

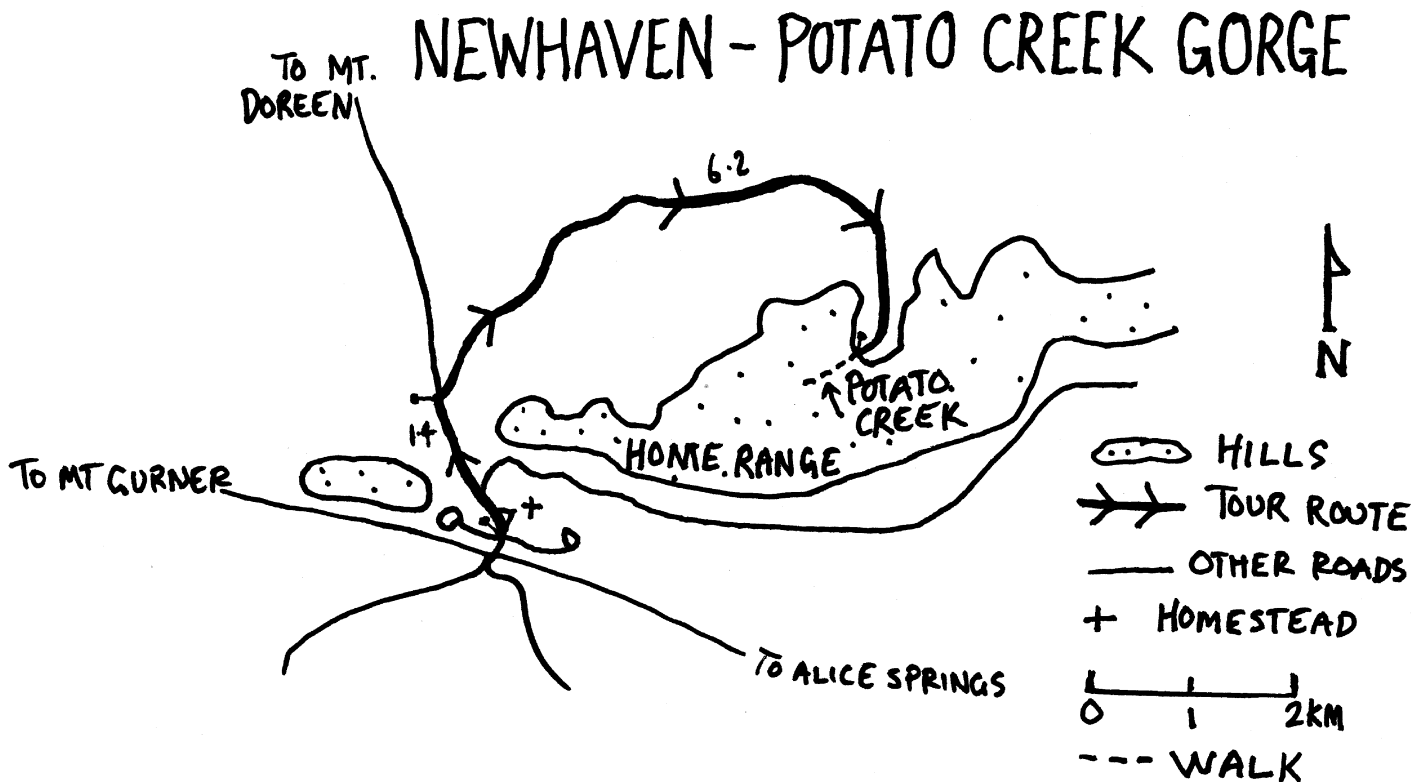
Newhaven Wildlife Sanctuary Potato Creek Gorge Tour

Please Note: Newhaven Sanctuary has a vast number of tracks and firebreaks not all these are open to the public. For safety please keep to designated tracks. Always carry plenty of drinking water. Whilst on Newhaven please use UHF channel 3 duplex.

