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THE VEGETATION OF THE MT CAMERON WEST ABORIGINAL SITE

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(with one table, two text figures and four plates)

ABSTRACT

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The vegetation of the Mt Cameron West Aboriginal Site is described. The vegetation is mapped into nine mapping units. The ecology of the plant communities which occur in each mapping unit is discussed. Much of the vegetation is ecologically brittle and reflects the combined effects of past grazing and fire regimes.

INTRODUCTION

The Mt Cameron West Aboriginal Site (144° 36'E, 40° 52'S) comprises 524 ha of land formerly included in the Woolnorth Estate on the northwestern tip of Tasmania. The site contains aboriginal rock engravings and a stone quarry of considerable archaeological significance, as well as an extensive area of middens. Hubble (1951) briefly described the coastal vegetation in the far northwest of Tasmania, and Jackson (pers. comm.) gives a detailed description of the vegetation of the Swan Bay Plain to the north of the Reserve. The following is the first account of the vegetation which occurs in the vicinity of Mt Cameron West.

THE PHYSICAL ENVIRONMENT

Climate

The climate of the area is temperate maritime and is determined largely by the transit of high and low pressure cells from the Indian and Southern Oceans (Bureau of Meteorology 1973). Prevailing winds blow mainly from two directions through Bass Strait; 270° ± 45° and 56° ± 56°. Temperature and rainfall data are not available for the study area, but conditions are probably approximated by Marrawah, Stanley and Cape Grim (table 1). The rainfall has a weak symmetrical winter maximum distribution. Summers are mild and cloudy; winters are cool and wet.

Geology and Geomorphology

Mt Cameron West dominates a low coastal plain of Quaternary alluvium and calcareous sand dunes. The mountain is composed of Tertiary alkali basalt and rises to 168 m at the southern end of the reserve. Outcrops of Precambrian metamorphic rock form rocky headlands at the northern end of the beach at Two Mile Sand. The aboriginal carvings are at the northern end of the beach in local outcrops of soft calcareous sandstone (Williams and Turner 1973, Sutherland 1972).

The coastal plain is a system of dune ridges parallel to the shore. This system is transgressed by several large parabolic or blowout dunes originating from wind erosion of previously stabilised dunes. Areas of iron concretion hardpan (coffee rock) are exposed by the removal of the overlying sand.

A number of dune barred lagoons occur in the area, and creeks flowing from two of these dissect the dune ridges and run to the sea. The larger lagoons carry extensive beds of macrophytic vegetation, and appear to provide permanent (brackish) water.

TABLE 1

Climatic data for selected stations near the Study Area

A = precipitation (mm); B = No. of raindays; C = mean daily maximum teperature (^{o}C); D = mean daily minimum temperature (^{o}C).

	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Year
					Marrawah (144^{o} 43' E, 40^{o} 55' S)								
A	43	47	49	106	127	137	128	143	120	99	62	69	1130
B	12	10	15	19	23	22	26	25	25	22	16	17	232
C	19.8	22.1	19.2	17.4	14.6	12.3	12.2	12.2	13.7	14.5	15.8	17.8	16.0
D	11.7	13.8	11.6	10.6	8.7	6.9	6.5	6.5	7.8	8.1	8.3	10.6	9.3
					Stanley (145^{o} 17' E, 40^{o} 46' S)								
A	42	46	49	75	93	107	115	104	84	87	66	61	929
B	11	10	13	16	20	20	22	22	19	18	16	14	201
C	20.9	21.1	19.8	17.5	14.8	13.3	12.5	12.8	14.2	15.8	17.6	19.2	16.6
D	12.5	12.9	11.8	10.1	8.1	7.1	6.1	6.2	7.0	8.1	9.5	10.9	9.2
					Cape Grim (144^{o} 44' E, 40^{o} 44' S)								
A	43	46	52	75	92	112	122	110	85	85	62	57	941
B	10	9	11	15	18	20	21	22	19	17	14	12	188

Soils

The soils are coarse textured, marine and aeolian sand (Nicolls and Dimmock 1965). Ground water podzols occur on the poorly drained wet sites behind the dune ridge system. The soils here are strongly leached and acid, with an A horizon of siliceous sand and organic matter. Podzols and moderately leached calcareous sands are found on the better drained sites on the lower slopes of Mt Cameron West and on the tops and sides of the stabilised dunes (Hubble 1951). Loams are developed on Mt Cameron West. These loams are derived from basalt with the addition of aeolian sands. Areas of rocky scree occur on the steep southern slopes of Mt Cameron West.

THE VEGETATION

The plant communities and a checklist of species occurring in the reserve are given in the appendix. Naming of the communities follows the structural system outlined by Specht (1970), except for sedgeland-heath, a composite community in which heath and sedge species are co-dominant.

