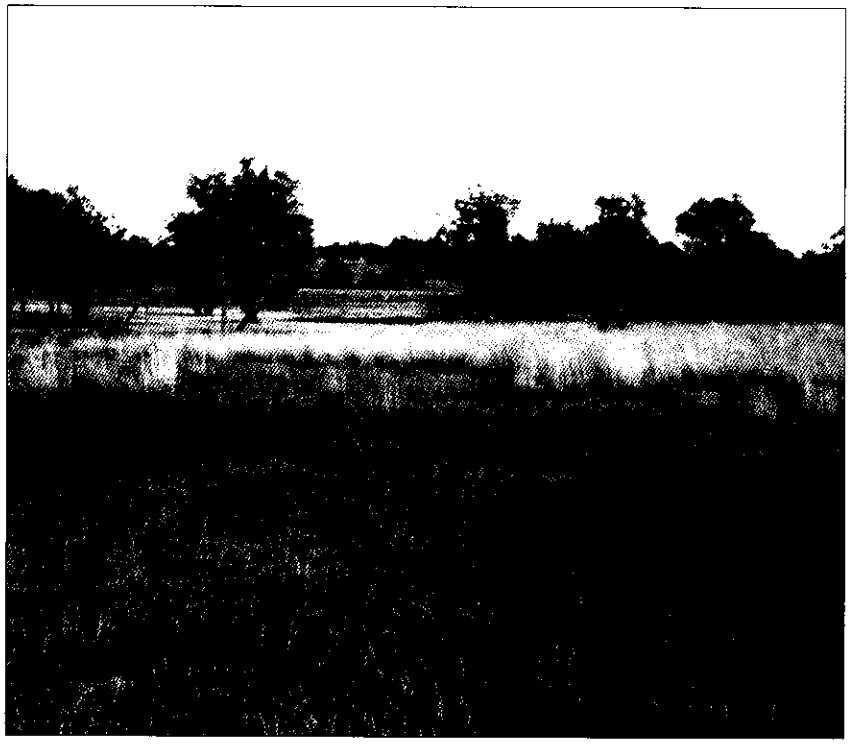
# LANDCARE

## LANDHOLDERS AND RESEARCHERS WORKING TOGETHER

*Sommer Jenkins*

Soil salinity is a recognised problem in the southwest of Western Australia, threatening to reduce agricultural production and viability in the region. The widespread clearing of deep-rooted native vegetation and its replacement with annual crops and pastures of current agricultural systems has led to the groundwater table rising and mobilizing salt from within the soil profile. There are numerous studies being conducted on the consequences of, and possible solutions to, secondary salinity. These studies can generate information to help farmers make productive use of their saline land.



Ecological zonation of the two grasses
Photo: S. Jenkins

However, many readers can appreciate that research, suggestions and data generated in a university may sometimes be inaccessible, or difficult to put into action by the landholder. It is important therefore, that research reaches the landholder, farmer or individual to whom it is most appropriate. Collaboration between researchers and landholders is a good way to ensure this transfer of information occurs. Collaboration is mutually beneficial, as the research is based on what is happening out in the field, and the information generated in this way is directly accessed by the landholder.

My PhD project at the University of Western Australia, working in conjunction with the Co-operative Research Centre (CRC) for Plant-Based Management of Dryland Salinity, is focused on the perennial pasture grasses puccinellia and tall wheatgrass (cv. Tyrell). Of particular interest to me is the ecological zonation of these two grasses, as caused by salinity and waterlogging gradients. Ecological zonation refers to the distribution of plant species in separate ecological zones because of variations in the environment (e.g. soil salinity and waterlogging).

Pasture grasses are commonly sown on saline land to increase water use, revegetate bare land and for use as fodder for livestock. It is recommended that a combination of grasses with different salt and waterlogging tolerances be sown to ensure good establishment as most saline sites are highly variable. Puccinellia and tall wheatgrass are often sown together as mixtures, with puccinellia colonising the more waterlogged zones of the landscape and tall wheatgrass occupying the less affected zones.

My glasshouse and lab-based project was in need of a field location. Through the assistance of Landcare, I was put in contact with a willing landholder in the southern wheat belt. I was lucky enough to be introduced to Peter Macleay who, for the last two years, has generously allowed me access to his 570 ha farm just out of Kojonup. On this property, there is a small low-lying area affected by secondary salinity, which serves as a very convenient study site. It was convenient in that it showed natural zonation of puccinellia and tall wheatgrass.

About 15 years ago Peter addressed this isolated secondary salinity issue by planting a mix of puccinellia and tall wheatgrass. When I asked Peter if he planted this mix as fodder, he replied, "I planted this mix because it would grow in saline areas where trees would not. It was easier to plant and I thought it would use more water than trees. I did not start to use it until about 5 years later when I had sheep in a feed lot over the break of the season and noticed the wheatgrass, and decided it was worth a graze. I then

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noticed that the clover and other grasses grew better when there was both wheatgrass and two grazings a year. I then realised the potential of perennial grasses and the grazing systems that they need. There is a synergy with cropping in that the grasses love the areas that crops don't grow well in."

The synergy extends to my project as well. I gain from Peter's enthusiasm and knowledge, as well as access to his pasture. I visit the site regularly and monitor the watertable level, soil and groundwater salinity and pH, plant health and biomass. Peter benefits from ongoing monitoring of his pasture and is recognized for his significant contribution within the CRC. Peter has been involved with research groups in the past. Whilst he has never had a formal connection with Landcare, he has been interested in the debates and research results. Currently he is mainly involved with the Kojonup Crop Research Group. He says, "It was set up to help develop high rainfall cropping. We are still working with CSIRO and Ag WA in this area, mainly looking at fundamental limits to production."

When asked what motivates him to donate his time and pasture to research, he replied "I am interested in the results, and the contact with the ideas and the people who do the research."

The field work aspect of my project has become central to my research, and has provided me with a great deal of valuable information. Thanks to the enthusiastic and successful collaboration between landholder and researcher, my investigation continues to prove very worthwhile.

*Sommer Jenkins is undertaking a PhD research project at UWA. Further information on related topics is available at* www.agric.uwa.edu.au/soils/nuts/home.html or www1.cresalinity.com.

**(Note: Both puccinellia and tall wheatgrass can become weeds in conservation areas - especially natural salt lake communities - so, if using them, be careful they do not escape - Ed.)**