

**A REPORT ON THE
SUNNY CREEK CATCHMENT
A PROPOSAL FOR PROCLAMATION**

Prepared for consideration by the
Land Conservation Council

By I Master

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Soil Conservation Authority

INTRODUCTION

In its final recommendations for the Melbourne Study Area, the Land Conservation Council recommended that the Sunny Creek catchment to be investigated with a view to proclamation.

The following report is the result of such an investigation and recommends that the catchment be proclaimed.

SUPPLY SYSTEM

Trafalgar Waterworks Trust was constituted in 1924 to provide water for the township of Trafalgar. Originally the sole source was Sunny Creek, but in 1946 Narracan Creek water was added to the system via 200 mm diameter pipeline which runs for 2.34 km to discharge into the headwaters of Sunny Creek. In addition, water from a bore in the vicinity of Trafalgar is used to supplement the town water supply in emergency situations.

Trafalgar Waterworks Trust believes that the present system will provide enough water until 1990.

With additions from Narracan Creek, Sunny Creek is a permanent stream, with reduced flows during summer and autumn.

The offtake is a diversion weir across the creek in Crown Allotment 40, Parish of Moe. Water gravitates through a 200 mm diameter pipe into a service basin south of Trafalgar. The basin holds 3.4 ML water which is enough for two days' average consumption. Trafalgar Waterworks Trust supplies a population of 2200 (863 assessments) in an area of 2.02 km².

WATER QUALITY AND TREATMENT

The water for consumption in Trafalgar is treated by filtration, flocculation and chlorination.

The State Rivers and Water Supply Commission, through the Latrobe Valley Water and Sewerage Board, monitors the bacterial parameters of the treated water at monthly intervals, and also carries out physical and chemical analyses at 6-monthly intervals (May and November)>

The majority of test results over two years from July 1977 to July 1979 indicate that the level of faecal bacteria is in excess of WHO standards. However, since June 1980, samples taken from the town supply have been satisfactory.

Data on raw water used by the Trust would assist the Soil Conservation Authority in making its decision on land use in the catchment. It has therefore requested the Commission to arrange for regular sampling of water from the three sources (Sunny Creek, outfall of the Narracan Creek diversion and the groundwater bore) and for analyses for bacteria, colour, turbidity, nitrate, nitrite, phosphate and electrical conductivity.

THE CATCHMENT

(a) *General*

The Sunny Creek water supply catchment has an area of approximately 4.7 km². It is an attractive catchment with considerable areas of magnificent native vegetation on the banks of the streams.

It is located within the Melbourne Study Area of the Land Conservation Council, south of Trafalgar, about 132 km east of Melbourne.

(b) Geology and Topography

Most of the catchment is on the Cretaceous sedimentary rocks of the Strzelecki Group. It is situated on the eastern side of an uplifted and tilted block which has been deeply dissected by streams. Part of the southern ridges of the catchment are capped with Thorpdale volcanics which cover about 5% of the total catchment area.

Hill tops along the southern and western ridges are moderately flat, but slopes vary from 15% to 70% elsewhere in the catchment. Elevation of the catchment ranges from 200 m at the offtake to 400m at the highest point.

(c) Soils

Most of the soils have developed from Cretaceous rocks and may be described as shallow, mottled yellow gradational soils with a clay loam surface texture. They have an average depth of 0.5 m, deeper on gentle crests and on the creek banks.

Soils developed by Thorpdale volcanics on the southern ridges are deeper than 1.5 m with a gradational structure and a fine sandy loam surface texture.

Soils of Cretaceous origin are subject to landslips, particularly when they are cleared of forest vegetation, and a considerable number of inactive slips are evident on the cleared slopes of the catchment. Due to high rainfall and favourable growing conditions, the slip faces are usually well covered with pasture species.

(d) Vegetation

Most of the catchment has been cleared or agricultural use but native forest vegetation has been retained on 40% of its area (See Fig 1).

The forested areas cover the lower steep slopes and along the streams, drainage lines and valley floors. These areas have probably been left forested because of their steepness and difficult access. The other 60% of the catchment is covered by a mixture of introduced and native pasture species. Small portions of land in the south-west of the catchment are used for potato cropping in rotation with pasture.

