Draft Natural Heritage Strategy - 2010 to 2015

Te Tai Hauauru - Whanganui Conservancy

DECEMBER 2009

Department of Conservation
Te Papa Atawhai

Draft Natural Heritage Strategy - 2010 to 2015

Te Tai Hauauru - Whanganui Conservancy

Cover photo: Ratapihipihi Scenic Reserve. Photo: Tim Weston

COMPANION DOCUMENTS

Te Hikoi Whakamua The path forward - Wanganui Conservancy Strategic Direction 2009 to 2014 (Department of Conservation, Wanganui Conservancy, 2008)

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Purpose

The aim of this strategy is to direct the natural heritage focus of Wanganui Conservancy until 2015. It describes how the Wanganui Conservancy Conservation Management Strategy (CMS) will be implemented over the coming five years. It is intended to highlight ongoing or potential work that is of a strategic nature, rather than list the everyday tasks that are also an essential component of the Conservancy's work.

Drivers for this strategy are the strategic directions of the Department, national and regional species priorities, the Wanganui Conservancy monitoring, wild animal control and threatened plant strategies, as well as the draft CMS's places with their goals and objectives that relate to natural heritage. This strategy will be an essential component of future business planning, and will ultimately guide resource allocation and work prioritisation from 2010 to 2015.

The strategy is written for departmental staff, and contains references to internal documents and resources. Please contact a DOC staff member should you require clarity on any proposed work.

Back country Taranaki. Photo: Tim Weston

Objectives and principles of strategy

The objectives of the strategy are:

1. To develop a strategy for Natural Heritage management in Wanganui Conservancy that will define the critical actions required to ensure the priority outcomes defined by the draft CMS and/or National and Regional priorities are achieved.
2. To define the priority order for annual actions to enable rational and defendable resource allocations through the business planning process.
3. To identify the critical outcomes and the likely consequence of these outcomes where necessary actions are unable to be resourced from within the Department.

SMT identified its over-arching view of natural heritage principles within Wanganui Conservancy and for the conservancy as a contributor to national and regional priorities. These principles are:

1. Protecting and maintaining icon sites, with the highest priority afforded to;
   i. Egmont National Park,
   ii. Whanganui National Park,
   iii. NW Ruahine
   iv. Paengaroa Mainland Island
   v. Marine reserves and marine protected areas
   vi. Manawatu Estuary RAMSAR site
   vii. Whitiau and Tawhirihoe Scientific Reserves and Tapuarau Conservation Area
   viii. Sites with strong community linkages that comply with principle 2, i.e. protecting and maintaining icon species and ecosystems.
2. Protecting and maintaining icon species and ecosystems, with highest priority afforded to;
   i. Those species or ecosystems that will go extinct or severely decline if action to protect them is not taken in Wanganui Conservancy.
   ii. Those species or ecosystems, threatened with decline that have natural strongholds or are best represented within Wanganui Conservancy.
   iii. Those species or ecosystems that comply with i and ii above, and that are highly valued by local communities, particularly where those communities are active in assisting the Department's efforts.

Tui feeding chicks. Photo: Nga Manu Images

3. Measuring and reporting on the outcomes of the Conservancy's actions, enabling it to integrate that knowledge into Regional and National "pictures".
4. Minimizing irreversible change with highest priority afforded to biosecurity within the Conservancy's boundaries where new or range-expanding species threaten irreversible loss to or of those species and ecosystems identified above.
5. Protecting and, if possible, enhancing carbon sinks and other critical ecosystem services on land managed by the Department, particularly where that work can be undertaken with the support of other agencies.

Moss seed. Photo: Tim Weston

kiwi prints. Photo: DOC

Underlying assumptions

This strategy is not intended to be a wish list of unattainable goals. Instead it is based on several assumptions on how Wanganui Conservancy sees conservation at a national and a regional level developing over the next five years. These underpinning assumptions are:

1. Resources available from within the Department's funding are likely to decrease and will be eroded by increasing costs especially those related to personnel and transport.
2. Opportunities and demands to assist other organizations and community groups to achieve conservation outcomes on public conservation land will increase. Increasing demand will need to be managed to ensure work and expenditure remains focussed on the Conservancy's strategic priorities.
3. Iwi will play a greater role in managing or contributing towards the management of icon sites.
4. Horizons and Taranaki Regional Councils will seek to sustain and grow collaborative activity to protect of biodiversity particularly in and around the icon sites identified above.
5. The demand for access to lands managed by the Department for creation of energy infrastructure or climate change mitigation will grow rapidly. While presenting challenges for protection of biodiversity, these demands are also likely to provide opportunities to enhance natural heritage or other conservation outcomes.
6. The large forest sites managed by the Conservancy are important for both species sustainability, carbon stock growth and other ecosystem services at a national level.
7. The directions for the Conservancy that will be driven by natural heritage management strategy (NHMS) decision support tools are unlikely to be significantly different from the priorities identified by this strategy.
8. Management tools will continue to be refined with effectiveness and efficiency increasing.
9. Significant gains have already been made at several important sites through sustained pest control. This work was based on sound principles. The value of that investment should be maintained as a priority.
10. Public scrutiny of expenditure by DOC will increase as will scrutiny of the use of pesticides and other lethal animal control measures.

