5. Protection Management

5.1 INTRODUCTION

The Convention on Biological Diversity which New Zealand ratified in 1993 provides a framework for the protection management activities of the Department. Biodiversity is the variety of all life on earth: plants, animals and micro-organisms, the genes they contain and the ecosystems they form. Biodiversity recognises the interrelatedness of all parts of the biological world and can be considered at three levels.

- D*iversity of species* - the diversity of all plants and animals, including fungi and micro-organisms;
- G*enetic diversity* - the variety of genetic material within a species.
- E*cosystem diversity* - the variety of ecosystems, eg. lowland forest, coastal forest, wetlands, dune systems.

The conservation of biodiversity is defined as: the "*conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings.*"

Northland is an area with a high number of endemic plants and animals, many of which are threatened. These together with fragmented and degraded forest and wetland communities in lowland and coastal zones, make it a particularly important area for conserving the remaining indigenous biodiversity of New Zealand.

Threats to biodiversity in Northland include:

- fragmentation and loss of habitats through vegetation clearance for agriculture, afforestation and firewood, drainage, reclamation, water abstraction and fire;
- destruction of habitat quality by possums, goats and other animal pests; predation of native animals by introduced carnivores;
- invasion of habitats by plant pests such as pampas, ginger and mist flower;
- industrial and urban rural and residential development;
- pollution of waterways; and
- illegal hunting of protected species.

The overall goal of protection management is to control, mitigate or limit the impact of these threats in order to sustain ecosystems, natural processes and species in riparian areas, estuaries, forests, wetlands and on islands.

The Department's principal interest is to ensure the protection of high quality and representative areas of habitat. Under the Resource Management Act 1991 the Northland Regional Council and district councils are required to recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna as a matter of national importance.

5.2 LEGAL PROTECTION OF HABITATS ON LAND

The Conservation Act 1987 gives the Department the function of preserving, maintaining and enhancing natural and historic resources managed under that Act and to seek the conservation of other natural and historic resources in private ownership. Under the Reserves Act 1977 (section 3) one of the purposes of the Act is described as:

"ensuring as far as possible, the survival of all indigenous species of flora and fauna, both rare and commonplace, in their natural communities and habitats, and the preservation of representative samples of all classes of natural ecosystems and landscape which in their aggregate originally gave New Zealand its own recognisable character."

The Protected Natural Areas Programme (PNAP) was established in 1983 to implement that direction. It has been the principal but not sole means by which priorities have been set for the purchase or other legal protection of land. In Northland prior to 1994, no formal PNAP surveys had been initiated except in a small part of the Rodney Ecological District. Instead, the Sites of Special Biological Interest Inventory (SSBI) has been the main technique used to identify and prioritise natural areas for protection. Since 1994 a PNAP reconnaissance of the northern half of the Conservancy has commenced.

Other legislation not administered by the Department such as the Resource Management Act 1991, the Queen Elizabeth II National Trust Act 1977, the Forests Amendment Act 1993 and Te Ture Whenua (Maori Land) Act 1993 also provide opportunities for the Department to advocate or assist in protection of natural areas. More detail on mechanisms for legal protection is contained in Appendix One.

Some of the reasons for the acquisition and protection of areas have changed over the years. The Department has inherited a network of protected areas, which although numerous, do not adequately represent the remaining natural values of Northland.

To achieve its habitat protection objectives, the Conservancy has identified those habitat types and species which are poorly or unrepresented in protected lands. Rapid SSBI surveys are being undertaken to update information and to identify new sites. PNAP reconnaissance and survey of all Ecological Districts and Regions is presently being planned to cover the entire Conservancy over the next three years.

Habitats which are under-represented as protected areas, and sites containing threatened species outside of lands administered by the Department, are identified, ranked and prioritised in order to seek protection by way of covenants, agreements, leases or

purchase. In addition, protection for these areas from adverse effects can be achieved under the Resource Management Act 1991. Both the Proposed Regional Policy Statement and the Proposed Regional Coastal Plan contain policies which seek to identify and protect, and promote the protection of, areas of outstanding natural features and landscapes, significant indigenous vegetation and significant habitats of indigenous fauna. Regional plans may contain objectives, policies and methods to protect the above matters, but can only contain rules/regulation for the purposes of water quality, water quantity and soil erosion.

Habitat Types Protected in Lands Administered by the Northland Conservancy

An analysis of PNAP and SSBI data gives an overview of what is and what is not represented within lands administered by the Department in Northland. [Refer Tables Two and Three.]

Protection is not something the Department can achieve on its own. The Department recognises its role as a protection agency and sees itself as a habitat information source and facilitator in identifying resource information needs and suggesting protection of natural areas. Resources are not available to achieve all that needs to be done. To seek the legal protection of the numerous areas requiring protection through negotiation and discussion with landowners, is a time-consuming process.

The Department is clear as to the types of habitats that need to be protected and these are identified in Table Three: Priorities for Protection of Habitats on Land. Top priority habitats for protection are forest and shrubland, including riverine flood/alluvial, volcanic broadleaf, duneland and North Cape serpentine; freshwater wetlands including volcanic lakes, thermal lakes, pakihi gumland, peatbogs, ephemeral swamps and dune lake margins; estuarine/coastal saltmarshes and shellbanks; and islands which contain threatened or endemic species. The Department is however flexible as to the mechanisms which can be used to achieve protection. [Refer also to Appendix One.]

The key to habitat protection is public awareness. Raising public understanding of habitat values should enable greater support for protection of those habitats and the various mechanisms available to achieve that protection. [Refer also to Section 8.0 Public Awareness.]

Different measures, of which there is a broad range, can achieve the same outcomes. A unified effort from the local authorities, the public and private agencies is required. The Department will seek to be the catalyst, and co-ordinator of the following approach:

- Reach agreement with appropriate parties on what natural value information is required.

- Make a commitment to research and resource survey work for each part of the Conservancy on an agreed priority basis.

- Make a commitment to share information with affected landowners so that each is aware of the special natural value that exists on their properties and the management requirements necessary for protection.

- Set priorities for identified natural areas based on criteria such as rarity, representativeness and threat.

- Agree on the most appropriate form of protection and the agency most appropriate to discuss and negotiate the protection measure with the landowner.

Table Two: Comparative Areas of Habitat Types On and Off Land Administered by the Department

Ecosystem	Habitat Type	Area ranking	
		Within DoC	Outside DoC
Forest and shrubland	Kauri-podocarp-broadleaf	5	5
	Podocarp-broadleaf:		
	- Lowland	5	5
	- Upland	2	1
	Kauri	3	2
	Shrubland:		
	- Manuka/kanuka	3	4
	- Coastal/broadleaf	2	2
	- Serpentine/North Cape	1	1
	Coastal	2	2
	Volcanic broadleaf	1	1
	Podocarp	1	2
	Riverine and alluvial flood forest	1	1
	Duneland	1	1
Freshwater wetland	Rivers and Streams:		
	- Upper catchments and riparian	5	5
	- Lower orders and riparian	1	5
	Ephemeral		
	- Duneland	1	1
	- Hinterland	0	1
	Peatbog	1	1
	Pakihi gumland	1	1
	Intermediate	1	2
	Swamp	1	1
	Dunelake	2	2
	Dunelake riparian	1	1
	Volcanic lake	0	1
	Volcanic lake riparian	1	1
	Ngawha thermal lake	1	1
Estuarine	Mangrove	1	5
	Saltmarsh	1	2
	Sand/mudflat	2	5
	Shellbank	1	1
Coast	Hard coast	2	5
	Soft coast	4	5
Duneland	Sandhill	2	1
	Coastal deflation zone	2	1
	Pouto sand dune cliffs	1	1
Island	East coast	2	2
	West coast	1	1

5 = greater than 30,000 hectares
4 = 20,000 to 29,999 hectares
3 = 10,000 to 19,999 hectares
2 = 1,000 to 9,999 hectares
1 = less than 999 hectares
0 = 0

[For a more detailed description of ecosystems and habitat types refer to Section 3.4 Habitats.]

Until a comprehensive plan is agreed on with willing landowners and other parties, the Department may undertake rapid assessments to identify key habitats in areas where land use change is accelerating and threatening natural areas.

Improved information on the natural values within the Conservancy will allow the Department to respond better to public concerns involving unprotected areas under threat. In addition the Department will advocate for the recognition of such areas in District Plans, and will encourage private landowners to protect and manage important remnant natural areas and indigenous populations.

Research on the size and shape of protected areas shows that isolated and fragmented areas will not adequately preserve indigenous biodiversity. Linkages between remnant areas will be sought to increase the effective area of reserves, to allow interaction of gene pools, provide seasonal habitat variety and provide buffers.

Priority areas for protection will be high value ecosystems, poorly represented ecosystems, buffers and linkages between high value habitats, and entire catchments especially headwaters. Priority will also be given to boundary rationalisation to facilitate fencing.

The opportunities, funding options and legal mechanisms for legal protection of natural resources are outlined in Appendix One.

Objectives

To survey and describe natural habitats and ecosystems within Northland to enable the identification of priority areas for protection.

To achieve protection of the most threatened, rare, and/or representative natural areas.

To encourage landowners, the Northland Regional Council and local authorities to apply legal mechanisms to protect and restore remnant natural habitats.

Implementation

1. Carry out a Protected Natural Areas Programme (PNAP) survey of all ecological regions and districts within the Conservancy to update and expand SSBI data.

2. Assess the survey requirements for natural resources and species in addition to PNAP, including surveys for freshwater fish and invertebrates.

3. Work with iwi, landowners, other government agencies, the Northland Regional Council, district councils and other interested organisations to identify priority areas for protection and apply appropriate mechanisms to achieve protection, including those practised by Maori, according to priorities set out in Table Three and mechanisms described in Appendix One.

4. Maintain up to date survey databases and exchange information with landowners, the Northland Regional Council, local authorities, iwi and other interested organisations.

5. Continue with public awareness, statutory planning and regular liaison and consultation with iwi, landowners, local government and interested organisations to achieve protection of remnant natural areas and habitats of threatened species.

6. Work with specific landowners who have priority natural habitats on their property to assess the most appropriate mechanisms, including those practised by Maori, for protecting identified natural resources.

7. Classify any new areas subject to the Department's administration according to processes outlined in Section 6.11 Land Classification.

Table Three: Priorities For Protection of Habitats on Land

First Priority

Ecosystem	Habitat Type	Reason
Forest/shrubland	Riverine flood/alluvial, volcanic broadleaf, duneland, North Cape serpentine	1. Habitats are poorly represented as protected areas.
Freshwater wetland	Volcanic lake/riparian, Ngawha thermal lakes, pakihi gumland, peatbog, ephemeral swamp, dune lake margin	2. Habitats are now generally confined to small isolated areas, are rare and under continued threat of modification or development.
Estuarine/coastal	Saltmarsh, shellbank	
Offshore island	All islands/groups which are vermin free and/or contain endangered species or species endemic to that particular island and which have no present form of protection	3. Habitats are nationally threatened and are essential to New Zealand's biodiversity. In Northland they have a high degree of endemism and may contain threatened species.

Second Priority

Ecosystem	Habitat Type	Reason
Forest/shrubland	Podocarp, upland broadleaf	1. Habitats are under-represented

		as protected areas.
Freshwater wetland	Dunelake, intermediate	
Estuarine/Coastal	Sandhill, coastal deflation zone	2. Habitats may be adequately represented at a national level but are poorly represented in Northland.
Offshore island	All islands which are vermin free except for kiore and which have no present protection status	3. Habitats contain a large diversity of threatened species.

Third Priority

Ecosystem	Habitat Type	Reason
Forest/shrubland	Coastal, coastal broadleaf shrubland, kauri	1. Habitats are inadequately represented as protected areas.
Freshwater wetland	Lower order river and stream riparian	2. Habitats contain a significant diversity and number of threatened species.
Estuarine/coastal	Hard coast	
Offshore island	Islands great than 10ha located more than 1500m from the mainland	

Fourth Priority

Ecosystem	Habitat Type	Reason
Forest/shrubland	Shrubland (manuka/kanuka)	1. Habitats are inadequately protected in some ecological districts.
Freshwater wetland	Riverine lower order riparian	
Estuarine/coastal	Sand/mudflat, mangrove, soft coast	2. Habitats are important to threatened species.
Offshore island	Islands less than 10ha located more than 1500 m from the mainland	

Fifth Priority

Ecosystem	Habitat Type	Reason
Forest/shrubland	Kauri-podocarp-broadleaf, podocarp-broadleaf	1. Habitats are reasonably represented as protected areas or within most ecological districts.
Freshwater wetland	Upper river and stream catchments	2. Habitats become significant if threatened species are present or they add to existing protected areas or they form linkages with other habitats and ecosystems.

Offshore island	Those islands and stacks which may be used as seabird breeding sites.	

Sixth Priority

Ecosystem	Habitat Type	Reason
All modified, manmade or exotic ecosystems and habitats		All modified and manmade ecosystems and habitats may contain threatened species or assemblages of indigenous flora and fauna.

5.3 FIRE PREVENTION AND CONTROL

The Department is a Rural Fire Authority responsible under the Forest and Rural Fires Act 1977 for the control of all fires on the lands it administers, on a one kilometre buffer zone around these lands, and on unalienated Crown land. The Department is also required to be actively involved in law enforcement in the Rural Fire Area.

The Conservancy is required to prepare a fire action plan each year. This details what to do when a fire is reported, who to contact, what resources are available, organisational requirements, and the resources of other agencies.

Fire can significantly damage or destroy habitat, native vegetation, species and historic places and artefacts. Preventing fires, and effectively deploying staff and equipment to identify and control fires when they occur, is a major priority for conservation management. Dry conditions throughout the year but especially in summer and autumn, extensive areas of vulnerable vegetation including large areas of young exotic forest, and high recreation use in some areas, make fire prevention and control a critical issue throughout the Conservancy. The coastal sand dunelands, gumlands, and wetlands of the Far North are at risk from arson related to cannabis cultivation.

Objectives

To prevent or minimise fire damage to lands administered by the Department and other Crown lands within Northland.

To liaise and co-operate with other fire authorities and rural fire organisations to provide an effective rural fire fighting force in Northland.

To meet the various legislative requirements for rural fire suppression.

Implementation

1. Give priority (with the exception of ensuring safety to human life), to the control and suppression of wildfire on Crown lands.

2. Provide annual training for all staff in fire equipment use and fire fighting techniques. Encourage joint training with adjoining fire authorities.

3. Locate fire-fighting equipment at all staffed field centres.

4. Continue to be a member of the Northland Rural Fire Co-ordinating Committee and, whenever possible, participate in joint fire activities such as training and publicity, arranged by the committee.

5. As a fire authority, maintain daily fire weather index (FWI) readings, to show fire danger levels and the fluctuations throughout the fire season.

6. Impose appropriate levels of fire prohibition when fire danger exists. The FWI readings will form the basis of determining the level of prohibition required.

7. Provide appropriate fire danger publicity to the public during the fire season and participate in publicity arranged nationally by the Department, the National Rural Fire Authority and the Northland Rural Fire Co-ordinating Committee.

8. Require fire permits for all fires lit within the one kilometre wide fire safety margin around land administered by the Department.

9. Maintain co-operation with neighbouring fire authorities to ensure mutual safety measures are in place for the protection of each other's adjoining lands.

10. Encourage visitors to use gas cookers rather than open fires in approved places.

11. Carry out restoration plantings, grazing and boundary adjustments where necessary to minimise risk of fire in areas of high fire hazard and on boundaries of land administered by the Department. In areas where die back of vegetation, grass or gorse (for example) constitutes a fire risk, controlled burning may be used in the process of reducing the hazard and the conversion to more fire resistant species.

5.4 ANIMAL PEST CONTROL

5.4.1 General Animal Pest Control

Overview

An animal pest is usually alien to New Zealand. For the purpose of this document, it can be any animal which threatens the future survival of any native plant, animal or habitat, or which damages soil and waterways. Pests such as possums, goats and pigs have established in Northland as a result of deliberate releases and extension of their own wild breeding ranges. Pests such as rats, ferrets, stoats, weasels and wasps have continued to extend their range.

Escaped or stray domestic animals or livestock can also be classified as pests, depending on where they are and what they threaten. Feral dogs and cats have contributed to the decline in native bird species such as kiwi. Wandering cattle and sheep have damaged the understorey of many forests and, as with escaped or liberated deer, have established breeding populations within some northern forests.

Animal pests can also include birds such as black-backed gulls which prey on shorebird eggs and chicks; and introduced fish such as koi carp, tench and perch which threaten native fish.

The Department's roles and responsibilities in pest control are identified in the Conservation Act 1987, Reserves Act 1977, National Parks Act 1980, Wildlife Act 1953, and Wild Animal Control Act 1977. The Pesticides Act 1979, Resource Management Act 1991 and Biosecurity Act 1993 also provide important opportunities for the implementation of pest control activities.

The purpose of the Biosecurity Act is to deal with the "exclusion, eradication and effective management of pests and unwanted organisms". It provides for the establishment of national and regional pest management strategies as a means of ensuring co-ordinated pest control action. Any Minister may propose a national strategy. Ultimately all such strategies must be approved by the Governor General on the recommendation of a Minister. Regional strategies may be prepared by a wide range of individuals and organisations including the Department of Conservation, and must be approved by regional councils.

Other organisations are also responsible for pest control on lands held by the Crown. The Animal Health Board is responsible for the control of bovine tuberculosis and Tb vectors (mainly possums). The Northland Regional Council is responsible for control of certain animal pests including possums, where they are deemed to be a pest of local regional importance. This can include pests occurring on private land or lands administered by the Crown.