Nine major vegetation mapping units are recognisable within the reserve area (fig 1): - 1. vegetation of the littoral beach and mobile sand, 2. vegetation of the littoral rocky headland and boulder beach, 3. vegetation of the partially stabilised dunes, 4. vegetation of the stabilised dunes and slopes, 5. vegetation of the scree slopes, 6. shrubland, 7. woodland, 8. aquatic, 9. acid sedgeland-heath.

1. Littoral beach and mobile sand

Erosion of the dunes has extended the area of the beach, by the mobilisation of sand for 2-3 km inland (plate 1). Except for the occasional pioneering plants of *Cakile edentula* near the foredunes, the beach and inland blow areas are devoid of vegetation.

Isolated pockets of vegetation, and the remains of the dead shrubs occurring within the transgressive dunes indicate that the dunes and swales previously supported dense thickets of *Acacia sophorae* and *Melaleuca ericifolia* respectively. In his account of

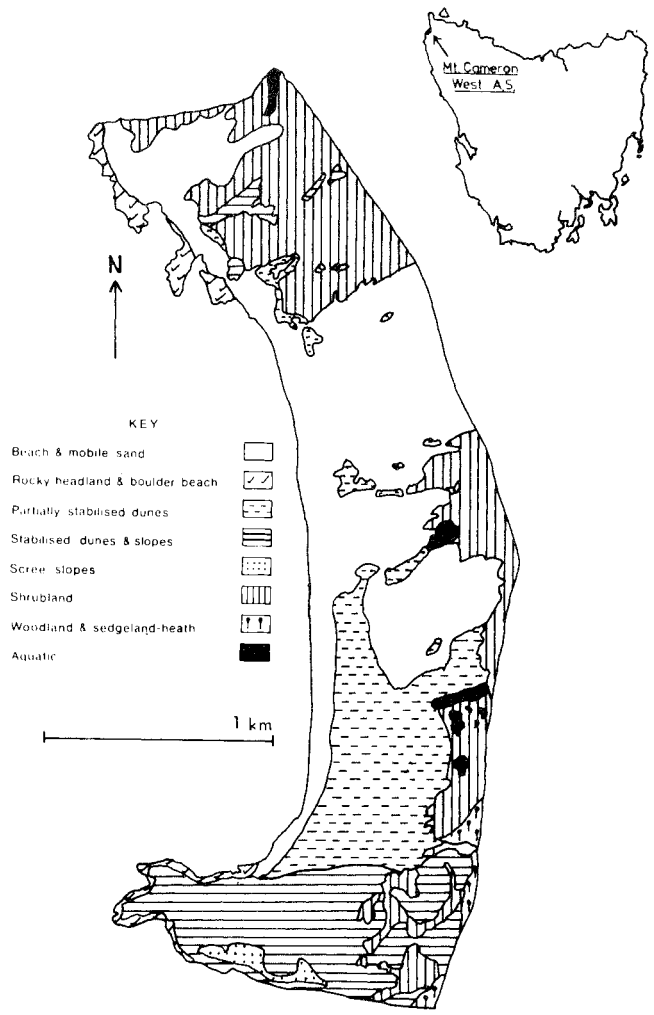

FIG.1.- Mt Cameron West Aboriginal Site: Vegetation.

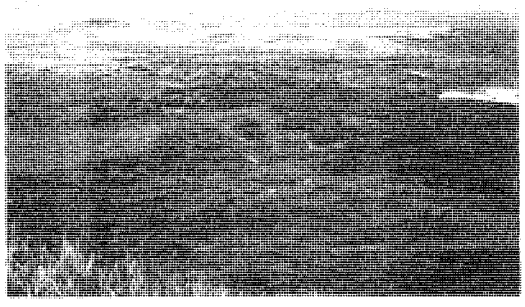

PLATE 1.- The coastal plain north of Mt Cameron West. Dense scrub of *Leptospermum laevigatum* (light) and *Melaleuca ericifolia* (dark) surround the lagoons in the middle ground, and border on seral sedgelands of the beach ridges. Two large dune blowouts are visible in the background.

the aboriginal rock carvings at Mt Cameron West, Meston (1934) noted..." cattle breaking down the dunes and allowing the wind free play have destroyed the face of the country". Patches of dead *Ammophila* on the fringe of the mobile sands indicate past attempts at stabilisation.

2. Littoral rocky headland and boulder beach

Halophytic succulents from the families Ficoideae and Chenopodiaceae form the littoral vegetation on the rocky shores; open herbfields dominated by *Salicornia quinqueflora* and *Disphyma australe* occur in the lower salt spray zone, which may be subject to inundation. At higher levels of the salt spray zone the same species occupy the ground layer in open grasslands of *Stipa teretifolia*.

