAM, describes the new discovery as one of the Museum's most exciting accessions. “The Winton area has produced the majority of Australia's large dinosaur fossils so adding a crocodile that preyed on dinosaurs provides an extraordinary insight into the complex ecology that existed in Cretaceous Winton,” he said. The fossilised remains of *Confractosuchus* are now on display at the Museum, which is located 25km from Winton township in western Queensland.