

APPENDIX

To Report by

SOIL EROSION COMMITTEE

February 1938



TYPES OF WATER EROSION

Sheet Erosion

This form of erosion is to be found in many parts of the State. It is caused by heavy rain falling on unprotected slopes and is characterised by a more or less uniform wasting away of the surface soil, particularly where it is of an impervious cohesive nature.

It is one of the most prevalent and destructive forms of "man-made" erosion. It rapidly reduces the productivity of land by carrying off the rich organic matter and readily available plant food; unfortunately it may continue for lengthy periods undetected. In certain areas farmers have noticed the progressive falling off in crop yields without recognising the loss of top-soil from their paddocks. Now they cultivate heavy intractable sub-soil instead of the original mellow surface soil.

On forest lands where bush fires have swept the surface clear of trees, shrubs, and litter, the same disastrous conditions are found. By over-grazing on the ranges soil less through sheet erosion are rapidly induced. As the protecting vegetation grows thinner the soil is compacted by the trampling of the stock as it wanders in search of fodder.

If unchecked, this form of erosion is rapidly followed by "rill" and "gully" erosion, where the soil covering is deep.



1. Sheet erosion, north-west of Bacchus Marsh. These slopes were one well-forested, but deprived of this protection sheet erosion has removed up to 2 feet of soil and exposed the underlying rocks. Soil wastage has been accelerated by over-grazing and numerous rabbits are taking toll of what little vegetation remains.



2. South-east of Castlemaine. Originally covered with timber, which was cleared for firewood for the mines. The land is now practically stripped of soil between the stunted saplings.



3. Sheet erosion, basalt country at Diggers Rest. Silt in foreground has been washed from cultivated paddock of clay loam.



4. Sheet erosion developing into gullying, south of Avoca. Paddock in foreground was apparently cultivated with the slope. Stormwater from the cleared hills beyond has flowed across it, stripping off most of the topsoil. Odd furrows have scoured out, forming the beginnings of gullies, as on the right of the picture.



5. Grazing land west of Ouyen. Formation - fine reddish-brown silty loam. Rainfall 10 inches to 15 inches. After the drought of 192 had depleted this area of vegetative cover, heavy rains caused serious sheet erosion. With concentration of the run-off "rill" erosion is developing.



6. Sheet and gully erosion west of Mindample. The surface soil has been washed from the slopes, exposing the underlying Silurian rocks. In the depressions gully erosion is rapidly tearing out the deep loams.



7. Undulatory country on the Limestone Creek (Hume Reservoir Catchment). Constant firing has seriously damaged this stand of *eucalyptus coriacea*. The thin canopy affords little shelter to the bare surface from which litter, grass, and much of the surface soil have disappeared.



8. The southern slope of Tussocky Creek - a small tributary of Wilson's Creek (Omeo). The poor protection afforded by the open stunted forest is inadequate to prevent the washing away of forest litter and surface soil when such a slope is grazed. The soil is stiff clayey loam overlying ordovician sedimentaries.