

SOME NOTES ON THE COASTAL SAND DUNES BETWEEN
POINT D'ENTRECASTEAUX AND PERTH

by D. H. Perry

I was recently given the opportunity to inspect the sand dune stabilisation work which has been carried out over the years along our coastline from Point D'Entrecasteaux to Perth. The major part of this section of our coastline is very unstable and any interference with the vegetation which holds the soil in place can have disastrous and far reaching effects. The main points at which reclamation work has been carried out commencing at Point D'Entrecasteaux are:-

1. The Calcup Dunes just south of the Warren River.
2. The Yeagerup Dunes which lie between the Warren and the Donnelly Rivers.
3. The Boranup Dunes just north of Karridale.

4. A number of areas between Boranup and Cape Naturaliste as follows commencing at the southern end:

Calgardup
Boodjidup
Gnarabup
Kilcarnup
Gnoccardup
Elensbrook
Quinninup
Imjidup

5. Bunbury - north of the Power Station.
6. Several areas between Bunbury and Mandurah.
7. Point Peron, Penguin Island, Cottesloe, Swanbourne

Some of the larger areas of drift sand, for instance Yeagerup and Boranup, were undoubtedly on the move before the white man came to this country. Our interference with the environment has accelerated the movement of existing dunes and created many new ones.

Boranup Dunes

The first actual sand dune fixation work carried out in Western Australia was at Boranup, by the M. C. Davies Timber Company, in the early 1890's. This firm had been trading with South Africa for a number of years and it is known that Marram Grass had been established there to stabilise draft sands in the early days of settlement. It is highly probable that either seed or cuttings was obtained from this source and established on the Boranup Dunes. This huge area of shifting sand continually menaced the main access road from the Company's Mills to the north and the road was resited eastwards several times. Finally it could not be moved further east as a line of swamps prevented this and the only thing to do was to stop the advancing sand. It is not known just how much of these dunes was planted up but their further advance was completely checked. An examination of these dunes today, some 65 years later, shows that Marram Grass is still growing vigorously in many places where there continues to be sand movement. There still exists large areas of drift sand within the dune complex, but these are fairly well controlled by the marram grass which becomes vigorous on the perimeter of such areas as a direct result of the sand movement. Indigenous vegetation has re-established itself over a considerable area around the southern, eastern and northern perimeter of the dune where the sand has been stabilised by the Marram, but this does not exceed ten chains in width after 60 years. There are also extensive areas within the dune complex where the native vegetation has become established again and it appears that this spread has developed around isolated areas of indigenous vegetation not overwhelmed by the advancing sand initially. The dead Marram Grass can be found in what are now very dense thickets of mainly *Acacia cuneata* - but other plants are also present - *Dryandra* sp., *Scaevola* sp., *Agonis flexuosa*, *Acacia cyclopis*, etc. *Acacia cuneata* in particular and *Acacia cyclopis* to a lesser extent are outstanding plants in this region for revegetating the dunes once drift has been arrested. The windward side of this dune extends to the coast and much of this area is still bare. The sand has been removed from over the limestone and there is little chance of vegetation re-establishing itself on these areas. However, Marram Grass is to be found in isolated spots whenever there is enough sand for it to become established.

Calcup Dunes

One of the most encouraging and really outstanding developments has taken place on the coastline between the Donnelly and the Meerup Rivers. The Calcup Dunes on the south side of the Warren River were beginning to obstruct the flow of the river in 1934. In 1936 the whole area of this dune (approximately 1,000 acres) was planted with Marram Grass with the object of fixing it and preventing further drift. The major part of the grass for this work was obtained from small plantings carried out by landholders some years earlier. This operation was entirely successful and no further drift took place. While engaged on this work in 1936, I took the opportunity to examine the coast line for some miles north and south of the Warren River. At that time the beach which in this vicinity is about half a mile wide from the base of the foredune to H.W.M. was devoid of plant life except for a few scattered *Arctothecus* sp. Today, some 23 years later, Marram Grass has spread through the intervening belt of sand hills from Calcup to the H.W.M., a distance of approximately one and a half miles and north and south along the coast for a total distance of approximately 15 miles. It is now growing south of the Meerup River and will undoubtedly establish itself on the large dunes near the Meerup in the not too distant future. The fact that this sand stilling plant is spreading naturally and so rapidly over this country is of great economic importance and it would appear at this stage that very large areas of sand dune will become stabilised by it in the next 30 to 50 years. This process could be hastened by the judicious spreading of Marram Grass by planting.

It is particularly noteworthy that Marram Grass seeds profusely in this region, something it does not do northwards of a point somewhere between Perth and Bunbury. It is to this characteristic that the amazing spread of this plant can be attributed. It is possible that this faculty for seeding freely may be due to environment or it could be due to the development of a free seeding strain. This is now being investigated by the Soil Conservation Service, who have taken over responsibility for this important work.

There have been many examples of the rapid natural spread of worthless plants in Australia and to encounter the reverse in an example such as this is most encouraging.

Ellensbrook

Another instance of the outstanding value of Marram Grass as a sand fixer is to be seen at the old Bussell property at Ellensbrook. The homestead was surrounded with large areas of drifting sand and was deserted in 1938. Following the planting of Marram Grass in that year the whole area has been stabilised and the indigenous vegetation has now re-established itself over the whole area. The old homestead has been renovated and repaired and is again occupied.

Another plant which has played a part in the stabilisation of this particular area is Pyp Grass (*Ehrhata villosa*). This species now appears to be spreading amongst the indigenous scrub and competing with it for growing space.