Distribution and Effects of Animal Pests

Goats are present in moderate to low numbers throughout the Conservancy with high numbers in localised sites on private land. With the exception of the Te Paki reserves, goat-free habitats in Northland are rare. Their introduction to many habitats has occurred relatively recently as a result of the liberation and escape of farmed goats following a decline in goat prices. They are efficient herbivores and can rapidly increase their population. Left undisturbed, goats are relatively sedentary and can cause severe depletion of all understorey plants, eliminating any seedling regeneration. In addition, they often occupy steep bluff systems which are often the last refuge of rare, palatable plants. The lack of interest in goats by commercial and recreational hunters make goats a major threat to vegetation, particularly in areas of high value for conservation.

Possums are present throughout mainland Northland and, contrary to popular belief, are known to swim to and occupy close inshore islands such as those in and around the northern Bay of Islands. They are in moderate to high numbers over most of Northland. However, low numbers are present in the Te Paki reserves and large scale control has been carried out in such areas as Waipoua, Puketi, Whangaroa, Cape Brett and Whangarei Heads. Possums browse the canopy and often target insects and bird life, including kukupa and kokako, preying on eggs, chicks and adults. Combined with goats, they have had the most damaging effect on Northland's forests of all animal pests.

Pigs are in low numbers throughout the Conservancy with occasional moderate-high numbers present in the Far North and on private forestry lands. They are an efficient predator of the rare flax snail *Placostylus* sp. and the more common kauri snail and could also impact on kiwi. They also inhibit natural regeneration by browsing and uprooting

seedlings and disturbing soil, which assists the spread of invasive weeds such as mist flower.

Deer that have escaped or been liberated in Northland are of serious concern. In combination with goats and possums, deer pose one of the greatest new pest risks to Northland and, if left uncontrolled, have the potential to ruin native forests, wetlands and dunelands.

Weasels, ferrets and stoats are present within parts of the Conservancy. Stoats are the most common, and are present in all forests. Ferrets have been progressing steadily northwards since the demise of the fitch farming industry, when many were liberated, and populations are known from Kaitaia southwards. Weasels are rare. All three species of mustelid are efficient predators of native birds, their eggs and chicks. The largest of the three, the ferret, is a predator of kiwi and their eggs. Mustelids, together with rodents, have contributed to the rapid decline of many of Northland's rare birds such as kokako, kakariki and kaka as well as invertebrate and lizard species. Their impact has greatest potential on islands where natural and historic values are often the highest.

Rats and mice are present throughout Northland, though kiore (Polynesian rat) are restricted to some offshore islands. Norway rats, ship rats and kiore feed on native fruit and seed-falls, insects, birds, snails and lizards.

Wild cats are established in all of Northland's forests and are predators of lizards, birds and many insects.

Dogs, uncontrolled or scavenging - pig hunters' dogs, stray farm dogs or domestic pets - are of particular concern because of the devastating effect they have on kiwi.

Rabbits occur generally in low numbers. However, moderate populations have been observed following dry winters in some Northland localities e.g. Waipu and Ngunguru sandspits and Lake Ohia. Hares are less common and their effect on natural values is unknown. Rabbits, in certain locations in the Far North, have caused serious damage to native orchids through soil disturbance and direct browsing and have modified fragile coastal environments by disturbing native sand-binding plants.

Livestock (wandering stock) including wild cattle and horses have a detrimental effect on the understorey of many forests. Shrublands, wetlands and dune and coastal ecosystems are all being degraded by wandering stock. Forest margins often suffer greatest damage. Patches of unfenced remnant and grazed riparian forest will eventually disappear as seedling growth and regeneration is prevented by stock.

Wasps of several species occur in Northland and reach high densities during the summer months. Studies elsewhere have shown that, in high numbers, wasps can have serious detrimental effects on native insect populations and birds that feed on insects or honeydew. Wasps also pose a nuisance to visitors to forests and camping grounds.

Noxious freshwater fish in Northland streams and rivers include catfish (*Clarias batrachus*), koi carp (*Cyprinus carpio*) and rudd (*Scardinius erythrophthalmus*) in the Northern Wairoa/Wairua river system and they have also been reported in some dune

lakes. Mosquito fish (*Gambusia*) and rainbow trout also occur in Northland and impact on native freshwater fish and invertebrates. *Gambusia* are found in the Kaiiwi Lakes.

Other animals may assume a pest status in special circumstances. For example, harrier hawks are known to have preyed on kokako nests destroying the chicks, and cats amd hedgehogs are effective predators of birds' eggs and invertebrates. The presence of these pests may hinder the recovery of threatened species and require them to be targetted for control. Mynahs and magpies are known to predate nests and act aggressively towards native birds.

The status of pests in Northland are summarised in Table Four, together with solutions for control.

Options and Issues

Achieving the protection of natural and historic resources which are at risk is the obvious focus of the Department when it considers animal pest control. Too often managers have confused pest control with the actual goal of protection, so that killing the pest becomes the objective, with no regard to how the natural environment has responded. The question of "how few pests are few enough?" governs the effort and intensity of pest control.
Control can be directed to:

- keeping pests out of areas where they are presently absent; and
- controlling pests where they occur.

Preventing introductions and spread to new areas is important and relies on a detailed knowledge of the distribution of pests. Straying farm animals and the establishment of wild populations of cattle, sheep and deer are an ongoing problem, particularly in areas where boundary fencing is inadequate or non-existent. The browsing effects are the same as for goats although can be locally more damaging in terms of soil disturbance and browse levels.

Where pests already exist options for control are:

- eradication (no individuals remain);
- zero density, eradicating pests in the area then continuing to mop up any new animals migrating in;
- sustained control, where pest numbers are reduced and then maintained at a predetermined low level which protects the values under threat; and
- do nothing.

Eradication is usually the most desirable, but most difficult, option. It is limited to offshore islands where unassisted reinvasion is not possible, or to mainland sites where artificial barriers can prevent the re-entry of pests. Given these conditions, technology must then be available to eliminate all individuals in the population in a one-off control operation.

A variation on eradication is achieving "zero density". This strategy is similar to eradication in that the aim is to remove the pest entirely from an area. The difference with this strategy is that the pests can reinvade, and regular control is required to remove these animals.

Sustained control is the most common option used to control animal pests because, with current technology and resources, it is impossible to eradicate most pest species in most areas. Sustained control is carried out in areas of highest natural and historic value to maximise the benefits. Goals must be achievable and able to be quantified.

Table Four: Status of Animal Pests in Northland 1998

Pest	Distribution	Impact	Solutions
Goats	All DOC administered mainland forests over 300 ha except the Te Paki Reserves.	Kill and prevent regeneration of palatable plants, seedlings, saplings and trees. Assist spread of invasive weeds.	Eradication or sustained control by ground hunting, supplemented with aerial helicopter shooting in priority areas. Permit recreational hunters. Preventing goats establishing in goat-free habitats such as Te Paki is a priority. Eradication or maintenance of low numbers in remaining high value habitats is important.
Possums	Everywhere except offshore islands.	Kill preferred plants, bird chicks, eggs and invertebrates; compete for food with native animals; destroy forest canopy.	The Department has embarked on a ten year national plan for possum control. Its principal effect in Northland will be that within four years, major possum control operations will be completed in all large forest habitats in Northland, with ongoing maintenance of low numbers. Many smaller habitats with high natural and historic resource values will be included for the control of possums. Commercial hunters and possum farmers will be subject to permits.
Deer	Red deer - small populations known in Kaimaumau, Aupouri, Mangakahia. Single sightings in 16 other locations. Sika deer - small population known in Russell Forest. Fallow - single deer known from two locations.	Prevent regeneration of plants. Work in combination with possums and goats to destroy forest structure.	React to illegal liberations promptly. Prosecute offenders. Liaise with other agencies to eradicate feral populations. An eradication campaign will be undertaken to eliminate wild deer from Northland. In conjunction with deer farming industry, increase focus on deer farm fences to minimise escapes.
Cattle, sheep and horses	Wild populations known in Warawara and Te Paki. Wandering domestic stock on margins of most habitats where fencing is inadequate.	Eliminate forest understorey and prevent regeneration. Assist spread of invasive weeds.	Exclusion fencing, mustering and hunting. Effective boundary fencing and responsible farming practices are the main ways damage can be controlled.
Rodents	Norway and ship rats and mice on the mainland and some nearshore islands. Kiore on some offshore islands.	Kill native animals especially invertebrates. Eat seeds and fruit which inhibits regeneration and limits food supply for indigenous species.	Targeted control around flax snail colonies and eradication on islands where tuatara &/or rare seabirds are present. Islands present an ideal opportunity where eradication can be successful for the restoration and liberation of endangered species.
Mustelids	Ferrets as far north as Kaitaia. Stoats & weasels everywhere on mainland & stoats also on islands in Bay of Islands.	Kill native animals, ground dwelling and other birds. Especially vulnerable are brown teal, kiwi and nesting seabirds.	Specific control in support of threatened species recovery plans. Probable by-catch of large scale possum control activities. Islands give an ideal opportunity for eradication to allow restoration and liberation of endangered species.

Wild Pigs	Low to moderate numbers in all large habitats, often highly mobile.	Kill ground-dwelling birds, eggs and chicks and land snails. Prevent natural regeneration, assist spread of weeds.	Support & encourage responsible recreational hunting through issue of permits, information and use of high quality hunting dogs. Research alternative controls incl. poisons & traps. In some circumstances, close areas to all dogs.
Rabbits	Coastal dry areas esp. dunes.	Prevent regeneration of native orchids and damage dunes.	Localised control for protection of priority threatened species.
Cats	Widespread.	Predate kiwi and shorebirds, invertebrates, bats, reptiles, & some freshwater fish.	Localised control for protection of priority threatened species.
Wasps	*Polistes* in shrublands.	Predate native butterflies and other insects, compete with native birds for nectar and annoy visitors.	Destroy nests in areas with high recreation use and high ecological value. Current chemical methods provide temporary control of nests. The present expansion of wasp numbers in Northland may mean new control technologies are needed in future to control this pest.
Wild dogs	Many forests incl. Opua, Herekino and Raetea.	Predate kiwi and shorebirds.	1.Localised control for protection of priority threatened species. 2. Develop and implement Conservancy dog control policy.
Noxious freshwater fish	Northern Wairoa/Wairua river system and some dune lakes.	Eat native fish and compete for food.	Caught in eel fyke nets and by amateur fishers. Control of these fish is difficult but they may be removed from dune lakes by poisoning. Illegal releases of coarse fish require an ongoing compliance and law enforcement effort.
Other species	Mynahs widespread and spreading into native forests. Magpies spreading north and increasing in numbers.	Predate nests of native birds, aggressive, compete for food.	Promote public awareness, assess impacts. Some private landowners control these species by a variety of means, with beneficial effects on native species such as tui. The Department is undertaking control methodology trials in key areas, e.g. Trounson.

Without unlimited resources, it could be argued that the only option for areas of lesser natural and historic value is to do nothing. This is a better solution than irregular, spontaneous control efforts which cannot be sustained and which have been shown to do little to protect the areas where they have been carried out. It has been argued that unsustained or irregular harvests of any stable pest population seems to maintain the health, vigour and reproductive capacity of those who survive. This in turn can lead to sharp rises in the population and subsequently an increase in damage to the values at risk. However, there may be a role for tangata whenua or community groups to have management of certain areas vested in them, under a management plan agreed to and supported by the Department.

Predator-prey relationships also need consideration. For example, removing rats, which are one of the main foods of stoats in forests, may cause the stoat population to make an undesirable switch in diet to birds or insects. Research is continuing to explore the possible consequences of actions and solutions. Alternatively, the removal or increase of one pest may lead to a rise or fall in the population of another. Rats and cats, stoats and mice, and rabbits and ferrets can form complex predator-prey relationships in this way.

Where To Start?

Areas of highest natural value are chosen based on the presence of:

- nationally and locally rare, endemic and endangered plants and animals;
- representative ecosystems, and common forest types which were more extensive before the influence of human beings, mammalian predators and herbivores;
- rare or unusual vegetation and animal communities; and/or
- landscape, historic and recreation values.

The question is then asked: “Are there any pests present which threaten these values?” Taken into account are:

- what pests are involved, as often control of more than one pest at a time can give increased benefits;
- the potential or current threats they pose; and
- the extent and location of damage.

Another question asked is: “Given the resources available, can control be achieved?” This is dependent on:

- the availability of resources and technology;
- the extent of public and other agency support for control;
- the undesirable impacts of control techniques;
- an assessment of practical abilities;
- size of the control area, and extent and location of damage;
- whether or not eradication can be achieved;
- risks of reinfestation;
- land tenure;
- past attempts to control the pest;
- the presence of other pests which may also be under control; and
- indirect effects of removal of pests.

Monitoring to establish whether or not an enhancement of the value at risk has been achieved must be part of any programme to reduce or eradicate pest numbers.

Other Parties in Pest Control

Pests travel freely across all lands with no regard to political or legal boundaries. The Northland Regional Council, local authorities and other Government agencies, recreational

hunting groups, commercial operators, Federated Farmers, and local community and conservation groups have all contributed to activities associated with control of pests in Northland, especially possums. Significant gains have been made through joint pest control operations and it is important to continue these co-operative efforts where common goals are being met. The establishment of regional pest management strategies under the Biosecurity Act provides a mechanism for ensuring a greater level of co-ordination, particularly with the Northland Regional Council.

The general view of iwi is that possum control is a high priority. However, there is a need for considerably more education and information on the impacts of 1080 poison. They suggest that other methods of control, such as ground poisoning and trapping, should be used to a greater extent and that there should be more involvement and training of tangata whenua in monitoring and operations. Iwi feel that greater co-ordination is required between the Department and Northland Regional Council in possum control operations.

Iwi also believe that goat control is a priority and that local hunters should be used. Fencing in conjunction with goat control is also necessary. Support from iwi is also advanced for the control of all other animal pests on land which the Department administers. However, they feel that the animals should not be wasted and they want the opportunity to recover pigs and cattle for food.

Pest Diseases

Several animal pests have the potential to act as vectors for animal disease. It is critical that Northland retains its bovine Tb-free status. Management and control of this disease is the responsibility of the Animal Health Board, who in the future may need to control the spread of the disease on land administered by the Department. Potential vectors of this disease include cattle, feral pigs, possums, ferrets, cats and deer.

Introduced insects such as Asian gypsy moth would also be of great concern and local assessment of the status of forest health around likely deep water ports will be monitored by agencies such as the Ministry of Forestry.

Objective

To remove or minimise the threat and impact of animal pests on native plants, animals and habitats.

Implementation

1. Give priority for animal pest control to the areas set out in Table Five, with the details on formulation and implementation to be carried out in consultation with tangata whenua and community interest groups.

2. Ensure that any methods to control animal pests are cost effective and do not pose undue risk to the environment or public safety.

3. Where two or more pests are working in combination to damage species or habitats, undertake concurrent control of each pest wherever possible eg. possums and goats.

4. Carry out animal pest control in accordance with national control plans and guidelines and focus on areas of highest natural and historic value and where goals are achievable.

5. Target particular areas where important threatened species occur for animal pest control operations according to priorities set out in Table Five.

6. Prepare operational plans for each control effort and describe how changes to the natural and historic values at risk will be measured and the impacts, if any, on non-target species.

7. Encourage close co-ordination with all pest agencies including the Animal Health Board and Northland Regional Council and seek combined programmes where possible as identified in the proposed Regional Pest Management Strategy.

8. Co-operate with other agencies acting against bovine Tb where the disease is identified in any animal pest.

9. Survey the boundaries of all areas managed by the Department and rank the threats of domestic livestock intrusion.

10. Implement a fence construction and maintenance programme to exclude domestic livestock such as cattle and goats from priority boundaries. Priority boundaries are for those key habitats identified on Table Five. The Department may also be required to fence boundaries with adjoining neighbours under the Fencing Act 1978.

11. Build suitably designed fences across peninsulas to exclude possums from areas such as North Cape Scientific Reserve and Cape Brett.

12. Undertake careful consideration of new technologies for pest control and when an opportunity presents, trial these to assess their effectiveness.

13. Focus rodent, cat, mustelid and wild dog control on key habitats and other areas, particularly in response to the management of threatened species. The latter may also necessitate control of introduced predatory birds.

14. Undertake destruction of wasp nests in accordance with the National Wasp Control Plan, primarily in high use recreation areas, and continue to monitor wasp distribution and density.

15. Prepare and implement contingency plans in the event of the entry of mammalian predators, rats, cats, and mustelids on high value offshore islands.

16. Monitor dune lakes to assess the presence and impact of noxious fish and implement appropriate control methods where necessary.

17. Maintain liaison and a process of ongoing consultation with all communities, iwi and interest groups, and strongly advocate for the need to protect large natural ecosystems and threatened species.

Table Five: Focus of Animal Pest Control

Place	Pest	Strategy	Outcome
Islands	rodents cats mustelids	• Eradication and prevention of further introductions.	• Threatened species recovery and restoration.
Mainland high value & large ecosystems. Key Habitats: Pouto dune lakes & wetlands Te Paki Reserves & wetlands Waipoua/Waima/Mataraua Whangaroa Puketi-Omahuta Bream Head/Mt Manaia Cape Brett Whangamumu Whangaruru Maunganui Bluff Herekino Raetea/Maungataniwha Russell Warawara Kaihu Marlborough Mimiwhangata Opua Kaimaumau Hikurangi Swamp Karikari Manganui River Ahipara Houto Te Arai Motatau Rewarewa Purua Riponui	goats possums livestock	• Eradication or sustained control and limiting dispersal of known populations. • Fencing to exclude domestic stock where practical. • Possum fences on peninsulas such as North Cape and Cape Brett.	• Reduction in browse and foliage loss on plant species preferred by pests. • Restoration of healthy forest canopy and structure.
Specific areas on mainland important for threatened species incl. Kokako nest sites in Mataraua, Puketi & Marlborough. Bartlett's rata site Te Paki Reserves Flax snail colonies North Cape Scientific Reserve Trounson Kauri Park Scenic Reserve Bream Head Scenic Reserve	possums rodents mustelids cats dogs livestock pigs horses	• Prevention, eradication or sustained control. • Fencing to limit or halt dispersal where practical. • Targetted recreational hunting.	• Regeneration of plant species preferred by pests. • Survival of threatened species. • Reduced predation of threatened species. • Total restoration of habitat and possible reintroduction of threatened species.

