

Reference SC/C/105

SOIL CONSERVATION AUTHORITY

**REPORT ON
LAND USE DETERMINATION
OF THE MICKS CREEK CATCHMENT
(HEALESVILLE WATERWORKS TRUST)**

Prepared for consideration by
The Land Conservation Council

June 1973

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REPORT ON LAND-USE DETERMINATION OF THE MICKS CREEK WATER SUPPLY CATCHMENT

I INTRODUCTION

An earlier report on this catchment was prepared for the Land Conservation Council in January 1972, and after discussion, Council recommended proclamation of the catchment to Governor-in-Council.

Proclamation was published in the Victorian Government Gazette No. 30 on 3/5/72 and a copy of the extract is included in the Appendix of this report.

A Land Use Determination has now been prepared for approval by the Authority after consideration by Council.

II CATCHMENT DESCRIPTION

The following information has been summarized from the earlier report prepared for Council in January 1972:

The Micks Creek Water Supply catchment is located on the western slopes of Mt St Leonard, approximately 7 miles (11 kilometres) north of Healesville. Its area of approximately 2 square miles (5 square kilometres) is held by six separate freehold owners and the Forests Commission, with part of the forest land leased to the Department of Agriculture for the Toolangi Potato Research Farm.

Most of the catchment is within the Parish of Tarrawarra North but a small section of Reserved Forest extends into the Parish of Monda.

1. *Topography*

Micks Creek is a swift flowing mountain tributary of the Yarra River. It occupies a steep walled V shaped valley and has a steep bed grade. Most of the catchment area is steeply sloping land except for the upper reaches of the streams which are undulating to hilly. Reserved Forest in the south and east is generally on steep to very steep land while freehold land to the north is on generally undulating areas which then fall sharply in the vicinity of the main watercourse.

Elevations within the catchment range from 950 feet (290 metres) at the offtake weir to 2400 feet (732 metres) on Mt St Leonard.

2. *Climate*

Annual rainfall, as recorded over 18 years at the Toolangi Research Station, averages 55 inches (1400 mm) within a variability of 15%. The wettest month is May (5.94" or 151 mm) but it is notable that spring and early summer rains are characterised by high totals. November and December have the greatest number of storm days making these two months the most hazardous period for protection of the catchment from soil erosion.

Temperature data obtained from the same source indicate that plant growth will be restricted during the months of May to September, when the mean daily temperatures are less than 50°F (10°C). This leaves a growing season from October to April when neither temperature nor moisture are limiting.

3. *Soils*

Throughout the catchment soils are red-brown forest loams, developed on silt-stones and mud-stones of Lower Devonian age.

They are generally deep clay loams, well structured and friable, but after several years of continuous cropping lose organic matter and hence structure in the topsoil

Much of the cropping land has slopes 7% to 20%, and on such slopes rill and sheet erosion is common. Many landholders accept this erosion without concern, probably because the topsoil is 12" to 18" deep in places.

Once this silt gets into the watercourses it can rapidly be carried down to the offtake weir without settling out.

4. Vegetation

Much of the forest area was burnt in the 1939 bushfires, and present timbered areas carry a mixed species forest of Ash (*Eucalyptus regnans*), Messmate (*E. obliqua*) and peppermint (*E. radiata*). Understorey vegetation consists of treefern, bracken, blanket wood, acacias, fireweed and wire weed.

Cleared areas are used primarily to produce potatoes, strawberry runners, fodder crops and nursery plants.

5. Land Tenure

	Acres	%
Reserved Forest	478	43.5
Part of Potato Research Farm	106	9.6
Freehold land		
Cleared 229 acres		
Timbered 266 acres		
Road & road reserves	24	2.0
	1103	100.0

III. SIGNIFICANT DEVELOPMENTS IN THE CATCHMENT DURING THIS PAST YEAR

1. Healesville Waterworks Trust

Complaints about turbid and discoloured water are still reported, especially during high flow periods and at other times when for various reasons sediment in the supply pipes is disturbed. There has been no need to remove silt from the offtake weir since it was cleaned out late in 1970. A Cyclone fence approximately 2 metres high has been erected around the offtake weir, with the gate carrying a sign advising people of its purpose, and requesting their co-operation.

In January of this year a 90° V-notch weir was installed in Micks Creek, just upstream of the main road crossing. Stream flows will be calculated from the readings taken daily at this point.

Bacteriological quality of the water remains satisfactory.

The Trust's consultant engineer has been asked to investigate and report on the possibility of building a reservoir immediately upstream of the offtake weir, or a smaller concrete off-stream storage between the weir and the main supply area. Either step would reduce the turbidity problem in the reticulation system.

2. *Rainfall*

	J	F	M	A	M	J	J	A	S	O	N	D	Total
1971	324	333	201	461	835	410	299	260	200	650	1201	559	57.3
1972	390	659	100	436	288	111	265	449	235	324	559	41	38.8

Average annual rainfall for Toolangi is 55" (1400 mm) so the 1972 total was 16" below average, and no year since 1953 has been so dry.

141 points was recorded during a storm on January 31st this year, followed by 423 points on February 6th, and 314 points between the 19th and 22nd. The February total of 953 points is higher than that of any other February since 1953.

The heavy falls in February of this year have not caused by specific problems for the Trust but recent catchment inspections revealed that topsoil washed severely on several properties in the catchment.

3. *Reserved Forest*

No particular logging operations are planned on the Commission's land in the catchment for the coming season. Forests Commission and SCA officers are preparing draft management prescriptions which will be submitted to both departments for their approval. The Commission intends to restrict clear-cutting operations in the area to land below 2,400 ft (730 m) elevation and the steeper slopes of Mt St Leonard are above this level.