3. Partially stabilised dunes

The stabilised dune ridge system on the coastal plain appears to have been heavily grazed and frequently burnt, presumably to maintain a green pick for cattle, and to prevent shrubland encroachment. Sites of incipient deflation and terracettes on the sides of the steeper dunes have resulted from grazing and mechanical damage by cattle.

3.1 Foredunes.- The coastal side of the vegetated foredunes supports grasslands of *Ammophila arenaria* (marram) and *Festuca littoralis*. Isolated tufts of *Spinifex hirsutus* occur, but no extensive growth of this grass was observed. At the base of the foredunes, creeping succulents such as *Carpobrotus rossii* and herbs like *Acaena novae-zelandiae* intermingle with the grasses. The open grasslands of *Ammophila* extend well back from the frontal dunes in areas which have been previously destabilised. The lee sides of stable dunes carry a tussock grassland of *Poa poiformis* interspersed with *Scirpus nodosus*.

Carex gaudichaudiana sedgelands occupy localised sites of fresh water seepage at the base of the dune front where salinity is reduced. This species is replaced by *Carex appressa* on a few low-lying sites flanking creek outflows and by *Baumea tetragona* or *Restio tetraphyllus* in more acid situations.

3.2 Rear dunes.- The older dune ridge system behind the foredunes supports a mosaic of *Poa* grassland, *Pteridium* (bracken) fernland and sedgelands dominated by *Lomandra longifolia*, *Lepidosperma gladiatum* and *Scirpus nodosus* (plate 1). Fire, grazing, microtopography, drainage and the degree of calcareous deposition all affect the distribution of these communities. The presence of shrub skeletons and the vegetation on stabilised dunes at the northern end of the reserve suggest that in the absence of fire and grazing, the grassland-sedgeland associations would be replaced by shrublands of *Acacia sophorae*, *Myoporum insulare* and *Correa backhousiana* near the coast and *Melaleuca ericifolia* or *Leptospermum laevigatum*, respectively in poorly and well-drained situations behind. Brown, Shepherd & Jackson (unpub), suggest that in coastal areas subject to grazing, the seral *Pteridium* fernlands maintained by frequent firing are eventually replaced by grassland and sedgeland dominated by *Poa* and *Lomandra*. A succession

toward coastal heath species is likely to follow the removal of grazing and a reduced frequency of fires.

3.3 Destabilised shrublands.- Patches of shrubland are scattered through the sand-drift area.

The patches arise in two ways. Some are the result of mounds of sand sufficiently bound by dead fibrous root and rhizome material to be recolonised by abrasion resistant succulents and shrubs; other patches appear to be relict shrublands remaining after erosion of surrounding areas.

The beach sands overlying the sandstone near the aboriginal rock carvings support a low open heath of the composites, *Olearia lepidophylla* and *Calocephalus brownii* over mats of *Carpobrotus*, and *Tetragonia implexicoma*. The mats effectively bind the sand, but their distribution is patchy and sites of potential erosion are evident.

4. Stabilised dunes and slopes

4.1 Dune herbfields.- Grasslands and herbfields occur on the stabilised dunes toward the northern end of the reserve. Grasslands of *Aira caryophyllea - Vulpia bromoides* and herbfields of *Solenogyne bellioides - Plantago bellidioides* occupy the freely draining sands of the tops and lee sides of dunes. These grasslands are heavily grazed by native herbivores. Low lying flat areas are covered by closed grasslands of *Distichlis distichopylla* and closed-herbfields of *Nablonium calyceroides*. The swale hollows of impeded drainage carry the above associations at the edges of ephemeral lagoons.

4.2 Mt Cameron West and foothills.- The soils on the slopes of Mt Cameron and its associated foothills are more fertile than those of the coast plain. The vegetation is better developed and wind erosion is not a problem. However slumps and terracettes occur on the steeper slopes (plate 2). The predominant vegetation is *Poa* grassland, *Pteridium* fernland and *Lomandra* tussock-sedgeland. Isolated trees of *Eucalyptus ovata* and *Banksia marginata* dot the landscape suggesting that the original cover of the protected slopes would have been a *Eucalyptus ovata (E. obliqua?)* woodland, with a heath or scrub understorey, whilst the lower slopes, and regions of poor drainage would have been occupied by *Melaleuca ericifolia* closed-scrub. The high incidence of fire, the introduction of pasture species, and the preference of cattle for any regenerating shrub and herb species have resulted in the promotion of *Lomandra* tussocks and bracken together with a high proportion of adventive species, at the expense of the native shrubs. No regenerating eucalypts or *Banksia* were observed in the area. A secondary effect of grazing has been the establishment of extensive closed thickets of *Ulex europaeus* (gorse).