18. Make public awareness activities an ongoing part of animal pest control programmes in order to explain the risk to habitats, the need for animal pest control, the methods to be used and other issues arising.

19. Encourage trapping by the public of wild cats, stray dogs, rodents and mustelids, particularly near high value habitats in or around areas containing threatened species susceptible to those predators.

20. Provide encouragement and advice to tangata whenua and community groups to carry out pest control in specific areas which are not currently a priority for the Department.

21. Encourage tangata whenua and community groups to participate in Departmental control operations where it is practical and appropriate for them to do so.

[Refer also to Section 5.4.3 Farming, Holding and Liberation of Animals.]

5.4.2 Recreational and Commercial Hunting

Recreational hunters are achieving pest control objectives in many forests administered by the Department by maintaining pigs in low to moderate numbers. However, it is beyond the scope of recreational hunters to control possums and goats in the same way. Most recreational hunting is carried out close to vehicle access points and landowners' permission to cross private land is often required before Department-administered land can be reached. In small habitats, where access is close-by and the landowners' permission is freely given, recreational hunters generally keep goats and pigs down to acceptable levels. However on areas of Department-administered land where access is difficult or not permitted by a private landowner, or on private land, these pests can reach locally high populations.

The Department generally supports recreational and commercial hunting as a means of complementing its own wild animal control programmes. When horses and dogs are used for hunting on lands administered by the Department they have undesirable side effects, however every opportunity needs to be taken to control wild animal pests in the region.

In some areas recreational hunters are responsible for the liberation of pigs and actively farm them for recreational benefit. Many tangata whenua maintain the right to hunt pigs from their ancestral lands for kai and do not believe they should have to apply for permits to do so.

The Wild Animal Control Act requires that landowner consent be gained for hunting wild animals, and for wild animal recovery by helicopter. On land administered by the Department, this consent is issued in the form of permits. The Conservation Act requires the issue of permits to have regard for public safety.

Uncontrolled and feral dogs are responsible in part for the decline in kiwi numbers in many forests. Part VC of the Conservation Act provides for the gazettal of areas as 'controlled dog areas' and 'open dog areas' through a process of public notification and consultation. Dogs may or may not be allowed in a dog controlled area, and a permit is required. At the time of writing this Strategy, no such areas are gazetted in Northland, and permits are required to use dogs for pig hunting in all areas administered by the Department.

Objective

To support controlled recreational and commercial hunting of animal pests and wild animals where appropriate to assist in meeting goals for the recovery of native plants and animals.

Implementation

1. Encourage efforts to control goats and pigs by recreational hunters through liaison with them and the continued issuing of permits.

2. Request assistance from recreational hunters to eradicate pigs where they severely threaten natural and historic values.

3. Co-operate with those intending to undertake the commercial harvesting of possums.

4. Raise public awareness of animal pest issues and the role of recreational hunters.

5. Consider restricting recreational hunting with dogs in dog control areas. These areas will be defined according to the procedures prescribed in Part Vc of the Conservation Act, and may include areas where, for example, wildlife values are high and include the presence of threatened species and where protected wildlife are vulnerable to uncontrolled dogs.

5.4.3 Farming, Holding and Liberation of Animals

Under the Wild Animal Control Act, which applies to all land, permits are required to capture, convey or liberate wild animals. Permits are also required to keep any wild animal in captivity for farming or for display purposes. The Fencing Act sets out specific fencing standards for the farming of all animals.

In Northland Conservancy deer farming is generally prohibited except for specified zones where Red deer, wapiti hybrids and fallow deer may be farmed or kept. These zones are not adjacent to significant forest tracts in the region. Where deer farming is permitted, consents must be obtained with specific requirements regarding fencing standards and other matters. Increasing numbers of escapes of animals from deer farms have reinforced the importance of regular monitoring of deer fences to minimise any chance of liberations.

Unauthorised liberation of animals can be intentional or as a result of inadequate holding pens and fences or accidents. Intentional releases of feral pigs and deer into the wild in Northland are of grave concern as these animals can form breeding herds and destroy native plants. Tb infected animals could also be introduced into Northland in this way.

Support and information from local authorities, farmers, recreational hunters and the public is needed to prevent pest liberations. Animals such as cats, ferrets, weasels and stoats are often released into the wild and publicity on the impacts they have on wildlife and control methods is required.

Statutory procedures are available to ensure the removal of stray stock or farmed wild animals which are liberated from captivity. Where the problem arises through inadequate or lack of fencing, the Department may negotiate with the adjacent owner to improve boundary fences.

The Department, together with the Ministry of Agriculture and Fisheries, has a role in approval of transfers of live aquatic life for fish farming under Section 26ZM of the Conservation Act. Environmental impact assessments are required for transfer proposals and the public must be given the opportunity to comment in accordance with the legislation.

Objective

To control the capture, conveyance and liberation of animal pests and wild animals to prevent their establishment in areas where they are not present.

Implementation

1. Carry out monitoring of deer and goat herds, and farms holding other potential pest species, as far as possible to minimise chances of liberation onto lands administered by the Department. Strictly police deer farming regulations to reduce frequency of escapes.

2. Exterminate any escaped or liberated deer from any land regardless of tenure. The Department will also co-operate with actions by other agencies and individuals to remove this pest. Prosecuting offenders, and advocating the need for ongoing diligence, will continue.

3. Advocate planning controls on goat farming adjacent to or near areas managed by the Department, and continue to liaise with land owners to improve stock fences.

4. Oppose the introduction of potential animal pests and wild animals into Northland.

5. Where illegal or accidental introductions of new species do occur, take all practical steps to remove them. Offenders may be prosecuted and charged costs of removal.

6. Where straying livestock impact on plant and animal values, make every effort to remove them.

7. Do not apply the above restrictions to legally authorised liberations of animal pest species for either approved control (e.g. Judas goats) or approved scientific research purposes.

8. Assess transfers of live aquatic life into the Conservancy to ensure risk of accidental release is minimised and potential impacts on native aquatic flora and fauna are not significant.

9. Raise public awareness of issues and the role of the public in assisting the Department.

5.5 PLANT PEST CONTROL

The control of plant pests by the Department is primarily determined by the Conservation Act 1987 (and more specifically the Reserves Act 1977 and National Parks Act 1980) and the Biosecurity Act 1993. The requirements of each Act are different, and vary according to the plant species concerned.

Two major responsibilities of the Department are:

- to protect natural and historic resources in areas managed by the Department from the effects of environmentally damaging plants; and

- to act as a "good neighbour" with regard to declared plant pests under the Regional Pest Management Strategy. The good neighbour principle could be extended to other plants which are not declared as pest plants, especially where natural and historic values of adjoining areas are threatened.

The Biosecurity Act 1993 provides for the preparation of regional and national pest management strategies. Plants may be classified as pests for a number of reasons, mainly for their economic effects and environmental impacts. Any government department including the Department of Conservation, local authority, company, society or private citizen can establish a pest management strategy, although the Department is still able to develop pest management programmes for the control of plant pests on land it administers under its own legislation. The Northland Regional Council is a key pest management agency in Northland and it has prepared a Regional Pest Management Strategy for plant and animal pests.

The plant pest problem in Northland has the following general characteristics:

- Northland with its warm, moist climate, which becomes almost subtropical further north, is a favourable place for weed spread and appears to have the greatest range of weed problems in New Zealand.

- Over 100 species of weeds threaten natural and historic values. These comprise a wide range of plant types and invade all types of habitat throughout the Conservancy.

- The overall process of invasion in terms of bulk, impact and number of species is still in its infancy but this situation is about to explode. Animal pests have accelerated the establishment and spread of unwanted introduced plants within forest by acting as vectors or degrading previously resilient habitats. Other vectors include wind, birds, stock, trampers, vehicles, watercourses and disposal of garden rubbish.

- The most significant weeds are those with the capacity to invade pristine ecosystems and damage the natural processes of ecosystem functioning. These include mist flower, wild ginger, monkey apple, and cestrum; colonisers like prickly hakea, spartina, wattle and pampas; and a wide range of scramblers and climbers, such as asparagus, jasmine, ivy, German ivy, and wandering jew. Nitrogen fixing plants such as wattles are a particular concern in acid wetlands.

- There is a high escape rate of plants into the natural environment and the primary source of problem plants is from areas outside land administered by the Department. Many potential problem plants are still being brought into the country and grown at local nurseries. Areas close to settlements and towns are under most threat.

- There are large areas of land suitable for plant pest growth such as ungrazed farm blocks, pine plantations, and degraded and secondary forest where plant pests are able to multiply and spread towards protected natural areas.

A plant pest control strategy requires a systematic, co-ordinated and carefully planned programme of work with the ultimate goal of subduing plant pests to the point where special natural and historic values are no longer threatened.

An inventory of weeds is required which shows the distribution and abundance of weeds posing the main threats to protected land. This information needs to be mapped and co-ordinated at the Conservancy level.

With the wide range of weeds involved, the focus of control programmes will be on defence of outstanding habitats rather than on individual species. The aim is to eradicate or control all ecologically damaging or potentially damaging plant pests in a particular area. The process of ranking habitats for their natural values has been carried out for possums and goats. Those habitats which receive wild animal control funding will also be targetted for plant pest control.

There are also highly ranked habitats with plant pest problems such as harbours, wetlands and coastal dunelands where animal pest control is not carried out. These areas will also be targetted for plant pest control where inventory shows significant pest problems which can realistically be attacked. In addition there are numerous small areas of infestation

which, if contained quickly, will limit the spread of a weed. These are also targetted if control is feasible.

Overall priorities for plant pest control will be assessed according to criteria which recognise:

- the value of the habitat;
- the level of invasion;
- the nature of the plant pest;
- the rate of plant pest spread;
- the size of the plant pest source;
- the time available before the plant pest reaches control crisis point;
- opportunity costs; and
- control options.

Total eradication can only occur where all seed sources can be eliminated, such as on islands or in isolated localities. Localised eradication can be achieved in an area where all potential seed sources can be eliminated in a buffer as wide as the seed dispersal distance, and where vegetative spread can be prevented. Even on islands there is a risk of reinvasion and so ongoing control is required especially for those plants whose seed is dispersed by wind or birds. In many situations, because of the size of the problem, the resources available and the nature of the pest, the only option is to do nothing.

Plants are classified as plant pests by local authorities for agricultural, economic and environmental reasons. Control programmes for plant pests such as gorse and ragwort may be undertaken in areas and on boundaries where there is no conservation concern.

Control methods may involve physical removal such as cutting or grubbing or use of high temperature steam. The Department supports programmes to develop and introduce biological control agents for species such as mist flower. Chemical methods are usually the most effective if applied correctly. Preventative methods to halt the introduction of plant pests into certain areas include control on the movement of stock, fire, human access, and movement of roading gravel and rubbish. Stopping the propagation and sale by commercial nurseries of certain species is also necessary. More research is required on different approaches to control in a variety of situations, as well as research into the biology of plant pests and their behaviour and effects in Northland habitats.

Liaison with other organisations is an important aspect of pest control. Areas affected by plant pests often extend across property boundaries and there is an ongoing need for a co-ordinated approach with regard to work priorities and objectives. Contact must also be maintained with other interest groups such as Federated Farmers, the forest industry and owners of land adjoining land administered by the Department. Public awareness is an important part of plant pest control, and involves discouraging planting of pest species and ensuring correct disposal of garden waste.

The view of iwi is that weed control is a priority for the Department and that gorse in particular should be eradicated where possible. However gorse in many circumstances is a good nurse crop, and may eventually aid regeneration into native forest if undisturbed. Ngati Whatua support the wholesale elimination of exotic species of flora and fauna which

are responsible for the destruction of indigenous flora and fauna, as listed by the Department.

Objectives

To control weeds according to statutory obligations.

To control, and wherever possible, eradicate plant pests where they threaten significant natural and historic values.

To encourage other landowners and authorities to act on plant pest control and co-ordinate their actions where appropriate.

To prevent the introduction and invasion of potentially significant new plant pests wherever possible.

Implementation

1. Discharge obligations arising out of national and regional pest management strategies established under the Biosecurity Act.

2. Eradicate or control plant pests, other than plants contained in the Regional Pest Management Strategy, from priority areas at greatest risk and of highest natural and historic value as indicated in Table Six.

3. Control plant pests in selected outlying areas where the infestation is small and there is a high probability of success.

4. Where appropriate, adopt a comprehensive approach to plant pest control by targeting all significant plant pests in a particular area in accordance with the Conservancy plant pest control strategy. This will include intensive control along roads, tracks and water courses, and close liaison with adjoining landowners especially if they are in the same catchment. Promote the establishment of buffer zones around high priority areas.

5. Carry out an inventory of plant pests to determine their distribution and size of infestation.

6. Encourage and support a co-operative research with other agencies into long term control methods including biological control, plant pest biology and site rehabilitation. Use properly authorised biological control agents where appropriate and mechanical methods where practical.

7. Carry out an ongoing public information campaign which seeks to raise awareness of the identity of plant pests, the threats they pose, methods of control and other issues. Give encouragement and advice to tangata whenua,

community groups and the public to undertake plant pest control programmes in buffer zones.

8. Actively discourage the propagation and sale of plant pests from nurseries and domestic gardens.

9. Attempt to achieve early detection of new potential plant pests through liaison with the country of origin, other Pacific countries with experience in plant pest control, and liaison with countries where the plants have also been introduced.

10. Co-ordinate eradication and control efforts with the Northland Regional Council and district councils through the proposed Regional Pest Management Strategy.

11. Encourage community involvement in plant pest control through support of pest management strategies proposed by other agencies under the Biosecurity Act.

12. Use control methods according to defined safety, storage, handling and application procedures and appropriate legislative requirements.

13. Establish monitoring programmes to assess the long-term effectiveness of any control operation, the need for follow-up rehabilitation work, and changes in plant pest distribution.

Table Six: Priorities for Plant Pest Control on Land Administered by the Department

(Refer to Appendix Four for list of common and scientific names.)

Priority Areas for Comprehensive Control	
Te Paki/Parengarenga	Kangaroo acacia, Prickly hakea and downy hakea, Mist flower, Orange cestrum, Pampas, Spartina, Oxylobium, Wilding exotic pines
Kaimaumau/Rangaunu/ Karikari	Spartina, Sydney golden wattle, Willow leaved and prickly hakea, Pampas, Broom, Wilding exotic pines, Bottle brush, Climbing asparagus, Ginger species, Cape Honey flower
Whangaroa/Cavalli Islands	Kahili ginger, Spartina, Sharp rush, Mist flower, Pampas, Wilding exotic pines, Wandering jew, Climbing asparagus, Mexican daisy, Lantana
Bay of Islands/ Whangaruru/ Mimiwhangata	Kahili ginger, Mist flower, Spartina, Chinese privet, Loquat, Olive, Bartletina, Climbing asparagus, Monkey apple, Polygala, Moth plant, Wilding exotic pines
Whangarei/Bream Bay	Kahili ginger, Mist flower, Wandering jew, Climbing asparagus, Spartina, Sharprush, Wilding pines
Pouto/Kaipara	Pampas, Spartina, Wandering jew, Mistflower, African feather grass, Wilding pines
Waipoua/Waima/ Mataraua	Kahili ginger, Mist flower, Mexican devil weed, Himalayan honeysuckle, Selaginella, Ivy, Crocosmia x crocosmifolia, Aristea ecklonii, Hakea, Wilding pines, Banana passion fruit, Cotoneaster, Pampas, African club moss, Montbretia, Climbing asparagus, Tutsen
Hokianga/Puketi	Mexican devil weed, Selaginella, Cape honey flower, Ginger species, Spartina, Mist flower
Ahipara	Hakea, Pampas, Lantana
Offshore Island Refuges	All invasive plant pests including pampas, Moth plant, Mist flower and Mexican devil weed

Plant Pests to be Monitored and Eradicated if Detected
Water net, Mexican daisy, Evergreen buckthorn, Climbing spindleberry

5.6 LEGAL PROTECTION OF HISTORIC RESOURCES

Background

This section refers to lands of all tenure, not just those administered by the Department. Legal protection of historic resources is concerned with the protection and conservation of historic places, the artefacts and taonga associated with them and, where appropriate, their written and oral histories. These aspects of our cultural heritage are grouped by the Department under the term 'historical resources'. Use of this term, with its materialistic bias, may seem inappropriate especially when applied to urupa and other wahi tapu, but it does emphasise the finite and vulnerable nature of historical remains.

The majority of historic places contain physical remains of the past. In Northland they represent every stage of New Zealand history from early Polynesian settlement, through the development of Maori agriculture and warfare, to European colonisation and the subsequent growth of industries that transformed the landscape and formed a basis for our present economy. These sites contain archaeological evidence and in some cases they retain standing structures. Many that can be defined as archaeological also hold spiritual significance for the tangata whenua but there are other places of traditional importance where no visible evidence of human activity exists, for example canoe landing places and landmarks that define the boundaries of a rohe. There is then an overlap but not a precise parallel between the concept of an archaeological site and that of indigenous cultural value.

Departmental staff have received privileged information on the location of wahi tapu from several iwi and hapu of Taitokerau, to ensure protection of the sites. The decision as to whether knowledge of these places should be disseminated must rest with the tangata whenua concerned.

The main emphasis of this strategy is on physical places that can be identified from archaeological evidence and historical documentation. The breadth of scope in these related fields of history and archaeology is seldom recognised. In the widest sense they can be defined as the study of past human interaction with the environment and the resultant changes to cultures and lands over time. Evidence of this process is not simply

a resource for academic scholars and museum collectors, but is highly relevant to contemporary problems. As both a Maori proverb and a European philosopher advise, we need to "look back to the future".

