

GREENING UP THE GULLY

overview of the project

This project has achieved remarkable improvements in soil salinity and water table levels in a degraded area known as Green Gully, near Deniliquin, through the installation of a network of tile drains and vegetation. The gully, once the bed of the Murray River, had developed a watertable so high that it reached the soil surface. This caused groundwater to flow upwards and discharge across the area as well as very high salinity levels. Green Gully Landcare Association has dramatically improved the soil condition in a short period of time, providing inspiration and encouragement to local farmers who have struggled with salinity for many years.



Green Gully evaporation basin

how the project was carried out

Before commencing the project, geophysical investigations were carried out along the entire length of the 40 kilometre gully to better understand the hydrology and soils, and to maximise the effectiveness of the project. This work determined the behaviour and movement of the groundwater, the soil types and salinity levels. These investigations were important for prioritising sites and ensuring the constructed works would be effective.



A sign at the Green Gully remediation site

Rehabilitation of the gully was achieved through the installation of 50 hectares of tile drains and by the construction of a large evaporation basin. Tile drains are a special type of plastic hose containing small holes for catching water which were placed under the surface of the soil

to collect excess water and pipe it to the evaporation basin. Within months of the tile drains being completed there was a significant reduction in watertable depths and by completion of the project the watertable was reduced to a depth that allowed plants to successfully grow again and the soil structure to recover.

outcomes now and in the future

Within six months of completing the works barley grass and other salt tolerant plants had returned to the bed of the gully. The absence of any ponded water even after heavy rainfall events demonstrated the success of the tile drains which far exceeded the original expectations of the Landcare group.

A salt tolerant cereal crop was successfully grown on the floor of the gully in 2007. This crop was ploughed back into the soil to replenish the humus and organic matter that had been degraded through long periods of waterlogging and salinity. The ongoing planting of salt tolerant pastures and native vegetation by landholders will further improve the soil structure and reduce salinity.

This reclamation project has successfully addressed the salinity problem within the gully. It will result in a viable future for adjacent properties, improvements in biodiversity, and reduce the threat of salinity affecting downstream river red gums and saline discharge from entering the Murray River.

benefits, challenges & lessons learned

The main challenge faced by the project was delays in implementing various stages of the project due to wet weather. As Green Gully is in a low lying saline area, access to the site even after light rainfall was difficult. Delays occurred during the initial site investigations, and a lack of dry weather resulted in a very short window of opportunity for the construction works.

The cost of installing the evaporation ponds and drainage works exceeded the group's initial budget estimates, highlighting the need for more detailed estimates in the future.

This project has demonstrated to local landholders that tile drainage is a very effective way to reclaim saline land. After many years of local debate on how best to address this issue, the remarkable changes in watertable levels and soil conditions achieved has given a new focus and incentive to landholders in the area to continue investing in on-farm works and to rebuild areas of native vegetation that have been lost.