

SECTION 13.10 INDIGENOUS VEGETATION AND HABITATS OF INDIGENOUS FAUNA DISTRICT WIDE ACTIVITY

13.10.1 INTRODUCTION

The Resource Management Act requires Council to recognise and provide for the protection of areas of significant indigenous vegetation and habitats of indigenous fauna. In addition, Council is required to have regard to the intrinsic values of ecosystems, and the maintenance and enhancement of the environment.

Historically, human habitation has resulted in most of Hastings District's natural landscape being modified, mainly through the clearance of large areas of indigenous vegetation for pastoral farming. This increases the importance of protecting those remaining areas of native forest and wetlands. Many significant areas within the Hastings District are already in the ownership of the Department of Conservation and therefore legally or physically protected by them by way of covenants, reserves or forest parks. However, of the remaining areas of remnant native forest and wetlands outside of the Conservation Estate, the majority do not have any legal or physical protection and there is therefore little certainty of protection for these relatively few remaining significant natural areas.

A number of activities have the potential to adversely affect remaining indigenous vegetation and fauna habitats, and geological sites. Such activities and their effects include uncontrolled stock grazing which thin out the forest, and compact peat land surrounding wetlands, and the fragmentation of remnant native forest and wetland areas through clearance or reclamation. Other threats include feral animals, domestic stock grazing, invasion of weeds, continuing drainage, erosion and farming. The majority of the areas of remnant forest and wetlands in the District are not being actively managed in a way that would ensure their continued existence and enhancement. As a result, a number of areas may be becoming degraded, with the loss of habitats for indigenous fauna.

The Department of Conservation has identified 58 Recommended Areas for Protection (RAP) within the Hastings District under the Protected Natural Areas Programme. These areas are the most representative of indigenous flora and fauna, distinctive ecosystems and landscape within each of the ecological districts in the District. RAP sites are selected based on criteria such as rarity, diversity, representativeness, naturalness, size, fragility and significance.

The District Plan recognises the need to remedy adverse effects on District biodiversity values, indigenous vegetation and habitats of indigenous fauna, with a view to enhancing biodiversity as well as maintaining existing values. Provisions included in this section of the Plan are, however, voluntary, and initially directed towards avoiding the further loss or degradation of the natural environment. Landowners are encouraged to protect areas of indigenous vegetation and habitats of indigenous fauna, motivated by a range of tangible incentives to do so, such as rates relief and subdivision opportunities.

Council also recognises alternative methods of protection such as education and the provision of information. Regulatory methods are not generally considered to be appropriate until further investigation and consultation is undertaken. Future initiatives directed at the positive enhancement of the natural environment will also require greater understanding of the pressures and threats to the environment and the commitment by the community to a pro-active approach to its enhancement.

13.10.2 RESOURCE MANAGEMENT ISSUES

- ***Previous Modification of the Natural Environment has compromised the biodiversity of indigenous species and ecosystems within the District, and there remains a potential threat to the remaining natural areas.***

Human habitation and land development has resulted in most of Hastings District's natural landscape being modified. Notably large areas of indigenous vegetation (in the lowlands in particular) were cleared to make way for pastoral farming. Vegetation clearance, stock grazing and weed invasion can also have adverse effects on the natural areas and biodiversity of the District. Today there are very few areas of remnant indigenous vegetation remaining. This increases the importance of protecting those remaining areas of native forest and wetlands.

Council has a responsibility to take into account the effects of activities on the indigenous species in the District, their genetic diversity and the natural habitats and ecosystems that support them. Of the remaining areas of remnant native forest and wetlands outside of the Conservation Estate (the latter being managed by the Department of Conservation) the majority do not have any legal or physical protection. There is little certainty of protection for these relatively few remaining significant natural areas, and in most cases, conservation and preservation is entirely at the discretion of the landowner. The lack of physical protection around the remaining natural areas (e.g. stock-proof fencing) also means that some land use activities, such as uncontrolled grazing, are a significant threat to habitat values.

- ***The majority of the areas of remnant forest and wetlands in the District are not being actively managed in a way that would ensure their continued existence and enhancement.***

Although these areas can be considered as 'natural' their continued survival may be dependant upon appropriate management programmes. This is because a number of areas are becoming degraded with the loss of habitats for indigenous flora and fauna. The lack of adequate control over animal and plant pests is a significant factor in the degradation of remnant native forest.