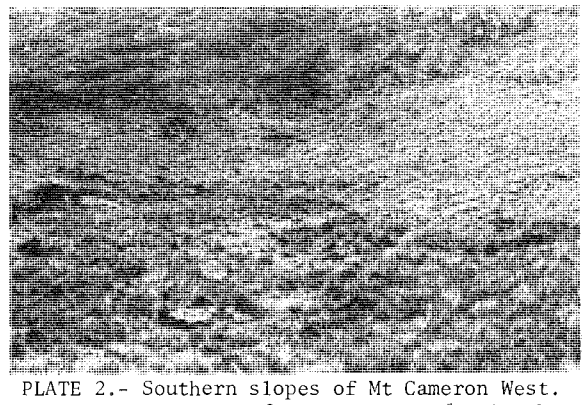

PLATE 2.- Southern slopes of Mt Cameron West. Seral grassland of *Poa* and *Lomandra* in the foreground. The scree is colonized by mats of *Tetragonia*. Terracettes have formed below the relict patch of *Melaleuca ericifolia* scrub in the middle ground.

5. Scree slopes

The steep southern slopes of Mt Cameron West support a mosaic of rocky scree, *Poa* tussock, *Pteridium*, and small thickets of *Melaleuca ericifolia* and *Leptospermum laevigatum*. Parts of the scree slopes are covered by dense hanging mats of *Tetragonia implexicoma*, although most of the lower parts of the scree have been invaded by introduced and seral species such as nettles, thistles and bracken (plate 2).

6. Shrubland

Closed-scrub is found on the stabilised frontal dunes. *Acacia sophorae, Myoporum insulare, Correa alba, C. backhousiana and Leucopogon parviflorus* predominate (plate 4). These species are replaced inland by *Melaleuca ericifolia* which forms dense shrub thickets of low floristic diversity (plate 1). The *Melaleuca* scrub occurs on the slopes of Mt Cameron West, on the exposed and lee slopes of dunes, and on the low-lying,poorly-drained flats surrounding the lagoons. On areas of better drainage, between the foothills of Mt Cameron West and the lagoons, *Melaleuca* is replaced by a closed-scrub of *Leptospermum laevigatum*. This species appears to be actively colonising fire-sere areas of bracken.

Stunted and low-lying *E. viminalis* are scattered through both these shrublands. The presence of dead stags and stumps within the thickets suggests that a more extensive low-open forest of this species may once have occurred in the area.

7. Woodland

Eucalyptus woodlands are poorly represented in the reserve but are present along the eastern boundary. The region near the south-eastern corner carries an open-woodland of *E. viminalis - E. ovata* over a *Poa* grassland and *Lomandra* tussock understorey. *E. obliqua* occurs in the same woodland, but is absent from the reserve area. A small patch of *E. viminalis* woodland over a mixture of bracken, heath and sedges occurs on the lower slopes of the eastern foothills of Mt Cameron West. These slopes grade onto flats carrying a mosaic of sedgeland-heath, and low open (mallee) woodland of *E. nitida*.

8. Aquatic

8.1 Ephemeral lagoons.- The shallow depressions of the dune swales are intermittently flooded, and carry a zoned series of plant associations which reflect the depth and duration of inundation. This zonation ranges from open-herbfields of *Myriophyllum amphibium* in the areas of longest inundation, through herbfields of *Samolus repens - Eryngium vesiculosum* to *Selliera radicans, Nablonium calyceriodes* closed-herbfields or *Distichlis distichophylla* closed-grassland.

8.2 Permanent lagoons.- The larger lagoons all contain permanent water. The two lagoons on the northern boundary, and the large lagoon in the centre of the reserve shelve fairly rapidly, and there is very little development of emergent macrophytes. The vegetation is limited to submerged aquatics such as *Myriophyllum elatinoides*.

These lagoons contrast with those to the south, which contain shallower water and carry extensive reed swamps (plate 3). The chief species present are *Triglochin procera* and *Typha*. *Myriophyllum elatinoides, Myriophyllum amphibium* and a number of unidentified submerged aquatics are also present. The emergent vegetation extends more or less across the entire surface of the lagoons. A dense floating cover of duckweed *(Lemna minor)* and water fern (*Azolla filiculoides*) was present on the larger lagoon at the time of the visit. The density of dead stems on the lagoon indicates that much of the lagoon was once covered in a *Melaleuca ericifolia* closed-scrub (plate 3). The steeper inland sides of the southern lagoons are fringed by a sedgeland of *Restio tetraphyllus* above *Scirpus inundatus*. On the shallower eastern and northern banks of the large lagoon, there is a mosaic of rushes (*Juncus caespiticius*), grasses (*Distichlis*,

PLATE 3.- Shallow lagoon covered with *Triglochin procera* and dead stems of *Melaleuca ericifolia*; Mt Cameron West is in background.

