PROPOSAL FOR THE PROCLAMATION OF THE MOLLISON CREEK WATER SUPPLY CATCHMENT (PYALONG WATER SUPPLY).

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Prepared for consideration by the Land Conservation Council.

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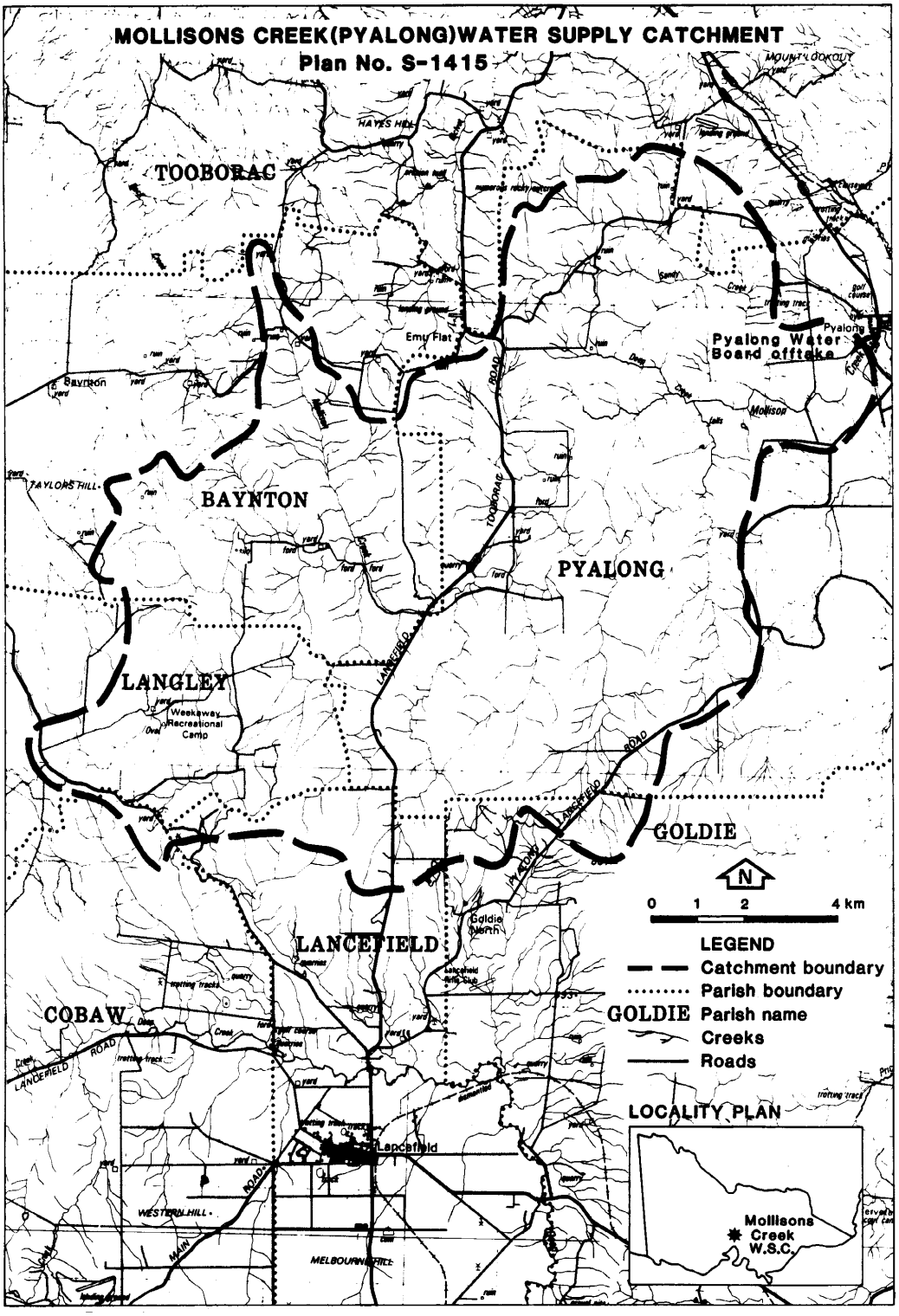


INTRODUCTION

Mollison Creek, a tributary of the Goulburn River, is the source of the domestic water supply for the central Victorian township of Pyalong (population: 180), some 100 km north of Melbourne (Figure 1).

Stream water harvested is frequently of low quality and is considered unsatisfactory for domestic use without treatment. The water is therefor routinely chlorinated before reticulation and a demonstration slow sand filtration plant is being installed to improve the water quality. The Pyalong Water Board manages diversion, treatment and reticulation.