- ***Further information and monitoring of Natural Areas needs to be undertaken.***

There are some databases available on indigenous vegetation and fauna within Hastings District but these are no longer up to date because the sites to which they relate have not been re-surveyed in recent years. The validity of such data is therefore questionable particularly in relation to:

- the continued existence of sites;
- their significance and quality;
- current threats;
- the current level of protection.

- ***Some unsustainable land use practices have the ability to adversely affect some natural, cultural or historic areas.***

A number of activities have the potential to adversely affect remaining indigenous vegetation and fauna habitats and geological sites. Such activities and their effects include: pastoral activity, the fragmentation of native forest and wetlands through reclamation, and the effects of farm run off on downstream water quality.

- ***The establishment of Reserve Management Plans for reserves in the District.***

Where reserves are established under the Reserve Act 1977 they are each required to have a Reserve Management Plan. These plans establish the scope of activities allowed on these reserves and must be in accordance with the purposes for which the reserves are

classified under the Act. These plans are developed in consultation with relevant community groups and must be approved by the Minister of Conservation. It is important that the District Plan recognises the role which Reserve Management Plans have in managing the scope of activities that can be established on reserves.

- ***The opportunity for landowners to undertake the voluntary setting aside of land for conservation purposes.***

The Queen Elizabeth II Trust Act 1977, the Reserves Act 1977 and the Conservation Act 1987 all provide for individuals to voluntarily set aside land for conservation purposes. This enables land to be protected in the public interest without the need for public acquisition. The Council together with other statutory authorities will need to adopt measures that encourage and support individual landowners taking such initiatives.

13.10.3 OBJECTIVES

- **INO1** *To provide access to recreation facilities for the community through their provision and distribution throughout the District.*
- **INO2** *To protect areas of the coastline and the margins of rivers, lakes and streams that are identified as being of significant, natural, cultural, or recreational value.*
- **INO3** *To protect and encourage the protection of areas of significant indigenous vegetation, significant habitats of indigenous fauna and significant geological sites.*
- **INO4** *To maintain and enhance the biodiversity of indigenous species and their natural habitats and ecosystems that support them.*

13.10.4 POLICIES

- **INP1** **Establish a Natural Areas Information Base containing information on the type, location, level of significance, vulnerability, condition and protection status of indigenous vegetation, habitats of indigenous fauna and geological sites in the District.**

Explanation

The Council will work with other agencies to establish a Natural Areas Information Base. This will identify those areas which have been identified as being of significance in the District and which warrant monitoring, investigation and protection.

- **INP2** **Regularly monitor the status of land identified in the Natural Areas Information Base to assess the condition of areas of significant indigenous vegetation, significant habitats of indigenous fauna, and significant geological sites.**

Explanation

The Council will work with other statutory bodies to monitor the status of its Natural Areas Resource and in particular the success of the policies adopted through its District Plan.

- **INP3** **Encourage the protection of areas of indigenous vegetation, habitats of indigenous fauna (including wetlands), and geological sites by providing a range of incentives for their protection.**

Explanation

The Council will encourage the voluntary setting aside and protection of areas of indigenous vegetation, habitats of indigenous fauna and geological sites within the District, particularly those areas identified as Recommended Areas for Protection (RAP) and included in Appendix 13.10-1 and significant Geo Preservation sites identified in Appendix 13.10-2. The subdivision of Conservation Lots will enable landowners to develop additional houselots where land identified in these Appendices is protected. (See Section 15.1.8.2 of the District Plan). In addition Council will consider under the Rating Powers Act 1988 to postpone or remit rates where land is voluntarily set aside or protected.

- INP4 Maintain and protect areas of significant indigenous vegetation and habitats of indigenous fauna (including wetlands) (as identified in Appendix 13.10-1) from being adversely affected by vegetation clearance activities.**

Explanation

The District Plan introduces rules that seek to protect areas in the list of areas of significant indigenous vegetation and habitats of indigenous fauna from activities, which may adversely affect their significant status.

