

Quantifying the impact of on-ground works in the dryland Mallee



Above: Old man saltbush plantings. Photo: Mallee CMA.

The Mallee Land Protection Incentive Scheme (LPIS) has been helping Mallee dryland farmers tackle environmental issues for more than 20 years.

The program provides technical, administrative and financial support for landholders to undertake on-ground works that protect and rehabilitate land at risk of degradation.

Over the history of the scheme incentives have been offered to dryland farmers for a range of on-ground activities to help manage soils to reduce erosion and salinity and improve soil health.

Activities have included reclaiming eroded dunes, improving grazing management through the construction of stock containment areas, salinity control works such as saltbush plantings and fencing, as well as recharge control through plantings and EM38 mapping to assist with paddock zoning.

Method

During 2009 a monitoring program was developed and trialled to collect evidence and quantify the impact of works on the health of the region's soils and also on reducing the incidence and severity of threats.

Following this initial trial the monitoring program was expanded and data is now collected from all on-ground works sites, both before and after works to determine the impact of these activities. As many of the improvements in the health of the region are expected after a number of years, monitoring will continue on these sites in future years to assess the longer term change. Monitoring is also taking place on a selection of historical sites.



At a glance

- A monitoring program was developed in 2009 to quantify the impact of on-ground works on the health of the region's soils;
- Key findings have highlighted significant achievements in reducing soil erosion and salinity;
- In 2011-12 25 sites had pre-and-post monitoring undertaken; 32 historical sites have been assessed.



Above: 1 Dune before works were started, and 2 the same dune after works with a stabilisation crop. Photo: DPI.



Above: Stock containment area. Photo: DPI.

Data collected to help assess the condition of the sites includes vegetation cover and height, as well as soil dry aggregates as these variables are indicators used to estimate the erosion risk.

Information is also collected on land management practices including crop and grazing practices. The condition of saline discharge sites are assessed by vegetation cover as well as classifying the site within a soil salinity class. Information on the impact of invasive plants and animals is collected on all sites and photographs are collected for visual comparisons. Landholders are also interviewed to determine their views on the works, and any positive changes in the sites.

During 2011/2012, 25 sites had pre and post monitoring undertaken and 32 historical sites were monitored. The results of all monitoring are presented in "Monitoring the impact and effectiveness of on ground interventions" report (DPI, 2012).

Key findings

Fifty per cent of reclaimed dunes monitored five years after works reported a low risk of erosion with the remaining fifty percent being assessed as having a medium risk of erosion. No five year old sites were assessed as having a high risk of erosion. Landholders were positive about the outcome of the works observing that dunes that had previously been "waste land" and filled with blow outs were now manageable and could be cropped.

Sand dunes provide the ideal habitat for rabbits to establish burrows and to inhabit due to their ease in digging. Prior to works thirty per cent of dune reclamation sites were found to have an isolated rabbit abundance present. Following the completion of works one hundred per cent of sites had no rabbit abundance observed. Landholders supported this observation stating "because of the works we don't have a problem with rabbits in this area due to the lack of hiding holes".

A questionnaire completed by landholders revealed they were pleased with some

aspects of the works and disappointed by others. Landholders who had direct seeded saltbush into their saline areas two years prior were disappointed due to the lack of germination. They identified that they used a different direct seeder from previous successful years and that they felt that this, along with the dry weather conditions, were contributing factors to the failure of the saltbush to germinate. However, landholders with five year old sites identified that through their salinity discharge works they were able to turn unproductive land into an asset: "With the introduction of old man saltbush the paddock can now be used."

Conclusion

The LPIS monitoring program was developed to collect long term data to establish if on ground works were contributing to an improvement in the health of the Mallee's soils through a reduction in soil erosion and salinity. Initial key findings have highlighted some significant achievements as well as positive feedback from landholders. This work has also highlighted some areas for further investigation to refine the incentive program, including the possibility of follow up works. Over time, this data will enable the impact of on-ground works to be measured and provide information that will assist with the development of best management practices.

Acknowledgements

This project is supported by the Mallee Catchment Management Authority (CMA) in partnership with the Department of Primary Industries (DPI) through funding from the Australian Government's Caring for Our Country and the Victorian Government.

Find out More

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Published February 2013

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