

Distance in km from Trailhead

0.0 Arkaroola Village Trailhead—at the road junction

(map ref. 399 453)

Walk in a westerly direction past the *Callitris* motel units.

0.4 to 0.55 Near here are the attractive curly mallee and a grove of weeping emu-bush. This is a good place to familiarise yourself with some local high spots. Starting by the village you can see (bearings are magnetic):

Griselda Hill	113°	1.0 km
Acacia Ridge	94°	3.0 km
Mt Elva	63°	2.0 km
Mt Painter	5°	9.0 km
Mt Oliphant	338°	2.0 km
Sprigg Knob	294°	3.5 km

Above you is a cliff of Wortupa Quartzite with a few cypress-pines; on the scree and the rubble slopes below it, are mulgas and rock fuchsia-bushes. Among the dead mulgas are young ones. Here as else where on Arkaroola, they came up in 1974 after good rains. Their small size reflects the slow growth in arid areas.

Below you is the softer, calcareous Opaminda Formation with a grove of black oak. This tree is often found where there is likely to be movement of the ground surface layers (such as these stony slopes) which encourages the development of new trees from suckers.

0.8 Opposite the peg on the bank of the creek (which is a tributary of Wywhyana Creek) is the dark green dryland tea-tree (or moonah).

Plants with a moisture requirement greater than those on hillsides are found in the creeks; white tea tree, river red gum and moonah or dryland tea-tree,

The creek bed is eroded into greyish green, calcareous Opaminda Formation siltstones, which extend some way up the lower slope. They carry vegetation which is different from

Distance from Trailhead in km

that on the quartzites forming the crests of the ranges—Blue Mine Conglomerate to the north and Wortupa Quartzite to the south. The plants of the siltstones include:

dead finish,
silver wattle,
mulga,
elegant wattle,
rock fuchsia-bush and
curly mallee

Some of these plants may occur on the quartzite ridges, but there are others also, including:

narrow-leaved hop-bush,
sennas,
native orange tree,
spiny fanflower,
narrow-leaved fuchsia-bush,
native cypress-pine and
Mt Lofty grass tree.

You may be able to see these differences from a distance between the 1.0 km and 1.2 km markers (numbered posts 1 and 2 are nearby).

1.4 Nearby is the gum-barked coolibah, a common tree of hill slopes in the northern Flinders Ranges.

1.6 (Post 3) Curly mallee growing here is also characteristic of this region, particularly on calcareous and dolomitic soils.

1.8 (Post 4) The large mass of Mt Oliphant is evident on the skyline.

2.0 Here are the first outcrops of pale-coloured quartz and feldspar of Sitting Bull; geologist and Antarctic explorer, Douglas Mawson gave Sitting Bull (post 5) its name in 1945. Sitting Bull, The Pinnacles and The Needles are the much eroded remnant cores or plugs of granitic rock which intruded through many thousands of metres of overlying sediments some 450 million years ago. The plugs are composed of pink or white crystals of feldspar and clear or white crystal quartz.

3.2 A good spot to observe The Pinnacles; on the dolomitic shales surrounding them is porcupine grass and curly mallee, some of which is infested with reddish-gold festoons of mistletoe.

3.4 The largest of The Pinnacles has a colony of Yellow-footed Rock-wallabies and you are asked not to disturb them; these agile animals with their striped tails are active in the early morning or evening; the tops of these rocky knobs carry grass-trees and cypress-pine.

3.6 A stand of curly mallee.

3.8 **Checkpoint 1**—The Pinnacles car park (map ref. 374 466)

At **Checkpoint 1**, cross the car park and follow yellow markers on the opposite slope. The walk has been rerouted, now going directly to **Checkpoint 4** to avoid a dusty walk along the road. **Checkpoints 2 & 3** have been deleted.

4.0 Track crosses a stony hill to reach a small saddle and enters a patch of Curly Mallee on a white, dusty slope, before descending into a creek bed.

4.2 Creek crossing.

4.3 *Cross road*; track winds across bare slopes vegetated with Dead Finish, crossing small creeks, some vegetated with Dryland Tree-tree.

4.8 Flat-topped Mount Warren Hastings can be seen 4 km away, to the SSE (150°) (*Oppaminda-Nudlamutana Walk*).

5.2 Attractive stand of Curly Mallee. In this region (Arkaroola and Balcanoona) Curly Mallee grows on dolomite [$\text{CaMg}(\text{CO}_3)_2$] soils, which tend to be dusty.

5.6 Remains of an old aerial survey mark, possibly established to determine the boundary between the original sheep stations of Arkaroola and Balcanoona. Track climbs to **Checkpoint 4**.

Rejoin vehicle track; continue uphill to 6.0 km mark and *Spriggina* lookout.

6.0 This calcareous dolomite ridge gives you a view down into a valley floor of a 'landscape' model of *Spriggina*, one of the fossilised segmented flatworms belonging to the Ediacara Fauna. Most details of the worms' structure were lost in the fossilisation process, but *Spriggina* appears to have had a front and rear end as shown in this much enlarged model.

From here you may see Sprigg Knob to the north-west; Mt Oliphant to the north and Mt Elva to the north-east.

6.2 The vegetation of the low ridge you are on carries mulga woodland, with a variety of shrubs—sennas with bright yellow flowers, lobe-leaved hop-bushes with bright red 'hops' in winter and spring and the rock fuchsia with mauve flowers in spring and early summer.

6.6 The shining dome of Arkaroola's observatory is clearly visible and, to the south in a low range on the horizon, is Mt Warren Hastings.

