

Coalseam Conservation Park: a natural jewel in the northern Wheatbelt



Come winter and spring and people from far and wide journey to the Midwest's Coalseam Conservation Park to immerse themselves in wildflowers, particularly after good winter rains. But it wasn't wildflowers that first put the area on the map. Coalseam was the first area in Western Australia where coal was discovered.

by Rory Chapple

It was 1839 and around the globe the industrial revolution was in full swing. The population of the fledgling Swan River settlement was about 2,000 settlers and the Government was in desperate need of an energy source for transport and power generation. In the 1800s power meant coal, and to further develop the growing Western Australian settlement the governor put up a sizeable reward of 2,560 acres (about 1,036 hectares) of land for anybody who discovered a "significant bed of coal".

Seven years later, in 1846, three brothers Augustus, Francis and Henry Gregory undertook a seven-week expedition to find suitable grazing and agricultural lands north of Perth. They stumbled upon the banks of the Irwin River where they found two exposed seams of coal near where the Midwest town of Mingenew lies today. Ecstatic with their find, they eagerly took turns in removing a quantity of coal from the seams to take back to Perth as proof of their discovery. Augustus recorded the event in his diary:



"We therefore entered the bed of the river to examine it, and found two seams of coal—one five feet thick and the other about six feet thick—between beds of sandstone and shale. Having pitched the tent and tethered the horses, we commenced to collect specimens of the various strata, and succeeded in cutting out five or six hundredweight of coal with the tomahawk, and in a short time had the satisfaction of seeing the first fire of Western Australian coal burning cheerfully in front of the camp..."

Their return to the Swan River settlement was met with considerable jubilation. The brothers had made the first discovery of coal in Western Australian history, which led the Government to declare a 10,000-acre coal reserve in the area. Henry, the actual discoverer of the coal, collected his reward and a return trip was quickly organised to further investigate the find. Geologist Dr F Von Sommer led the party and although he confirmed that a significant amount of coal existed in the two seams he also found the coal to be poor quality because of its high ash content.

The Irwin River coal deposit never became a profitable commercial venture. Despite further exploration and increased interest at various times during the nineteenth and twentieth centuries, the poor quality of coal and considerable distance from Perth meant nothing much came of the discovery. The coalfield was eventually declared an uneconomical mining venture and in 1978 the coal reserve was vested with the Shire of Mingenew for the 'preservation of natural features'.

The discovery of the coal seams by the Gregory brothers and subsequent push to develop the mineral resources of the area had a surprisingly different end result. The protection afforded by the coal reserve and hilly nature of the country meant the area was never developed for agriculture like most of the other land around the reserve. Today, the 754-hectare reserve managed by the Department of Environment and Conservation is known as Coalseam Conservation Park

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Main View of the Irwin River valley from Irwin Lookout.

Photo - Dennis Sarson/Lochman

Transparencies

Inset Pompom head (*Cephalipterum drummondii*).

Photo - Ann Storrie

Above Explorer Augustus Gregory.

Photo - National Library of Australia

Left A 1907 photo of a mineshaft in the bank of the Irwin River.

