

River saltbush: outstanding survivor amongst old saltland agronomy plots

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As early as 1954 dryland salinity was seen as an increasing problem in the agricultural areas of Western Australia. Research to improve saline areas through the use of forage shrubs was undertaken across 276 sites in Western Australia. In conjunction with the CRC for Plant Based Management of Dryland Salinity, 25 sites were revisited in June, 2002 as part of an old site reconnaissance project. This ongoing project aims to answer key questions on forage shrub survival and environmental impact such as:

1. Is saltland revegetation sustainable and what are the environmental benefits from revegetation of saltland?
2. What are the site characteristics necessary for long term sustainable plantings of forage shrubs?
3. What is the salt and water balance, carbon dioxide sequestration and the productivity of long term plantings?
4. What is the identity of the germplasm that is surviving and has it any special features?

Some general trends were noted from the initial observations made of the old study sites. Some of the original halophytes had completely disappeared and tended to be from overseas collections (e.g. *Atriplex canescens* and *Atriplex glauca*). Others also from overseas collections tended to be present in very limited numbers (e.g. *Atriplex halimus* and *Atriplex linearis*). Salt tolerant shrubs and grasses which had survived and spread included *Atriplex bunburyana* (Silver Saltbush), *Maireana brevifolia* (Bluebush), *Atriplex amnicola* (river saltbush) and *Puccinellia ciliata* (puccinellia).

Hydrological and grazing factors appear to influence the vegetative cover. On sites which have suffered from regular waterlogging or have a rise in the watertable, *Halosarcia sp.* (samphire) has aggressively invaded and become the dominant species. On sites which have received little grazing, *Halosarcia* has been able to spread at the expense of other species. However, on sites that have received regular grazing it was observed that *A. amnicola* was more successful than *Halosarcia*. Thus, preliminary observations suggest that on certain sites under appropriate management, saltland revegetation can be sustainable.