FLORA

COASTAL CONSIDERATIONS

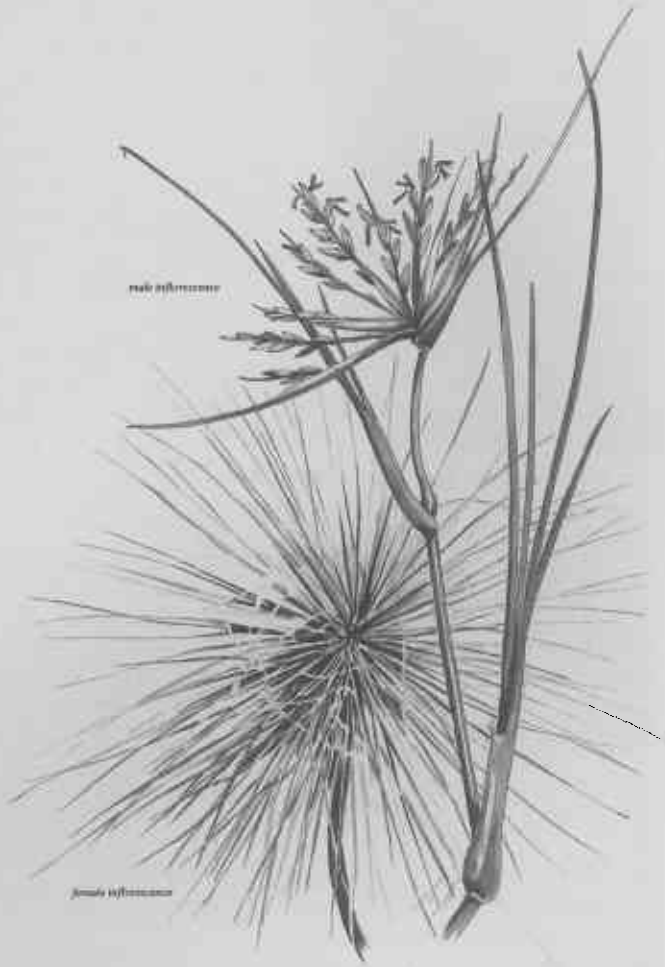
Elizabeth Rippey

'AUSTRALIANS have two impulses towards the coast: they want to preserve it, and they want to possess it. They want to keep it unspoilt and beautiful, the wilderness which they knew as kids or which they still seek out in national parks and forests and secluded beaches. And yet Australians also want to use it; for holidays, for living, for entertainment, for tourism, for work....'*

Our beguiling coastline, 12,000 kilometres of it, is extraordinarily difficult to bring into focus, including as it does the tropical, rugged Kimberley to the north, flats and estuaries with 10 metre tides and mangroves at the Fitzroy River, dry salt-laden regions with coral reefs at the western extremity of the state, to the gentler south west with winter rain, then the granite cliffs and domes that dominate parts of the south and finally the coastal sand plain and limestone of the western Bight. This coastal zone is a dynamic strip of erosion and deposition, cyclones and salt, wild winds and great dryness. And except for the south west, it is scarcely populated.

Perhaps the *plants* of the coast are easier to encompass, although their form and design vary to accommodate this most challenging range of environments, and only a few species occur throughout the region. The plants of sandy areas, beaches and dunes, exemplify the extraordinary capabilities of coastal plants. Here the sands move with the wind, storm events can eliminate a dune overnight, soils are very low in nutrients, salt spray is a constant factor and heat can be extreme. But these plants not only tolerate these conditions, they require them, and usually they can grow nowhere else. Some species that grow on the shifting sands and foredunes beside the beaches have their seeds spread by the ocean, such as the pantropical Beach Morning Glory (*Ipomoea pes-caprae* subsp *brasiliensis*) to the north. Some species accommodate rapid deposition or erosion of sand around them, as do *Spinifex longifolius* and *S. hirsutus* (true spinifexes, not the widespread Porcupine Grasses of the outback). Heat can be countered with strategies such as hairiness, shiny leaves, or loss of leaves altogether; and salt with fleshy growth, excretion of salt onto leaves, concentration of salt in certain parts which are discarded. Comparatively few species populate the foredunes, but further back where the dunes are more stable, there is greater diversity. The vast majority of species continue to be perennial, providing all-season cover for the sandy substrate.

