

**VEGETATION AND FLORA OF THE
WAIOMOKO RIVER SAND DUNES**

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INTRODUCTION

The Waiomoko river sand dunes are in the Waiapu ecological district (described and defined in McEwen 1987) about 25 km north of Gisborne (figure 1.) (NZMS260 Y16 645786). They are on the true right side of the river mouth. A brief field inspection of the dunes was made on 28 February 1990 in the company of John Galilee, Department of Conservation, East Coast Conservancy.

VEGETATION

The vegetation present on the sand dunes can be divided into 3 zones. Zone (i) occurs closest to the mean high spring tide level whilst zone (iii) occurs furthest away from the mean high spring tide level. Listed below are the vegetation associations that most commonly occur in these zones. Vegetation structural classes and type names are first approximation names as described and defined by Atkinson (1985). Refer to Appendix 2 for definitions of vegetation type names and a glossary of common names.

- (i) Spinifex sandfield (*Austrofestuca littoralis* occurs locally in this zone, *Carex pumila* and *Deyeuxia billardieri* also occur locally).
- (ii) Spinifex-*Isolepis nodosa* grassland (harestalk and hawkesbeard are common in this zone)

At several points along the dune system there is a third zone (this is not always present).

- (iii) Exotic grasses and herbs (Several native species occur in this zone, e.g. *Isolepis nodosa* and bracken).

Marram tussockland occurs in two places in the dune system, at the northern end and in small area near the middle. There is also a small area of marram tussockland on the northern side of the Waiomoko River.

FLORA

Ten indigenous vascular plant species were recorded on the dunes and these are listed in Appendix 1. Over 100 plants of *Austrofestuca littoralis* were recorded. *Austrofestuca* is listed as 'local' on the

checklist of threatened and local plants (Given et al. 1987). This means that although it is not currently at risk it has a local distribution which suggests that it could move into a higher risk category. Local plants require periodic monitoring. This species is not known from elsewhere in the Waiapu ecological district, although it does occur in the Pukeamaru ecological district (Beadel 1988).

The other species are relatively common. *Spinifex*, *Zoysia pauciflora*, *Deyeuxia billardieri*, *Calystegia soldanella*, and *Carex pumila*, generally only occur in coastal vegetation communities.

BOTANICAL CONSERVATION VALUES

The study area contains relatively good quality examples of indigenous vegetation on coastal sand dunes. *Austrofestuca littoralis* is not known from elsewhere in the Waiapu ecological district. The vegetation of coastal sand dune systems of the Waiapu ecological district is not well documented, particularly in the north end of the district. However, given existing knowledge, the Waiomoko River sand dunes contain the best examples of indigenous vegetation on coastal sand dunes at the southern end of the Waiapu ecological district (cf. Beadel 1990) and are of high botanical conservation value.

CONCLUSIONS

The Waiomoko river sand dunes are of high botanical conservation value and should be protected. The marram grass present in the area should be removed.

REFERENCES

- Atkinson, A. E. 1989 :Derivation of mapping units for an ecological survey of Tongariro National Park, North Island, New Zealand. *New Zealand Journal of Botany* 23(3):361-378
- Beadel S.M. 1988 :A Register of Threatened and Local Plant Taxa in the Eastern Region, Department of Conservation : Their distribution and Status. Technical Report Series No. 6. Report prepared for the Department of Conservation, Rotorua by Wildland Consultants Ltd. 72pp.

- Beadel S.M. 1990 :The vegetation and flora of the Whangara Sand Dunes. Report prepared for the Department of Conservation East Cape Conservancy, by Wildland Consultants Ltd. Rotorua
- Given D.R., Sykes, W.R., Williams, P.A. and Wilson, C.M. 1987: Threatened and Local Plants of New Zealand. A revised checklist. Botany Division Report, DSIR, Lincoln. 16pp.
- McEwen W.M. 1987 :Ecological Regions and Districts Of New Zealand. 3rd revised edition and 4 :500,000 maps. Biological Resources Centre Publication No.5, Department of Conservation, Wellington.

APPENDIX 1.

INDIGENOUS VASCULAR FLORA OF WAIOMOKO RIVER SAND DUNES

Key : NZFRI Specimen lodged in Forest Research Institute
Herbarium, Rotorua

Dicot. lianes

Calystegia soldanella
Muehlenbeckia complexa

Ferns

Pteridium esculentum

Grasses

Austrofestuca littoralis (NZFRI)
Deyeuia billardieri
Spinifex sericeus
Zoysia pauciflora

Sedges

Carex pumila
Cyperus ustulatus
Isolepis nodosa

APPENDIX 2

GLOSSARY

2.1 COMMON NAMES USED IN THE TEXT

bracken	<i>Pteridium esculentum</i>
haretail	<i>Lagarus ovatus</i>
hawkesbeard	<i>Crepis capillaris</i>
marram	<i>Ammophila arenaria</i>
spinifex	<i>Spinifex sericeus</i>

2.2 TECHNICAL TERMS, SYMBOLS AND ABBREVIATIONS (Vegetation structural class definitions from Atkinson 1985)

- Grassland:** Vegetation in which the cover of grass in the canopy is 20-100% and in which the grass cover exceeds that of any other growth form or bare ground. Tussock-grasses are excluded from the grass growth-form.
- Sandfield:** Land in which the area of bare sand (0.01-2mm diam.) exceeds the area covered by any one class of plant growth-form. Dune vegetation often includes sandfields which are named from the leading plant species when plant cover exceeds > 1%.
- Tussockland:** Vegetation in which the cover of tussocks in the canopy is 20-100% and in which the tussock cover exceeds that of any other growth form or bare ground. Tussocks include all grasses, sedges, rushes, and other herbaceous plants with linear leaves (or linear non-woody stems) that are densely clumped and > 10cm height. Examples of the growth form occur in all species of *Cortaderia*, *Gahnia*, and *Phormium* and in some species of *Chionochloa*, *Poa*, *Festuca*, *Rytidosperma*, *Cyperus*, *Carex*, *Uncinia*, *Juncus*, *Astelia*, *Aciphylla* and *Celmisia*. It is sometimes useful to separate flaxland as a subclass for areas where species of *Phormium* are dominant.



Plate 1. Foreground : Spinifex sandfield
 Midground : *Austrofestuca littoralis*



Plate 2. Middle of photograph : *Austrofestuca littoralis*
 Background : Spinifex



Spinifex-Isolepis nodosa grassland, Waimoko River sand dunes

**FIGURE 1.
LOCATION OF THE SURVEY AREA AND
BOUNDARIES OF ECOLOGICAL REGIONS
AND ECOLOGICAL DISTRICTS**