PLATE 4.- Closed heath of *Acacia sophorae* and *Correa spp.* surrounding an outcrop of Precambrian quartzite at the northern end of the reserve. An old duneblow is visible in foreground.

Poa), herbs (*Crassula helmsii, Epilobium sp.*) introduced herbs (*Plantago coronopus, Rumex*) and tussocks of the rush *Juncus maritimus* (plate 3).

This region is heavily trodden and browsed by cattle.

8.3 Riparian.- The banks of the streams and margins of outflows from fresh water soaks in the area provide specialised habitats for the development of sedgelands and semi-aquatic herbfields. The sedgelands are dominated by *Carex appressa* or *Baumea tetragona* on the banks of streams with *Scirpus inundatus* at levels of frequent inundation. The more acidophilous *Restio tetraphyllus* replaces these sedges in backwaters and other regions of standing water. At the shallower margins of streams, herbfields of *Callitriche stagnalis* and the Tasmanian endemic species *Lilaeopsis brownii* occur within sedges and rushes such as *Scirpus inundatus* and *Juncus planifolius*.

9. Acid sedgeland - heath

The eastern boundary of the reserve is flanked by acid sedgeland-heaths developed on the ground water podzols beyond the foothills of Mt Cameron West. These communities lie outside the boundary of the reserve, and only a brief description is given. The area consists of a low-open (mallee) woodland of *E. nitida* over closed-heaths of *Melaleuca squamea, M. squarrosa, Leptospermum scoparium* and *L. glaucescens*. The heath is replaced locally by sedgelands of *Restio complanatus - Lepidosperma filiforme*, or, on sites of badly impeded drainage, by *Leptocarpus tenax* sedgeland.

DISCUSSION

The native vegetation of the reserve is generally similar to other coastal types known to occur along the north-west and west coasts of Tasmania (Macphail *et al.* 1975, Jackson pers. comm.). The distribution of plants appears to be correlated with salinity, drainage, pH and microtopography. However, the vegetation has been extensively modified by burning, grazing and subsequent erosion, and by the past sowing of pasture species.

Vegetation of Mt Cameron West

A provisional scheme which outlines the inter-relationships among the major plant communities of the dunes and their hinterland is presented in fig. 2. The bare sands of the frontal dunes are colonized by species such as *Cakile*, *Spinifex* and *Festuca littoralis*. This partial stabilization allows *Poa* dominated grasslands to establish, together with rhizomatous herbs and succulents. With the subsequent stabilization and increasing humification of the sands, open-heathlands replace the grasslands on sites which are wind-exposed, whilst on sheltered sites of free drainage, *Acacia sophorae* scrub becomes dominant.

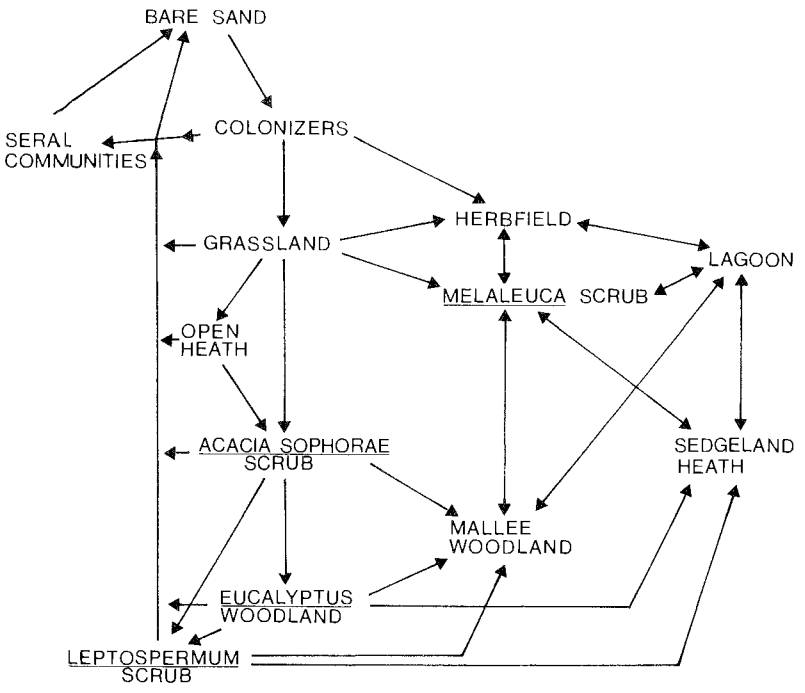

FIG. 2.- Inter-relationships among the plant communities of the dunes at Mt. Cameron West.

