

The oldest Australian fossil freshwater crustacean burrows can be seen at a number of sites along the Bass Coast.

They were identified in 2006 by **Dr. Antony Martin, a palaeoichnologist (old tracks and traces)** from Emory University in Atlanta Georgia, USA. The first set of burrows was found near The Caves and since then more have been found at other localities along the coast.

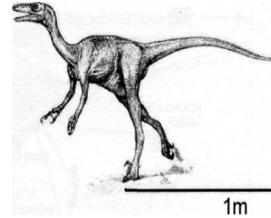
Although the Flat Rocks site is the richest fossil locality along the Bass Coast, there are other sites where very exciting fossils have been found, including:

Giant amphibian jaws from San Remo: This animal looked like a giant axoloti or Mexican Walking fish and was the size of a large salt water crocodile. It belonged to a group of animals that went extinct everywhere else in the world more than 50million years earlier. Named **Koolasuchus cleelandi** after the two people who found the first evidence of it, it is the last of its kind anywhere in the world.

The remains of a large carnivorous dinosaur claw near Kilcunda, was found by **Mike Cleeland**. It was in a large boulder, and most of the claw had eroded away by the time he found it. However, there was enough of the claw left to be able to reconstruct it to its original size, and it would have been about 20cms long – about the size of a large Allosaurus claw.

Mike also found part of the backbone of a large plant eating dinosaur in August 2008.

A number of isolated vertebrae have been found between San Remo and Inverloch, but the one Mike found is the largest so far.



Theropod (THAIR-row-pod)

The best part about searching for dinosaurs along the Bass Coast is that erosion is a constant process that slowly wears away the rock exposing new bones. Regular prospecting for these newly exposed bones is a very important part of the research being carried out by Museum Victoria and Monash University, and we look forward to more exciting discoveries in the future.

If you think you have found a fossil bone in the rocks along the Bass Coast, please contact **the Bunurong Environment Centre in Inverloch (5674 3738)** and they will pass the information on to the researchers. It is **VERY** important to make a careful note of where you found the fossil.

Taking a photograph is the best way to secure its location. If you do not have a camera, then note any obvious landmarks near the fossil which will help you find it again. It is amazing how many people have found something of interest and then never been able to find it again.

Happy hunting – Lesley Kool – Dinosaur Dreaming Co-ordinator

For more information on this project visit websites:

www.sci.monash.edu.au/smsc/dinodream
www.dinodreaming.blogspot.com

Dinosaur Dreaming along the coast

In 1903 field geologist for the Geological Survey of Victoria, **William Ferguson**, was exploring the rocky shore platform at Eagles Nest, a few kilometres from the sleepy seaside town of Inverloch. He made a detailed map of the area in his search for coal deposits and on May 7th he came across a small fossil bone exposed on the shore platform. Recognising it as a fossil, he carefully chipped it out of the rock and took it back to the Museum of Victoria, from where it was sent to London's Natural History Museum for identification. It was identified as a claw from a medium sized carnivorous dinosaur similar to **Megalosaurus** and it became known as the "Cape Paterson claw". **It is the very first dinosaur bone found in Australia.**

Ausktribosphenos nyktos
(The first Inverloch mammal)



It was not until 1978 that another geologist, **Rob Glenie**, and two Monash University students, **Tim Flannery** and **John Long**, decided to retrace Ferguson's footsteps at Eagles Nest.

Almost immediately they started finding more fossil bones exposed in the rocks and it was these discoveries that really started dinosaur hunting in Victoria.

Inverloch is situated on the southern coast of Victoria approximately 150 kilometres southeast of Melbourne where Early Cretaceous sedimentary rocks outcrop along the coast from San Remo to Inverloch.

The rocks have been dated at approximately 115-200 million years old, and represent sediments that accumulated in a vast rift valley that existed between Antarctica and the south coast of Australia.

At this time, Australia was still firmly attached to Antarctica and represented the last of the great super continent Gondwana. Australia was also situated much further south than it is today; approximately 75° South; within the polar circle.

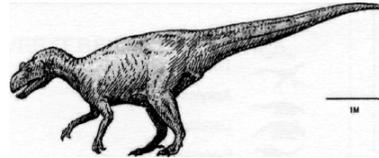
This area would have looked very different to what it looks like today. Instead of cliffs and sea, there was a wide, flat-bottomed valley with mountain ranges to the north and south.

In the valley lived many different animals, including dinosaurs, birds, mammals, pterosaurs, freshwater plesiosaurs, giant amphibians and turtles. Large and small fish lived in the rivers along with the amphibians, turtles, freshwater crustaceans and molluscs.

Plants dominated by coniferous species included tree ferns, cyads, and araucarian trees and ginkgos grew in the valley. Fossilised tree trunks and branches can be seen sticking out of the rocky shore platform, particularly around Eagles Nest and Flat Rocks.

Sedimentary structures in the cliff close to the Flat Rocks site suggest that temperatures dropped below freezing during the polar winter when the sun disappeared below the horizon, and did not return for two to three months.

The diversity of animals represented by the fossil bones found along the Bass Coast is very high considering the harsh conditions they existed in. There is no modern analogue for these climatic conditions at high latitudes today.



Carnosaurs

Regular prospecting of the rocks along the Bass Coast from San Remo to Inverloch began in the mid 1980's. Led by **Lesley Kool, from Monash University, and local geologist Mike Cleland,** groups would systematically search the shore platforms at low tide, looking for exposed fossil bones.

Many isolated bones have been found over the years, but rarely in any concentration until March 1991, when a group were prospecting the coast-line between The Caves and Inverloch.

For most of the year the rocks outcropping on the shore platform are covered with a layer of sand. When the sand covers the rocks it is impossible to spot the fossils, but sometimes we can be lucky.

Such was the day we decided to check the rocks at The Caves in 1991. There had been a storm in the area the day before, and when we arrived at The Caves, all the sand had been washed off the beach to expose the underlying rocks.

Working our way along the shore platform towards Inverloch, we came across a four-metre wide cross section through a fossil layer that had more than 20 bones exposed on the surface. **This was the largest concentration of fossils we had found anywhere along the south coast of Victoria.**

Subsequent excavations at what was to be named the "Flat Rocks site" proved it to be the richest Early Cretaceous fossil locality in Victoria. **From this one locality we have removed thousands of fossil bones over the last 16 years, including evidence of:**

- Five different types of dinosaurs
- Four types of mammals, including the smallest and oldest monotreme
- The oldest evidence of birds in Australia
- Primitive short-necked turtle
- Freshwater plesiosaur
- Small pterosaurs
- Large and small fish
- Freshwater molluscs

In 2006, dinosaur footprints were discovered near the Flat Rocks site.

At least three footprints were found in the rocky shore platform, made by three different theropod or meat-eating dinosaurs. The best print is very close to the dig site, but is only accessible a few hours either side of low tide.