Proclamation will encourage a consistent approach to proper planning and management of the catchment in order to protect it for water supply purposes by bringing to the attention of planning and management bodies and private landholders the need for careful management of land within the catchment. Proclamation also imposes a requirement that proposals for subdivision, extractive industries and some mining activities receive comment relevant to catchment interests during the process of consideration.

This report summarises preliminary investigations into the catchment, and recommends its proclamation as a Water Supply Catchment under the *Land Conservation* Act 1970 and *Soil Conservation and Land Utilisation Act* 1958.

THE WATER SUPPLY SYSTEM

Water diverted from a shallow weir pool of 20 ML capacity on Mollison Creek is chlorinated before being pumped to an open service basin (capacity: 0.9 ML) near Pyalong. Water is then gravity-fed into the reticulation system that currently services only 70 dwellings with a population of 180. Current annual consumption is approximately 30 ML, and is expected to reach 75 ML when the reticulation system is expanded to service a population of 500 by the year 2000. The majority of the dwellings maintain rainwater tanks.

Maximum detention time in the service basin is three days, during the period of maximum summer demand, allowing little natural clarification or disinfection to occur. A slow sand filtration plant is now being installed because of continued water quality problems due to bacterial contamination and turbidity. This plaint is expected to commence operation in late 1985 and will be used by the Rural Water Commission to test and monitor improvements in water quality. In addition the service basin is being covered to minimise contamination.

WATER QUALITY HAZARDS

Regular testing of the water has indicated significant bacterial contamination (high *E. coli*. counts) and high turbidity and colour readings. Consequently, the supply would be regarded as unsatisfactory under World Health Organisation domestic water supply standards. This poor water quality results from run-off from grazing land, stock access to streams, roadside drainage, and the presence of highly erodable granitic sandy clay soils in the catchment.

In addition, sedimentation of the stream system and the off-take weir is of concern. This is due in part to hydrological changes resulting from extensive clearing of land for agriculture and in part to the susceptibility of the coarse sandy soils of the catchment to erosion, particularly in sand extraction areas. Some 2000 cubic metres of sand is removed annually from the off-take weir, adding to the cost of supply and contributing to intermittent deterioration in water quality at the off-take.

CATCHMENT MANAGEMENT STRATEGIES

A combination of structural works and improved land management techniques are required to reduce the hazards to the water supply, particularly on the grey granitic soils.

Structural works, in the form of improved roadside drainage (table drains, cut-off drains and culverts) are required to minimise erosion associated with the road network. Improved rehabilitation procedures and greater control of surface drainage are also required at sand extraction sites.

The application of conservation management techniques is required to minimise sheet erosion from bared soil and to prevent stock from damaging the streamside environment where they have free access to the watercourse.

These are the objectives for the sound management of land in the catchment which it is hoped will be achieved through the combined efforts of extension and advisory services of the Department of Conservation, Forests and Lands, local government and landholders.

THE CATCHMENT

Catchment characteristics of interest are summarised below:

Catchment Area: 166 square kilometres.

Stream Flow: Mean annual flow of 23,800 ML, majority over winter with no summer flow in some years.

Topography: Undulating low hills.

Elevation: 280 metres at off-take to 807 metres at Mt William (most of catchment area is within the range of 300-500 meters).

Mean Annual Rainfall: 630 mm in the north and 750 mm in the south.

Geology: Granitic rocks – 84%.
Metamorphosed slates and sandstones – 15%.
Basalt - <1%.

Soils: Hills and plains – uniformly textured coarse sandy soils.
Hill slopes – uniformly textured gravelly coarse sandy loam soils.
Aureole slopes – shallow reddish-brown gradational soils.

Vegetation: Cleared land - (90% of the catchment) annual improved and unimproved pasture.
Native vegetation - (10% of the catchment) scattered remnants in cleared land and along drainage lines, dominantly manna gum, candlebark, messmate and acacias.

LAND TENURE, MANAGEMENT AND USE

The great majority of the catchment area (i.e. 99%) is in freehold ownership, where the dominant land use is grazing. Some areas are used for some fence post production, semi-urban residential use (close to the water diversion point) and sand extraction.

Public land (see Figure 2 for reserved areas and river frontages) totals approximately 200 ha and except for land around the off-take, the Department of Conservation, Forests and Lands manage public land.

