

fact sheet

Land Soils and Agriculture



Salinity and Sustainable Land Management

Case Study No 2 – Trafalgar

Landholder	Jenny and Roger Landsberg
Location	South-west of Charters Towers
Rainfall	660 mm
Property size	33,000 ha
Enterprises	Cattle

Roger Landsberg and his wife Jenny have busy lives as graziers and as parents to five children. In-between mustering and parenthood, they have also found time to be closely involved with the Dalrymple Land Care Group since the 1970's.

Roger also had some involvement with the National Dryland Salinity Program (NDSP) in the 1990's, as their property was in one of the program's focus catchments.

The history of Trafalgar

Roger's grandfather bought their property, Trafalgar back in 1914, and their family has been there ever since.

"My children are fourth generation. Our hope is that Trafalgar will stay in the family for some time," said Roger.

A long term outlook

Roger and Jenny's goals for the property are not just about stock and cash flow, but encompass succession and ecological condition.

During the 1980's the Landsberg's saw the effects of overstocking in the Dalrymple Shire which resulted from the beef crash in the 1970's.

"People tried to sustain high stocking rates which caused a lot of degradation," he said.

In 1987 Roger embarked on a whole new program.



Roger and Jenny Landsberg have managed Trafalgar since 1987. Roger's family first came there in 1914. With five children, they hope the property will stay in the family for some time to come.

"We de-stocked by 60%, conducted a range of resource and infrastructure audits, and started a whole new plan. Since that time we have honed our management practice so that we spell 30% of the property every year. We still maintain about 3,000 head – the same as my grandfather.

We now focus more on end-markets and run a very strategic breeding and fattening program – so we are turning off more cattle but are running less breeders.

As a result of our conservative stocking and spelling program we've got much higher quality pastures, which aids our productivity. It also gives us a drought mitigation option and means we don't have to sell during a drought." said Roger.



Salinity has been around for a while

Small outbreaks of salinity have been around for a long time on Trafalgar.

"My grandfather used to talk about how salt used to come to the surface along a particular gully where it runs into Bells Creek – especially during very wet years. That particular area was partially cleared during the 1960's.

Since I took over management of the property, I've allowed a lot of areas to regrow with the native timber, to try and minimise the risk of the salinity increasing.

I'm hoping that the changes I've made, in letting more country grow back, may help the country to find its equilibrium again," Roger said.

Even though salinity will probably fluctuate as water tables rise and fall with changes in rainfall, new management practices like retaining ground cover, spelling of pastures, rotational grazing and very limited use of fire will help to minimise the risk of any further salinity outbreaks.



The main patch of salinity is adjacent to a gully that runs into Bells Creek. It has bare patches of ground and much of the area is covered by marine couch. The saline soils tend to have a 'fluffy' appearance.

The National Dryland Salinity Program

The Balfes creek catchment was one of the focus catchments for the National Dryland Salinity Program (NDSP) during the mid-1990s.

Research conducted at that time identified a number of areas with shallow groundwater levels that when combined with sandy soils and poor pasture condition could develop dryland salinity.

"I think this research work has given us a lot better understanding of our soil types and their hydrological properties.

Also, the typical grazier's knowledge of land management with regard to soils, pastures, and other ecological function is now light years ahead of where it was 20 years ago," said Roger.



Salt crystals have formed on the side of the gully next to the salty patch of land.

Why salinity has developed

Salinity appears to have developed because of constricted drainage out of the catchment. This may be partly due to topography and, most likely, a sub-surface geological feature. They have caused the shallow water tables to rise closer to the surface and allowed salts to concentrate as groundwater is evaporated from the land surface.

Historical land use change in the upstream catchment has probably contributed to increased water recharge. Further removal of native vegetation might cause salinity to become more widespread.

The ideal management is to maintain perennial vegetation cover above this constriction, and to maintain ground cover on the patches of land where salinity already occurs.

Key Points

- Some parts of the property are predisposed to salinity because of salt stored in the landscape and natural constraints to groundwater flow.
- The naturally occurring potential for salinity, or salinity hazard, has been activated in places by upstream clearing and grazing pressure.
- These land use changes caused an increase in the amount of water moving through the landscape.
- Spelling, more conservative stocking rates and better management of grazing have encouraged the build-up of perennial grass cover across the landscape, reduced groundwater recharge and probably limits the likelihood of further salinity outbreaks. It has also assisted annual grasses and some pioneer perennial grasses to re-establish in salt-affected areas.

The BDTNRM Dryland Salinity Project was funded by the Australian and Queensland Government as part of the National Action Plan for Salinity and Water Quality. The final report is available at BDTNRMs website or contact BDTNRM for further information.

