

## FEATURES OF HAWKEN'S LAGOON CONSERVATION AREA AND ADJOINING NATURAL AREAS

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### Background

Throughout New Zealand, dunes are among the most severely modified of ecosystems through the activities of people. Coasts of Wanganui Conservancy are no exception: fires, grazing, pine plantings, urban developments, roading, off-road vehicles, wild animals, rubbish dumping, and spread of weeds are some of the problems for the native plants and animals of the sand country.

There is no unmodified native dune vegetation on the mainland, and even little-modified examples are rare. One of these rare examples lies within 201 ha of dunes managed by the Department of Conservation as "Hawken's Lagoon Conservation Area" on the west bank of the Waitotara River mouth. These dunes are fenced, as is the adjoining estuary which is administered as part of the coastal zone by Taranaki Regional Council. The adjoining Waitotara River estuary expands the protected natural area in an ecological and landscape sense. Also increasing the area with some form of protection are a fenced marginal strip that extends the Hawken's Lagoon C.A. up-river and, on the eastern bank of the river, the mostly grazed 997 ha Nukumaru Recreation Reserve, administered by South Taranaki District Council.

### Indigenous flora and fauna

Hawken's Lagoon C.A. is smaller than Wanganui Conservancy's other major area of protected dunes, Whitiau Scientific Reserve at the Whangaehu River mouth (250 ha), but it has some features not present in the latter reserve. These include a dune lake ("Hawken's Lagoon" or Paroa) with reed beds and swamp margins, and an adjoining estuary that is unaffected by ~~thermal~~ <sup>volcanic</sup> activity. Of the two protected dune areas, only Hawken's Lagoon C.A. has permanent water which provides habitat for resident Australasian bitterns and NZ dabchick, with seasonal waterfowl that include grey teal and up to 100 NZ shoveler duck. Among its aquatic plants are raupo, a dwarf milfoil (*Myriophyllum pedunculatum*), the herb *Gratiola sexdentata*, duckweeds, and floating red water-fern (*Azolla filiculoides* ssp. *rubra*).

Extensive periodically submerged sand flats have large populations of sand gunnera (*Gunnera dentata* var. [*G. arenaria*], a herb *Limosella lineata*, and the sand flat milfoil (*Myriophyllum votschii*), species less common at Whitiau. *Eleocharis neozelandica* is not known at Whitiau, but damp sand flats at Hawken's Lagoon hold a localised but apparently vigorous population of this nationally "vulnerable" sedge.

The number of native vascular plant species known in the reserve is currently 64 (Whitiau has 119). These include healthy populations of widespread sand country plants like spinifex, well-known for its spherical, tumbling seed heads, and the yellow sand sedge, pingao, which is a valued plant for Maori weaving. Although pingao is a declining species nationally, it is quite common here. Native shrubs are much less common and varied than at Whitiau. Only the shrub daisy, tauhinu, is common. There are small numbers of sand coprosma and manuka.

Hawken's Lagoon has two species of plants rated as nationally threatened. The rarest is *Sebaea ovata*, a yellow-flowered relation of gentians, which has a "critical" status. It was thought to be possibly extinct in New Zealand until it was found at Whitiau in 1989, and a few plants at Hawken's Lagoon in 1991. The other is the sedge *Eleocharis neozelandica*.

The fernbird, a rare species in the southern North Island, occurs in tall vegetation on the damp sand flats near the lake. Water birds, including white heron, eastern bar-tailed godwit, banded dotterel, shags, gulls, ducks and terns, use the river and its margins, and waders such as black-fronted dotterel and spur-winged plover feed in the shallow water of temporary wetlands between the dunes.

Near the northeast corner of the reserve, the lowest 200 m or so of Waiau Creek is tidal and joins the Waitotara River. Ungrazed grassy banks of Waiau Creek are a known spawning site for inanga. The creek rises in dune lakes several kilometres inland and runs through pasture for most of its length.

Almost nothing is known of the smaller native animals in the Hawken's Lagoon C.A, though in recent summers, larvae of the convolvulus hawk moth have been common on plants of sand convolvulus. These caterpillars are green or brown and grow to 10 cm long, with a red horn on the hind end. They were called anuhe or torongu by the Maori, and regarded as a pest as they attacked kumara crops.

### Damage to natural features

Because most of the conservation area's native plants are of short stature and often rather sparse, there is ample opportunity for exotic plants to invade both the dry dunes and damp hollows. Some like marram grass are too common for control to be an option. Pampas grass is seen as the worst immediate but manageable threat. In other parts of the sand country, pampas has been a rapid invader of damp dune hollows. Boxthorn and gorse are obvious woody weeds, while some exotic pasture plants are very invasive, including Mercer grass on swampy lake margins and tall fescue on damp sand flats. Some common invasive weeds of the district's sand country are not yet in the conservation area. These include holly-leaved senecio (*Senecio glastifolius*) and strawberry clover (*Trifolium fragiferum*).

There is obvious evidence of rabbits browsing native plants. Rabbits may be reducing the reproductive potential of the threatened sedge, *Eleocharis neozelandica*, by continually removing its flower heads. Possums may also be feeding in the area. The effects of introduced predators here is unknown, but mustelids (stoat, ferret and weasel), cats, dogs, hedgehogs and rats are all likely to be present.

Compared with many of the dune areas of the district, Hawken's Lagoon C.A. has generally a low incidence of illegal off-road vehicle use.

### **Totara stumps**

Although outside Hawken's Lagoon C.A., the sub-fossil totara stumps in the Waitotara River estuary are a well-known landscape feature. Their origins are still a matter of scientific debate, but they are known to be about 1100 years old. Because the trunks are all vertical, it is assumed that they represent a totara forest which was inundated by either sand dunes or river silt, and the aerial parts of the trees rotted away.

### **Management**

To protect the important features of what became Hawken's Lagoon C.A. and the adjoining estuary, in 1986 the Department of Lands and Survey extended existing fences along the Waitotara River banks to exclude domestic stock. The Department of Conservation has undertaken some weed control, especially for gorse and boxthorn, and control trials on pampas grass.



## **FUTURE MANAGEMENT CONSIDERATIONS**

1. Appropriate legal status of Hawken's Lagoon Conservation Area
2. An alternative formal name for the area
3. Future tenure of the grazed access (currently DoC issues a grazing licence)
4. Enclave of Maori land in the Conservation Area
5. Camping in the reserve (especially in white-baiting season)
6. Gamebird hunting/maimai construction
7. Weed control/surveillance
8. Re-vegetation (supplementing of riparian strip/possible restoration in the C.A.)
9. Management of white-bait spawning sites in Waiau Stream
10. Threatened species management (flora and fauna)
11. Lack of knowledge of much of the area's flora and fauna (including exotic animals)
12. Management of a dynamic natural system / "good neighbour" considerations
13. Conservation of Waitotara Estuary totara stumps
14. Vehicle access to the dunes/estuary/beach
15. Access and tracks for people on foot
16. Interpretation

