TOWARDS TOMORROW'S LANDSCAPES – CHRISTCHURCH CITY COUNCIL'S ROLE IN MANAGING PAST, PRESENT AND FUTURE HABITATS ON THE PORT HILLS.

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INTRODUCTION

The Port Hills are the northern flank of a volcanic complex that formed Banks Peninsula 10–12 million years ago. Today the Port Hills divide the Canterbury Plains and Lyttelton harbour and provide a unique living history of natural and cultural processes. The habitats and plants of the Port Hills tell a story that forms the basis of the Christchurch City Council's aims to conserve and promote this natural history and manage future habitats on the Port Hills.

The Christchurch City Council (CCC) plays an active role in the acquisition of land on the Port Hills to retain land with conservation and recreation values in perpetuity for future generations. Currently about 15% of the total area of the Port Hills is owned by the Christchurch City Council. Land is purchased on a "willing seller-willing buyer basis" based on ecological, recreation, historic and landscape principles (Port Hills Regional Park Acquisitions Strategy, Christchurch City Council, 1999). Consideration of conservation values on adjacent private land is important when purchasing reserves to promote optimal habitat and ecological linkages between the harbour and the plains.

The Port Hills Ranger Service (CCC) manages 1430 ha of reserve land on the Port Hills. The area covers three distinctive habitats: rock outcrops, tussock grasslands and remnants of podocarp/hardwood forest. Each habitat evolved over a different time period, is exposed to different impacts and therefore has different management requirements.

ROCK OUTCROP HABITATS

Plants of the rock outcrop habitats on the Port Hills reflect a long natural history.

Banks Peninsula was a volcanic island for nearly 12 million years of its existence, until approximately 20,000 years ago, the end of the last ice age, when the outwash gravels formed the Canterbury Plains connecting Banks Peninsula to mainland New Zealand.

During this long period of isolation, three plant species evolved and survive today only among the rock outcrops in Banks Peninsula region. These endemic species include: Banks Peninsula hebe (*Heliohebe lavaudiana*), Banks Peninsula blue tussock (*Festuca actae*) and *Hebe strictissima.*

The rock outcrops also provide protected habitat for many plants away from grazing and burning. Rare and threatened species such as blanket fern (*Pleurosorus rutifolius*), pygmy button daisy (*Leptinella nana*) and Lyttelton forget-me-not (*Myosotis australis var lytteltonensis*), occupy crevices and areas under overhangs and seepages. Many other plants such as orchids (*Earina autumnalis*), iceplant (*Dysphyma australe*), NZ linen flax (*Linum monogynum*), NZ iris (*Libertia ixiodes*), ferns and shrubs occupy niche habitats on and around the rock outcrops.

Management

A database for weed management has been implemented to prioritise and co-ordinate effective long-term weed control on the Port Hills. In addition to controlling weeds as required by the Regional Pest Management Strategy, control of other weed species effecting conservation values in key habitats have been prioritised.

The rock outcrops are one of three key habitats. A number of weed species threaten the limited niche habitats among pockets of soil in the rock crevices: fennel, spur valerian, Californian poppy, pigs ear, ivy, wall flower, broom, gorse, boneseed, boxthorn and hawthorn.

Control of weed species has been initiated on rock outcrops in six reserves: Coopers Knob, Castle Rock, Heathcote Valley, the Tors, Mt Cavendish and Scarborough. Removal of weeds on the rock outcrop itself is the first priority to maintain immediate habitat, followed by clearance of weeds in a 20m buffer zone around the outcrop. Scattered weeds in adjacent areas can then be targeted. Control by cutting and painting the stems of the weed with chemical is the preferred method to minimise damage to surrounding plants.

Education

Rock climbing on the Port Hills has been a popular recreational pursuit since the early 1980's. At this time, the style of climbing threatened plants and rock habitat. Climbers cleaned soil and removed plants from rock cracks to place climbing hardware for protection from falling.

Today the style of climbing has changed in some areas. The climbs are harder and the popularity of placing permanent bolts for climbing protection has meant a shift from climbing in rock crevices to climbing on the face of the rock. Soil

and plants remain intact in the rock crevices and the climbing routes can be more appropriately directed to reduce impact.

Through education, recreation and conservation can co-exist. The rock climbers are a good example. Interpretation panels, labelling of individual plants on the rock outcrops and direct contact with tutors and climbing students from the Christchurch Polytech's outdoor recreation course, has promoted greater awareness of the botanical value of the rock outcrops. Volunteers from the Canterbury Mountaineering Club and Polytech work under the guidance of ranger staff to undertake weed control on and around the outcrops. Such work is mutually beneficial to climbers to maintain their recreational asset and to the Port Hills Ranger Service to have qualified assistance to access weeds in otherwise inaccessible areas. Co-operation such as this promotes community responsibility for conservation values, and long-term appreciation and protection of natural environments by recreational users.

PODOCARP/HARDWOOD FOREST HABITATS

The podocarp/hardwood forest remnants on the Port Hills provide examples of vegetation that established in the last 20,000 years, at the end of the last ice age. Specimens of totara, matai and kahikatea in remnants today have been aged between 500–600 years old with good regeneration of seedlings in some reserves. In the higher rainfall areas west of the Sign of the Kiwi where grazing has been excluded, natural regeneration is taking place with bracken cover succeeding through grassland, and species such as karamu (*Coprosma robusta*), divaricating coprosma, lancewood (*Pseudopanax crassifolius*) and flax succeeding through the bracken.

Healthy populations of tree fuchsia are scattered among the podocarps. Of botanical interest is fierce toothed lancewood (*Pseudpanax ferox*), green flowering mistletoe (*Ileostylus micranthus*), and climbing groundsel (*Brachyglottis sciadophila*).