Legislation

The Department's principal historic heritage function is the management of historic resources on land it administers. The Conservation Act 1987 determines the functions and responsibilities of the Department for historic resource protection on conservation areas. The Reserves Act 1977 applies to those areas classified as historic, scenic, recreation and other reserves. The Department is also bound by the Historic Places Act 1993 and the Antiquities Act 1975 and it has a role in advocating for historic resource protection under the Resource Management Act 1991.

The Conservation Act also provides the Department with advocacy and public awareness functions relating to the conservation of historic places that are not on land which it administers. However the Historic Places Act and the Resource Management Act clearly allocate key roles in these functions to the Historic Places Trust and local authorities. The Department regards these agencies, together with tangata whenua and the New Zealand Archaeological Association, as key associates in historic heritage protection. The Historic Places Act confirmed the Trust's role as the leading historic heritage advocate and strengthened its independent status.

The Historic Places Act provides for registration of historic places, historic areas, and wahi tapu areas, and their protection through heritage orders and heritage covenants. It also controls destruction, modification and investigation of archaeological sites by a system of authorities.

The purpose of the Antiquities Act is to protect historic artefacts, documents and ship wrecks; to establish ownership of Maori artefacts; to control the sale of artefacts within New Zealand, and to restrict their export. It requires collectors of historic artefacts to be registered and those who trade in them to be licensed. The Act is administered by the Department of Internal Affairs.

Under the Resource Management Act local authorities must prepare regional policy statements and plans which must address issues of historic resource protection. The Department supports the Historic Places Trust in ensuring that such issues are effectively dealt with but the Trust is the lead agency in this function. [Refer also Section 9.0 Statutory Planning.]

The result sought by the National Historic Heritage Strategy is: " Historic places and areas on land administered by the Department are managed effectively in co-operation with the community, and those special to Maori are managed according to Maori tikanga in partnership with tangata whenua. In co-operation with the community and other agencies, key historic places on all lands have been identified and significant gains made in their conservation and appreciation."

Iwi Perspectives

In Northland the great majority of historic places are of Maori origin. Their full significance cannot be determined by Conservancy staff, consequently the appropriate protection and conservation of these sites can only be achieved through a co-operative working relationship between the Department and the iwi and hapu of Taitokerau. There is already a good working relationship in some areas and the Department is committed to furthering this.

In addition to this general principle the Conservancy accepts the more precise code of ethics and guidelines in the ICOMOS New Zealand Charter for the Conservation of Places of Cultural Heritage Value. This includes acknowledgement that indigenous people are the guardians of their own cultural heritage and that the requirements of tangata whenua will be taken into account in the conservation of places with cultural or spiritual significance to them. It also provides principles for all forms of conservation methods and processes to ensure that high professional standards are met in the recording, investigation, maintenance and restoration of archaeological sites and historic structures. The complete charter is reproduced in Appendix Two.

The views of iwi relating to historic resource protection centre on three main issues.

1. Treaty of Waitangi claims. (These include almost all of the land currently administered by the Department).

   The iwi objective is for these lands to be returned so that they can be improved and managed according to "tikanga Maori conservation values and standards". Iwi consider that the Department should encourage and allow the immediate return of the claimed lands.

2. Recognition of tangata whenua status.

   It is stated that sacred lands are being abused in ignorance by the general public. From an iwi perspective these need to be re-designated in consultation with the tangata whenua to ensure that their spiritual significance is respected. In addition, lands where public use is allowed should be controlled and managed by the tangata whenua.

3. Wahi tapu.

   Wahi tapu denotes a place under tapu. If these areas are deliberately tampered with or interfered with, there could be serious consequences for the individual, the whanau and hapu.

   Wahi tapu are sacrosanct to Maori. Trees, rocks, mountains, hills, and waterways, including food gathering places, and harvesting and cultivating sites, are included in this category. This may include canoe landings, moorings, papakainga and the materials necessary for the construction of houses, canoes, clothing and tools. All of these things can be placed under sacred protection by tohunga (specialists) to maintain their integrity or sustainable use. Bones of

rangatira (chiefs) were buried on mountains, where the bones were deposited by different methods. Ana (caves) were used as burial grounds because of the cool temperatures which helped to preserve the bones.

Iwi believe the Department must recognise that all wahi tapu are sacred and cannot be categorised, or be given western value standards. All developers, including the Department, should consult with the tangata whenua at an early stage of planning to allow for protection of wahi tapu according to tikanga Maori.

The Crown has made no determination as to its views in response to those of iwi recorded above and the Department has no mandate to anticipatethe outcome of any Treaty of Waitangi claim settlement between the Crown and iwi.

Terminology

The terms used in this strategy are generally in accordance with definitions given in the ICOMOS Charter. (See Appendix Two.) In addition a distinction is made between legal protection of historic resources and their active conservation. Legal protection prohibits damage to sites without authorisation from the Historic Places Trust. With active conservation, specific measures are taken to halt or remedy destructive forces. This is a costly process which can only be applied to a minority of highly significant sites. This is discussed more fully in Section 5.8.

Threats to Historic Resources

Wahi tapu and historic places, and the taonga and artefacts they contain, are highly vulnerable to desecration or physical damage from a variety of natural forces and human activities. Legislation in the form of the Historic Places, Antiquities, Conservation, Reserves and Resource Management Acts provides prohibitions and principles designed to protect and conserve these resources but the available staff and funding are inadequate to make the Acts fully effective.

There have been improvements in recent years with clearer responsibilities for regional and district councils to protect cultural and historic values under the Resource Management Act, and with the relocation of additional Departmental staff trained in historic and archaeological disciplines. However, modification and destruction of historic places is still continuing throughout Northland. The major causes are listed below.

(a) **Natural forces**. Erosion and modification of sites from wind, rain, wave action and tree roots is generally a slow, if inevitable, process, but in parts of Northland, particularly the Far North dunes, storms can seriously damage or destroy important sites within a few weeks or even days. Many of these sites are on land administered by the Department and on adjacent land in Maori ownership.

(b) **Ignorance of the law**. Deliberate damage to historic places is rare and if suspected it can be difficult to prove. However, many sites are inadvertently modified through ignorance of the law that protects them, or from an inability to recognise their existence.

Fossicking and the illegal removal of artefacts from sites, is still common in Northland, especially on sea coasts and in dunelands.

(c) **Developments.** Farming, forestry, mineral extraction, tourist facilities and subdivision of land are all potential threats to historic sites. Although resource consents are required for most of these activities, the problem has not been solved. Councils vary in the information they provide to the Department and to iwi. Some areas have not been archaeologically surveyed and may wrongly be assumed to have no significance. Some developers commence work before consent is obtained. Surveys of historic buildings and structures are also incomplete.

(d) **Conflict of Conservation Issues**. Revegetation proposals for reserves and other lands, including offshore islands, need to take account of the impact this could have on historic values.

(e) **Visitor Traffic**. A number of sites on land designated recreation reserve and administered by the Department and district councils are extremely popular with the public. These are often pa that provide extensive views of the landscape. The constant visitor traffic results in eroded pathways and platforms.

(f) **Loss of Knowledge**. Oral histories, documents, drawings and early photographs enrich our understanding and appreciation of historic places. Without them, knowledge of a place is limited to its physical remains. This valuable information is frequently lost when people die and their belongings are discarded without realisation of the significance they hold.

Measures to alleviate these threats to vulnerable resources are addressed in the following sections which are concerned with the Conservancy's responsibilities within and outside the land it administers.

Responsibilities

The Department has a statutory role in advocating for the conservation of resources generally and part of this role is advocating for the conservation of historic resources. However, primary responsibility for advocacy for the conservation of historic resources rests with the NZ Historic Places Trust. Together with this advocacy, the Historic Places Trust is also legally responsible for the protection of these resources through its powers and functions under the Historic Places Act. The principal role of the Department is the management of historic resources on land it administers. (Refer Section 5.7 Management of Historic Resources).

Issues

- The Conservancy has a role in advocating for the conservation of Northland's historic resources but this role is limited under the Historic Places Act. The Historic Places Trust is now the lead agency.

- Historic sites in the region are being damaged and destroyed by natural processes and human agencies.

- Legislation alone is inadequate for the protection of historic places. This can only be achieved through widespread public co-operation.

- Although surveys of historic places have covered several large areas of Northland, the site inventory is far from complete. Historic places cannot be protected until they are identified.

Objectives

To work in co-operation with the Historic Places Trust and landowners toward identification, protection and conservation of historic places on land not administered by the Department, and to support the Trust in the exercise of its powers and functions under the Historic Places Act.

To support and assist tangata whenua in recording and protecting wahi tapu and other places of cultural significance.

To assist councils, planners and developers to protect historic places through the Resource Management Act 1991.

To re-evaluate the management and classification of reserves on land administered by the Department and other land in consultation with the public and relevant iwi and hapu.

To consult and work with the Historic Places Trust and local government to increase public awareness of Northland's historic values and encourage public participation in their conservation.

Implementation

1. Provide assistance, where appropriate and legally permissible, to the NZ Historic Places Trust, councils, planners and developers, for the purpose of protecting and conserving historic resources throughout Northland.

2. When requested by iwi, seek to assist in recording and protecting wahi tapu and other places of cultural significance where appropriate, to ensure that they are not desecrated or damaged.

3. Encourage, support, and cooperate with the Historic Places Trust and district councils in programmes of survey and inventory, targetted at areas of greatest need, to complement programmes on land administered by the Department (Table Seven), and in accordance with national priorities.

4. Encourage and assist graduate students to undertake post-graduate research in Northland to further the aims of the Department.

5. Increase public awareness of historic resources through media attention, by inviting public participation in projects, and arranging open days and field trips.

6. Continue to support the Regional Committee of the Historic Places Trust and attend meetings.

7. Continue to house the NZ Archaeological Association files in the Conservancy Office and to assist the Regional Filekeeper.

5.7 MANAGEMENT OF HISTORIC RESOURCES

This section relates mainly to the conservation of historic resources on land administered by the Department. This is now the Department's main function in historic resource protection under the Historic Places Act 1993 and the National Historic Heritage Strategy. Preservation of these resources retains the fabric of cultural identity for Northlanders, emphasises continuity between the past and present, and provides an understanding of the human achievements and errors that have resulted in the present-day ecology.

The Department's function is to manage for conservation purposes all land which it administers as identified and described in Volume Two of this Conservation Management Strategy. The Conservation Act 1987 defines conservation as "the preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations."

The lands administered by Northland Conservancy are highly diverse in size and topography. They include offshore islands, coastal belts, farm parks and inland forests. These contain historic places and landscapes that represent the full sequence of historic periods in New Zealand from early Polynesian settlement to the development of European industries.

Since the 1970s, large areas of land administered by the Department have been surveyed for archaeological sites and approximately 3,000 have been recorded; about one third of those identified throughout the region. The majority are of Maori origin and many hold deep spiritual significance in addition to their historic and archaeological values. The Conservancy administers 15 historic reserves, most of which are small areas of land containing a single historic place. Many other areas with equal, if not greater, significance are on land with other classifications.

The task of the Department is to care for the 3,000 known historic places on land which it administers. Given the large number of sites, it is necessary to prioritise conservation effort. A detailed historic resources strategy has been developed which guides work priorities.

Priorities are based on the following criteria:

1. Physical values as a record of the historic heritage.
2. Representative of specific periods of Northland history.
3. Current state of preservation.
4. Vulnerability to threats.
5. Rarity, special attributes or significance.

Table Seven contains the identified priorities. The strategy also includes procedures for assessing the significance of sites and how staff should ensure their protection. Areas requiring additional inventory need to be identified. A register of actively managed sites will be maintained which summarises key management information. The co-operation of the public, iwi, NZ Historic Places Trust and staff is required to ensure adequate standards of protection.

Issues

- Historic places continue to be modified through natural processes, visitor traffic, removal of artefacts and conflict between different conservation values.

- Closer communication and co-operation is required between all levels of the Department, iwi authorities, the Historic Places Trust, local government and the general public.

- Although many large areas of land administered by the Department have been surveyed for historic places, additional surveys are required to address gaps and deficiencies in information.

- The boundaries of land administered by the Conservancy are arbitrary and artificial from a historical perspective. Many reserves are only part of historic landscapes that extend well beyond Conservancy boundaries.

- Many historic places are subject to claims by tangata whenua before the Waitangi Tribunal. These claims require resolution.

Objectives

To protect all historic sites on land administered by the Department from damage through deliberate or inadvertent human activities in co-operation with tangata whenua and community interest groups.

To actively conserve a range of historic places that represent a broad cross-section of periods in Northland's historic sequence, and to enhance public understanding and appreciation of our heritage.

To undertake the protection and conservation of wahi tapu and other places of Maori significance in co-operation with tangata whenua.

Implementation

1. Endeavour to protect all historic places on land administered by the Department from damage through deliberate or inadvertent human actions, and conduct research to control damage from natural forces.

2. Carry out active conservation work on a range of historic sites that represent Northland's historic heritage according to priorities set out in Table Seven. The criteria for selection approximate those used in the Historic Places Act, which are as follows:

   - physical values as a record of the historic heritage;
   - representativeness of specific periods or themes in Northland history;
   - current state of preservation;
   - vulnerability to threats; and
   - rarity, special attributes or significance.

3. Undertake protection and conservation of wahi tapu and other sites of Maori significance in co-operation with tangata whenua. If koiwi are found, inform local tangata whenua or runanga as appropriate.

4. Enhance public understanding and appreciation of historic places through site interpretation, publications and public involvement in projects, where this does not adversely conflict with the significance of the place.

5. In collaboration with tangata whenua and other interest groups, undertake within the next six years an ongoing inventory of historic places on land administered by the Department with potentially high historic values, and include adjacent lands where relevant to an understanding of the area. Include histories of the land blocks in survey reports.

6. Synthesise the historic and archaeological research undertaken in the region to produce accounts of the major periods and themes of Northland history.

7. Prepare conservation plans, guided by the principles and practices set out in the ICOMOS New Zealand Charter (Appendix Two), for those actively managed places identified in Table Seven. The plans, which will guide work, will provide for remedial work and long-term maintenance.

8. Carry out urgent remedial work in response to immediate threats without the normal process of planning if a historic place of apparent high significance is under threat of significant loss of integrity.

9. Consult with the Historic Places Trust on work on historic places where they are registered or are archaeological sites.

10. Acquire additional areas of land which relate to or enhance historic sites already managed by the Department.[See also Section 5.2.]

11. Re-assess the classification and management of land administered by the Department and other land in consultation with tangata whenua and advocate changes where historic or dual classification would be more appropriate.

12. Ensure that authorities and permits are obtained from the Historic Places Trust when they are required for remedial work or investigation of sites on land administered by the Department.

Table Seven: Priorities for Historic Site Conservation

Refer also to Historic Resources Strategy, Northland Conservancy, for more detail on proposed programmes.

LOCATION	DESCRIPTION	Criteria (see key below)					CONSERVATION PROGRAMME
		1	2	3	4	5	
HIGH PRIORITY							
Ruapekapeka Historic Reserve	Site of last battle, 1840s. Maori musket pa. European forward lines.	H	H	H	H	H	Research into vegetation management. Conservation of artefacts.
Far North Dunes Te Paki/Mokaikai Recreational Reserves	Campsites, midden, workfloors. Early Polynesian settlement 19th century. Burial sites.	H	H	L	H	H	Research into stabilisation. Investigation of badly eroded sites if approved by tangata whenua.
Hiriki Pa complex Te Paki Recreational Reserve	Group of significant Maori pa.	H	H	H-M	H	H	Re-assess condition. Stabilise & assess interpretation potential.
Te Rerenga Wairua	Departure place of the spirits of the dead for Hawaiki nui	L	H	M	M	H	Ensure that there is no desecration of spiritual values.
Taumatawhana Onepu; proposed Historic Reserve	Two significant twin-tihi pa. Associated Maori ditch gardens on adjacent property.	H	H	H	M	H	Vegetation management. Periodic grazing.
Muiata Pa Historic Reserve	Maori swamp pa.	H	H	H-M	M	H	Produce measured plans. Fencing; stock control.
Taumarumaru Recreational Reserve	Three significant named Maori pa and associated sites.	H	H	M	M	H	Stock and gorse control.
Rangikapiti Pa Historic Reserve	Spectacular Maori pa. Great traditional significance.	H	H	H	M	H	Reconstruct steps & re-route visitor access. Control gorse & assess interpretation potential.
Mangonui Courthouse Historic Reserve	19th century courthouse. 20th century police station.	H	H	M	M	H	Complete remedial work. Continue maintenance.
Waipoua Forest	Extensive evidence of Maori occupation & agriculture. Gumdigging. Kawerua Gumstore/Hotel.	H	H	H-M	H-M	H	Complete survey & measured drawings. Seek closer co-operation between DOC & Te Roroa. Architectural assessment of Kawerua Hotel. Establish Historic and Traditional Reserve.
Ranfurly Bay Scenic Reserve	Extensive evidence of Maori occupation & agriculture. 19th/20th century fishing camps. WWII defence installations.	H	H	H-M	H	M	Eradicate pigs. Monitor vegetation regrowth.
Kororipo Pa Historic Reserve	Significant Maori pa; pre- & post-European. Base for Hongi Hika's war parties.	H	H	M	L	H	Research into vegetation management. Re-assess interpretation.