Because an area is 'significant', does not automatically mean that no activity can take place on site. Council is required to exercise its statutory obligations and may place conditions on an activity and the use of a significant area through the resource consent process, in order to maintain and protect the significant indigenous vegetation and habitats of indigenous fauna (including wetlands) in the District.

- INP5 Include interim rules to protect areas of significant indigenous vegetation and habitats of indigenous fauna (including wetlands) not identified in Appendix 13.10-1 from being adversely affected by vegetation modification activities. This Policy and the associated rule (in 13.10.7. 2) will not be required when Appendix 13.10-1 is updated (and beyond challenge) to include the additional significant sites identified as a result of completing the Natural Areas Information Base for the whole District.**

Explanation

Clearance of this vegetation is controlled through district plan rules. It is recognised however that Appendix 13.10-1 does not currently list all significant areas. The information is based largely on the Department of Conservation's Recommended Areas for Protection, which have yet to be completed for the whole of the District. Also RAPs do not cover all of significance under the RMA. Through the process of establishing a Natural Areas Information Base identified in INP1 above, it is anticipated that Council will notify an updated schedule of areas of significant indigenous vegetation by 2007.

In the interim period while the processes in Policy INP1 are being completed, Council has included a set of interim provisions. These provisions will enable an activity in an unscheduled area to be assessed on a case by case basis in order to establish whether the vegetation concerned is 'significant' and, if it is significant whether or not the effects of an activity should be allowed.

- INP6 Control the adverse effects of exotic species on the indigenous vegetation and fauna within the District.**

Explanation

Farmed exotic species are frequently the source of feral pest populations, both as a result of escapes and from illegal liberations. Deer, goats and mustelids can pose a significant threat to the long term viability of ecosystems and indigenous flora and fauna within the District if not properly controlled by adequate security. The provisions within the Plan will work alongside the provisions in the Wild Animal Control Act 1977 to ensure that the adverse effects of exotic species on the environment are avoided, remedied or mitigated.

13.10.5 METHODS

The Objectives and Policies will be implemented through the following Methods:

- **Hastings District Plan**

Indigenous Vegetation and Habitats of Indigenous Fauna DWA (Section 13.10): The Indigenous Vegetation and Habitats of Indigenous Fauna District Wide Activity identifies the areas of significant indigenous vegetation and habitats of indigenous fauna in the District where Council has identified that it will provide incentives and rules for the protection of them.

Subdivision and Land Development (Section 15.1)

Conservation Lots: These rules provide for the creation of a separate title containing significant areas of indigenous vegetation and/or wildlife habitat (including wetlands on land identified in the List of Significant Vegetation, Habitats and Geological Sites - See Appendix 13.10-1) and an associated house site in return for the legal and physical protection in perpetuity of the nominated vegetation or other significant feature.

Rural, Plains, Rural Residential, Residential, and Special Character Zones (Sections 5.0, 6.0, 7.0, 8.0 and 11.0): Rules are included in these Zones to ensure that the farming of species with recognised pest potential, such as goats, deer and mustelids, is controlled to prevent escaped animals impacting on the indigenous flora and fauna of the District.

- **Hastings District Council Annual Plan**

For Council initiated and funded works for the provision of reserves and the maintenance, improvement or development of them.

- **Reserves Act 1977 and Reserve Management Plans**

These determine the scope of activities that can be established on reserves which are approved by the Minister of Conservation and outline the management regime necessary to provide for the ongoing use and enjoyment of the reserve.

- **Hastings District Reserves Development Strategy**

This identifies requirements in the District for the establishment, development or improvement of reserves over the next 10-20 years

- **Natural Areas Information Base**

Data from the Protected Natural Areas (PNA) Programme, Wetlands Resource Inventory (WERI), Sites of Special Wildlife Interest (SSWI), and the New Zealand Geological Society's Geopreservation Inventory will form the core of the Information Base. The District Plan identifies those sites drawn from the Department of Conservation's Protected Natural Areas

Study that have been identified as Recommended Areas for Protection (RAP) sites. These are listed in Appendix 13.10-1. Further details on each RAP site can be obtained from the Department of Conservation Ecological District Reports.