7.0 An interesting plant grows here; called camel poison, this small willow tree is short-lived and never occurs very prolifically; male flowers are borne at the top of the stem with the female flowers (which give rise to the ribbed yellow-green bell-shaped fruit) below them. A few individuals grow near here, so look around if this one dies before you see it.

7.2 Continue downhill and cross the campground road to reach...

7.4 **Checkpoint 5**—road junction (map ref. 394 452)

Follow the main road to walk back to the village (about half a kilometre).

8.0 Arkaroola Village Trailhead

conti



Mawson - Spriggina

Included in this walk are features of the research of two geologists who had long association with the northern Flinders Ranges. It follows the Mawson Valley and returns along the Spriggina ridge, which gives good views of the surrounding country.

Douglas Mawson studied the sequence and relationship of rock layers in the Flinders Ranges, which arose from the compression and folding of sediments deposited in the Adelaide Geosyncline between 800 and 500 million years ago. Reg Sprigg, a student of Mawson's, discovered the fossils of the Ediacara fauna in rocks of the Flinders about 600 million years old, the earliest worms and jellyfish fossils to be found.

Mawson Valley is eroded into the soft sediments of the Opaminda Formation and is flanked to the north by a ridge of Blue Mine Conglomerate. These coarse feldspathic sands and gravels were laid down 900 - 800 million years ago, after they were eroded from an island land mass to the north. Over them were deposited the calcareous Opaminda Formation shales and then the Wortupa Quartzite which forms the range to the south. When these sediments were buckled into mountain ranges compaction and heating took place. Deep seated rocks thus became molten and forced their way to the surface, solidifying as whitish or pinkish granitic rock, exposed today as Sitting Bull, The Pinnacles, Tourmaline Hill and The Needles.

Note: There is a leaflet which covers this walk as far as the Pinnacles, produced by Arkaroola Wildlife Sanctuary; the leaflet refers to numbered posts (1 - 8) which you will see along the way. With permission of the management the notes below include some of that information. Arkaroola's notes provide additional information on the minerals you could see.

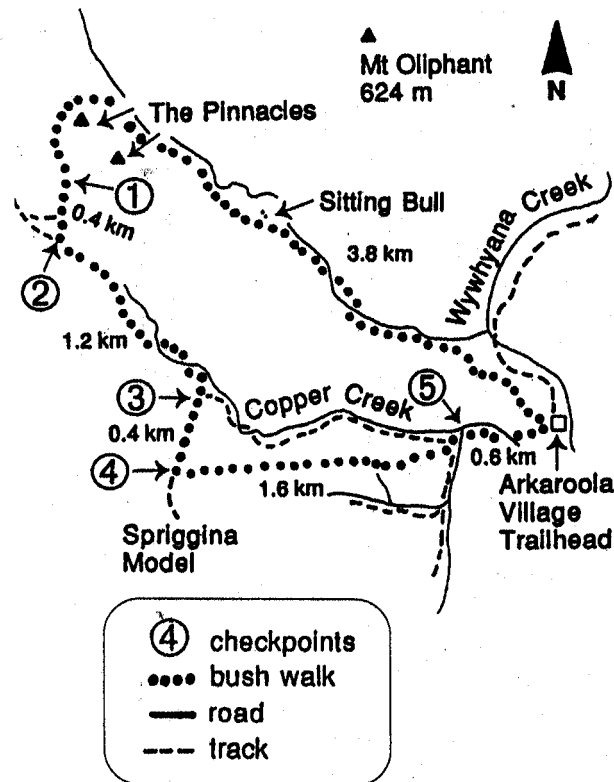
SELF-GUIDED WALK

- 8.0 km loop walk; allow 4 hours
- Altitude range 330 m (Arkaroola Village) to 496 m (Spriggina Ridge).

ACCESS

The walk starts in Arkaroola Village.

Mawson - Spriggina Bush Walk

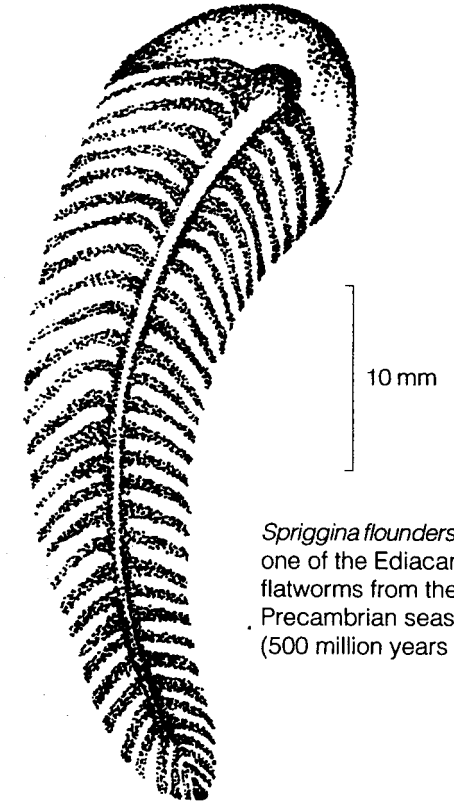


For more map detail see
1:50 000 scale Topographic Map sheet
Wooltana 6737 - 2



Agile and pretty
Yellow-footed Rock-
wallabies occupy
high cliffs near water

MAWSON- SPRIGGINA



Spriggina floundersi,
one of the Ediacara
flatworms from the
Precambrian seas
(500 million years ago)

FLINDERS RANGES

BUSH WALKS

8km (4hrs)