Rainbow Falls Scenic Reserve	20th century hydro-electric station.	H	H	M	L	H	Continue maintenance & restore machinery. Provide interpretation.
Okuratope Pa Historic Reserve	Significant Maori pa; pre- & post-European. Unusual form of construction.	H	H	H	M	H	Control vegetation, provide visitor access subject to protection of very delicate surface features & assess interpretation potential.
Kahuwhera Pa Historic Reserve	Significant Maori pa; pre-European contact period.	H	H	H	M	H	Assess vegetation regrowth.
Motuarohia Recreational Reserve	Maori pa & associated sites; pre-European & contact period. Early European occupation.	M	H	M	L	H	Monitor visitor impact. Control vegetation. Re-assess interpretation.
Moturua Scenic Reserve	Early Polynesian settlement. Maori pa & associated sites pre-European & contact period.	H	H	?	M	H	Re-survey and assessment.
Urupukapuka Island Recreational Reserve	Maori pa & associated sites pre-European & contact periods.	H	H	H-M	M	H	Assess vegetation regrowth. Re-assess interpretation.
Mimiwhangata Coastal Park	Extensive evidence of Maori settlement & agriculture. Burial sites.	H	H	M	M	H	Vegetation control. Monitor visitor/stock impact. Develop historic walkway.
MEDIUM PRIORITY							
Ngaiwhituaroa complex Te Paki Recreational Reserve	Group of significant Maori pa & associated sites.	H	H	H	M	H	Re-assess condition. Vegetation clearance if justified. Assess interpretation potential.
Airstrip complex Te Paki Recreational Reserve	Wide variety of pre-European Maori sites; pa, kainga & storage areas.	H	H	H	M	H	Re-assess stock erosion and management. Assess interpretation potential.
Motuopao Island	Base of 1878 lighthouse. Associated buildings. Midden sites.	M	H	M	M	H	Assess condition & costs of implementation.
Puwheke Recreation Reserve	Three small pa & midden.	M	M	H	M	M	Assess stock management and fencing.
Ahipara Gumfields Historic Reserve	Extensive evidence of Dalmatian gumdigging & occupation.	H	H	H	L	H	Historical research. Vegetation management. Interpretation.
Arai-te-Uru Recreational Reserve	Great spiritual significance. Previous burial site & first signal station for Hokianga bar.	M	H	M	L	H	Vegetation management. Interpretation.
St Paul's Rock	Maori pa; pre-European.	M	M	H	L	M	Monitor visitor traffic. Assess stocking regime.
Marsden Cross Reserve	First CMS Mission Station. Maori garden channels.	H	H	H	L	H	Monitor vegetation control.
Akeake Historic Reserve	Maori pa; pre-European.	H	M	M	L	M	Walkway for erosion control.

							Interpretation.
Tapeka Pa Historic Reserve	Significant Maori pa; pre-European.	H	M	H	L	M	Continue current maintenance. Construct steps over eroded scarps.
Waikare Historic Reserve	Te Kapa Pa; pre-European; spectacular defences.	H	M	H	M	H	Produce detailed plans. Assess vegetation regrowth.
Harata Historic Reserve	Paroa Pa; pre-European. Burial site.	M	M	H	L	H	Vegetation control.
Waewaetorea Island	Maori pa & other associated sites.	M	M	?	M	M	Re-survey and assess.
Flagstaff Hill Historic Reserve	Site of Hone Heke's defiance of British rule by cutting down flagstaff; Previous Maori pa.	H	H	L	L	H	Continue current maintenance.
Whangamumu Scenic Reserve	Whaling station.	H	H	M	M	H	Re-assess condition. Produce measured plans.
Whangaruru North Head Scenic Reserve	Maori pa & other associated sites.	M	M	?	M	H	Re-survey and assess.
Okiato Proposed Historic Reserve	Site of the first Government House. Residence of American Consul.	M	H	L	L	H	Complete investigation of sub-surface evidence. Landscape and interpret.
Waikiore	Puhipuhi mercury & silver mines.	H	H	?	M	H	Produce measured plans. Assess interpretation potential.
Bream Head Scenic Reserve	Extensive Maori occupation. Burial sites. WWII defence installation.	H	H	M	M	H	Continue current maintenance. Complete interpretation. Monitor visitor impact.
Motukiore Island Recreational Reserve	Maori pa, middens; pre-European. Early European sawmilling, ship building, oyster farming.	H	H	H	L	H	Continue current stocking regime. Monitor stock/rabbit impact.
Otaika Valley Scenic Reserve	Part of extensive & dense Maori settlement throughout valley.	H	H	H	L	H	Re-survey and assess.

Key

1. Physical values as a record of the historic heritage
2. Representative of specific periods of Northland history
3. Current state of preservation
4. Vulnerability to threats
5. Rarity; special attributes or significance

H High
M Medium
L Low

Note This programme is not inflexible. It is open to proposals from iwi and other interest groups and to modification as further information is acquired.

5.8 LEGAL PROTECTION OF MARINE AREAS

The Marine Reserves Act 1971 provides for " the setting up and management of areas of the territorial sea, internal waters and foreshore as marine reserves for the purpose of preserving them in their natural state as the habitat of marine life for scientific study."

The Department is developing a long-term strategy for marine reserves. Its intention is to administer the Act to establish and manage a network of marine reserves around New Zealand's coastline to ensure, as far as possible, the preservation of representative examples of all types of natural marine ecosystems, both unique and typical. The Department also has an advocacy role in relation to the protection of the coastal/marine area. [Refer Section 9.3 Coastal Planning.]

There is currently one marine reserve in the Conservancy, at the Poor Knights Islands, where fishing is prohibited. The marine park at Mimiwhangata is established under fisheries regulations which replace the former Grant of Control of the seabed under the Harbours Act. The Ministry of Fisheries is responsible for ongoing fisheries management in the Park. which involves restricting fishing to certain methods to allow the protection of reef fish. [Refer also Section 5.9 Marine Reserves Management.]

The Department has been pursuing a marine reserve proposal in the Bay of Islands which was initiated by the Bay of Islands Swordfish Club. As a result of the concerns of tangata whenua, this proposal is still under discussion within the community.

Investigation of the diversity and vulnerability of marine life and seabirds at the Three Kings Islands has identified the need for protection of marine habitats in this area. Set netting has been prohibited within one nautical mile of the Three Kings since September 1993. The creation of a marine reserve under the Marine Reserves Act may be the best means of achieving additional protection.

Proposals for marine reserves may be prepared by the Director General of Conservation, any university (within the meaning of the Universities Act 1961), any body appointed to administer land (subject to the Reserves Act 1977) which has frontage onto the sea, or any incorporated society engaged in or having as one of its objectives the scientific study of marine life or natural history. Other organisations may also submit proposals if they are supported or sponsored by one of the above. Proposals require wide initial consultation with iwi and the public and must meet certain criteria as specified in the Marine Reserves Act. If the Department is satisfied that the proposal has been well prepared, it is required to advance it through the necessary legal steps, including further investigation and consultation.

A proposal is currently being formulated by Ngati Kura to establish a marine reserve surrounding part of the Cavalli Islands. Others proposals include several areas of mangrove and estuarine habitats in the Whangarei Harbour and a rocky lagoon at Tapuaetahi.

A survey of rocky reef marine habitats throughout Northland waters has identified numerous other sites warranting protection as marine reserves but these have not been

pursued. The Department's priority is to complete the Bay of Islands proposal before pursuing other proposals.

The proposed Regional Coastal Plan for Northland supports the establishment of more marine reserves where these can be shown to provide social benefits to the community of Northland. The plan also refers to the provision of information to tangata whenua applying for the establishment of taiapure and mataitai reserves.

The gathering of kai moana (sea food) was carried out by tangata whenua within their traditional boundaries. Mataitai (traditional food gathering places), have always been traditionally managed by each hapu along the coast to provide them and the inland whanaunga (relatives) with food. These food gathering places today are jealously guarded and protected as best as possible by tangata whenua of the area. The view of iwi is that commercialisation and unrestrained recreational access have depleted these sources of food to a very low level. The rate of harvest by other users nullifies the sustainable conservation methods of their ancestors still being practiced today.

For iwi Maori, rahui are mechanisms for establishing a reserve, or a restricted area. A rahui is put in place as a conservation measure to preserve the food that is there and allow for its rejuvenation. Taiapure can be established under the Fisheries Act 1983 as amended by the Maori Fisheries Act 1989. Taiapure are local fishery areas which are of special significance to iwi or hapu as a source of seafood, or for spiritual or cultural reasons. Mataitai reserves can be established under the provisions of the Treaty of Waitangi (Fisheries Claims) Settlement Act 1992. They are discrete areas of traditional importance to Maori within which tangata whenua are authorised to manage and control the non-commercial harvest of seafoods. The establishment of a mataitai reserve clearly identifies the reserve as a mahinga mataitai under the Resource Management Act. Traditional methods of conservation still have their place in today's world, and are often seen by tangata whenua as the only device left to preserve what little there is remaining.

The protected status of marine areas may also be raised under the Convention on Wetlands of International Importance, commonly known as the RAMSAR Convention. This convention, signed in 1971 in the Iranian town of Ramsar by 18 contracting parties, seeks to conserve wetlands, including shallow, open waters such as lakes, rivers and coastal fringes, and any land which is regularly or intermittently saturated by water, such as marshes, swamps and floodplains. Guidelines have been developed for the wise use of wetlands. These seek to modify human use of wetlands so that there is continuous benefit to present generations while at the same time natural properties such as food webs and other ecological processes are maintained for future generations. Criteria for classification as a wetland of international importance include factors such as representativeness, biodiversity of threatened plants and animals and waterbird populations. The wetlands and harbours of the Far North are believed to meet the criteria and Parengarenga, Houhora, Rangaunu Harbours and the associated Kaimaumau and Karikari Peninsula wetlands have been nominated for RAMSAR status. Parengarenga and Rangaunu are particularly significant.

Objective

To raise the protected status of significantly more areas of high marine conservation value on the region's coast.

Implementation

1. Promote, recommend or advise on the establishment of marine reserves in the Bay of Islands.

2. Work with the Ministry of Fisheries and provide information, advice and technical support to tangata whenua seeking to establish taiapure or other forms of marine protection. [Refer also Section 9.3 Coastal Planning.]

3. Maintain a database of the coastal and marine conservation values of the Conservancy giving priority to rocky reef coasts and potential marine protected areas.

4. Promote the value of existing marine protected areas at the Poor Knights Islands and Mimiwhangata, recognising tangata whenua interest in and knowledge of the areas.

5. Provide information, advice and technical support to other organisations and groups promoting applications for marine protected areas.

6. Consider any additional proposals for marine reserves and ensure that they are in keeping with the Department's long term strategy for marine reserves.

7. Undertake proper consultation with groups affected by, or with an interest in, any proposal as part of any marine reserve investigation.

8. Use criteria for assessing areas of high marine conservation value based on:
   - diversity of reef fish species and habitats;
   - presence of rare species and biological communities;
   - representativeness of physical, biological and ecological features; and
   - the extent of human disturbance and intervention.

Priority areas for marine protected area status are:

- Bay of Islands,
- Cavalli Islands,
- Three Kings Islands,
- parts of the Hokianga Harbour, and
- parts of the Whangarei Harbour.

Other areas, assessed in terms of the listed criteria and objectives, may be added to the above list from time to time as listed areas gain marine reserve status or are withdrawn due

to opposition. Such additional areas may include Mimiwhangata and Hen and Chickens (part).

5.9 MARINE RESERVES MANAGEMENT

The Poor Knights Islands Marine Reserve is the only marine reserve in the Conservancy. The reserve extends 800 metres offshore from the Poor Knights Islands. The reserve is internationally known for excellent diving and is visited by over 50,000 people annually. Because of the need to protect the significant natural values present, the Department encourages charter boat operators to observe restrictions and police other boaties. Fishing is prohibited within the marine reserve boundaries. Interpretation panels and information at boat launching ramps and public awareness campaigns explain the value of the reserve (and the islands) and are important components of management.

The Department also has an interest in the Mimiwhangata Marine Park, an area of high marine value adjacent to the Mimiwhangata Coastal Park. Controls relating to the marine area are the Fisheries (Auckland and Kermadec Commercial Fishing Areas) Regulations 1986, and the Fisheries (Auckland and Kermadec Amateur Fishing Areas) Regulations 1986. These regulations are administered by the Ministry of Fisheries. Compliance with the fishing regulations is being encouraged through on-site interpretation and information brochures prepared by the Department.

Both these areas are within the rohe of Ngati Wai. Ngati Wai have expressed a desire to become more closely involved in direct management of the reserves. Management of any new marine reserves established during the period of this strategy, such as in the Bay of Islands, will require full involvement of tangata moana by way of membership of the relevant advisory committee.

Objectives

To manage marine reserves primarily for the purpose of preserving them in their natural state as habitat for marine life, scientific study in accordance with the Marine Reserves Act 1971 (Section 3(2)(a)-(d)), and to allow the public the opportunity to study and experience marine life in its natural habitat.

To manage other protected marine areas primarily to ensure that natural and historic resources are protected and enhanced, and to provide for recreation where appropriate.

Implementation

1. Monitor marine protected areas to determine the effects of protection and human impacts on marine ecosystems.

2. Carry out compliance and law enforcement of offences under the Act and of fishing notices and reserve regulations, in co-operation with tangata moana, local residents, tourist operators and dive clubs.

3. Where possible and appropriate, mark the boundaries of marine reserves with shore based markers, or significant features such as headlands, or other suitable methods.

4. Investigate and set aside designated anchorage sites providing natural and historic resources are not adversely affected.

5. Provide displays and notice boards at principal embarkation points to reserves to inform visitors of boundaries and other regulations.

6. Promote the concept and importance of marine reserves through visitor and volunteer programmes, displays, publications and the media. [Refer also Section 8.0 Public Awareness.]

7. Encourage appropriate research and scientific study in marine reserves in association with Ministry of Fisheries, universities, other interest groups and national Departmental monitoring teams.

8. Consult with tangata moana and other interest groups and involve them in the management of marine protected areas through advisory committees.

5.10 MARINE MAMMAL PROTECTION

The Marine Mammals Protection Act 1978 provides for the protection, conservation and management of all marine mammals such as whales, dolphins and seals within New Zealand and within New Zealand's territorial waters. Included in this legislation are provisions controlling the taking and keeping of marine mammals for specific purposes, and the disposal of sick or dead specimens. The collection and distribution of marine mammal bones and teeth is also a responsibility of the Department.

The Conservancy maintains a database and a plan for dealing with marine mammal sightings, strandings and deaths. It recognises the valuable contribution that volunteers can make to marine mammal management, and supports the efforts of groups such as Far North Whale Rescue and Project Jonah in education, training and incident response.

Frequent visitors to Northland waters are pilot whales, orca, herds of common and bottlenose dolphins, Brydes whales, sei whales, Grays beaked whales and minke whales. Occasional visitors include sperm whales, dwarf pygmy sperm whales, blue whales and humpback whales. Fur seals are found on Matapia Island off Ninety Mile Beach.

Each year the Conservancy responds to an average of one major whale stranding, usually a large pod of pilot whales. With extensive lengths of shallow sloping beaches and shallow harbours and estuaries such as the entrance to Whangarei Harbour and Parengarenga Harbour, Northland is one of the major stranding areas in the world. The Department is responsible for the disposal of dead marine mammals and records are kept of the sites of all burials.

Notwithstanding the legislation it is the view of some iwi that tangata whenua are the owners of marine mammals that die on beaches and that they should be allowed to use the flesh and bone of those dead animals. They do however support attempts at refloating animals which are still alive and have a fair chance of survival. The Department has worked with Ngati Wai to develop protocols for dealing with their respective interests, and these will be discussed with other iwi in Taitokerau.

The Department consults with iwi, the Northland Regional Council and district councils regarding the disposal of dead marine mammals. Prior to burial, prime carving material (whale jaw and teeth) are removed and prepared for allocation through the Cultural Materials Committee. [Refer Section 6.10 Customary Use.] The skulls and skeletal material from some whales is sent to the Museum of New Zealand for scientific purposes or display.

In recent years there has been increasing interest in dolphin and whale watching on a commercial basis along the eastern coastline and its major harbours, particularly in the Bay of Islands. The Department's responsibility is to ensure the health and safety of the animals above all else and strict conditions to meet these criteria are included on any permit issued for the purposes of marine mammal watching.

Objectives

To provide for the protection of marine mammals in accordance with the requirements of the Marine Mammals Protection Act.

To allow the controlled use of dead specimens for the benefit of tangata whenua, and for conservation and scientific purposes.

Implementation

1. Ensure that marine mammals are accorded protection as provided for in the Marine Mammals Protection Act and Marine Mammals Protection Regulations 1992.

2. Maintain a Marine Mammals Stranding Contingency Plan and train staff and capable volunteers in rescue techniques and maintenance of operational rescue equipment.

3. Encourage volunteer groups to take an active role in marine mammal protection, strandings and to support a marine mammal coastwatch network.

4. Allocate the products of marine mammals such as teeth and bones through the Cultural Materials Committee [refer Section 6.10] giving local tangata whenua priority for use of these products. The taking of flesh from marine mammals will be discouraged.

5. Maintain a register of marine mammal burial sites.

6. Provide suitable skeletal material and teeth to museums and other organisations in consultation with tangata whenua.

7. Issue a limited number of permits for commercial marine mammal watching subject to conditions which ensure the safety and well being of the animals, and compliance with the permit conditions by permit holders.

8. Inform all types of boat users of the requirements of the Marine Mammals Protection Regulations with respect to behaviour around marine mammals, through public awareness activities including signage at boat ramps, pamphlets and the news media.

9. Provide for the use of dead specimens or parts thereof for scientific research and conservation purposes.

5.11 PROTECTED SPECIES

The Department of Conservation administers a range of legislation which provides for protection of some indigenous species and the habitats of these species:

- Conservation Act 1987
- Wildlife Act 1953
- Wildlife Regulations 1955
- Native Plants Protection Act 1934
- Freshwater Fisheries Regulations 1983
- Whitebait Fishing Regulations 1994
- Marine Mammals Protection Act 1978 and Marine Mammals Protection Regulations 1992
- Marine Reserves Act 1971 and Marine Reserves Regulations 1993
- Wild Animal Control Act 1977
- Wildlife (Farming of Unprotected Wildlife) Regulations 1985
- Reserves Act 1977
- Trade in Endangered Species Act 1989

This legislation provides for the protection of most indigenous vertebrate species, all bats, frogs, most birds and reptiles, some large invertebrates and the habitats of

freshwater fish and marine mammals. Most invertebrates and plants, however, are not protected unless they occur on land managed by the Department. On other land some species are not protected so the Department advocates for the protection of these species and for the habitats of all indigenous species.