Potato Creek Gorge Tour Summary

Potato Creek Gorge tour is an out and back drive from the campground to an interesting and scenic area on the northern side of Home Range (Ngkalitja).

The return driving distance is approximately 15km, with less than 2 km of easy-medium walking. About 4 hours is suggested to find and enjoy both the views and all the attractions of The Gorge. A morning exploring followed by lunch in the gorge or the shade of nearby mulga woodland is an enjoyable trip.



Tour Notes

0.0km - Bird Box:

This Tour begins at, and is distance-referenced from, the Registration/Information Shelter ('Bird Box'). Start from here after noting the odometer or resetting the trip meter. Head west towards western campground, then take the first right then left turns. This will take you past the tank stands and to a Y-Junction within 300m.



0.3 km - Y Junction:

FRESHWATER BORE is to the right. **HILLSIDE TOUR** is both right and left (Hillside Tour is a circuit drive). Take the left fork. This is Mount Doreen road.

0.6 km - Cattle Yards:

On the right is a set of cattle yards, skilfully crafted from native timber. These yards were built by Alex Coppock in 1964 and have a set of impressive wooden gates at the base of the loading ramp. About one hundred trees were used, mostly Desert Oak and Bloodwood.

You can also see the concentration of the weed buffel grass (*Cenchrus ciliaris*) in and around the yards. If you venture into the Buffel grass for a closer look at the yards please ensure you check your shoes and clothing for Buffel grass seed before you continue on. We wish to avoid accidental spread.

1.4 km - Fork in the road:

Take the signed turnoff to the right, to **THE GORGE**. The road follows the east west orientation of the Home Range but out on the plain, some distance from its northern edge

1.5 km - Calcrete:

About this point, the road surface shows the presence of white limestone, calcrete. Now, if you look across the landscape, you can see that its presence supports a repeated series of small-scale ridges and basins.

Unsurprisingly, the vegetation responds to this pattern, with more trees and shrubs in the basins than on the ridges. Unfortunately, this repeated pattern has been masked somewhat by a hot, destructive wildfire in 2004. The vegetation will slowly recover from this disturbance.



Calcrete is a significant landscape component within Newhaven Sanctuary and the Great Sandy Desert bioregion generally. It was formed many hundreds of thousands of years ago when the climate was appreciably wetter. Fine limestone dust, recycled from eroded rocks, was first dissolved by soil water and then precipitated and cemented either into nodules or into extensive sheets, as groundwater levels fluctuated in response to climatic change. Large expanses of calcrete sheets fringe the southern side of the chain of salt lakes in the centre of the Sanctuary. Its presence just below the soil surface influences the type and abundance of plants and therefore animals.



As you travel watch for the occasional Desert Poplar (*Codonocarpus cotinifolius*) that have grown in the fire footprint on the northern roadside. This is a 'fire facilitated' species, living fast and dying young. If you do find some plants, stop and examine them. The plant has a wax-covered stem that is often criss-crossed with ant pathways. The pathways lead to their colonies hidden within the stem. You might also notice a pile of saw dust at the base of the trunk, this is evidence that a grub has its home within the stem.

Camels relish this plant and particularly seek out the large succulent seed heads. You often see Desert Poplar with its main trunk broken at about two meters. This is a result of camels targeting a favourite food type. This preferential browsing behaviour is the main concern when considering the impacts of wild camels on the environment. They target what they find to be the most palatable plants including uncommon species for which the impact is quite serious. The Batwing Coral Bean Tree (*Erythrina vespertilio*) is another species of tree on Newhaven that is selectively browsed by camels and will need to be monitored for camel impact. You can see these near the water tanks as well as on the Siddeley Range Tour.



