SOIL CONSERVATION AUTHORITY

Preliminary Report

on the

NILLAHCOOTIE RESERVOIR CATCHMENT

INTRODUCTION

On the 19th January 1966, the State Rivers and Water Supply Commission requested that consideration should be given to the proclamation of the catchment of the Nillahcootie Reservoir under Section 22 of the *Soil Conservation and Land Utilization Act* 1958.

Construction of the dam has commenced and it is expected that the works will be completed in 1967.

The 90 ft high bank is built on the Broken River about 24 miles south of Benalla in the Parish of Nillahcootie, Ca 12^{B}, shire of Benalla.

Capacity of the dam is estimated as 35,000 ac ft.

The total area of the catchment is 160 square miles.

Reserved Forest	23 sq m	14%
Crown Land	30 sq m	19%
Freehold (including roads and reserves)	160 sq m	100%

THE BROKEN RIVER

"Victorian River Gaugings to 1960" issued by the State Rivers and Water Supply Commission gives the following data:

Maximum Annual Discharge	171,866 ac ft (1917-18)
Minimum Annual Discharge	6,374 ac ft (1914-15)
Maximum Monthly Discharge	4,905 ac ft (Sept 1921)
Minimum Monthly Discharge	nil in dry years
Maximum Daily Flow (Hydrograph)	7,550 causes (Sept 1916)
Minimum Daily Flow (Hydrograph)	nil in dry years
Peak Flow (observed)	15,000 cusecs (9th Sept 1921)

The Broken River is beset with the problem of having too much water delivered too fast.

Mr W J Carlyle, Benalla Shire Engineer, reported in 1958 that "upstream of Swanpool the gradient is quite steep, 21ft per mile, and stream bank erosion is active, particularly over a length of 7 miles in the Barjang area, and as a result acres of valuable pastures have been and are being lost. Gully erosion of up to 40 ft in places is occurring in the small streams forming the tributaries in this area.:

The river section referred to in this quote is within this catchment

EROSION

In 1961, one year after being constituted, the Broken River Improvement Trust asked the Soil Conservation Authority to carry out an erosion and land-use survey with the view to make the recommendations for an erosion control plan.

The Trust in 1963 spent £6,000 on groyne work.

The Soil Conservation Authority's North-Eastern Division staff in co-operation with the landowners carried out much work on an individual property basis on frontages of the River and its tributaries.

In the opinion of Mr K Terry, Senior Conservation Officer of the Division, peak flows are largely derived from the steep to hilly land which has been ringbarked and heavily grazed on the volunteer pastures without the benefit of further pasture improvement.

The findings of the ecological survey, carried out by the Authority's Research Division during 1962 and 1963 concurs with this opinion. It also adds that there is little hope of flood alleviation or reduction in river erosion and resulting siltation, without a programmed stream and gully revegetation in the headwaters.

The chief areas of erosion according to this report are:

a) Tabletop land system, which is very steep has an average rainfall of 30-35 inches and extremely vulnerable mainly solodic soils.

b) Mansfield land system, with gentler slopes, lower rainfall, 25-30 inches and mainly podsolic soils.

Erosion in (a) is prevalent as sheet, tunnel and gully erosion, in (b) it appears as sheet, gully and stream bank erosion.

The report divides the catchment into three further land systems:

- The Strathbogie - mildly dissected, rolling granite tableland.
- The Swanpool - generally granitic area of moderate relief.
- The Cambatong - headwaters of riverine dissection in sedimentary rocks.

The erosion status of these land systems, excepting some river bank erosion, was found reasonably sound and of much lower hazard.

SUMMARY

Conservation and erosion control works appear to be required in parts of the catchment to assist in controlling flooding and reducing runoff.

Pasture improvement, improved management practices (mainly subdivision and rabbit control) fire control and control of stream bank erosion are the suggested remedial measures.

Proclamation of the catchment could form the basis for planning and concerted action by the Government and landowners.

A P FISHER
Catchment Investigation Officer
17/12/1966