

**PROCEEDINGS OF THE AUSTRALIAN RANGELAND SOCIETY
BIENNIAL CONFERENCE**

Official publication of The Australian Rangeland Society

Copyright and Photocopying

© The Australian Rangeland Society 2012. All rights reserved.

For non-personal use, no part of this item may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior permission of the Australian Rangeland Society and of the author (or the organisation they work or have worked for). Permission of the Australian Rangeland Society for photocopying of articles for non-personal use may be obtained from the Secretary who can be contacted at the email address, rangelands.exec@gmail.com

For personal use, temporary copies necessary to browse this site on screen may be made and a single copy of an article may be downloaded or printed for research or personal use, but no changes are to be made to any of the material. This copyright notice is not to be removed from the front of the article.

All efforts have been made by the Australian Rangeland Society to contact the authors. If you believe your copyright has been breached please notify us immediately and we will remove the offending material from our website.

Form of Reference

The reference for this article should be in this general form;
Author family name, initials (year). Title. *In*: Proceedings of the nth Australian Rangeland Society Biennial Conference. Pages. (Australian Rangeland Society: Australia).

For example:

Anderson, L., van Klinken, R. D., and Shepherd, D. (2008). Aerially surveying Mesquite (*Prosopis* spp.) in the Pilbara. *In*: 'A Climate of Change in the Rangelands. Proceedings of the 15th Australian Rangeland Society Biennial Conference'. (Ed. D. Orr) 4 pages. (Australian Rangeland Society: Australia).

Disclaimer

The Australian Rangeland Society and Editors cannot be held responsible for errors or any consequences arising from the use of information obtained in this article or in the Proceedings of the Australian Rangeland Society Biennial Conferences. The views and opinions expressed do not necessarily reflect those of the Australian Rangeland Society and Editors, neither does the publication of advertisements constitute any endorsement by the Australian Rangeland Society and Editors of the products advertised.



The Australian Rangeland Society

DRYLAND SALINITY REVEGETATION

John Greig

"Tilga" Ootha, NSW 2797

The site is 30km east of Condobolin in central NSW on the property of J.E. and J.M. Greig, "Tilga", Ootha. Rainfall is variable and neither winter nor summer dominant. Average rainfall is 425mm.

SOILS

Red-brown earth with clay subsoil. Ridges have some gravelly shallow soils overlaying weathered shale.

HISTORY

The original timber was mainly bumble box and cypress pine and was rung about 110 years ago and cleared for cropping 70-80 years ago. The saline area (approx. 20 ha) appeared in 1956, a very wet year. During wet years the area has a saline watertable which reaches across the surface.

RECLAMATION

Reclamation work began in 1969 with the fencing out of the area and ripping and planting of old man saltbush (*Atriplex nummularia*) tubestock. Subsequently it was found to be cheaper and more effective to scatter saltbush seed by hand onto a ripped surface in autumn. Marsh grass (*Puccinellia* sp.), tall wheat grass (*Agropyron elongatum*) and some similar seeds have been sown using a combine and small seeds box. Bluebush and saltbush species have been established initially by hand-scattering of seed. Natural regeneration has occurred from these plants resulting in a considerable improvement in ground cover.

Saltbush couch (*Paspalum distichum*) has persisted in spite of the droughts of the early 1980's and some heavy grazing, and now covers a considerable part of the wetter areas. The grass was established from cuttings in 1969. Mealy saltbush (*Atriplex pseudocampanulata*) had been one of the best colonisers of the saltbushes so far.

This year 50 different species have been planted to assess their value for salt reclamation in this area. A list of these is attached. Note that the RECOM. rating is a composite of a visual assessment of the plant's ability to survive, colonise, produce, be palatable and lack undesirable features. There is one point for each feature (maximum of 5) and a score of 2 or less means unsuitable for this site. Some species have not been assessed yet as they are either not established or only recently established.

RESULTS

The results of this work have shown that:

1. The area must be fenced out and stock excluded
2. The area should be ripped six months before the autumn sowing to leach salt from the seed bed
3. Stock should be excluded for at least 22 months after sowing a mixture of salt tolerant plants
4. Less salty areas should be reclaimed first as these will provide seed which will establish itself on the more saline areas when conditions are favourable
5. Saltbush should only be grazed during late summer and early autumn to ensure survival
6. Steps should be taken to prevent the water table rising eg. tree and lucerne planting, diversion banks, etc.