3.9 km:

Around here is a good spot to pause and interpret the country that you have just driven through. From the road you can see three different landscapes. The most distinctive is the rocky quartzite range to the south. The layered rocks of Home Range dip to the north, towards you, so from this viewpoint they present a smooth sloping surface. The sparse vegetation, caused by wildfire, exaggerates this natural smoothness. The other landscapes are mulga woodlands immediately south of the road, and the more gently undulating calcrete landscape to the north. Here you can clearly notice the effects of wildfire on various landscapes.

You can interpret the intensity of a wildfire years the event. A low-intensity fire does not completely burn all the plant litter on the soil surface. Larger shrubs and trees are less

likely to be killed; such cool fires scorch only the lower parts of the tree and burn off only the finest twigs. Patches of the tussock and hummock grasses along with some shrubs and trees remain unburned. A generally more 'patchy' burn occurs.

In contrast, a high-intensity fire burns the soil surface bare, chars tree trunks to their full height, and burns away all twigs. Most shrubs will be killed or reduced to the ground. The term 'blanket burn' can be applied to these types of fires, suggesting that everything gets burned.

A high intensity fire occurred here in 2003/04.

Will this country recover?

Some plant species such as spinifex thrive on fire others such as the mulga are killed by fire and rarely can regenerate to maturity. Fire and its impacts on the landscape are complex.

The first plants to recover after fire are those species that quickly exploit the removal of perennial competitors. They are sometimes called 'fire weeds'. They germinate from seed, grow fast, and refill their bank of seeds in the soil before they are slowly out-competed by the returning perennial species. The returning perennial species re-sprout from undamaged stems or roots. They also grow from seed - a hazardous process because their slow-growing seedlings are always vulnerable to further fire.

The fauna - fire relationship is also complex, with different animals preferring habitats of varied fire history.

How quickly will this country recover? Like most processes in deserts, the rate of recovery is not determined by time, but by moisture. The greater the available moisture, the faster the regeneration.

Below is a pan photo taken from the road in this area (location **723570 E, 7488250 N**) in October 2006. If you have a GPS, you can relocate the spot and by using landmark trees, compare the view today with October 2006. Change should be obvious, the landscape is regenerating.



5.9 km - Potato Creek:

On your right you can see the banks of a deep erosion gully. This is Potato Creek, named after the plant *Ipomoea costata*, or Bush Potato. This beautifully flowered shrubby perennial is very common around the flanks of the Home Range.

7.6 km - Car Park:

You have arrived at the car park and turnaround point. It is a great short walk of less than 2 km return to the top of the gorge. The path leads uphill to the south. It starts at the 'Car Park' sign and is marked by a series of small stone cairns. It will guide you along the upper edge of the left hand fork of the gorge.



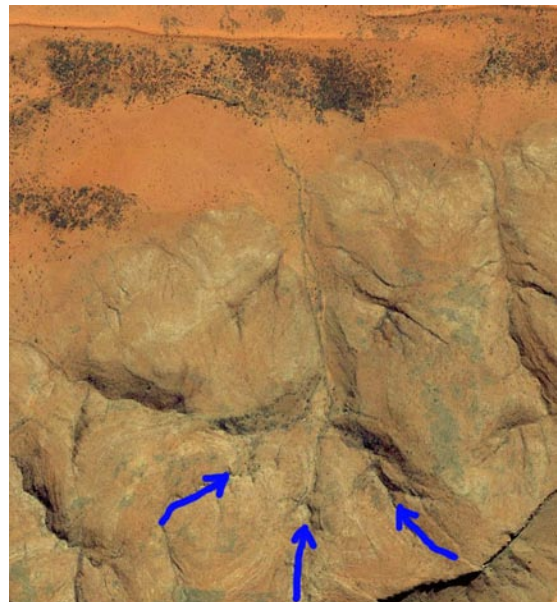
What to explore at The Gorge:

The Gorge is interesting for its structure, its landscapes and its biology.

Over the unimaginable length of geological time, the chance coincidence of shape and fractures in the hard quartzite layers allowed the weathering power of rainfall to first form three channels, which then gouged out a much larger amphitheatre (refer to aerial photo).