Geopreservation sites identified in the District are recorded in Appendix 13.10-2. In addition applications for land use and subdivision consent will be required to include information on the type, location, approximate area and protection status (e.g. whether fenced off or not) of any known areas of indigenous vegetation, habitats of indigenous fauna, wetlands, and geological sites on the land subject to the application. This will provide a further means of obtaining information to augment and update the Natural Areas Information Base.

- **Reserves Act 1977, Queen Elizabeth National Trust Act 1977**

Both of these pieces of legislation provide for the voluntary setting aside of land by private individuals. The Council will endeavour to make the community more aware of these opportunities particularly landowners in areas identified by Appendices 13.10-1 and 13.10-2 of the District Plan.

- **Rating Powers Act 1988**

Where land is voluntarily protected for natural, historic or cultural conservation purposes, set aside and legally and physically protected or classified as an esplanade reserve, Council may utilise its powers under the Rating Powers Act 1988 to grant rates relief.

- **Voluntary Mechanisms**

Council will facilitate and promote the voluntary protection of areas of indigenous vegetation and habitats of indigenous fauna within the District. Existing and prospective landowners will be identified and informed of the voluntary methods available for protecting these areas and the benefits of retaining and enhancing these areas to maintain the biodiversity within the District.

13.10.6 ANTICIPATED OUTCOMES

It is anticipated that the following specific outcomes will be achieved:

- Improved protection of areas of significant indigenous vegetation, significant habitats of indigenous fauna, and significant geological sites.
- Maintenance and enhancement of the biodiversity of indigenous plant and animal species within Hastings District and the natural habitats and ecosystems that support them.
- Joint partnership of landowners with the District Council and wider community to achieve conservation objectives.
- A greater public awareness of the type, location, significance and vulnerability of indigenous vegetation, habitats and geological sites and available methods of protection.

13.10.7 RULES

The activity status and Performance Standard requirements provided for in rules of this District wide activity may be modified by the specific provisions of individual Resource Management Units (RMUs). It will be necessary to check first whether the activity is located within a RMU. Any activity must first comply with the RMU provisions before applying the following rules.

13.10.7.1 PERMITTED ACTIVITIES

The following activities shall be Permitted in any zone in the District, provided that they comply with the General Performance Standards and Terms in Section 13.10.8.

- INDIGENOUS VEGETATION MODIFICATION OUTSIDE OF ANY AREA IDENTIFIED IN APPENDIX 13.10-1 AND WHICH MEETS THE PERFORMANCE STANDARDS AND TERMS IN 13.10.8.

13.10.7.2 RESTRICTED DISCRETIONARY ACTIVITIES

- (a) Applications for Restricted Discretionary Activities will be assessed and conditions may be imposed in relation to those matters identified in Section 13.10.9 that Council has restricted its discretion over.
- INDIGENOUS VEGETATION MODIFICATION WITHIN ANY AREA IDENTIFIED IN APPENDIX 13.10-1.
 - THE FOLLOWING RULE SHALL APPLY UNTIL SUCH TIME AS AN UPDATED APPENDIX 13.10-1 BECOMES OPERATIVE (SEE POLICY INP5):
 - ANY INDIGENOUS VEGETATION CLEARANCE ACTIVITY THAT FAILS TO MEET ONE OR MORE OF THE GENERAL PERFORMANCE STANDARDS AND TERMS IN SECTION 13.10.8.

13.10.8 GENERAL PERFORMANCE STANDARDS AND TERMS

The following General Performance Standards and Terms apply to all Permitted Activities.

13.10.8.1 INDIGENOUS VEGETATION MODIFICATION

Indigenous Vegetation Modification may not take place in an area which:

- (a) Is an area of 5 hectares or greater which has an actual or emerging predominance of indigenous tree species of any height; or
- (b) Any area of woody indigenous vegetation containing tree species, which attain at least 30 cm diameter at breast height at maturity, and is either;
- (i) over 1 Ha and with an average canopy height over 6 metres; or
 - (ii) over 5 Ha of any height
- (c) Contains indigenous trees over 100 years old, unless the sum of all areas of modification is less than 1000m² in any 10 year period; or
- (d) Is a wetland over 100m² in area with an average width of at least 5m; or
- (e) Is over 100m² in area within the coastal environment.