Management

Most of the forest remnants are in isolated patches. However, because many adjacent landholders, including the Summit Road Society (Ohinetahi bush), the Gamma Foundation (Omahu bush), Rapaki landowners (Taukahara) and other individual landowners, have similar ideals to protect existing forest remnants and to promote natural regeneration, there is greater potential for linking forest remnants and optimising habitat size.

Plant and animal pest control programmes are fundamental to conserving the long-term viability of these small remnants. Co-ordinated pest management with

Environment Canterbury and adjacent land owners to control goats, deer, pigs, possums, mustelids and rodents is essential to the successful regeneration of these forests.

The greatest plant pest threat to the forest remnants today is old mans beard which has the destructive capability to smother mature forest. A rigorous control programme is in place to reduce seeding of old mans beard. Other bird-dispersed species such as cotoneaster, holly, hawthorn, elderberry, currant and Himalayan honeysuckle are spreading into the reserves. The infestations and their sources are controlled where possible. In Victoria Park, these species are gradually being replaced with native species that fruit in the same season to maintain food sources for birds.

Education

Environment Canterbury, Christchurch City Council and the Department of Conservation have published weed brochures that are available at visitor centres, council service centres, field days and community talks to inform the public of weeds and garden plants that are naturalising. There is growing public support with individual volunteers and groups willing to help with animal and plant pest control in the reserves.

TUSSOCK GRASSLAND HABITATS

The change from podocarp forest cover to tussock grassland cover on the Port Hills is recent in ecological terms and evolved through natural and human influence – climate and human induced fires, and major forest clearance with burning and oversowing of pasture species since European colonisation. Conservation of the tussock grasslands represents a period of time where humans have influenced the creation of a natural resource and used that resource over the last 150 years for pastoral farming.

Management

Grazing is an important management tool used to reduce exotic grass competition, which inhibits tussock vigour, and to reduce woody weed establishment. Chemical control of woody species including gorse, broom, sweet brier, boxthorn and hawthorn is planned for annually, and prioritised in areas where tussock cover is good. Improved subdivision fencing and reticulated water also helps to gain more effective grazing control.

Education

The public appreciate and value the expansiveness and open vistas from the tussock clad hills and the tawny pastoral backdrop it creates for the city. Through ranger contact with school groups, recreational users, community talks,

interpretation in the visitors centre, and volunteer programmes the public gain a greater appreciation of the origin, uniqueness and maintenance requirements of this recently formed habitat.

FUTURE LANDSCAPES

The key priority for management on the Port Hills is to protect and maintain the natural values of existing habitats – the rock outcrops, podocarp forest remnants and tussock grasslands. One secondary ecological objective is to optimise forest habitat with active restoration planting in some of the lower northern valleys of the Port Hills, with flax plantings continuing up through the valleys to connect with forest remnants on the Lyttelton side of the Port Hills. This has the dual purpose of creating linkages between the harbour and the plains and protecting water and soil values in the catchments.

Restoration effort is prioritised in areas where habitat will be optimised by connecting with existing forest remnants. For example Bowenvale and Huntsbury valleys connect with larger forest remnants in Sugarloaf Reserve and Taukahara on the south side of the crater rim, linking the inner harbour with the Heathcote River. Bowenvale and Huntsbury valleys also include small pockets of remnant podocarp forest in Bush Head and Dry Bush.

Education

Over the last 3 years 15 000 plants have been planted by volunteers. Individuals and groups have returned each year to plant in winter and maintain the plantings in spring and autumn. Contact with over 250 adults from tramping groups, education groups, businesses such as MacPac, service groups and community/residents groups has provided opportunity for the public to have hands on experience and appreciation of the indigenous flora of the Port Hills.

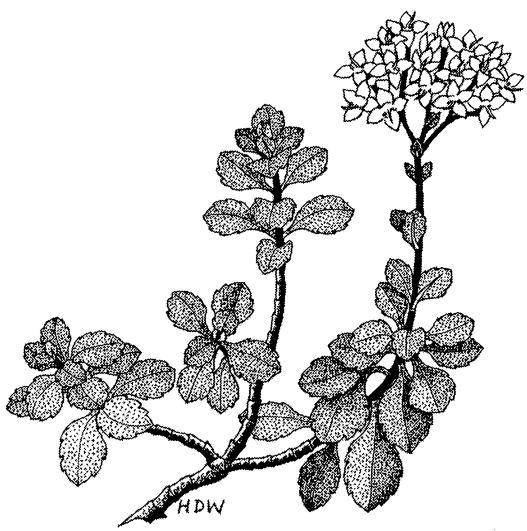
CONCLUSION

The City Council reserves on the Port Hills are managed by the Port Hills Ranger Service and well supported by the public – actively through volunteer input and education programmes and indirectly through appreciation of the recreational environment.

This effort to protect a natural resource adjacent to Christchurch city is also supported by co-operation with other agencies including the Department of Conservation, Environment Canterbury, local iwi, and the Summit Road Society to optimise plant and animal pest control effort and maintenance of key biodiversity values. Working in with neighbouring landowners also improves

common management goals in pest control and opportunities to maximize long-term restoration effort.

The long-term goal is to continue to maintain and enhance the natural environments of the Port Hills, and to continue to develop public appreciation of these key values and to raise people's awareness of their role in the future landscapes and biodiversity of the Port Hills.



Banks Peninsula sun hebe *Heliohebe lavaudiana*. The genus *Heliohebe*, with five species, is unique to the Canterbury/Marlborough region. *H. lavaudiana* is particularly significant for Canterbury Botanical Society members – it is endemic to Banks Peninsula, and especially attractive in October when the low-growing shrubs grace rock outcrops with intermingled pink buds and white flowers. (del. Hugh Wilson).