Other species (34) will be sown if seed can be obtained and it is hoped further experimentation will continue in cooperation with the recently formed Dorriwong-Ootha Landcare Group.

Table 1.

<u>No.</u>	<u>BOTANICAL NAME</u>	<u>COMMON NAME</u>	<u>Establ</u>	<u>Recomm</u>
1	<i>Agropyron elongatum</i>	Tall wheat grass	Y	5
2	<i>Puccinellia ciliata</i>	Puccinellia	Y	5
3	<i>Chloris gayana</i>	Rhodes grass	Y	2
4	<i>Phalaris ?</i>	Sirolan phalaris	N	
5	<i>Trifolium fragiferum</i>	Strawberry clover	Y	2
6	<i>Atriplex canescens</i>	Four winged saltbush	N	
7	<i>Atriplex lentiformis</i>	Quailbush	N	
8	<i>Atriplex nummularia</i>	Old man saltbush	Y	5
9	<i>Atriplex vesicaria</i>	Bladder saltbush	N	
10	<i>Atriplex bunburyana</i>	Silver saltbush	Y	4
11	<i>Atriplex amnicola</i>	River saltbush	Y	4
12	<i>Atriplex glauca</i>	Blue saltbush	N	
13	<i>Atriplex leptocarpa</i>	Slender fruited saltbush	Y	4
14	<i>Atriplex halimus</i>	Nth African saltbush	N	
15	<i>Atriplex undulata</i>	Wavy leaf saltbush	Y	5
16	<i>Maireana excavata</i>	Bottle fissure weed	Y	4
17	<i>Atriplex pseudocompanulata</i>	Mealy saltbush	Y	5
18	<i>Enchylaena tomentosa</i>	Ruby saltbush	Y	5
19	<i>Atriplex semibaccata</i>	Creeping saltbush	Y	4
20	<i>Atriplex ?</i>		Y	3
21	<i>Maireana brevifolia</i>	Yanga bush	Y	4
22	<i>Paspalum distichum</i>	Saltwater couch	Y	5
23	<i>Sarcosoma praecox</i>	Sarcosoma (pigface)	Y	3
24	<i>At. paludosa sp. paludosa</i>	Marsh saltbush	Y	3
25	<i>Rhagodia spinescens</i>	Thorny saltbush	N	
26	<i>Atriplex spinibractea</i>	Sprinyfruit saltbush	Y	3
27	<i>Atriplex suberecta</i>	Lagoon saltbush	Y	2
29	<i>Atriplex confertifolia</i>		N	
29	<i>Atriplex cinerea</i>	Grey saltbush	N	
30	<i>Sclerolaena diacantha</i>	Grey copperburr	N	
31	<i>Maireans ?</i>		N	
32	<i>Cactus ?</i>		Y	
33	<i>Atriplex halocarpa</i>	Pop saltbush	N	
34	<i>Atriplex isatidea</i>	Coast saltbush	N	
35	<i>At. lindleyi sp. lindleyi</i>		Y	4
36	<i>Maireana aphylla</i>	Cottonbush	Y	
37	<i>Maireana pyramidata</i>	Black bluebush	Y	
38	<i>Maireana astrotricha</i>	Low bluebush	Y	
39	<i>Maireana convexa</i>		N	
40	<i>Rhagodia baccata</i>		N	
41	<i>Salsola vermiculata</i>	A Mid. Eastern Rollypolly	N	
42	<i>Carpobrotus edulis</i>	Angular pigface	N	
43	<i>Chenopodium anidiophyllum</i>	Mallee goosefoot	N	
44	<i>Maireana pentagona</i>	Slender fissure weed	N	
45	<i>Maireana humilia</i>		N	
46	<i>Maireana enchylaenoides</i>	Wingless fissure weed	N	
47	<i>Bassis stelligera</i>	Star copperburr		
48	<i>Halosarcia doleiformis</i>	Samphire		
49	<i>Halosarcia sp.</i>	Blue samphire		