Most of the native vegetation is of wet forest type including Mountain Ash, Mountain Grey Gum, Musk Daisybush, Hazel pomaderris, Austral mulberry, Stinkwood and tree-ferns. A slightly drier forest vegetation type which includes Messmate species is found on the higher slopes.

The condition of remaining native vegetation in the catchment is not uniform. Steep parts have not been disturbed by man or introduced grazing stock and they contain a large number of fern species, particularly tree-ferns.

Other areas of native vegetation next to pasture land have a vegetation cover which in places has been heavily trampled and destroyed by cattle and invaded by exotic species such as blackberry. Continued access to these areas by cattle may lead to complete loss of shrub and tree layers. The remaining native vegetation has a significant value in preventing soil erosion and providing filtration of overland flow into the streams.

(e) Climate

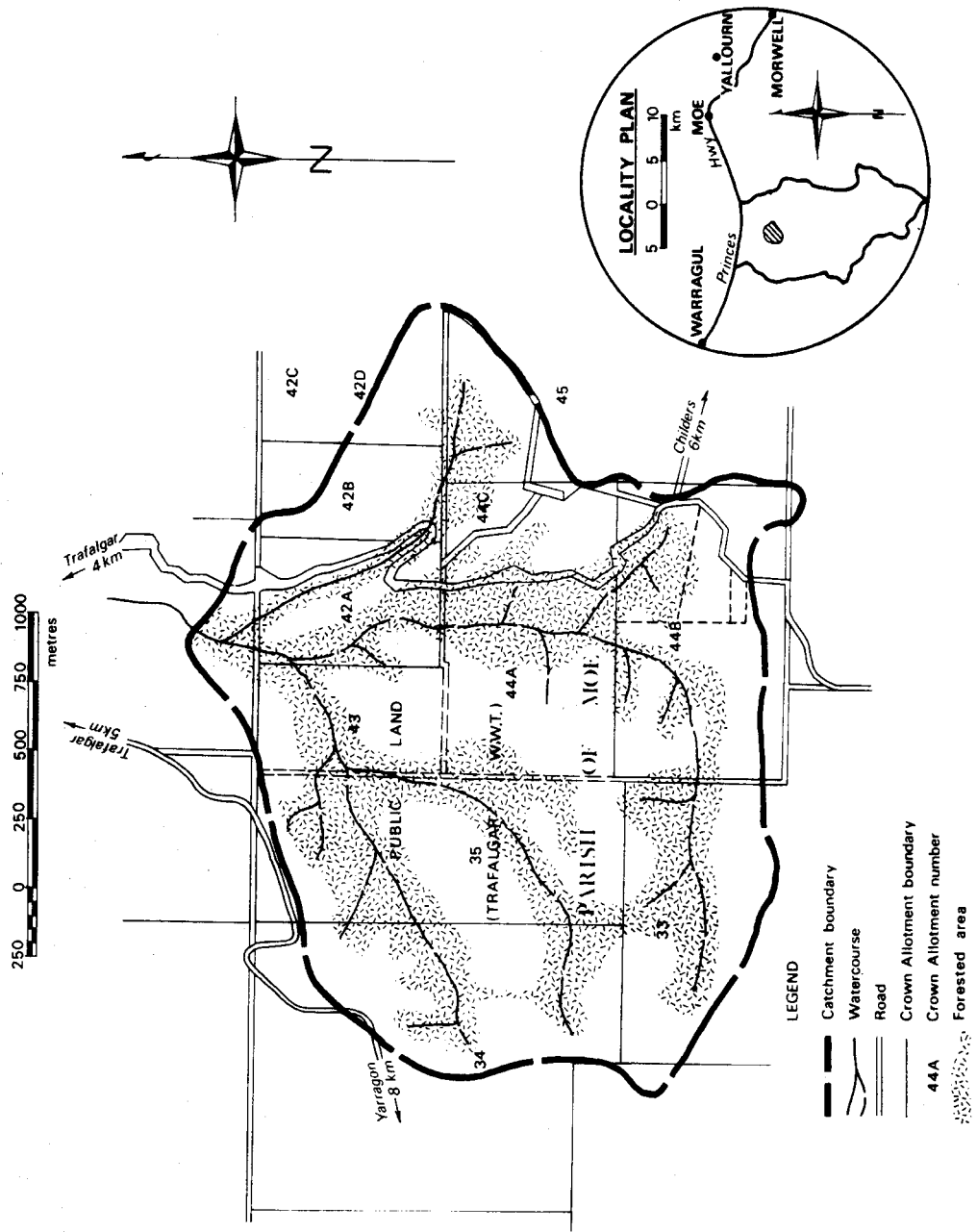
There is a dearth of climatic records in the Strzelecki Ranges. The nearest rainfall recording station to Sunny Creek catchment is in Trafalgar, about 6 km north of the centre of the catchment, and there the annual rainfall has average 1011 mm over 59 years.