13.10.9 ASSESSMENT CRITERIA FOR RESTRICTED DISCRETIONARY ACTIVITIESExplanation of Assessment Criteria

For Restricted Discretionary Activities, the Council has restricted its discretion over the following matters.

- (a) The significance of the affected indigenous vegetation or habitat of indigenous fauna in terms of ecological, intrinsic, cultural or amenity values;
- (b) The extent to which an area of affected indigenous vegetation or habitat of indigenous fauna and its inter-relationship with other habitats or areas of indigenous vegetation represents or exemplifies the components of the natural diversity of a larger reference area. For example, the representation of the current natural diversity of an ecological district, or representation of the original natural landscape.
- (c) The sustainability of the habitat or area of vegetation proposed to be modified or damaged or of any adjoining habitat of vegetation to an area proposed to be affected;
- (d) Whether any affected area of indigenous vegetation is naturally occurring or has been artificially created;
- (e) The degree to which the vegetation or habitat is threatened or is uncommon in the ecological district within which it is located.
- (f) Whether any affected area contains a vegetation type of species of flora or fauna that is regionally rare or threatened as identified in Appendix 13.10-2.

SIGNIFICANT VEGETATION, HABITATS AND GEOLOGICAL SITES
Recommended Areas for Protection (RAPs) under the Protected Natural Areas (PNA)
Programme

REF. NO	SITE NAME	MAP NO.	DESCRIPTION	MODIFIERS/ THREATS	FRAGILITY THREAT RANK
RAP1	Summerlee	18	Ecological Island Kanuka Forests. Native/exotic birds. Rich in invertebrates.	Development forestry, farming, grazing.	Medium
RAP2	Rangaiika-Ocean Beach	18, 19	Largest/most intact sand dune system on East Coast N.Z.	Feral animals, domestic sheep/cattle, off-road vehicles, weeds.	High
RAP3	Waingongoro Stream	21	Karaka, titoko, mahoe forest, coastal steep limestone face (only combination like this in Ecol.Dist).	Grazing, trampling to pa sites, possums, weeds.	Medium-High (unfenced areas)
RAP4	Hapua	21	Forest remnants in meandering stream.	Flooding, grazing, felling, exotics, erosion.	High
RAP5	Kahuranaki Road Bush	21	Mixed broadleaved - podocarp forest.	Grazing, erosion.	High
RAP6	Puhokio Valley	21	Cabbage trees stands on pastureland.	Grazing stock trampling pa site.	High
RAP7	Maraetotara Plateau	21	Best remnant forest on plateau, mature tawa, rewarewa forest, giant podocarps, rimu, kaihihakea, matai, population of riflemen in 100 acres bush.	Possums, feral animals, domestic cattle, storms, drought.	Medium
RAP8	Eland	12	Tall kanuka/mixed kanuka-manuka forest, most rep/least fragmented blocks in locality.	Domestic stock, goats, fire cutting at edges, wilding pines.	Low
RAP9	Peninsular Stream/Mangaoe River	11	Kanuka mixed broadleaved forest, buffered by other protected areas.	Goats, wilding pine, surrounding plantation forests.	Low
RAP10	Mangahina No 1	11	Kanuka mixed, broadleaved forest, green gecko present.	Radiata pine, invasion, goats, possums, domestic stock, firewood extraction.	Low
RAP11	Mangahina No 2	11	Kanuka mixed broadleaved forest.		Low
RAP12	Waiiti Stream	11	Kanuka forest, largest intact area of native vegetation in Heretaunga District, good population pied tit/kiwi.	Radiata pine, goats, domestic stock.	Low
RAP13	Whirinaki Lagoons	12	Wetland surrounded, covered raupo, dune lake system, presence bittern, spotless crane, dabchick.	Raupo control by dredging, SH2.	High
RAP14	Okawa Stream	14	Upper/lower gorge, kanuka/mixed broadleaved forest upper gorge pockets kowhai.	Domestic stock/goats.	High
RAP15	Runanga Lake	14	Lake surrounded by raupo, waterfowl, breeding/moulting site, common waterfowl, bittern/spotless crane, best wetlands in Heretaunga.	Pussy willow, fire, grazing stock.	Medium