E. viminalis woodlands develop in areas where there is protection from salt-laden onshore winds. The understorey of the woodland is variable and *Leptospermum laevigatum* scrub, heaths, bracken, saggs and grasses all become locally prominent. The order of dominance is probably dependent on the fire regime. Fires of relatively low frequency but high intensity favour the development of *Leptospermum laevigatum* scrub (Hazard and Parsons 1977). Medium intensity - medium frequency fires favour heath species, and the grasses and saggs predominate where fires are very frequent and of low intensity. The density of bracken in the understorey varies from a few scattered plants to nearly 100% cover. This variability reflects the opportunist nature of bracken. Bracken can sprout and spread quickly after fire, but soon dies back, creating fuel for the next fire. If the next fire is not intense (i.e. occurs soon after) then grasses etc. can compete, whilst in the absence of fire, heath species will dominate and eventually replace the bracken. In the continued absence of fire, *Leptospermum laevigatum* eventually shades out the other species, and in the long term produces a monotypic stand which is perpetuated by infrequent firing.

Dune swales and areas of impeded drainage support low sedgelands and herbfields on ephemeral wetlands. *Melaleuca ericifolia* swamp scrub and woodlands occur where the

water table is reliable and sufficiently high, such as in lagoons formed where outflows of water are trapped by the dunes.

Inland, the low-lying sands have relatively low pH values, a high organic content and are strongly leached. These ground water podzols support sedgeland-heaths in areas of badly impeded drainage and low-woodlands of mallee-form *E. nitida* on better drained sites.

Destabilization of the dunes occurs when the vegetation is disturbed. Wind funnelling of the underlying sand causes undercutting of the adjacent vegetation until ultimately the whole dune may be exposed and mobilized. To some extent this process occurs naturally, e.g. when triggered by a violent storm. The erosion process may be initiated more readily after burning of the overlying vegetation. It seems probable that aboriginal occupancy of this portion of Tasmania dates from the formation of the coast (Bowdler 1974, Hope 1978). Thus fire has probably always been a feature of the environment of these dunes. However, the degree to which aboriginal fires contributed to dune destabilization is debatable. Dimmock (1957) provisionally ascribed the generally low incidence of of dune blows on Flinders Island to the absence of aboriginals. On the other hand, some early reports of Sandy Cape (to the south of the study area) describe rolling green hills suitable for sheep grazing (Macphail *et al.* 1975). Sandy Cape now consists largely of shifting sands, and the abundance of midden material in the vicinity attests to the frequency of aboriginal use of the area. Similarly, in New Zealand, Wendelken (1974) mentioned coastal areas inhabited by Maoris where burning has been part of the environment for 1000 years, but where excessive movement of sand has only recently become a problem. However, there can be little doubt that stabilized dunes which support a sparse, fire-induced, seral community are inherently more susceptible to destabilization than dunes which are more densely clad.

The advent of European man into the area has contributed to the degradation of the native vegetation in many ways. The most immediately apparent effect has been the clearing of most of the native vegetation and sowing to pasture of the fertile slopes of Mt Cameron West and its foothills.

The agistment of stock has greatly accelerated the erosion of the dunes, through mechanical damage, through over-grazing and through the too-frequent use of fire to provide a 'green pick'. Also, stock simultaneously distribute the seeds of weed species, and maintain conditions suitable for their growth.

The combination of fire and grazing can lead to 'ecological drift' (Jackson 1968), a process in which the chance elimination or promotion of particular species results in a succession of the vegetation towards a disclimax state. The disclimax is maintained by feedback mechanisms. In the present case, the predilection of stock for young regenerating herbs, grasses and shrubs places these species at a selective disadvantage when compared with the less palatable bracken, sedges and saggs. The process is then reinforced by the high fire frequency which favours vegetatively propagating species and annuals at the expense of species which propagate more slowly by seed. Thus, once it is established, the seral community tends to self-maintenance because of the need of graziers to burn off more frequently.

Left to themselves, the transgressive dunes eventually become isolated from their source of sand and stabilize (Kirkpatrick pers.comm.) However, this process may be unacceptable to land managers if the dune first engulfs land suited to grazing. It is probably for this reason that reclamation works have been carried out in the past using marram grass, a species which colonizes and binds free sand very much more rapidly than native grasses.

MANAGEMENT PROBLEMS

The vegetation of the reserve has been considerably disturbed in the past. Recovery should be hastened by the removal of cattle and a reduction in the frequency of fires.

The planting of marram grass is probably the only feasible means of rapid re-establishment of a vegetative cover on the sand drift areas, provided that this is an appropriate technique for management within a State Reserve. Subsequent colonisation by other species already present in the area (*Carpobrotus, Acaena, Cerastium, Laxmannia*) would be reasonably rapid. The blow out areas of exposed coffee rock are currently devoid of vegetation. Natural revegetation of these will be very slow, requiring the aeolian deposition of sand and subsequent colonisation by plants. Areas susceptible to destabilisation should recover once the reserve is fenced, and the cattle removed. The large tracts of gorse on the slopes of Mt Cameron West will require more intensive control methods.