The scenic interest is generated by the sharp, red rocks, weathered and tumbled into unfamiliar shapes, and the stark white trunks of Ghost Gums, both contrasting with the clear blue sky of the Australian desert. There is fascination too in the small details to be found within clefts and rock pools.

The availability of water and the effects of fire generate the biological interest. Has it rained recently so that the plants are flowering/fruitleting and the dependent animals are present in abundance? Is water available so that dependent animals are concentrated and observable? Or, more likely, has the soil dried and the rock pools evaporated leaving only a few stoic Euros, which can live for months without drinking?



The shelf is a productive place. Even though it is relatively infertile, the soil is deep here and there is an abundance and diversity of low shrubs and ephemerals. What you might find will depend partly on how much rain has fallen over the past few months. Food plants, or their remains, such as the Bush Tomatoes (*Solanum* species) are likely to be present. Along with Spinifex, another permanent resident is the distinctive Holly Grevillea (*Grevillea wickhamii*). Its flowers are a brilliant red colour, and the gum exudate was reputedly eaten. Curry Wattle

(*Acacia spondylophylla*) is also very common here. Curry Wattle is a low spreading bush of about 40 cm. Its stems and leaves are sticky with the leaves densely ringed around the stems. If you crush a few leaves of this plant and smell them you will understand why it is named Curry Wattle.

The majority of the large trees you can see here and on the Home Range in general are the white trunked Ghost Gum (*Corymbia aparrerinja*) and the majority of the ground cover is spinifex. This is typical of a hill vegetation pattern governed by regular fire. About 100m along the walking track, on your right you will see a small patch of different trees. These rough barked hairy leaved trees are a type of Bloodwood (*Corymbia deserticola*), they are a relict of a vegetation type more sensitive to fire that has been displaced over thousands of years by climatic changes and an increasing occurrence of fire in central Australia.



Approaching the gorge, you may surprise flocks of small seed-eating birds such as the Zebra Finch (*Poephila guttata*). Other bird species, and any large mammals, are more commonly seen at dawn and dusk. There are four areas where pools form and persist after rain. Whether wet or dry, they are made obvious by the dark staining.

You can explore upward towards the crest, and downward to where this gorge joins one coming in from the West. Gorges are always interesting places. When they are wet, there is a concentration of plants and animals (or their traces). Even when they are dry, the influence of water lingers on. In this gorge you will find tussocks of Lemon-scented Grass (*Cymbopogon ambiguus*). The strong but pleasant smell of a crushed leaf will announce that you have found it. This grass was used for medicinal purposes throughout Central Australia.

If the lower and larger rock pools are wet and have been so for some days, you may find them occupied by furiously busy, swimming and diving water beetles. It is interesting to consider how they found this small pool, and what the consequences would be if they didn't.

The rough and tumble of water flowing down these gorges carves out many small nooks and crannies – microhabitats – that are absent away from the gorges. Because these crevices in the rocks are sheltered from the hot sun and episodically wetted, they are less arid. If you search in these crevices, you can find small delicate plants, such as mosses and ferns.



There are also many insects species sheltering here. Most are cryptic but the webs that spiders spin to catch them indicate their presence. Then there are the interesting lichens: organisms best described as a lifestyle rather than a species, being a symbiotic partnership between a fungus and an alga. The lichens in the gorge are small – the size of rain spots – and coloured – black, white, and azure blue. They are found only where they are shaded from the direct sun, but sufficiently exposed to occasionally experience the splash or drip of rain or cascading water. They have a special fascination. If there are a few drops left in your water bottle, wet some of the mosses or lichens, and watch the change. Within minutes, they will rehydrate, and change appearance - suggesting that life has just sped up. These lichens are examples of an adaptation to aridity – renaissance. There are both plants and animals that can survive severe dehydration, and on rehydration they rapidly resume activity.

We hope that you have enjoyed this tour.