REF. NO	SITE NAME	MAP NO.	DESCRIPTION	MODIFIERS/ THREATS	FRAGILITY THREAT RANK
RAP16	Oingo Lake	14	Band raupo surrounds lake, lake important nesting/moulting site, waterfowls, dabchick, bittern, spotless crane, swamp.	Pussy willow, fire in raupo, grazing stock modified marginal reg.	Medium
RAP17	Waitangi Estuary	15	Estuary imp nesting/feeding area, wetland, coastal birds, white-fronted terns/black billed gulls nest on spit, white herons winter over, bitterns/spotless crane.	Disturbance modification development/recreat. use, upstream land use, effects water quality.	High
RAP18	The Pigsty	14	High quality wetland, oxbow formation, fernbird, bittern, spotless crane add significance to this wetland.	Pussy willow flooding from Ngaruroro River.	Medium
RAP19	Ngaruroro Riverbed	14, 17	Best example braided river system in Hawke's Bay, black fronted and backed dotterol. South Island pied oyster catcher.	Perennial weed encroachment, shingle extraction and flood control work (nesting season), off road vehicles.	Medium
RAP20	Ohara	13	Mixed totara-kanuka-broadleaved trees forest.	Surrounding land.	Low
RAP21	Tukituki Esturay	15, 36, 43	High wildlife rate, bittern and spotless crane present in back waters, white heron winter area.	Channeling/stopbanking, rubbish dump, high public use.	High
RAP22	Te Awanga	18, 51	Only known occurrence threatened plant Muchlenbeckia ephedroides in the Ecol.Dist	Housing development or recreation, vehicle use, exotic shore plants.	Medium
RAP23	Clifton	18	Coastal kanuka treeland and forest.	Seeding surrounding pine plantation, natural erosion, fire, firewood, grazing goats, stock.	Medium
RAP24	Poporangi Stream	16	Podocarp-broadleaved beech forest, diversity, canopy/widestory species, large size.	Weed stock	High
RAP25	Pekapeka Swamp	17	Large wetland willow/raupo dominant, provides nesting/feeding habitat, waterfowl/waders including bittern, spotless crane, marsh crane, dabchick, fish from Pekapeka stream habit swamp.	Maintenance water levels, control of willows.	Medium
RAP26	Haronga Road	20	Treeland ecosystem titoki dominated treeland	Possums, wind damage, grazing animals, firewood.	High
RAP27	Lake Poukawa	20	Largest shallow lake, outstanding wildlife value, supporting high numbers migrating - dabchick, water fowl, wader birds, bittern, dabchick, spotless crane, mute swan black fronted dotterol.	Willow spread, water level, water flow manipulations, agricultural development, peak shrinkage.	Medium
RAP28	Castle Rock Road Bush	10	Island of natural area amongst Carter Holt forest plantations. Diverse bird life. Pterostylus orchid.	Disturbance through pine harvesting. Invasion of weeds in margins of kanuka unit. Deer have opened up the understorey in the beech-unit.	