The reserve contains a number of plant species, plant associations and habitats not represented or poorly represented in the present State Reserve system. These include the *Leptospermum laevigatum* scrub and *Plantago bellidioides, Solenogyne bellioides, Nablonium calyceroides* and other lagoon fringe herbfields.

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APPENDIX

PLANT COMMUNITIES OF MT CAMERON WEST

Numbers in brackets indicate the vegetation mapping units which contain these communities.

1. *E. viminalis* - *E. ovata* low-woodland (7)
2. *E. obliqua* woodland (2)
3. *E. nitida* woodland (7.9)
4. *Banksia marginata* open-woodland (4)
5. *Melaleuca ericifolia* closed-scrub (6)
6. *Leptospermum laevigatum* closed-scrub (6)
7. *Acacia sophorae* closed-scrub (7)
8. *Ulex europaeus* closed-scrub (6)
9. *Melaleuca spp. Leptospermum* spp. closed-heath (9)
10. *Calocephalus brownii* - *Olearia lepidophylla* low-shrubland (3)
11. *Tetragonia implexicoma* low-shrubland (2, 3, 4, 5)
12. *Lomandra longifolia* tussock-sedgeland (4)
13. *Restio complanatus* - *Lepidosperma filiforme* sedgeland (9)
14. *Lomandra longifolia* - *Scirpus nodosus* sedgeland (3, 4)
15. *Lepidosperma gladiatum* sedgeland (4)
16. *Leptocarpus tenax* sedgeland (9)
17. *Pteridium esculentum* closed-fernland (3, 4, 5)
18. *Poa poiformis* grassland (3, 4)
19. *Ammophila arenaria* - *Festuca littoralis* grassland (3)
20. *Stipa teretifolia* open-grassland (2, 3, 4)
21. *Distichlis distichophylla* grassland (4)
22. *Carpobrotus rossii* herbfield (1, 2, 3, 4)
23. *Aira caryophyllea* - *Vulpia bromoides* grassland (4)
24. *Plantago bellidoides* - *Solenogyne bellioides* herbfield (3, 4)
25. *Nablonium calyceroides* closed-herbfield (4)
26. *Salicornia quinqueflora* open-herbfield (2)

CHECKLIST OF SPECIES FOR MT CAMERON WEST

The nomenclature for species in the checklist follows Curtis (1963, 1967) and Curtis & Morris (1975) for dicotyledons, and Willis (1970) for monocotyledons and pteridophytes except where authories are given. Endemic species are prefixed by "e", and introduced species by "i" in the checklist.

Seven Tasmanian endemic species were found in the area:- *Restio monocephalus*, *Correa backhousiana*, *Leptospermum glaucescens* and *Lilaeopsis brownii* are fairly widespread and are recorded from a number of other State Reserves. *Nablonium calyceroides* is restricted to the west coast and has been recorded in the West Point and the South-West State Reserves. *Hibbertia hirsuta* is listed as common by Curtis & Morris (1975), but has been recorded only in the Freycinet National Park. *Plantago bellidioides* is not known to occur in any other State Reserve.

PTERIDOPHYTA

Schizaeaceae
Schizaea fistulosa

Dennstaedtiaceae
Pteridium esculentum

Polypodiaceae
Microsorium diversifolium

Azollaceae
Azolla filiculoides

Selaginellaceae
Selaginella uliginosa

Gleicheniaceae
Gleichenia dicarpa, Gleichenia microphylla

Lindsayaceae
Lindsaya linearis

Aspleniaceae
Asplenium obtusatum

Lycopodiaceae
Lycopodium deuterodensum

ANGIOSPERMAE : MONOCOTYLEDONEAE

Typhaceae
Typha angustifolia

Juncaginaceae
Triglochin procera

Potamogetonaceae
Potamogeton australiensis

Gramineae
Distichlis distichophylla, Poa poiformis, i *Poa annua, Festuca littoralis,* i *Holcus lanatus, Stipa teretifolia,* i *Lolium perenne,* i *Ammophila arenaria, Themeda australis,* i *Aira carryophyllea,* i *Vulpia bromoides, Spinifex hirsutus.*

Cyperaceae
Schoenus nitens, Scirpus cernuus, Scirpus nodosus, Scirpus inundatus, Scirpus spp., Baumea acuta, Baumea rubiginosa, Baumea tetragona, Gahnia grandis, Lepidosperma gladiatum, Lepidosperma filiforme, Lepidosperma elatius, Lepidosperma laterale, Gymnoschoenus sphaerocephalus, Carex appressa, Carex gaudichaudiana, Carex fascicularis.