Photo - WA Campbell/Former Department of Industry and Resources





Above Pink and grey galah.
Photo - Jiri Lochman

Above right background Rocky cliff face.
Photo - Rory Chapple/DEC

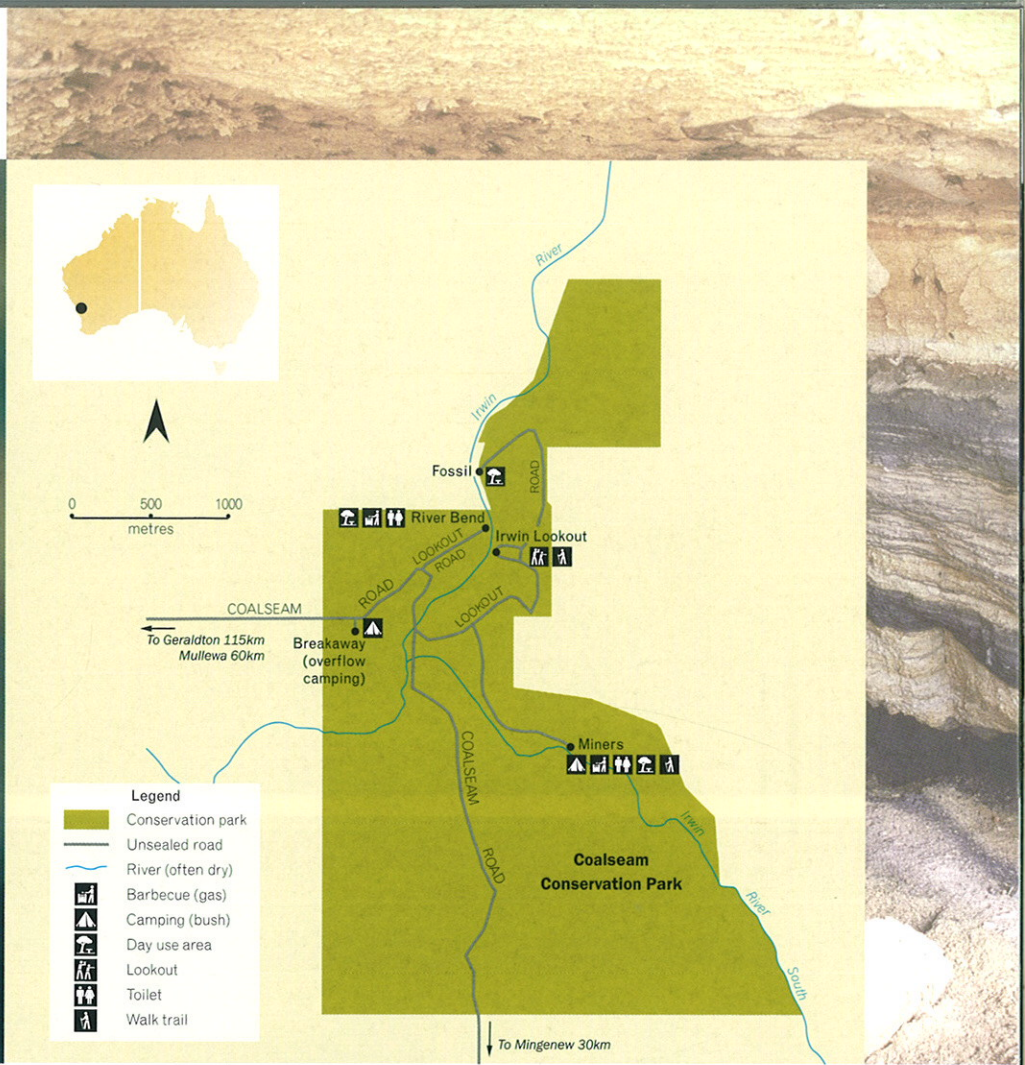
Right Everlastings lure visitors in winter and spring.
Photo - Ann Storrie

and is a natural jewel in the mostly flat and cleared landscape of the northern Wheatbelt.

A cross section of time

Coal deposits are generally found deep underground so why does coal occur as an outcrop along the Irwin River? To find the answer we need to examine Coalseam's geological history and go back to Gondwanan times, 290 million years ago.

It is difficult to imagine the landscape of the Midwest during Gondwanan times. The Earth was going through a period of global cooling; temperatures were much lower than today and huge glaciers covered the area. There were no flowering plants or mammals on Earth and ferns were the dominant plant group. About 269



million years ago, the Earth began to warm and the glaciers in the Midwest began to retreat. The movement of these massive blocks of ice ground up the underlying rock to create vast amounts of sediment. Massive amounts of silt and sand were deposited, creating a broad coastal delta-plain upon which temperate swamps began to thrive.

The cool, humid conditions of the time were ideal for growing and preserving the luxuriant plant material.

The layers of decaying vegetation gradually formed peat, which was buried, compressed by overlying sediments, slightly heated and slowly transformed into seams of coal. Tens of millions of years later, the Irwin River coal seams, siltstones and sandstones were uplifted, tilted and then exposed by river erosion.

Visitors to the park today can stand on the banks of the Irwin River, gaze across at the cliff face and read the



geological history of the park. Layers of siltstone, sandstone, claystone and coal spanning more than 200 million years of geological history are right before your eyes, exposed by the erosion of the Irwin River, just like peeling back the skin of an onion, revealing the park's dramatic geological history.

Coalseam is now a well-known geological site in WA and many educational institutions travel to the area for geology field trips. But Coalseam doesn't only attract university students and geologists—the area is also of interest to many people because of its abundance of marine fossils. The area was once covered by a Permian sea, abundant with corals, gastropods and other small marine creatures. Evidence of this early life on Earth can be seen in a section of the Irwin River upstream from the main visitor area where narrow bands of limestone line the banks of the river. In the cliff face you can see beautifully preserved specimens of small marine creatures, so well-preserved that you could easily believe they were alive only a few years ago.

Top Everlastings carpet a hillside at Coalseam.

Centre left Carpets of pink scoenias delight visitors in spring.

Left Coal seams have been exposed by erosion along the banks of the Irwin River.
Photos - Ann Storrie

Right Orange immortal (Waitzia acuminata).

Photo - Ann Storrie

Far right Blue heronsbill (Erodium cymnorum).

Photo - Rory Chapple/DEC

Below right Masked woodswallows.

Below far right Crested pigeons.

Photos - Jiri Lochman



Wildflower splendour

For most visitors to Coalseam the attraction is not just fossils or geology, it's the impressive spring wildflower display. The park is among the most botanically diverse areas in WA's northern Wheatbelt region and comes alive after good winter rains. The park lies between the northern sandplain country, where woody heath plants flower profusely in spring, and the arid lands of the Murchison region, where spectacular everlastings bloom each spring. This combination of flowering annuals and perennials are one of WA's botanical highlights.