REF. NO	SITE NAME	MAP NO.	DESCRIPTION	MODIFIERS/ THREATS	FRAGILITY THREAT RANK
RAP29	Moore Road Bush	10	Series of dissected gully-heads, gullies and spurs.	No major existing threats to the viability of site although control of possums and deer would increase the natural values of the site.	Medium
RAP30	Whittle Road Wetland	7	Wetland in shallow broad gully. Unusual range of plant species.	Browse and pugging from cattle and sheep. Probable top dressing - altered nutrient balance.	High
RAP31	Mangarakau Stream Bush	13	Steep sideslope with spurs and gullies in the valley of Mangarakau Stream. Birdlife reasonably diverse. Common gecko abundant. Unusual form of Hebe Parviflora.	Cattle and sheep browsing. Scrub-clearing	Medium
RAP32	Toronui Bush	5	Gentle sideslope with gullies. Just over half of the site is tall closed forest/red beech and broadleaf. Native birds.	Goats and possums. The canopy appears to have been damaged by heavy snowfalls.	
RAP33	Rangiora Station Road	5	One of the best unprotected examples of lowland rewarewa forest in Maungaharuru Ecol. Dist. Birds common and some waterfowl.	Goats and possums.	Medium
RAP34	Rangiora Station Treeland	5	Unusual range of species including the best example of a ngaio treeland left in Maungaharuru Ecol. Dist. Yellow & red admiral butterflies.	Goats and stock.	Medium-High
RAP35	Maori Stream Bush	5	Gentle sideslope, on nthern side a prehistoric slump has formed a series of wetland in a shallow valley.	Moderate damage to bush from goats	Medium
RAP36	Rimu Station Bush	7, 8	Sideslope and broad flat hanging valley. Mountain holly-broadleaf forest on sideslope which is the best unprotected example of this type of vegetation..	Goats. Snow appears to have caused damage to the canopy of the site. Fire. Selective logging.	Low-medium
RAP37	Otakowhai Stream Bush	8	Steep sideslopes with spurs, gullies and bluffs by Otakowhai Stream. Good diversity of forest types and mixed kanuka forest. Reasonably diverse birdlife.	Browse from goats and possums	Low
RAP38	Manganui Bush II	8	Sideslope transected by small gullies and spurs. Totara, Puka, unusual mix of montane and lowland species. Birdlife reasonably diverse.	Goats and blackberry.	Medium
RAP39	Titiokura Shrubland	7	Sideslope, gully bluffs and outcrops in a hanging valley. Uncommon assemblance of species.	Feral goats and sheep	Medium
RAP40	Titiokura Bush I	7	Sideslopes rising up from a hanging valley. Native birds.	Goats	Medium

REF. NO	SITE NAME	MAP NO.	DESCRIPTION	MODIFIERS/ THREATS	FRAGILITY THREAT RANK
RAP41	Titiokura Bush II	7	Titiokura summit area Rare ferns. Diverse range of birds.	Goats. Heavy snows on the site have damaged some canopy trees forming gaps. Cattle pugging.	Medium
RAP42	Carswell Bush	7	Small valley, gully and gully heads. Bird-life reasonably diverse. Site's natural values are high. Interesting range of lowland and montane species present in it.	Regeneration poor due to goat and sheep browsing.	High
RAP43	Mangaone Stream Bush	7	River flats in gorge. One of the few sites where <i>Lophomyrtus obcordata</i> has been found.	Goats	Medium
RAP44	Opau Stream Bush II	7, 11	Gully with wetland. Mistletoe " <i>Tupeia Antarctica</i> " is common.	Possums, gorse	Low-medium
RAP45	The Gorges Bush	11	Gully and gully heads in a series of gorges. The presence of limestone columns, stalagmites and stalactites is unusual in the Maungaharuru Ecol. Dist.	Goats - major threat to vegetation.	Medium-high
RAP46	Te Waka Bush I	7	Gentle sideslope dissected by small streams with steep gullies. A number of plants unusual for the ecol. district	Goats. Fire. Selective logging.	Medium
RAP47	Te Pohue Bush	7	Site has narrow deep gullies and spurs. Lack of beech trees makes this site different from other remnants in its vicinity.	Little regeneration due to large numbers of goats and sheep. Selective logging.	Medium
RAP48	Te Waka Bush II	7	Hanging Valley south west of Te Waka Trig. Rimu., lemonwood, and some mountain flax shrubland on outcrops.	Introduced mammals - severely reduced regeneration.	High
RAP49	Mangatutu Stream Bush	11	Site formed from steep sideslopes and bluffs on either side of the Mangatutu Stream Valley. Kawakawa noted on-site which is uncommon in Maungaharuru Ecological District. Black flounder noted - furthest inland record for this species in H.B.	Wandering jew noted on-site - plant is a serious threat.	Medium
RAP50	Gorge Stream Bush I	11	An extremely interesting site of lowland vegetation with coastal elements well inland.	Regeneration poor under the kanuka on the steep sideslopes.	Medium
RAP51	Gorge Stream Bush II	11	This site is a good example of podocarp-titoki forest.	Few threats to site noted.	Medium
RAP52	Te Kowhai Bush	11	This site is typical of riparian vegetation In other parts of the country but is unusual in the Mangaharuru Ecological District.	Blackberry rampant on-site especially in "canopy gaps"	Medium