Lemnaceae
Lemna minor

Restionaceae
Restio tetraphyllus, Restio complanatus, e *Restio monocephalus R. Br., Leptocarpus tenax, Hypolaena fastigiata, Calorophus lateriflorus.*

Xyridaceae
Xyris spp.

Juncaceae
Luzula campestris, Juncus articulatus, Juncus caespiticius, Juncus maritimus, Juncus pauciflorus, Juncus pallidus, Juncus procerus

Liliaceae
Lomandra longifolia, Laxmannia sessiliflora, Dianella tasmanica, Dianella revoluta

Iridaceae
Patersonia fragilis

Orchidaceae
Acianthus exsertus, Pterostylis nutans.

ANGIOSPERMAE : DICOTYLEDONEAE

Ranunculaceae
Ranunculus sp.

Cruciferae
i *Cakile edentula*

Pittosporaceae
Pittosporum bicolor, Bursaria spinosa

Caryophyllaceae
i *Cerastium fontanum,* i *Cerastium glomeratum, Colobanthus apetalus,* i *Spergularia rubra*

Geraniaceae
Geranium sp, Pelargonium australe

Rutaceae
Boronia pilosa, e *Correa backhousiana, Correa alba*

Dilleniaceae
Hibbertia acicularis, e *Hibbertia hirsuta*

Violaceae
Viola hederacea

Tremendaceae
Tetratheca pilosa

Oxalidaceae
Oxalis sp.

Leguminoseae
Acacia verticillata, Acacia verticillata var. *ovoidea, Acacia suaveolens, Acacia mucronata, Acacia sophorae, Daviesia ulicifolia, Aotus ericoides, Pultenaea daphnoides, Pultenaea juniperina, Dillwynia glaberrima, Bossiaea cinerea,* i *Ulex europeaeus, Indigofera australis, Kennedia prostrata,* i *Trifolium spp.*

Rosaceae
Acaena novae-zelandiae

Cunoniaceae
Bauera rubioides

Crassulaceae
Crassula helmsii, Crassula sieberana

Droseraceae
Drosera pygmaea, Drosera spathulata, Drosera peltata.

Haloragaceae
Haloragis teucrioides, Haloragis micrantha, Myriophyllum amphibium, Myriophyllum elatinoides.

Callitrichaceae
Callitriche stagnalis

Myrtaceae
Leptospermum laevigatum, Leptospermum scoparium, Leptospermum lanigerum, e *Leptospermum glaucescens, Melaleuca squarrosa, Melaleuca squamea, Melaleuca ericifolia, Eucalyptus ovata, Eucalyptus viminalis, Eucalyptus obliqua, Eucalyptus nitida.*

Onagraceae
Epilobium sp.

Ficoideae
Carpobrotus rossii, Disphyma australe, Tetragonia implexicoma

Umbelliferae
Hydrocotyle sp. Xanthosia dissecta, Eryngium vesiculosum, Apium prostratum, e *Lilaeopsis brownii*

Caprifoliaceae
Sambucus gaudichaudiana

Rubiaceae
Opercularia varia

Compositae
Solenogyne bellioides, i *Bellis perennis, Olearia ramulosa, Olearia lepidophylla, Gnaphalium candidissimum, Gnaphalium luteo-album, Leptorhynchos sp. Helichrysum scorpioides, Helichrysum paralium, Calocephalus brownii,* e *Nablonium calyceroides, Cotula sp. Senecio spp.* i *Cirsium sp.,* i *Silybum marianum, Leontodon leysseri, Sonchus megalocarpus*

Stylidiaceae
Stylidium graminifolium

Goodeniaceae
Se Selliera radicans

Lobeliaceae
Lobelia alata

Epacridaceae
Astroloma humifusum, Leucopogon parviflorus, Leucopogon australis, Leucopogon collinus, Leucopogon virgatus, Leucopogon ericoides, Monotoca glauca, Epacris impressa, Epacris lanuginosa, Sprengelia incarnata

Primulaceae
i *Anagallis arvensis, Samolus repens*

Convolvulaceae
Dichondra repens

Plantaginaceae
i *Plantago lanceolata,* i *Plantago coronopus,* e *Plantago bellidioides*

Chenopodiaceae
Chenopodium glaucum ssp. ambiguum, i *Beta vulgaris ssp. maritima, Salicornia quinqueflora.*

Polygonaceae
i *Rumex brownii,* i *Rumex acetosella, Muehlenbeckia adpressa.*

Lauraceae
Cassytha glabella, Cassytha pubescens

Proteaceae
Banksia marginata

Thymelaeaceae
Pimelea sp.

Euphorbiaceae
Amperea xiphoclada, Poranthera microphylla

Urticaceae
Urtica incisa, *Urtica urens*

Casuarinaceae
Casuarina monilifera