

ECONOMIC VALUE OF BIODIVERSITY

SALINITY - SOME PLUSES

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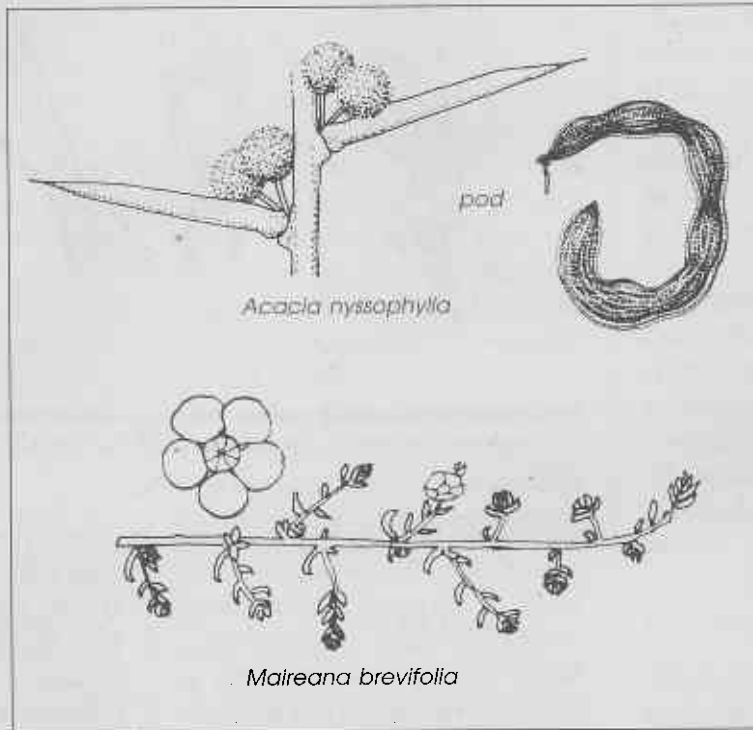
SALINE areas are often only spoken about in a negative light, but they do have some good points!

Natural salinity - conservation areas

Our property, "Koobabbie", is in the Waddy Forest LCDC 260km north of Perth, which is centred on a palaeo-drainage system. This is an area of natural salt land which contains a number of Priority Plants and forms a valuable wildlife corridor.

In 1987, John and I purchased an additional 2208 ha which included 1706 ha of this drainage system. Where the main flow of water occurs, the original melaleucas and *Acacia eremaea* have died, and saline flats covered with the samphire *Halosarcia pergranulata* dominate the landscape. However, much of the vegetation is diverse and in good condition, the only problem weed is Paterson's curse.

There are three Declared Rare Flora growing on this lake system. *Halosarcia koobabbiensis* is an attractive samphire with blueish "leaves" that is only found growing around the edge of one lake. We were very excited when we found out from Paul Wilson at the Herbarium that it was a completely new species! This is the only known population. *Ptilotus fasciculatus* was thought to be extinct until I forwarded a specimen to the Herbarium in 1987. It is a prostrate



recorded that the first signs of salinity appeared 13 years after the land was cleared.

In the late 1950s, Arnold fenced off an area that was developing saline patches and broadcast seed of old man saltbush, *Atriplex nummularia*, and bluebush, *Maireana brevifolia*, mixed with superphosphate. The bluebush grows naturally but as, at the time, only one small area was fenced from stock, there were few plants for natural regeneration. We

removed the fence as

the bluebush spread over the whole paddock. The paddock was last cropped in 1973, and since 1982, only cattle have been run there. They prune both species into dense low shrubs which can be grazed all year round. When sheep graze bluebush they strip all the leaves off, leaving long bare stems which produce no seed.

The old man saltbush has spread into the nearby salt lake system - will it become an environmental weed?

What has been a surprise is the ability of the thorny *Acacia nyssophylla* to establish and grow into large, 1.5m high, shrubs despite grazing by cattle or sheep. White-winged wrens and, to a lesser extent white-fronted chats, live in these "Brer Rabbit" bushes, which also shelter fat-tailed dunnarts and reptiles. Their dense, prickly habit means that foxes and cats would have difficulty penetrating them.

mat that doesn't look like a mulla-mulla until it actually flowers. *Caladenia drakeoides* grows close to the edge of the lake where the *Halosarcia koobabbiensis* is found. I first noticed a small population in 1996, and when Andrew Brown visited in 2001, he located two more populations 2 km away.

Thus, the area of primary salinity has a high conservation value but low grazing productivity. It might sustain 300 dry sheep in the long term.

Secondary salinity - productive areas

By comparison, the areas of secondary salinity adjoining the salt lakes are productive grazing land. The shelterbelts that have been preserved show that a fine stand of morrells, *Eucalyptus longicornis* and *E. myriadena*, grew on what was once the best soil on the farm. My father, Arnold Ruddock,

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The cattle's need for roughage is provided by the barley grass which grows well on the alkaline soil. In autumn the calving cows are fed hay. In this 340mm average rainfall region, the 73 ha paddock provides the feed requirements for 40 cows and their calves for six months of the year. The paddock is rarely top-dressed and the pasture does not need re-sowing. In recent years a second paddock has been managed as a cattle-only pasture with a good

stand of bluebush on part of the area. However, the pasture area in this paddock does need re-sowing after two very dry years.

Other saline areas

Away from the lake system, dolerite dykes are impeding drainage, bringing the saline watertable close to the surface. We fence these areas and plant trees at 10 metre spacings. There is now so much bluebush growing in fenced

remnant vegetation that it quickly establishes on any newly-fenced areas once sheep are excluded. Acacias regenerate naturally. Once established, these areas are grazed by pregnant ewes in autumn, in years when feed is scarce.

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species cannot be considered "rare".

Within the wheatbelt many species are restricted to isolated pockets of vegetation or along road verges e.g. *E. adenotricha*, *E. nivea*, *E. resinosa*, *E. scaberula*, *E. viscida*.