In administering the Conservation Act, the Department is required to give effect to the principles of the Treaty of Waitangi/Te Tiriti o Waitangi. These principles also apply to the conservation of indigenous species. This requires that the Department consult the relevant tangata whenua, where appropriate, during the planning and implementation of programmes directed towards the protection of indigenous species.

Northland contains a mosaic of habitats from temperate to subtropical, ranging from fragments of beech forest to expanses of kauri and mangrove forests, harbours, freshwater and brackish wetlands, dunelands and island refugia. Biodiversity is correspondingly high and the number of threatened plant and animal species (over 100) is greater than in any other Conservancy. The indigenous animals, and especially the plants of the region, have been shaped by climatic change and alternating periods of isolation and contact with the rest of the mainland.

The forests are home to unique plant and animal assemblages. A number of threatened species, and particularly the plants *Davallia "Puketi"*, *Coprosma waima*, *Olearia "Waima"*, and Bartletts rata, have very limited distributions. The forests are depauperate in birds but a relict population of rifleman occurs in Warawara and declining numbers of brown kiwi, kukupa and kokako are found elsewhere. Other threatened forest fauna include significant populations of short-tailed and long-tailed bat, Hochstetters frog, the locally endemic Northland tusked weta and the Te Paki subspecies of *Paryphanta busbyi watti* and *Placostylus spp.*

The harbours attract over 40 species of international and New Zealand migratory waders annually, including significant proportions of the total New Zealand populations of kuaka, knot, little tern, fairy tern, Caspian tern, New Zealand dotterel, banded dotterel and variable oystercatcher.

The freshwater and brackish wetlands are home to a variety of threatened plants and animals including *Hydatella inconspicua*, dwarf inanga and NZ dabchick, which are confined to dunelakes; *Baumea complanata*, black mudfish and several other threatened fish species; and wetland birds including brown teal, bittern and fernbird. Pockets of endemism occur at Kaimaumau, Lake Ohia and the dunelakes of Pouto and Aupouri Peninsula.

The islands of Northland provide refugia for predator-prone species such as tuatara, McGregor's skink, Poor Knights giant weta and cave weta, and plants such as *Asplenium pauperequitum* on the Poor Knights and *Tecomanthe speciosa* and *Pennantia baylisiana* on the Three Kings. Islands are particularly important for many species of threatened landbirds including little-spotted kiwi, kaka, kakariki and saddlebacks, and as breeding grounds for millions of seabirds including blue penguin, five species of shearwater, gannets and three species of petrels - fairy prions, diving petrels and white-faced storm petrels.

Maintaining biodiversity, the diversity and variety of species and natural ecological processes, is a high priority for the Department. While protection and management of key habitats in Northland reduces the threats to many protected species, this is often insufficient to ensure continued survival of threatened species. Management of particular species is often required, for example maintaining fish passages for migratory native fish. Threats to mainland species include land development, livestock, goats, possums, plant pests, predators and fire.

Decisions about which species are to be the focus of active management are guided by a nationally co-ordinated species ranking system. National priorities are based on species distinctiveness, status, threats, vulnerability and cultural values.

Conservancy rankings take account of:

- the requirements of species recovery programmes;
- the status of the species within the Conservancy as compared to their status nationally;
- whether the species is declining locally;
- existing or potential threats;
- whether the loss of the Conservancy population means the loss of the entire species or a significant proportion of it;
- whether a significant part of the species habitat or range is beyond land administered by the Department; and
- the practicality of effective conservation management.

Species management may involve habitat protection, restoration and management, predator control, captive breeding, relocation and supplementary feeding. The Conservancy will support the resolution of the taxonomy of species of indeterminate status for taxa with high threat profiles. The Conservancy has developed a Geographical Information System (GIS) linked database for threatened plants. Records will be maintained, resurveyed and new records inputted. The database has formed the basis for a Threatened Plants Conservation Manual (in draft) and resurvey information will be used to develop a full Northland Threatened Plants Strategy.

The Department is also developing national recovery plans for priority threatened species to help direct management, research effort and resources for these species. Current recovery plans (draft and approved) for Northland species include those for North Island brown kiwi, little spotted kiwi, North Island kokako, brown teal, weka, New Zealand dotterel, fairy tern, stitchbird, tuatara, native frogs, bats, *Placostylus* flax snails, *Paryphanta* snails, robust skink, weta and *Dactylanthus taylorii*. Other plans in preparation include those for *Davallia "Puketi"*, *Tecomanthe speciosa*, *Pennantia baylisiana*, and dwarf inanga. Recovery plans for kakabeak, *Dactylanthus* and coastal cress involve Northland and other Conservancies.

The Department is not alone in the conservation of indigenous species. The Northland Regional Council and local authorities have responsibility for the sustainable management of water, soil, air, ecosystems and land habitats of species. Research organisations, and

increasingly clubs, societies, and private individuals, contribute by breeding or propagating species or by expanding knowledge of species' ecology and distribution.

In the next ten years the Conservancy will focus its management, monitoring and research on the high priority indigenous species listed in Table Eight. Amongst the current focus for management and monitoring are North Island brown kiwi, little spotted kiwi, brown teal, New Zealand dotterel, fairy tern, kukupa, kaka, North Island kokako, stitchbird, New Zealand dabchick, North Island short tailed bat, *Placostylus* species, *Paryphanta busbyi watti*, dwarf inanga, black mudfish, Northland tusked weta, *Atriplex billardierei*, Bartlett's rata, *Coprosma waima*, *Coprosma neglecta complex*, *Olearia "Waima"*, and *Hydatella inconspicua*. Priority species for management will be reviewed annually.

The Conservancy strategy for indigenous species has three main components:

- setting priorities for conservation of species and habitats;
- species and habitat research and management; and
- increasing public awareness about and involvement in indigenous species conservation.

Objectives

To endeavour to prevent the extinction of any indigenous species in the Conservancy and maintain the diversity, viability and health of populations and communities of indigenous plant and animal species.

To maintain viable breeding populations of indigenous species in their appropriate habitat, and in particular improve the status of threatened species.

To increase public awareness of threatened species, their conservation requirements and opportunities for community involvement in species management.

Implementation

1. Manage threatened species according to both the Conservancy ranking and the national ranking system as in Table Eight, giving priority to those species ranked 1 (very high) for action.

2. Carry out active management including pest control and fencing programmes, transfers, captive breeding, supplementary feeding, planting and off-site cultivation out for species and habitats as in Table Eight. [Refer also Section 5.4 Animal Pest Control and Section 5.5 Plant Pest Control.]

3. Develop Conservancy species management plans and contribute to the preparation and implementation of national recovery plans for species at greatest risk.

4. Undertake transfers of species to islands where their survival can be assured, or to intensively managed mainland sites.

5. Ensure that any proposed species transfers are in accordance with the Department's species transfer protocols, after consultation with appropriate tangata whenua, and allow for reintroduction back into the species' original habitat at a later time subject to satisfactory recovery and reasonable probability of survival.

6. Undertake captive breeding and intensive management of threatened species only with the approval of the Director, Protected Species Division.

7. Seek the conservation and protection of areas which are of importance to priority species but which are not managed by the Department through suitable mechanisms such as the planning processes of the Resource Management Act 1991, conservation covenants and management agreements.[Refer also to Section 9.0 Statutory Advocacy and Section 5.2 Legal Protection of Habitats on Land.]

8. Assess priorities for indigenous species work annually, taking into account national priorities, local assessments of conservation needs and research results, and direct resources to those species with the most urgent need. The annual assessment may alter Conservancy rankings in Table Eight.

9. Refine and improve systems for monitoring the status of threatened indigenous species and maintain a database of the status, distribution, condition and health of threatened indigenous species and their habitats.

10. Continue research on threats to and management methods for priority species in accordance with species recovery plans.

11. Consult with iwi and offer opportunities for involvement in the survey, monitoring, research and, where appropriate, active management of indigenous species. This work will be based on information gathered by staff and specialists working in the particular field, supported by the traditional knowledge of tangata whenua and local communities.

12. Encourage the public and special interest groups to become involved in survey, monitoring, research and, where appropriate, management of indigenous species and sponsorship of conservation programmes.

13. In all areas managed by the Department where there are proposals to increase visitor numbers and/or facilities, particularly in areas significant to indigenous species or where threatened species occur, give priority to minimising adverse impacts by determining, if possible, the acceptable human carrying capacity of

the area and controlling visitor numbers accordingly. [Refer also to Section 7.28 Visitor Impact Monitoring.]

14. Carry out public awareness programmes to educate the public about indigenous species and their habitats and conservation requirements.

15. Evaluate environmental impact assessments prepared by any person or organisation seeking to introduce any species not presently occurring in the Conservancy in consultation with the Northland Regional Council, Ministry of Agriculture and Fisheries and other relevant agencies, with costs bome by the applicant.

16. Make input into processes of the Resource Management Act to ensure recognition of the requirements of protected species and their habitats. [Refer also to Sections 9.2 and 9.3.]

Table Eight: Priorities for Protected Species Programmes

C Conservancy ranking for action:
- 1 = very high
- 2 = high
- 3 = medium
- 4 = low

N National ranking for action
- A = highest
- B = second
- C = third
- I = indeterminate (little information exists)
- O = threatened in New Zealand but secure elsewhere

Birds	**C**	**N**	**Protected Species Programme**
NI kokako	1	B	Translocate surviving pairs to Trounson Kauri Park for active management &/or in situ management at Mataraua forest.
Fairy tern	1	A	Protect breeding pairs. Colour band young & monitor annually.
Brown teal	1	C	Research threats & habitat requirements. Manage key roosts & breeding grounds & monitor.
NI brown kiwi	1	A	Increase awareness & involvement of public in protection. Protect habitat, control dogs, with landowners and councils. Research relative threats of possums and predators. Begin management & monitor annually.
Little spotted kiwi	1	B	Survey Taranga island in 2000. Maintain compliance & law enforcement vigilance and pest contingency plans. Survey
Black petrel	1	B	Herekino and Warawara Forests.
NZ dotterel	2	B	Protect breeding pairs at key sites from dogs, vehicles & other threats. Raise public awareness & monitor post-breeding numbers.
NI weka	2	B	Raise public awareness of threats & habitat requirements, guided by Recovery Group.
Kukupa (NZ pigeon)	2	B	Consult with iwi to cease poaching. Target possums & predators in key habitats. Raise public awareness and monitor key populations.
NI kaka	2	C	Maintain compliance & law enforcement on Hen & Chickens Islands. Monitor population.
NZ dabchick	2	C	Fence out livestock from lake edges. Monitor annually & study interactions with Australian little grebe.
Bullers shearwater	2	B	Monitor & maintain compliance & law enforcement at Poor Knights Islands.
Stitchbird	2	B	Survey Taranga Island as guided by Recovery Group.
Pycrofts petrel	2	C	Maintain compliance & law enforcement on islands. Study impacts of kiore & little shearwaters on breeding success.
Little shearwater	2	-	Eradicate predators from key breeding areas & monitor.
NI rifleman	2	-	Monitor relict Warawara Forest population. Define distribution parameters.
Bullers mollymawk	3	B	Maintain compliance & law enforcement at Three Kings Islands and monitor.
Three Kings bellbird	3	C	Maintain compliance & law enforcement.
Poor Knights bellbird	3	C	Maintain compliance & law enforcement.
Banded dotterel	3	C	Advocate for habitat protection.
NI saddleback	3	C	Maintain compliance & law enforcement on Hen & Chickens Islands & monitor.
Caspian tern	3	O	Protect colonies in all areas.
Australasian bittern	3	O	Fence key wetlands on DOC boundaries & advocate protection of private wetlands.
Reef heron	3	O	Eradicate predators from key breeding areas & monitor.
Banded rail	3	-	Advocate protection of mangrove habitat.
White fronted tern	3	-	Monitor.
NI fernbird	3	-	Advocate for habitat protection.
Wrybill	4	B	Advocate for habitat protection & monitor.
Variable oystercatcher	4	C	Protect breeding pairs at key sites as for fairy tern & NZ dotterel. Raise public awareness

Yellow-crowned parakeet	4	C	elsewhere. Survey Taranga Island.
Red-crowned parakeet	4	-	Monitor Whangarei Heads.
Spotless Crake	4	-	Advocate for habitat protection.

♥ dicotyledon
♦ monocotyledon
♣ moss or liverwort
♠ fern
[Refer to Appendix Four for common names of some listed plants.]

Plants		C	N	Protected Species Programme
Atriplex billardierei .agg	♥	1	A	Monitor annually, survey new localities & research population biology.
Christella "NZ dentata"	♠	1	A	Covenant habitat, monitor weeds & research habitat requirements.
Coprosma waima	♥	1	A	Sustained goat control & monitoring.
Davallia "Puketi"	♠	1	A	Complete recovery plan & taxonomic study, control goats & monitor.
Hydatella inconspicua	♦	1	A	Control plant pest spread, research optimal management & implement.
Metrosideros bartlettii	♥	1	A	Prepare recovery plan, survey other habitats & reintroduce to former range.
Pittosporum "Surville"	♥	1	A	Monitor.
Tecomanthe speciosa	♥	1	A	Complete recovery plan & implement.
Thelymitra matthewsii	♦	1	A	Survey Surville cliffs & monitor.
Eleocharis neozealandica	♦	1	A	Research ecology of habitat & survey new areas.
Archidium elatum	♣	1	A	Plant pest control in coastal habitats.
Schistochila nitidissima	♣	1	A	Observe.
Pennantia baylisiana	♥	1	A	Artificially enhance flowering and fruit setting, reintroduce seedlings to Great Island & investigate reintroduction of kukupa.
Asplenium pauperequitum	♠	1	B	Monitor annually & establish captive population.
Coprosma spathulata subsp. "Surville"	♥	1	B	Monitor.
Olearia "Waima"	♥	1	B	Sustained goat control, monitoring & taxonomic description.
Pittosporum obcordatum	♥	1	B	Research optimal management, survey & monitor.
Hebe speciosa	♥	1	B	Survey & monitor recruitment under different plant pest control regimes.
Todea barbara	♠	1	B	Collect spores for cultivation, reintroduce to Kaimaumau. Monitor & survey new areas.
Chloranthelia berggrenii	♣	1	B	Observe.
Drucella integristipula	♣	1	B	Observe.
Dumortiela hirsuta	♣	1	B	Observe.
Fissidens integerrimus	♣	1	B	Protect streams from silting, eutrophication & abstraction.
Fissidens strictus	♣	1	B	Protect streams from silting, eutrophication & abstraction.
Caladenia aff.iridescens	♦	1	B	Monitor & protect habitat.
Clianthus puniceus	♥	2	A	Reintroduce to Matakohe (Limestone) and Taranaki Islands.
Baumea complanata	♦	2	B	Maintain firebreaks, monitor, & research growth in captivity.
Dactylanthus taylorii	♥	2	B	Survey & advocacy.
Prasophyllum sp.aff.*patens*	♦	2	B	Advocate presence in wetlands & establish covenants.
Calystegia marginata	♥	2	B	Advocacy, covenanting & monitoring.
Euphorbia glauca	♥	2	B	Fence existing sites, survey & monitor.
Lepidium oleraceum	♥	2	B	Restore islands for seabirds, monitor *Albugo candida* presence, collect seed for cultivation.
Lycopodium sepentinum	♠	2	B	Advocacy of presence in wetlands to protect habitat.
Myriophyllum robustum	♥	2	B	Survey, monitor & advocate habitat protection & plant pest hygiene.
Thelymitra "Ahipara"	♦	2	B	Monitor.
Crassula hunua	♥	2	B	Survey distribution.
Celmisia adamsii var. *rugosula*	♥	2	B	Monitor.
Senecio scaberulus	♥	2	B	Survey & monitor.
Pomaderis polifolia	♥	2	B	Advocate presence on road edges & no sprays.
Pimelia tomentosa s.s.	♥	2	B	Survey, monitor & study taxonomy.
Peraxilla tetrapetala	♥	2	B	Band host & collect seed for establishing on new hosts.
Ophioglossum petiolatum	♠	2	B	Survey & protect wetlands.
Mazus novaezeelandiae	♥	2	B	Survey, protect habitat & study taxonomy.

Hibiscus diversifolius	♥	2	B	Exclude livestock & monitor.
Doodia aspersa	♠	2	B	Maintain disturbed habitat.
Hebe acutiflora	♥	2	B	Collect cuttings & cultivate. Control mist flower.

Thelymitra malvina	♦	3	A	Monitor.
Leptinella rotundata	♥	3	B	Survey & monitor.
Pseudopanax gilliesii	♥	3	B	Monitor.
Carmichaelia williamsii	♥	3	B	Monitor.
Tupeia antarctica	♥	3	B	Monitor.
Tortella cirrhata	♣	3	B	Monitor.
Sicyos australis	♥	3	C	Monitor. Species to watch.
Macropiper melchoir	♥	3	C	Monitor.
Rorippa divaricata	♥	3	C	Survey & monitor.
Thelypteris confluens	♦	3	C	Monitor.
Utricularia delicatula	♥	3	C	Monitor.
Ileostylus micranthus	♥	3	-	Band hosts.
Hebe adamsii	♥	4	C	Monitor.
Pimelia "Three Kings"	♥	4	C	Survey to clarify taxonomy.
Coprosma Whangaroa	♥	4 4	C	Survey to clarify taxonomy.
Coprosma neglecta complex	♥	4	C	Survey to clarify taxonomy.
Elingamita johnsonii	♥		C	Monitor.