In rocky areas species that are tolerant of salt spray overhang the seaside cliffs, but there can be considerable plant diversity very close to the ocean on these more stable substrates.



Spinifex longifolius. (illustration: E. Rippey)

The coastline is naturally in a state of flux, particularly sandy parts, with dunes changing and patches of bare sand appearing and disappearing seasonally and in the longer term. It is plants that provide the stabilizing force, preventing erosion, and revegetating denuded areas.

The coast is perfect and needs no management.

As we embrace this paradise, perhaps Australia's greatest asset, for houses and resorts, but equally for wilderness time and beach access, its character changes. Tea rooms and parking places, icecreams and the smell of coconut oil are treasured parts of the Australian experience. But throughout the State every bay and promontory is explored in the search for beauty and sometimes isolation. This sharing of the commonage is a right to be defended, but we need protection from destroying what we love; from the sorrow of a return visit to find shady groves denuded or burnt and tracks scribbling throughout coastal heath and cliff tops, the paths widened and shifted as drivers and walkers sought purchase on new plants.

continued on page 7

FLORA

continued from page 6

Farm land is pay dirt. The coast seems unproductive and unworthy of expenditure of time and money, but if the value of a seaside plot is contrasted with that of a similar stand inland, the monetary worth of coastal recreation and aesthetic value is evident.

There is a lot of know-how on coastal maintenance, and it is readily available. Experts have found that it is good to start coastal work by identifying user patterns, and rationalising access to an area so as to benefit both users and the coast. Education and signage will make most people cooperative. Natural revegetation can take place remarkably quickly if the pressures on the coastal plants are removed.

Rehabilitation of seriously damaged areas depends on the needs of the area and resources available. It may require a long term plan, implemented in stages. The help of volunteers and community groups in coastal rehabilitation projects has proved very successful.

Sand blowouts first require stabilisation, at least in part, so that plants can take root. This can be achieved by laying down branches (brushing) or putting up fencing laced with brush or netting. If planting is attempted, it is helpful to seek advice about which species to use, whether to use seed or young plants, and what planting methods are appropriate for local conditions. In conservation areas local provenance (seeds from that area) should be used but in less significant places this is not such an issue. Coastal nurseries can identify and supply many species found on the dunes. It is important not to succumb to the temptation of using fast-growing introduced species as these can cause grief by invading the surrounding bush and becoming weeds in their own right.

Removal of introduced species may be simple if done at an early stage (as in the case of groves of Prickly Pear and Agave on one suburban foreshore, deposited with garden refuse!), but weeding may require a long term effort, with specific objectives.

A Coastal Planning and Management Manual has been put out this year by the Department of Planning and Infrastructure. This divides the Western Australian coast into bioregions and suggests techniques for weed removal, interpretive signage and recreation and access management. Funding for coastal rehabilitation is also available from the Commonwealth and State Governments, as well as from some local sources. Coastal facilitators with Coastcare can be approached for details.

The coast is perfect; only people need management.

* *Craig McGregor 1992. Different coastal people.* in *Resource Assessment Commission* Coastal Zone Enquiry draft report, *Australian Govt Publishing Service, Canberra.*

Elizabeth Rippey is a botanist and artist with a particular interest in coastal plants.

Volunteers working on dune rehabilitation at Quarrum NR, near Denmark. (photo: Barb Green)

WANT TO IDENTIFY COASTAL PLANTS?

You need "**Coastal Plants: Perth and the South West Region**"
by Elizabeth Rippey and Barbara Rowland.
Pub: Dec 2003. UWA Press.
The book contains information on the flora of the entire coastal dunes of the South West corner of WA, with descriptive information and superb watercolour drawings.
(This is a revised edition of "Plants of the Perth Coast and Islands" by the same authors.)