4. *Potato Research Station*

The Victorian Department of Agriculture has a Permissive Occupancy lease over 390 acres of Reserved Forest, and 106 acres of this is within the catchment. About 60 acres of this leasehold has been cleared and is used for potato and strawberry field trials. Most of the cleared slopes are less than 12% and cultivation is usually carried out on the contour.

5. *Freehold Land*

The six landowners have 229 acres of cleared land in the catchment. Two properties are plant nurseries with a total of 95 acres laid out for this purpose. Of the remaining land approximately 60 acres are planted each year to potatoes, strawberry runners or other vegetables leaving about 75 acres for pasture or fallow.

Cultivation operations being in October-November, and thus coincide with incidence of high monthly rainfalls, and high rainfall intensities. Cultivation is generally up and down the slope, or in the case of plant nurseries, direction of cultivation depends on the layout of plots and irrigation pipelines. Landholders accept the fact that soils will wash under these conditions, some of them have equipment to carry silt back up the slope, and most dams and smaller depressions are silt laden.

266 acres of the freehold land still carry timber and scrub, but little useful timber remains. Parts of these areas will be suitable for clearing in the future while others will be too steep to do so, particularly near watercourses.

(a) *Crown Allotment 5 (Binz)*

In November 1972 a pulpwood removal operations was noticed on timbered land near the southern boundary of this allotment. After subsequent inspections and discussions with the landholder, a letter

and plan were sent advising him of the extent to which clearing and development could continue without representing a hazard to the water supply.

Clearing has not been commenced yet, and if the Determination comes into effect quickly enough the development will be held up until March-April next year, when storm incidence and total rainfall are both low.

(b) Crown Allotment 4 (Van de Ven)

Cleared land on this property is rapidly brought into production for nursery plants. A large dam which was constructed in 1971 is used for supplementary irrigation. This dam is fed by a well protected spring, and surface flows (which occur only during and after heavy rains) are diverted around the dam, down the table drain of an access road to be discharged into scrub alongside the stream. This diversion has scoured the table drain to a depth of one metre in places, and is certainly the worst erosion in the catchment. The Determination is expected to help persuade the landholder to recognize the interests of the water supply, and to rectify the problem. A half chain (10 metres) stream buffer zone is proposed for the depression extending 4 chains (80 metres) upstream of the dam, and once this becomes effective, diversion of surface flows around the dam should be unnecessary.

(c) Crown Allotment 2 (Sewell)

The Authority gave conditional approval to proposed soil stripping on this property in March 1971. None of the work has been carried out yet, and the property will be kept under observation to ensure that conditions are complied with once the stripping does commence. At present this property represents no hazard to the water supply, and in fact no agricultural or forestry operations have been carried out on it for several years.

(d) Part Crown Allotment 64A (Busacca)

The 27 acres (11 ha) of this property which lies in the catchment is used for growing potatoes and fodder crops. It is not a hazardous area.

(e) Crown Allotments 3, 3^A, 3^B (Rimingtons Nurseries)

In recent months use of this land for growing nursery stock has diminished noticeably. The owner advises that for the next three years production will be slowed down, and the property may be sold then. In November 1972 the landholder discussed a proposal to log a useful stand of Messmate near the boundary of C A 3, and he was told that the Authority would have no objection. The area concerned is near the catchment boundary, and has slopes averaging 8%. The logging operation has not commenced yet.

6. Subdivisions

No land in the catchment has been subdivided since it was Proclaimed, and Healesville Shire has amended its Interim Development Order to make 40 acres the minimum permissible lot size in subdivisions of rural land.

IV. PROPOSED LAND USE CATEGORIES:

Category 1 500 acres, 203 hectares, 40% of the total catchment area.

Land which shall be used for permanent forest, where forestry operations shall be carried out only in accordance with management conditions made or approved by the Soil Conservation Authority. The construction of roads, dams or other earthworks are subject to approval of the Authority. (This category covers State Forest and part of the Potato Research Farm.)

Category 2 - 266 acres, 107 hectares, 22% of the total catchment area

Land suitable for forest purposes, parts of which may be developed for grazing or cropping with the approval of the Soil Conservation Authority. Use of the land for any of these purposes may be subject to conditions made or approved by the Authority and such conditions may include:

- A. Management prescriptions for forest areas.
- B. The specification of areas which may be developed and those areas which are to remain as forest, and
- C. The specification of conservation practices.

(This category covers most of the forested freehold land.)

Category 3 - 419 acres, 170 hectares, 33% of total catchment area

Land which may be used for grazing or cropping, subject to Soil Conservation Authority conditions for the particular circumstances. Such conditions may include:

- A. The specification of conservation practices where necessary.
- B. The specifications of areas where the cropping phase in the rotation is restricted.

(This category covers the cleared freehold land.)

Category 4

Land which shall be used for the protection of streams and watercourses where:

No trees shall be removed or soil disturbed in any way without the specific approval of the Soil Conservation Authority.

The crossing of streams and watercourses within this category is permitted only by means of properly constructed crossings approved for the particular site by the Authority.

This category includes land within a 10 chain radius of the offtake weir, within a half a chain or one chain (10 metres or 20 metres) of the banks of specified streams or watercourses as shown on plan number 2740, or within such greater distance as the Authority may specify.

Category 5

- 5a. Land used for roads, on which any alterations shall be made only after consultation with the Soil Conservation Authority.
- 5b. Land reserved for roads or other public purposes, on which any changes in land use shall be made only with the approval of the Authority.

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