



Native sand spurge, *Euphorbia glauca* at Sand Hill Point, Waitutu. DSIR studies in Southland found that this species survives today on only two of 25 Southland beaches.

Sand scarab beetle larvae. The large grubs spend much of their time buried in moist sand feeding on rotten driftwood and the plant roots.

Photo: G. W. Gibbs



Native shore earwigs can frequently be found beneath driftwood on the seashore.

Photo: G. W. Gibbs

Natural duneland distribution today

Our remaining natural dunelands are concentrated in Northland, the Cascade-Martin's Bay area, Fiordland and Stewart Island. Other areas of importance are Farewell and Kaitorete Spits, and parts of eastern Coromandel Peninsula, Manawatu and South Westland.

Of dune systems that have been highly modified, the most notable are along the coastlines of the Bay of Plenty, Manawatu-Wanganui, north Gisborne, Chatham Islands and the dune country along most of the east coast of the South Island. One may walk along many miles of these coastlines without encountering a single native plant.

Factors responsible for the decline in natural dunelands continue to operate and our natural dunelands are poorly represented in reserves. The few reserves that do support natural duneland are usually too small and often do not provide adequate protection. For example, the Kaitorete Spit Scientific Reserve, which was created to protect the Spit's dune system encompasses but a fraction of it

and does not include the important coastal parts of the dune sequence including most of the pingao communities. Some dune systems are protected by sheer chance, such as those within the Farewell Spit Nature Reserve and Fiordland National park, where the main reasons for protection have been to conserve other natural values.

Fortunately most of our remaining natural dunelands are on Crown owned land and could be given protective status by the stroke of a pen. However, it will also be necessary to devise management strategies to remove stock, to control introduced animals, control mining and in appropriate circumstances control the further spread of exotic weeds.

Our natural dunelands have not been acknowledged as an ecosystem with conservation values equal to those of other natural areas. Steps should now be urgently taken to ensure the protection of the natural dunelands, that remain. Unless this is done we will eventually lose another part of our native heritage which contributes to New Zealand's distinctive character.

References

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Cultivation and Use of Pingao

Pingao (*Desmoschoenus spiralis*) was widely used by the early Maori as a weaving material. The long, narrow leaves turn bright golden yellow when dry which provided contrast to red and black dyed fibres used in tukutuku panelling. With the recent resurgence in Maori crafts there is an increasing demand for pingao as a raw material. But it is no longer plentiful and has become locally extinct in many parts of the country.

It is possible that the demand for pingao can be met by supplementary planting or re-establishment on modified dunelands.

Pingao is extremely difficult to raise from seed, but has been grown with some success by transplanting young healthy shoots.

These shoots are transplanted in late winter before the new season's growth begins. They must be planted so their growing tips are well within the moist sand zone and below the dry surface layer. Often this means burying the tufts so only the top quarter of their leaves are emergent. Pingao thrives best on unconsolidated sand which is free from marram grass.

Transplanting and artificial cultivation of pingao could provide a sustainable resource and would lessen the need to harvest from the dwindling natural populations.