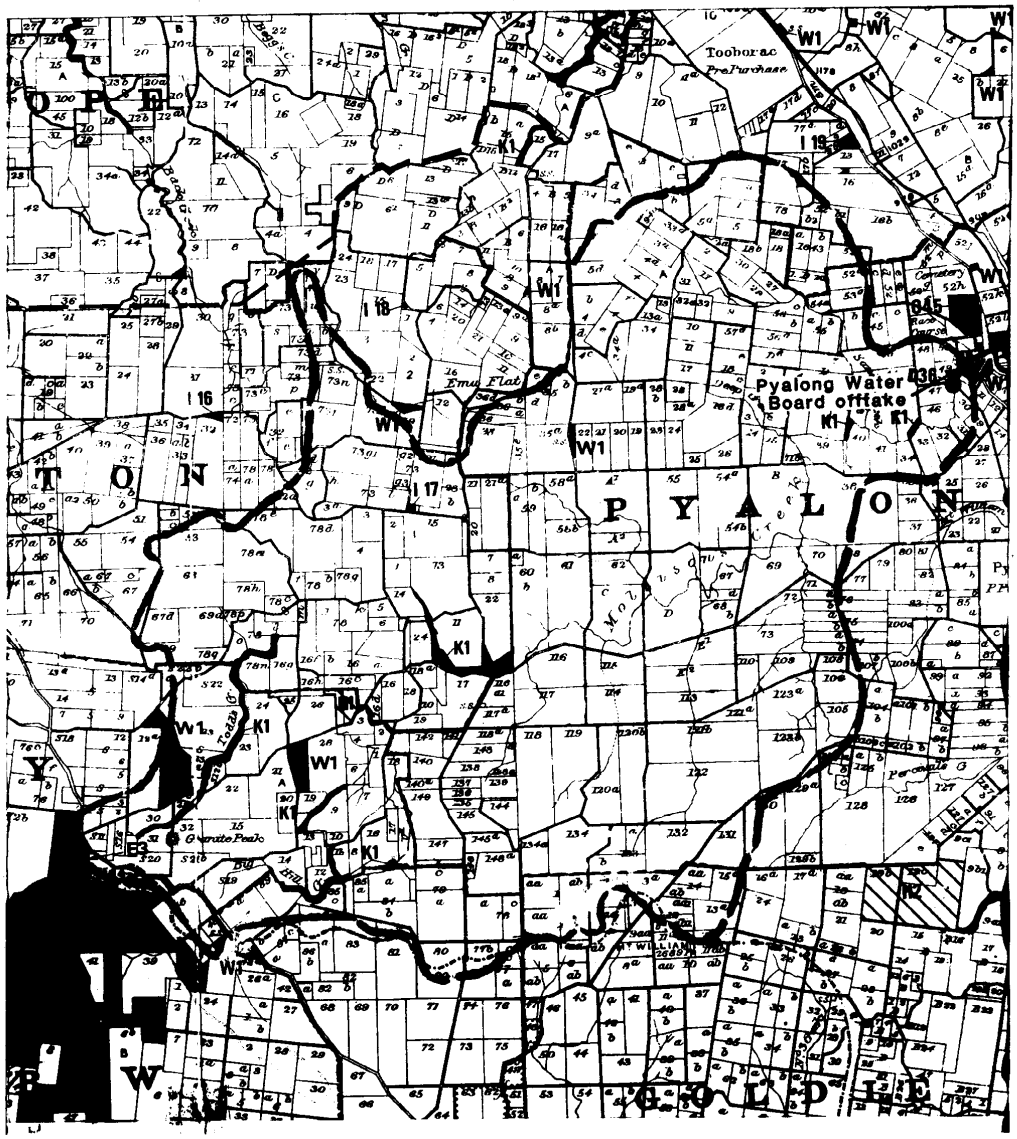
Statutory planning controls in the form of the Shires of Pyalong, Kyneton and Romsey administer Interim Development Orders.

RECOMMENDATION

As a result of this investigation, it is recommended that:

The Land Conservation Council recommend to the Governor-in-Council that the Mollison Creek (Pyalong) Water Supply Catchment as shown on Plan No-. S-1415 (Figure 1) is proclaimed under Section 5(1)(b) of the *Land Conservation Act* 1970 and Section 22(1) of *the Soil Conservation and Land Utilization Act* 1958.

Figure 2 - Approved uses of Public Land



Scale 1:100,000

Figure 2

APPROVED USES OF PUBLIC LAND

D36	Water protection - Mollison Ck. diversion.
E3	Hardwood production - Cobaw Forest.
H1	Flora Reserve.
I17	Bushland Reserves.
K1	Public land water frontages.
W1	Existing uses, other reserves and public land.