Invertebrates	**C**	**N**	**Protected Species Programme** *(P.a. = Placostylus ambagiosus, P.b. = Placostylus bollonsi)*
Paryphanta busbyi watti	1	A	Survey & monitor; identify threats & habitat requirements, implement management.
Placostylus.a.ambagiosus	1	A	Restore food plants. Maintain compliance & law enforcement on Motuopao Island. Captive breeding & monitoring.
P.a.consobrinus	1	A	Maintain rodent & pig control, investigate fencing & monitor.
P.a.pandora	1	A	Control pigs & rodents, investigate fencing & monitor.
P.a.wattii	1	A	Rodent control & survey & monitoring of snails.
P.a.whareana	1	A	Maintain pig exclosure, poison rodents & monitor snails.
P.a.keenorum	1	A	Maintain pig exclosure, poison rodents & monitor snails.
P.a.paraspiritus	1	A	Rodent control & monitor sand invasion & snail numbers.
Placostylus.a.annectens	2	A	Maintain fence & browser & predator control. Translocate to new sites & monitor.
P.a.lesleyae	2	A	Habitat restoration, rodent control & monitoring.
P.a.michei	2	B	Investigate feasibility of thrush control & monitor snails.
Northland tusked weta	2	B	Survey distribution & abundance & protect habitats. Research threats & captive breeding.
Poor Knights Island weta	2	C	Pest contingency plan & monitoring.
Poor Knights Island giant weta	2	C	Pest contingency plan & monitoring.
Placostylus hongii	2	C	Rodent control & monitoring at Whangaruru & Peach Cove. Survey elsewhere & establish conservation status at Cape Wiwiki & Orokawa.
Paryphanta busbyi busbyi	2	C	Survey, monitor & identify threats; implement management at key sites.
Succinea archeyi	2	-	Survey and monitor.
Placostylus.b.bollonsi	3	B	Compliance & law enforcement at Three Kings Islands. Pest contingency plan.
P.b.caparatus	3	B	Wild animal & fire control.
P.b.arbutus	3	B	Compliance & law enforcement & pest contingency plan.
P.b.west	3	B	Survey & pest contingency plan.
Turbotts weevil	3	B	Survey distribution & develop pest contingency plan.
Flax weevil	3	C	Survey.

Bats	**C**	**N**	**Protected Species Programme**
NI short-tailed bat	1	A	Survey likely forest areas. Sustained & appropriate possum control in key areas & monitor key populations.

Long-tailed bat	2	B	Survey & monitoring.

Freshwater Fish	C	N	Protected Species Programme
Short-jawed kokopu	1	A	Survey distribution, define habitat requirements, protect habitat & spawning areas & promote fish passages.
Dwarf inanga	1	B	Research impacts of plant pests & predatory fish. Management based on research findings. Protect habitat & spawning areas & monitor key populations.
Black mudfish	1	C	Survey distribution, & research habitat requirements & protect.
Giant kokopu	2	B	Survey distribution, protect habitat & spawning areas & promote fish passages.
Lamprey	2	-	Survey distribution, protect habitat & spawning areas & research low flow tolerance.
Koaro	3	C	Survey distribution, protect habitat & promote fish passages.
Banded kokopu	3	C	Survey distribution, protect habitat, research low flow tolerance & promote fish passages.
Blue gilled bully	3	-	Survey distribution, protect habitat & research low flow tolerance.

Reptiles	C	N	Protected Species Programme
Hoplodactylus "Matapia"	1	-	Translocate to Motuopao Island. Monitor. Maintain compliance & law enforcement & pest contingency plans.
Northern tuatara	2	B	Eradicate kiore on islands where occurring. Research & monitor recovery. Maintain compliance & law enforcement & pest contingency plan.
Hochstetters frog	2	B	Protect private land by covenant & purchase. Survey, monitor & manage predator impacts.
MacGregors skink	2	B	Investigate potential for translocation. Monitor & maintain compliance & law enforcement & pest contingency plan.
Robust skink	2	C	Translocate to Motuopao Island. Survey other islands & maintain pest contingency plan.
Poor Knights skink	2	C	Compliance & law enforcement, pest contingency plan & monitoring.
Three Kings skink	3	-	Monitor.

5.12 ISLAND RESTORATION PROGRAMME

Island restoration involves management to restore, or partially restore, biotic communities and ecological processes as thriving indigenous systems. The aim is to restore ecosystems to a condition where natural processes occur as free from human intervention as possible, where New Zealand's plants and animals can persist without threat of extinction, and to provide opportunities in appropriate places for people to enjoy the full splendour of natural New Zealand. Simple control or eradication of a plant or animal pest may allow the natural habitat, community or physical process to recover, or more active management may be needed such as restoration planting or reintroduction of species formerly present.

Islands present special opportunities for the protection and restoration of indigenous landforms and ecosystems. Their isolation from the mainland means it is easier to keep

island habitats safe from plant and animal pest threats and access by humans can be managed.

Northland waters have over 260 islands ranging in size from one to 500 hectares. There are also approximately 2000 rockstacks, reefs, sandbars and mangrove islands scattered along the coast. Most of the largest islands and island groups are managed by the Department while many of the smaller islands are in private ownership.

Northland's islands contain many different types of habitat, ranging from pasture to near pristine forest. The larger offshore islands have all at some time been occupied to varying degrees by Maori and later by European farmers, and evidence of this occupation is widespread. All islands are therefore modified to some extent, and some in the Bay of Islands are covered in large areas of regenerating shrubland and pasture. These may be suitable for community based restoration projects. Others such as the Hen and Chickens show less obvious evidence of modification and appear almost pristine in some areas. The Three Kings, Poor Knights and Hen and Chickens Islands support a large number of endemic species, and are refuges for many species which are extremely rare or extinct on the mainland. These habitats can be greatly enhanced or maintained by pest eradication and contingency programmes, thereby safeguarding the survival of native species. These islands are managed as nature reserves and access is only allowed by permit for legitimate scientific and restoration purposes.

Most of the smaller islands, lying closer to the mainland or within harbours, are much more degraded. They are classified as recreation, historic or scenic reserves and public access is freely available. They are subject to varying levels of threat from possums, cats, stoats, rats, weed invasion and fire. Visitor use on islands such as Urupukapuka is high. Public education on the unique values of islands and the threats they face is a high priority.

The kiore or Pacific rat was bought to New Zealand by early Maori and is the only mammal present on several offshore islands. Populations of kiore grew to the extent that many indigenous species were exterminated, and kiore still threaten the survival of other plants and animals. In many cases it is necessary to eradicate kiore to restore and maintain healthy ecosystem functioning. However the taonga status of the kiore to some Maori must be taken into account.

Priority islands for restoration have been identified using the following criteria:

- quality and diversity of existing communities;
- number of species endemic to the island and presence of other high priority species;
- islands comprise an entire ecological district;
- threats to resident native species;
- achievability of pest eradication with current technologies;
- ability to control reinvasion of pests;
- potential to achieve self-management;
- proposed restoration is compatible with protection of historic resources;
- importance of landform/landscape protection/enhancement;

- degree to which island meets Maori traditional needs; and
- opportunities for public participation.

Objectives

To increase and/or maintain the biodiversity of native species on islands.
To ensure protection of island habitats and provide for visitor access where appropriate.

Implementation

1. Eradicate plant pests from islands according to established priorities in Table Nine and Section 5.5. Annual plant pest surveillance and control will remove any newly established plant pests.

2. Ensure that personnel are familiar with identification of weeds and that all equipment taken to islands is free of both weed seeds and animals.

3. Eradicate all mammalian predators from islands as identified in Table Nine.

4. Monitor predator-free islands to check for reinvasion and take prompt action to remove or destroy invading predators.

5. Assess the role of kiore in island ecology including impacts on seabirds, landbirds, tuatara, lizards, plants and other biota.

6. Maintain liaison with fishing boats and charter launches and give support for their surveillance of islands for illegal landings and other prohibited activities.

7. Implement nationally approved species recovery plans, which may include translocations of species according to established transfer guidelines.

8. Survey and monitor islands to more clearly determine their management requirements and the effectiveness of restoration programmes.

9. Carry out research into island management techniques according to established priorities in Table Nine and Section 5.15 Research.

10. Allow access to islands classified as nature reserves only for approved research, educational purposes, species management, restoration and pest control subject to a permit. Allow access for Maori spiritual, cultural, and traditional purposes, subject to a permit, if there is no conflict with the primary objective of protection.

11. Allow access where appropriate for recreational activities on those islands classified as scenic, recreation or historic reserve.

12. Consult with and share information with the relevant tangata whenua when considering eradication of kiore, species translocations and other management.

13. Develop working relationships with island tangata whenua to enable their more active involvement in island restoration programmes.

14. Encourage restoration projects on lands outside the Department's administration (for example Matakohe/Limestone, and islands within the Bay of Islands and Whangaroa harbour). Where possible, natural regeneration is preferred together with plant and animal pest control and stock fencing. If planting is required, local genetic stock should be used.

15. Foster public enthusiasm for, and understanding of, restoration needs by undertaking limited restoration projects on islands which are easily accessible to people (for example Motukiore).

Table Nine: Priorities for Island Restoration Programme

[Refer also to section 4.11, Offshore Island Refuges]

Island/Island Group	area (ha)	status	pests	priority	Restoration Programme
Taranga (Hen)	500	nature reserve	kiore	high	Evaluate eradication of kiore & proceed if appropriate. Eradicate pampas, mist flower & other invasive pests. Introduce threatened species as guided by recovery plans. Monitor threatened species incl. tuatara, little spotted kiwi & stitchbird. Maintain surveillance.
Coppermine	80	nature reserve	kiore	high	Eradicate kiore, pampas, mist flower & other invasive pests. Introduce threatened species as guided by recovery plans. Monitor recovery of threatened species incl. Pycrofts petrel & lizards. Surveillance.
Whatupuke	102	nature reserve		high	Eradicate pampas, mist flower & other invasive plant pests. Introduce threatened species according to recovery plans & monitor.
Lady Alice	155	nature reserve	kiore	high	Eradicate kiore, pampas, mist flower & other invasive plant pests. Introduce threatened species according to recovery plans. Monitor recovery of tuatara, lizards, seabirds, landbirds & plants.
Mauitaha	27	nature reserve	kiore	high	Eradicate invasive plant pests. Survey & monitor biota.
Bream Islands	8	nature reserve		high	Plant & animal pest surveillance, monitor lizards.
Motukiore	5	recreation reserve	rats	medium	Plant pest surveillance.
Rimariki	22	scenic reserve	rats	medium	Maintain rodent stations. Plant pest surveillance.
Poor Knights Islands	273	nature reserve		high	Plant & animal pest surveillance. Eliminate pampas & other plant pests. Survey & monitor special flora & fauna incl. *Asplenium pauperequitium* & Buller's shearwater. Survey archaeological sites.

Urupukapuka	220	recreation reserve	stoat rats	high	Maintain visitor & recreational facilities incl. interpretation. Manage archaeological sites. Test feasibility of rodent & stoat eradication in whole island group. Enhance flora & fauna by reintroductions. Plant & animal pest surveillance & elimination where feasible. Community involvement.
Waewaetorea	52	recreation reserve	stoat	medium	Monitor kiwi & plant & animal pest surveillance. Community involvement.
Okahu	28	scenic reserve	stoat	medium	Plant & animal pest surveillance.
Motukiekie	34	recreation reserve	stoat	medium	Plant & animal pest surveillance.
Moturua	163	scenic reserve	cat stoat rats	medium	Monitor kiwi & robin populations. Plant & animal pest surveillance.
Motuarohia	66	recreation reserve	stoat rats	medium	Plant & animal pest surveillance.
Poroporo	8	scenic reserve	not known	low	Plant & animal pest surveillance.
Motumaire	6	historic reserve	not known	low	Plant & animal pest surveillance.
Black Rocks	6	scenic reserve	rats	high	Plant & animal pest surveillance & control. Maintain bait stations on near shore stacks. Monitor biota.
Kerikeri Inlet	10	scenic reserve	rats possum	medium	Plant & animal pest surveillance & management. Ongoing possum control on key islands.
Motukawanui	380	scenic reserve	kiore	medium	Provide & maintain visitor facilities & interpretation. Manage historic sites. Test feasibility of rodent eradication. Introduce threatened biota incl. kiwi & other threatened birds, skinks & coastal plants. Plant & animal pest surveillance & elimination where feasible. Community involvement & restoration planting.
Simmonds	6	nature reserve		medium	Plant & animal pest surveillance & elimination of invasive species. Survey threatened biota.
Motuopao	30	nature reserve		high	Plant & animal pest surveillance & elimination of invasive species. Monitor threatened species incl. *Placostylus*, threatened plants & small seabirds. Introduce threatened lizards as guided by recovery plans.
Three Kings Islands	506	nature reserve		high	Plant & animal pest surveillance & elimination of invasive species. Monitor threatened species incl. *Pennantia*, *Tecomanthe*, *Placostylus* & biota generally on regular timetable. Survey archaeological sites. Test

					feasibility of reintroductions eg. kukupa.

Privately Owned Islands					
Other Cavallis			kiore	low	Advocate for plant and animal pest surveillance & elimination of invasive species.
Stephenson	113		kiore	medium	With owners, survey & monitor threatened species.
Matakohe (Limestone)	37	recreation reserve	rat mouse stoat	medium	Advocate for plant & animal pest surveillance & formulation of island restoration plan. Advise on restoration planting & species reintroductions. Protect archaeological features during planting.
Moturoa Islands				low	With owners, survey & monitor threatened species & plant & animal pests.
Miscellaneous Rockstacks					
Harakeke	12		rats possum	medium	Maintain rodent & possum stations on inner stacks. Plant & animal pest surveillance & elimination of invasive species.
Matapia	2			high	With owners monitor threatened species & surveillance for plant & animal pests. Eliminate invasive plants.

5.13 MAINLAND RESTORATION

Restoration means the management of degraded biotic communities, landforms and landscapes on land administered by the Department in order to restore their biological character, ecological and physical processes and their cultural and visual qualities.

The aim is to restore ecosystems to a condition where natural processes occur as free from human intervention as possible. Restoration may be limited to plant and animal pest control or eradication that allows ecosystem recovery, or it may involve enhancement through planting. Restoration using plant succession can help to achieve more natural patterns than planting in human-selected sites. For example, spreading seed bearing manuka slash followed by strategic plantings of canopy species can achieve natural patterns effectively. Such low impact approaches are generally cheaper but take longer than intensive planting of canopy-forming trees.

The focus of restoration programmes in Northland has been on wetlands, dunelands, forests and islands. Projects have included weir construction to raise the level of Lake Ohia to its assumed natural level; fencing, and plant pest, possum and goat control in some forests; kiore and plant pest control on several offshore islands; and removal of stands of exotic pines within forests. Rehabilitation planting and fencing has occurred to improve brown teal habitat at Whangaruru and Mimiwhangata. Limited landscape planting

on some highly used recreation areas has also taken place. This type of restoration will continue in future.

Restoration can also involve the creation of mainland "islands". For example at Trounson Kauri Park it is intended to manage the forest remnant intensively so that all pests, possums, cats, mustelids and rats are controlled to very low levels. Barriers in the form of fences will be constructed to exclude pigs, goats and deer. Threatened species such as Hochstetters frog, kokako and other locally extinct species will be introduced as guided by species recovery plans. The local community and visitors will be invited to become involved in the management programme.

The Northland Regional Council promotes restoration through its public awareness and education activities and supports several restoration projects. District councils also undertake amenity planting and limited restoration work and there is a need for a co-ordinated approach with the Department to encourage private restoration activities. Private land owners have an important part to play in protecting existing indigenous plant communities through fencing, stock and pest control, enhancement planting and covenanting remnant forest and wetlands.

Much of Northland's natural duneland has been lost to exotic afforestation. Those areas that remain are subject to invasion of plant pests such as pampas grass and exotic sand binders like marram grass. These areas once contained extensive pingao which was a treasured resource for Maori weaving. The extent of pingao in Northland has reduced considerably.

Northland ecosystems, especially forest, often regenerate vigorously. Manuka and kanuka will rapidly recolonize areas where grazing pressure is low or where plant pests are not firmly established. Allowing natural regeneration is preferable to expensive broad scale human planting. However restoration planting of trees such as miro and taraire has been suggested to assist recovery of threatened kukupa.

Where plantings are necessary, to provide a long term seed source or in severely degraded sites, it is essential that stock be grown from seed from the local area or ecological district. Local seed is best adapted to local conditions. Particular anomalies in plant distribution and high levels of genetic variation mean that genetic pollution of sites by using stock from unknown outside sources should be avoided.

The expense of restoration on any scale means that work undertaken must be carefully planned, evaluated and maintained. To be most effective it must be integrated with other activities. Criteria for determining priorities for restoration in an area are:

- the number of threatened species present;
- the importance and quality of existing communities;
- animal and plant pest status;
- ability to control reinvasion of pests;
- visitor numbers;
- compatability with protection of historic resources;
- degree to which Maori traditional needs can be met; and
- likely amount of aftercare required and long term potential.

Objective

To restore selected degraded areas to a condition where indigenous natural processes continue as free from human and exotic influence as possible.

Implementation

1. Fence coastal areas, lake edges, estuarine and stream margins and beds, wetlands and forest remnants to protect from grazing.

2. Protect and rehabilitate areas of indigenous forest, wetland and dunefield through fencing, animal and plant pest control and replanting as appropriate.

3. Encourage restoration initiatives on private land (including Maori owned land) at public meetings and forums, particularly where they involve riparian management or complement restoration or other protection activities of the Department.

4. Use the lowest impact method of restoration, preferably involving natural succession and strategic planting of seed sources, where this meets with the programme objectives.

5. Avoid disturbance of geological, historical, archaeological and wahi tapu sites.

6. Use planting stock grown from indigenous local seed or seed from the relevant ecological district.

7. Undertake intensive planting only in severely degraded sites and in high use visitor areas for shelter or landscaping purposes.