REF. NO	SITE NAME	MAP NO.	DESCRIPTION	MODIFIERS/ THREATS	FRAGILITY THREAT RANK
RAP53	Maniaroa Bush	7, 11	Site situated in a valley which is a rift of the Mohaka Fault. Wetlands are a feature. The diversity of the landforms in the site allows a correspondingly diverse number of species.	Cattle & sheep grazing.	Medium
RAP54	Rimu Station Herbfield	7	Gully floor, sideslope and topslope. This site is highly significant:	Mouse ear hawkweed is epidemic - considered to be a significant threat	High
RAP55	Rimu Station Tussockland	7	Site is in a large open hanging valley surrounded by footslopes and sideslopes. A healthy red tussock grassland unique to the Maungaharuru Ecological District.	Mouse ear hawkweed. If heather were to reach site - it could spell disaster for the natural values of the site.	High
RAP56	Hukanui Bush	7	Site consists of a spur and gully. The site has an unusual mix of lowland and alpine species present in it.	Weeds, Browse from sheep, cattle and possibly deer.	Low-medium
RAP57	Waitara Station Bush	7	The best example of a "flush wetland" left in the ecological district.	The major threat to site is presence of stock	High
RAP58	Ahuateatua	5, 8	Outstanding mountain toatua forest unique to H.B. The alpine herbfields are distinctive, particularly in association with the forest.	Browsing mammals	High Threat/low fragility

**SIGNIFICANT VEGETATION, HABITATS AND GEOLOGICAL SITES
Geopreservation Sites**

SITE	NZMS REF. NO.	CLASSIFICATION	SIGNIFICANCE
Cape Kidnappers Stack	W21/616656	Importance = C Vulnerability = 3	A pale grey pointed tooth of sandstone rock as an extension of Cape Kidnappers. Age: approximately 1M years BP
Cape Kidnappers Pleistocene sediments and sea cliffs	W21/542662	Importance = A Vulnerability = 3	Shear colourful and spectacular cliffs cut into clearly stratified mudstones and sandstones with prominent rock banding, including some prominent fault displacement. Age: Pleistocene.
Cape Kidnappers conjugate shears	W21/560650	Importance = C Vulnerability = 3	Excellent example of conjugate shears. Age: Pleistocene. Reserve Status: Wildlife Sanctuary.
Flat Rock, Hawke's Bay	V20/491998	Importance = C Vulnerability = 3	A large flat horizontal shore platform slightly above water level with a cave in one end.
Kidnappers Anticline	W21/589652	Importance = C Vulnerability = 3	Topographical anticline, bending moment faulting/last interglacial marine terrace offsets, and raised marine benches aged c.2320 and 2410 years.
Te Apati thrust zones, Waimarama Beach	W22/522454	Importance = B Vulnerability = 3	Excellent exposure of a complex, amalgamated thrust zone system. Age: Cretaceous, Paleogene.
Waimarama raised marine benches	W22/525505	Importance = C Vulnerability = 3	Holocene raised marine platforms with dates of c.1570, 2280 and 2570 years.
Waipatiki Beach glacio-eustatic sequence	W20/527035	Importance = A Vulnerability = 3	This site is important for the preservation of rapid depth changes caused by glacio-eustatic sea level changes. Age: Pliocene.
Whakaari tombolo	V20/491999	Importance = C Vulnerability = 3	A large example of a tombolo. Classified as an extremely well defined landform of scientific/educational value.

KEY:**ASSESSMENT OF IMPORTANCE AND VULNERABILITY IMPORTANCE**

Sites are listed in this inventory under three levels (A-C) of significance. The importance assessment given to each site has been assessed by those informants familiar with the site:

- A. **International** - site of international scientific importance.
- B. **National** - site of national scientific, educational or aesthetic importance.
- C. **Regional** - site of regional scientific, educational or aesthetic importance.

VULNERABILITY

Each site has been given a vulnerability classification (1-5) depending on its perceived vulnerability to human activities.

1. Highly vulnerable to complete destruction or major modification by humans.
2. Moderately vulnerable to modification by humans.
3. Unlikely to be damaged by humans.
4. Could be improved by human activity.
5. Site already destroyed (not necessarily by human activity).