According to a report by the Bureau of Meteorology published in Victorian Resources Survey on West Gippsland Region, the annual rainfall in the Strzelecki Ranges generally exceeds 1000 mm and the falls are fairly well distributed throughout the year. Just over 18% of total rainfall falls in summer, 24% in autumn, 30% in winter and 28% of the yearly total in spring.

There are no temperature values available from areas in or near the catchment but the above-mentioned report states that in the Strzelecki Ranges the average daily maximum is 22°C. Frosts can be expected in the catchment between mid-April and mid-September and the frost-free season is generally less than eight months. Pasture growth continues however - at a slower rate - during the cold months of the year. Low rainfall seldom limits growth in summer. The actual growing season, therefore, is generally longer than eight months.

Figure 1 - Vegetation

SUNNY CREEK WATER SUPPLY CATCHMENT Trafalgar Waterworks Trust



LAND USE AND TENURE

Slightly more than 154 ha in the catchment is public land and owned by the Trafalgar Waterworks Trust. Some 32 ha of this land is leased to local farmers for stock grazing and the remaining units are native forest. Final recommendations of public land in the Melbourne Study Area recommend that the present tenure and management of this land continue for the time being.

The remaining land in the catchment is freehold and is used mainly for sheep and cattle grazing.

There are 19 landholders with property in the catchment.

Nine houses now exist within the catchment and there is potential for the erection of 4 or 5 more without further subdivisions.

Most of the properties are hobby farm or rural retreats. No specific sites of stream contamination have been identified on these small properties. The water quality data indicate, however, that contamination is occurring and a more detailed examination of the catchment will be needed to determine the sources of pollution.

There is a small area of potato cropping on the gentle ridge-top towards the southern end of the catchment.

Sunny Creek catchment is within the Rural Zone of the Interim Development Order of the Shire of Narracan. The planning scheme is being reviewed, but since 1976 subdivision into lots smaller than 16 ha has not generally been permitted. There is, however, provision for the excision of small house blocks (0.4 - 1.8 ha) from large allotments (greater than 16.4 ha) which existed prior to 1976.

HAZARDS TO WATER SUPPLY

Water in the Trafalgar reticulation system is derived from three different sources, namely: Narracan Creek, Sunny Creek and the groundwater bore. The quality of raw water from these sources is not measured but the quality of the treated water is satisfactory.

In a recent report on Narracan Creek catchment, the possible sources of stream contamination were listed as follows:

1. Stream sedimentation as a result of intensive soil cultivation.
2. Intensive use of fertilisers, herbicides and pesticides.
3. Decaying water-weeds from irrigation dams resulting in discolouration and odour of water.
4. Grazing cattle and sheep as a source of bacterial pollution.
5. Runoff from unsealed sections of road, resulting in turbidity.
6. Effluent from houses.

In Sunny Creek catchment, grazing stock appear to be the most likely source of bacterial pollution, particularly where they are concentrated near the streams.

RECOMMENDATIONS

1. That the Authority approves this report and forwards it to the Land Conservation Council for consideration.
2. That the Land Conservation Council recommends to the Governor-in-Council that the Sunny Creek water supply catchment as shown in Fig. 2 be proclaimed under the provisions of section 22(1) of the *Soil Conservation and Land Utilization Act 1958*.
3. That the land in this catchment be further investigated with a view to making a land use determination or introducing other catchment improvement measures.