8. Identify significant areas managed by the Department where restoration, rehabilitation or enhancement may be necessary.

9. Integrate restoration activities with species recovery programmes wherever possible.

10. Provide opportunities and support for iwi, community groups, and the public generally, to participate in restoration projects on land administered by the Department.

Priority Areas for Restoration

- Te Rerenga Wairua and selected areas within Te Paki;
- Mimiwhangata;
- Lake Ohia;
- Kaimaumau;
- fish passes;
- peninsulas eg. Whangaruru, Cape Brett, North Cape and Bream Head;
- mainland 'islands' eg. Trounson Kauri Park Scenic Reserve;
- Aupouri dunelands;
- Pouto dunelands; and
- Urquharts Bay.

5.14 GENERALIST SURVEY AND MONITORING

Change is taking place everywhere, both in natural ecosystems and their human use. Monitoring to assess the rate of change and its direction is necessary to highlight management priorities, especially in the most fragile ecosystems such as coastal dunelands and dune lakes, and for threatened species like kiwi and kukupa.

Information on threats to the integrity of conservation values and the effectiveness of management is also required. This includes aspects such as the condition of boundary fences, the distribution of plant pests and animal pests like pigs, cattle and escaped deer, and the numbers of visitors to recreation facilities.

Survey information can come from a wide variety of sources such as the Ornithological Society, botanical societies, local residents, tangata whenua, and visitors. Other organisations with resource management responsibilities such as the Northland Regional Council and district councils, forestry companies and other developers, Fish and Game Council, Landcare, Ministry of Forestry, NIWA and Ministry of Agriculture and Fisheries carry out surveys on many subjects. Information is available in a wide variety of forms, including raw data, maps, photographs and summary reports. There is scope for considerably more co-ordination of information gathering and information sharing between agencies, especially through the Northland Regional Council Regional Monitoring Strategy, which could assist in management decision making for all involved.

Knowledge of the full extent and condition of natural and historic resources on land administered by the Department is not adequately known. Survey information on land is of variable quality and detail and often not in a form that is readily accessible to managers. A detailed survey of subtidal rocky reef marine habitats has recently been completed for six areas, but the vast majority of marine habitats are poorly described. Surveys are required to fill gaps in this resource information.

Data bases which the Department maintains include:

- SSBI (Sites of Special Biological Interest);
- SSWI (Sites of Special Wildlife Interest);
- CRI (Coastal Resources Inventory);

- WERI (Wetlands of Ecological and Representative Importance);
- Freshwater Fisheries Database;
- NZ Archaeological Association Site Register;
- NZ Geopreservation Inventory;
- Species databases for kiwi, fairy tern, rare plants etc;
- Multi-species databases, five minute bird counts and seabird transects; and
- PNAP (Protected Natural Areas Programme database).

Data management and mapping systems such as GIS (Geographical Information System) and other linked computerised data bases are powerful manipulative tools which can provide new perspectives on relationships between resources and their condition.

The view of iwi is that management problems tend to be resolved primarily on scientific and technical criteria and it is important that Maori cultural values be drawn into the process. All sites and areas have value to Maori through their ancestral links, and information on these needs to be integrated as a grid or layer within databases. In some areas, iwi are keen to become involved in survey work on species or areas where they have a particular interest or concern.

The information gained from survey and monitoring is used in three main ways:

- to set priorities for protection work;
- to enable decisions on when and how to intervene; and
- to measure effectiveness of management actions.

Objective

To provide a basis for ongoing assessment of the condition of the conservation assets in the Conservancy and the effectiveness of management.

Implementation

1. Gather accurate information and develop and maintain an accessible database of terrestrial, freshwater and marine ecosystems, species, visitors, Maori cultural values and historic resources to nationally accepted standards.

2. Upgrade the existing manual SSBI database, expand to include information from all other data bases and progressively transfer to an electronic medium.

3. With Head Office, develop a strategy for determining the survey and monitoring requirements for conservation assets, which identifies criteria for determining which areas are to be surveyed and monitored, the methods that will be used and who will be involved.

4. Work co-operatively with local authorities, research organisations, tangata whenua and community groups on the development and implementation of the

strategy by sharing information collection procedures, databases and published reports.

5. Develop databases for the storage and retrieval of data on conditions and trends in conservation assets.

6. Investigate the feasibility of establishing a regional GIS system accessible by all major resource management agencies.

Priorities for Survey and Monitoring

- Threatened species especially kiwi, kukupa, fairy tern, bats and threatened plants. Refer also to Table Eight: Priorities for Protected Species Programmes.
- Freshwater habitats especially dune lakes, rivers and wetlands.
- Wild animal populations as part of control operations.
- Vegetation condition without, prior to, and following wild animal control.
- Visitor numbers and recreation impacts according to the Visitor Services Strategy.
- Archaeological sites.
- Historic sites.
- Marine ecosystems including marine reserves.
- Public awareness.

5.15 RESEARCH

In attempting to retain the biological diversity and historic heritage of Northland and manage the human use of areas, the Department needs a detailed knowledge of:

- efficient management techniques;
- the most threatened elements of ecosystems;
- the nature of organisms and processes that are displacing threatened elements; and
- the functioning of ecosystems as a whole.

National priority conservation research is funded by the Science, Technology and Information Systems Division and carried out by scientists via internal or external research contracts. Research themes are submitted annually by conservancies and Head Office output class managers, and then evaluated by specialist groups and the Science Board. Project proposals are then developed by specialist groups and put out for tender. A small number of unsolicited research proposals are also evaluated, initially by Conservancy Advisory Scientists.

Due to the competitive nature of science funding, many Conservancy priority bids are unsuccessful. Some of these unfunded proposals are carried out by Conservancy staff or through the provision of logistical and limited financial support to other researchers, particularly graduate students. The Conservancy Advisory Scientist co-ordinates this research.

Knowledge is the key to effective management and all research is management driven. The Department needs to know which natural and historic assets are under threat, why they are threatened, and what is the most effective way to eliminate or reduce those threats. In many cases management may need to proceed with only an interpretation of existing information rather than comprehensive knowledge of the assets. Research can guide management to areas of greatest need and increase the effectiveness of management techniques. Up-to-date information can improve the confidence with which the Department makes management decisions, and is also fundamental to statutory advocacy and public awareness activities.

The view of iwi is that there has been a trend in New Zealand for management problems to be resolved primarily on technical and scientific criteria. Iwi knowledge, understanding, familiarity and cultural concepts of resources and issues has largely been ignored. It is important that Maori cultural values be drawn into any research project and that tangata whenua are given the opportunity to become involved.

Objectives

To initiate or support research to:

- ***assess conservation priorities;***
- ***identify, counteract and ameliorate those factors and processes that are degrading natural and historic resources; and***
- ***improve the efficiency and effectiveness of conservation management in the Conservancy.***

Implementation

1. Give the highest priority for research to the highest natural values, those most under threat or least understood, and those with the greatest potential for conservation benefits. These topics will be identified by Conservancy managers and specialists and prioritised annually.

2. Include priority Conservancy research topics in the annual research funding bidding process.

3. Invite Crown Research Institutes, universities, other institutions and individuals to tender for specific research programmes approved by the Science Board.

4. Provide for early and close consultation with tangata whenua when research relates to topics of particular interest to them.

5. Ensure, as far as is practical, that all research causes minimum damage and disturbance to land, water and protected biota.

6. In particularly vulnerable areas, or when particularly vulnerable resources are involved, only permit research that has significant conservation benefit and cannot be carried out elsewhere.

7. Require that any research that may cause damage or modification to an archaeological site is referred to the Maori Heritage Council and New Zealand Historic Places Trust under the Historic Places Act 1993.

8. Ensure that all research meets appropriate approval and permit requirements, including those of the Animal Protection (Codes of Ethical Conduct) Regulations 1987.

9. Carry out, as opportunity permits, the research projects listed in the priority table.

Priority Research Topics

- Survey, database and monitoring methods.
- Vegetation management methods on archaeological sites.
- Fire resistance of plant associations.
- Improved methods for possum and goat control.
- Population dynamics and seasonal diet of possums.
- Maximum densities of possums acceptable to forests and species.
- Direct and indirect effects of pesticides on non-target species.
- Biological control of plant pests including mist flower, lantana, climbing asparagus, smilax, banana passionfruit and hakea.
- Management of Kaimaumau wetland.
- Control methods for stoats, cats and other predators on the mainland.
- Pig biology and control methods for pigs.
- Population dynamics of brown kiwi and relative impacts of different predators.
- Impacts of kiore on the biota of islands.
- Impacts of water abstraction on freshwater fish.
- Biology of long-tailed and short-tailed bats.
- Biology, distribution and management of endemic Northland invertebrates.
- Habitat requirements of dwarf inanga and black mudfish.
- Biology of orchids and other threatened plants.
- Costs and benefits of predator control.
- Impact assessment methodologies for recreation and tourism use.
- Public perceptions of DOC and methods for information dissemination.
- Impacts of ‘watching’ on marine mammals.

5.16 LEGAL PROTECTION OF GEOLOGICAL SITES AND LANDFORMS

The protection and survival of the best representative examples of the geological sites and features that document the geological history of Northland is important for education,

research, aesthetic appreciation and recreation. To date, protection of this rich heritage of the Northland region has been opportunistic and biased. [Refer also to Section 3.4 Geology and Soils.]

Some of Northland's more significant natural landforms and geological features are still being damaged and destroyed by human activities, such as coastal protection works, reclamations, quarrying, irrigation projects, housing and industrial developments. The heritage of young volcanic landforms in the Kaikohe-Bay of Islands and Whangarei areas is being irretrievably damaged by quarrying for scoria and basalt.

Many of the known sites have been recorded on a national inventory of the Joint Earth Science Societies Working Group on Geopreservation. The management of this inventory is overseen by the Department of Conservation. The Geopreservation Inventory consists of a database of specific sites with individual descriptions and assessments of importance. To date the inventory indicates that a significant proportion of the geological sites in the conservancy are located on areas other than those administered by the Department. Protection and management of these sites requires a variety of mechanisms.
The goal of the Conservancy is to protect significant landscapes, landforms, geological features and soil sites so that they are preserved for general study and appreciation. This can be done by protecting features on land administered by the Department and assisting with protection elsewhere. This will involve supporting conservation efforts, particularly through the Resource Management Act 1991. For example the proposed Regional Coastal Plan provides for the protection of outstanding geological sites and landforms.

Objectives

To ensure the protection of the best representative examples of the broad diversity of Northland's geological features, landforms, soil sites and active physical processes, as well as other sites of geomorphic importance.

To manage those sites identified by the Geopreservation Inventory in order to encourage awareness and education, through direct access and by the provision of information.

Implementation

1. Develop conservation programmes to ensure the protection of important sites on lands administered by the Department.

2. Retain the essential character of sites on land administered by the Department and keep any necessary modification to a minimum.

3. Ensure that important geological sites on other lands are protected from adverse use and development by:

- providing local authorities and the general public with information about the features;

- advocating legal mechanisms for protection under the Reserves Act 1977 and the Conservation Act 1987; and

- ensuring that policies and plans under the Resource Management Act contain provisions for the protection of, and are implemented so as to avoid adverse effects on, geological features.

4. Give priority to seeking protection of those sites identified by the Geopreservation Inventory as being important at a national or international scale, or being highly vulnerable to destruction or damage by human activity according to priorities in Table Ten.

5. Assist in the updating of the Geopreservation Inventory through dissemination of new information and identification of new sites, and liaise with the Joint Earth Sciences Working Group's Northland representatives.

6. Identify and record new sites through the Protected Natural Area Programme surveys. [Refer also to Section 5.2 Legal Protection of Habitats on Land.]

7. Assist the Northland Regional Council, district councils, planners and developers to protect significant landforms, geological features, soil sites and active physical processes through the Resource Management Act.

Table Ten: Priority Geological Sites and Landforms for Protection

Place	Significance	Criteria			
		1	2	3	4
First Priority					
Piercy Island skarn & sea arch	Internationally important example of Pb/Zn skarn & aesthetically significant sea arch.	A	2	H	M
Hokianga sand dunes	One of NZ's most spectacular examples of active dunes.	B	1	H	H
Taurikura Bay jetty	Best natural jetty formed by a dike in NZ.	B	1	H	H
Te Paki dunes	Best area of active dunes on Aupouri peninsula.	B	1	H	H
One Tree Point dunes	Best exposed last interglacial dunes in Northland.	B	1	H	H
Part Whangarei fossil bed	Best exposed last interglacial fossiliferous estuarine deposits in Northland.	B	1	H	H
Kamo limestone pinnacles	Among best preserved limestone karst pinnacles in Northland.	B	2	H	H
Karikari Peninsula tombolo	Large tombolo with a variety of dune forms.	B	2	M	H
Kokota spit	Largest unvegetated sand spit in NZ.	B	2	H	H
Maungaroho dike	Best example of a dike forming a knife edge ridge in NZ. Contains unusual mineral harmotome.	B	2	H	H
Ngawha springs	Northland's only active geothermal area, with cinnabar.	B	2	H	H
Pouerua scoria cone & lava flow field	Largest & best preserved scoria cone with little-modified lava flows. Best examples of pillow lava in Kaipara region.	B	2	H	H
Strawberry Bay pillow lava	Best natural lava bridge in NZ.	B	2	M	H
Titoki natural bridge	Largest and best exposed of numerous Miocene plugs in the	B	2	H	H
Tokatoka plug	Tokatoka area. Best preserved fossil coconuts in NZ.	B	2	M	H
Mangonui coconut beds	Only known tidal bore in NZ	B	2	H	M
Tangowahine tidal bore	Only known nephelinite flow in Northland, adjacent to garnet	B	1	M	H
Reserve Point volcanics	andesite intrusion. Only active mud volcano in Northland.	B	2	M	H
Runaruna mud volcano	Prominent well preserved forest covered scoria cone.	B	1	H	M
Maungakaramea scoria cone	Large 350masl bush covered scoria cone being quarried.	C	1	M	H
Hurupaki scoria cone		C	1	H	H
Second Priority					
Marble Bay Permian	Internationally important association of Permian pillow lava & fossiliferous marble from the N.hemisphere.	A	3	M	M
Puketotara erionite	Volcanic tuff bed with the most silica-poor erionite variety known.	A	3	M	M
Simpkins quarry	First recorded occurrence of herschelite in NZ and possibly first recorded occurrence in andesite.	B	2	M	M
Tauanui scoria cone & lava flows.	Second largest scoria cone in the Kaikohe area, source of a flow that spread 19km to Taheke.	B	2	M	H
Hokianga 'Orbitolite' bed	Fossiliferous unit containing large foraminifera of international biostrategraphic value.	C	2	M	M
Maitai Bay beaches	Entire bay an extremely well defined coastal landform of scientific, educational and scenic value.	C	2	M	H
Maungaturoto scoria cone	Unmodified perfectly formed scoria cone with central crater.	C	2	M	H
Mititai breccia	Best exposed of several breccia-filled necks in Tokatoka area.	C	2	M	M
Puketurua gullied fan	Gullied fan which is well dated & of scientific & educational value.	C	2	M	M
Te Ahuahu scoria cone	One of the most prominent, highest & well-preserved scoria cones in the Kaikohe area.	C	2	M	H
Te Puke scoria cones	Three well-preserved scoria cones and craters.	C	2	M	H
Pukepoto scoria cone	Well preserved bush covered scoria cone.	C	1		
Kawiti scoria cone	Scoria cone under threat from quarrying.	C	1		
Rawhitiroa scoria cone	Low scoria cone with lake in crater.	C	1	M	H

Ngararatunua scoria cone	Scoria cone with breached crater.	C	1	M	H

Third Priority					
Todd's quarry nephelinite	Best known of several middle Miocene nephelinite intrusions in Northland.	C	2	M	M
Waimimiti scoria mounds	One of two localities where abundant large gabbroic intrusions can be found.	C	2	M	M
Whatitiri shield volcano	Only example of a large almost concentric shield volcano in Northland & best preserved in NZ.	B	2	M	H
Maungatapere scoria cone	An almost perfect steep-sided cone & crater, one of best in NZ.	B	2	M	H
Maunu cone	A relatively well-preserved cone modified a little by farming, minor quarrying and roading.	C	2	M	H
Onemana Point allocthonous sediments	Best exposure of early allocthonous sediments in Northland.	B	3	M	H
Lake Ohia fossil forest	Well-preserved & visible fossil kauri forest.	C	2	M	H
Glenbervie scoria cone	Well-preserved scoria cone with breached crater.	C	2	M	H
Kaikohe scoria cone	Small 30m high breached scoria cone.	C	2	M	M
Ngahuha scoria cone	Small 60m high scoria cone, source of 7km flow.	C	2	M	H
Maungakawakawa scoria cone	Excellent example of breached scoria cone.	C	2	M	H

Several additional features worthy of protection which are not on the Geopreservation Inventory include the limestone formations at Waro, Abbey Caves, Waipu Caves and Hewlett Point.

Criteria:

1. Importance:

A = international
B = national
C = regional or local

2. Vulnerability:

1 = Highly vulnerable to complete destruction by human activities, for which strict legal protection is thought necessary.
2 = Vulnerable to partial destruction or modification by human activities, for which some sort of legal protection is thought necessary.
3 = Unlikely to be damaged by human activities.

3. Urgency with which conservation of the site or feature is required:

H (High) = Action required in the short term (0-2 years)
M (Medium) = Action required within medium term (2-5 years)
L (Low) = Action required in the longer term (5-15 years)

4. Unique opportunities for study, interpretation, education and scientific study:

H (High) = Site provides easily accessible, clear and readily interpretable example of feature. High educational and scientific value.
M (Medium) = Access to site is moderately easy. The feature may require some degree of expert interpretation. Education value is moderate, though scientific value may still be high.
L (Low) = Access is difficult. Feature requires expert interpretation and has limited potential for educational purposes, though still has scientific value or interest.