The park's variety of landforms from flat-topped hills to deeply dissected gullies and alluvial plains create a myriad of habitats for different plant species. On the plateau, a low-nutrient, thin sandplain covering the hard, iron-rich laterite capping supports a highly diverse 'kwongan' heath community. Here you'll find needle bush (*Hakea preissii*), sandplain wattle (*Acacia murrayana*), broom bush (*Melaleuca uncinata*) and graceful honeymyrtle (*Melaleuca radula*). On the Irwin River floodplain, reddish loams have formed from silt and sand washed down from the valley sides and from the upper reaches of the river. These soils are seasonally wet and relatively rich in nutrients. They support a wattle-dominated scrub that includes jam (*Acacia acuminata*) and orange wattle (*Acacia saligna*), with scattered large York gums (*Eucalyptus laxophleba*).

During spring, a carpet of everlastings transforms the usually sparse wattle understorey, covering the



valley slopes. Everlastings are short-lived annual herbs, mostly from the daisy family, that dry out to produce papery petals and seeds that are dispersed by the wind. Carpets of pompom heads (*Cephalopterum drummondii*) are mixed with the pinks of lawrencellas and rhodanthes. Parakeelyas (*Calandrinia polyandra*) form a carpet of mauves, in and among which you'll find the delicate flowers of the fringed lily (*Thysanotus manglesianus*).

The attraction in Coalseam's annual wildflower displays lies in the change you see through the season. A whole suite of annuals burst in to flower early in the season but are replaced by late-season flowering species in September and October. Several visits to the park at different times in spring will reveal the full botanical wonder of the park.

Animals

Unlike Coalseam's wildflowers, the park's animal life can be difficult to observe. Mammals are mostly nocturnal and many reptiles can be cryptic. For most visitors, birds are the only wildlife they'll see. Despite this, if you exercise patience and have a sharp eye you may spot mammals such as the echidna (*Tachyglossus aculeatus*), euro (*Macropus robustus*) and red kangaroo (*M. rufus*). Reptiles such as the bobtail (*Tiliqua rugosa*), Gould's sand goanna (*Varanus gouldii*), western blue-tongue (*Tiliqua occipitalis*), western netted dragon (*Ctenophorus reticulatus*), mulga snake (*Pseudechis australis*) and gwardar (*Pseudonaja nuchalis*) are relatively common throughout the park.

A range of different birds can easily be observed at Coalseam. Look



Above Interpretive signage reveals some of Coalseam's history to visitors.

Above right Two hundred million years of geological history are exposed in the cliff towering over the Irwin River.
Photos – Ann Storrie

Below right Graceful honeymyrtle (*Melaleuca radula*).
Photo – Marie Lochman

for both the singing and the spiny-cheeked honeyeaters in areas where there are flowering trees and shrubs. Wedge-tailed eagles soar overhead and peregrine falcons can occasionally be seen along the cliff face in front of the Irwin Lookout. Galahs nest in tree hollows near Miners Campground and red-capped robins can be seen flitting around near ground level. Australian ringnecks (or mallee ringnecks) are common in the park as are nankeen kestrels, black-faced woodswallows, black-faced cuckoo-shrikes and crested and common bronzewing.

Exploring the park

Coalseam Conservation Park is inland from Geraldton, approximately 30 kilometres north-east of Mingenew and 60 kilometres south of Mullewa. If there has been good winter rain, the spring wildflower season from about August through to October is when the park is the most beautiful but also the busiest. Although the park is



open year-round, most people avoid the summer months because of the extreme heat.

A number of sites have been developed to provide access to the park's features. Camping is provided at Miners Campground and volunteer campground hosts make visitors welcome over the busy wildflower season. The campground has unpowered sites for both tents and caravans and picnic tables, gas barbecues and toilets are provided. A short walk from the campground is the disused Johnson coal shaft, which was sunk in 1917 but yielded no commercial quantities of coal. There is a viewing platform above the shaft and interpretive signs which explain the history of the site.

For a good perspective of the surrounding landscape head for the Irwin Lookout where you'll enjoy dramatic views of the valley below. A short loop walk links viewing points along the cliff top. Keep an eye out for soaring peregrine falcons and wedge-tailed eagles.

The Riverbend site lies close to the usually dry Irwin River and offers picnic tables, barbecues, toilets and an information shelter with signs covering the area's geology, flora and fauna. Riverbend gets its name from a section of the Irwin River that has carved a striking cliff face into the Victoria Plateau. A cross-section of the underlying rock layers are exposed offering an insight into the interesting geology of the park. The layers of rock

span five evolutionary periods and provide valuable visual evidence of how the local landscape was formed. If you explore the river banks downstream from this site, you may find some marine fossils. To find the fossils you'll need to look carefully as they are generally very small—most are only thumbnail size or smaller. Many visitors are surprised that they look like marine creatures we know today but what is most surprising is that they are about 100 kilometres from the sea and more than 250 million years old!

The Fossils picnic area has no formal facilities and is situated on the banks of the Irwin River. Here you can either rest and admire the view or take a stroll along the river.



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