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Latrobe Valley Water and Sewerage Board

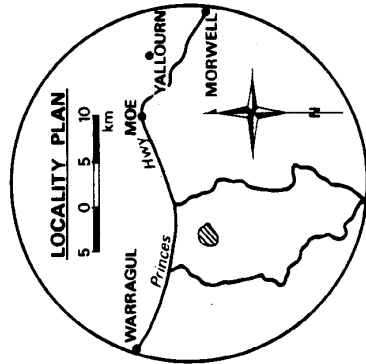
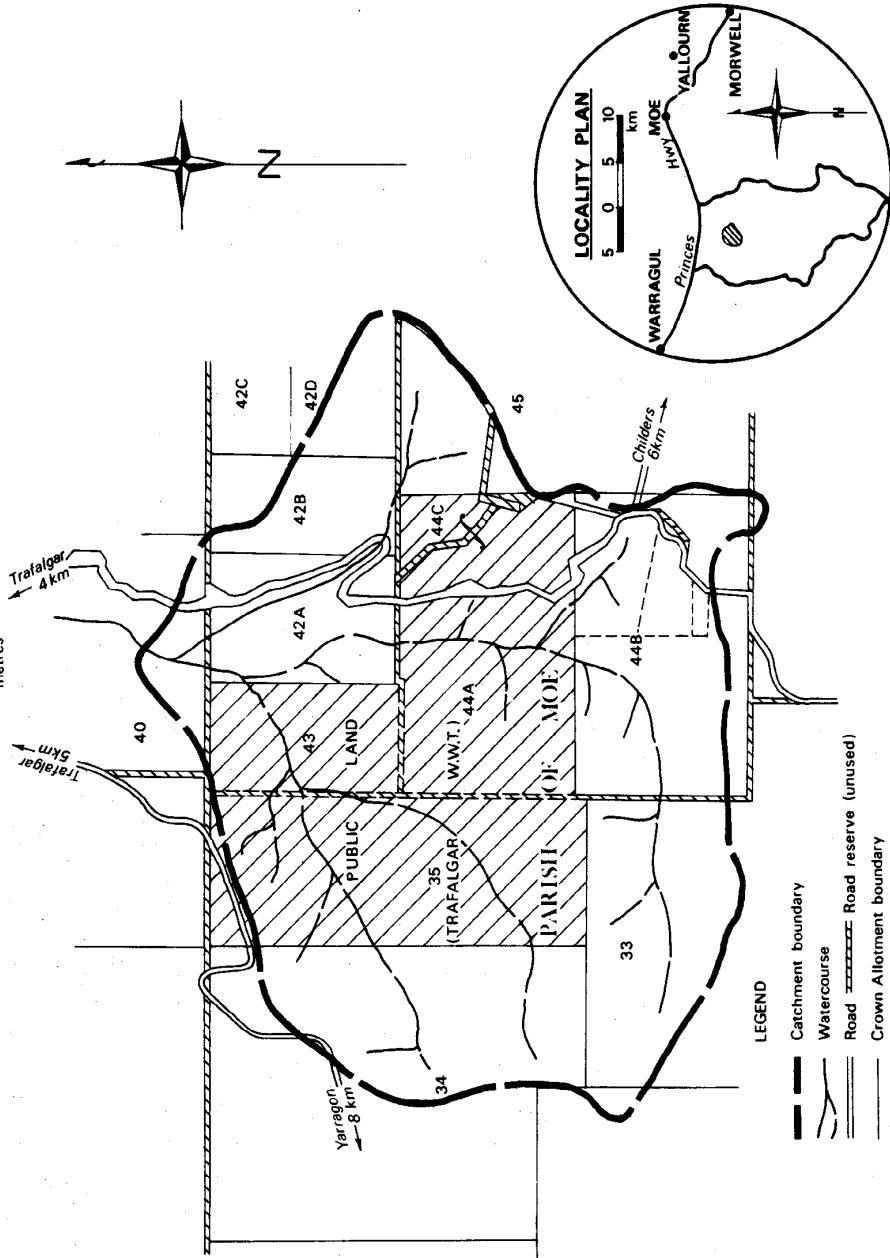
State Rivers and Water Supply Commission

Shire of Narracan.

Figure 2 - Catchment Plan

SUNNY CREEK WATER SUPPLY CATCHMENT Trafalgar Waterworks Trust

PLAN NO S-870



- LEGEND**
- Catchment boundary
 - Watercourse
 - Road reserve (unused)
 - Crown Allotment boundary
 - 44A Crown Allotment number