Draft CMS Places

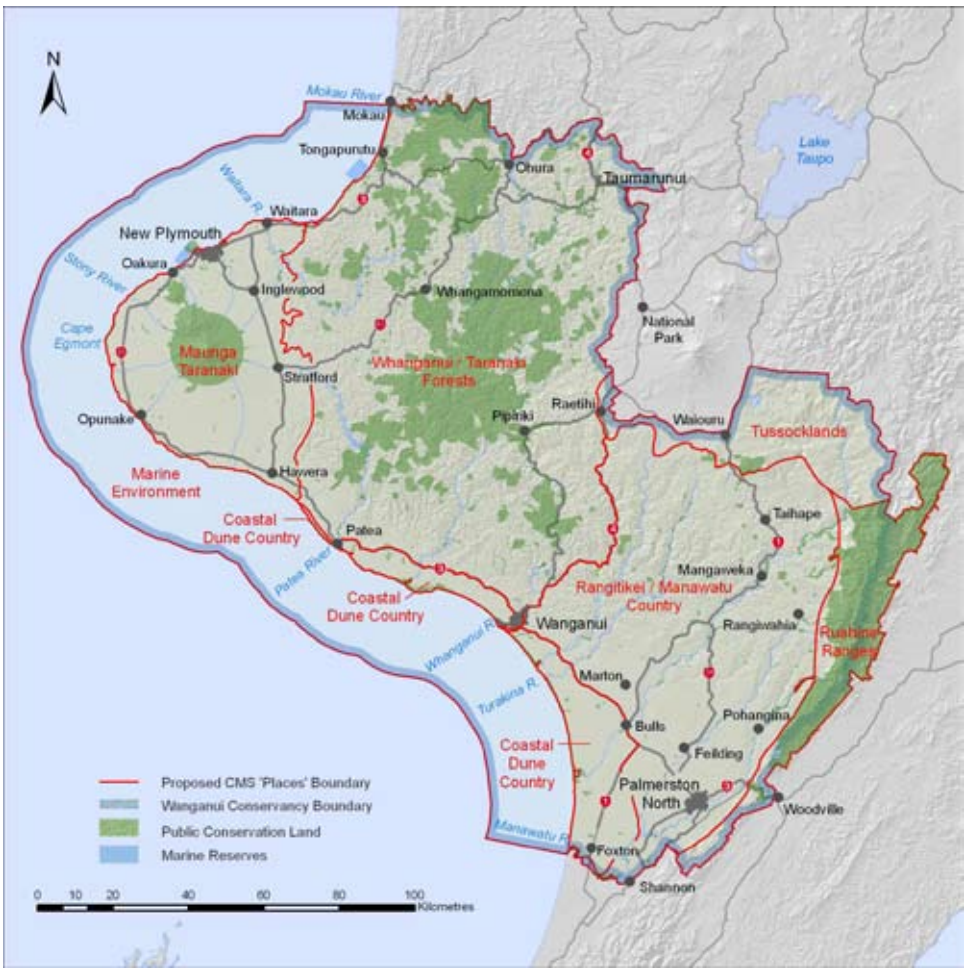
Some conservation areas require different management from others. These "places" were identified as part of the CMS process. Seven places were identified for Wanganui Conservancy. These largely reflect the ecological districts.

The seven places are:

1. Marine
2. Maunga Taranaki
3. Taranaki/Whanganui forests
4. Tussocklands
5. Ruahine Forest Park
6. Rangitikei/Manawatu Country
7. Coastal dune country

The draft CMS provides a good description of each place, including detail on the physical and ecological features, culture and history, visitors and associated communities. This strategy will not repeat that detail; rather it will concentrate on the natural heritage values, desired outcomes and priority work for each place.

FIGURE 1: CMS PLACES MAP



Morepork chicks. Photo: Nga Manu Images

Kowhai flower. Photo: Nga Manu Images

New Zealand fur seal. Photo: Nga Manu Images

Banded kokopu. Photo: Nga Manu Images

Generic functions, species work and sources of information

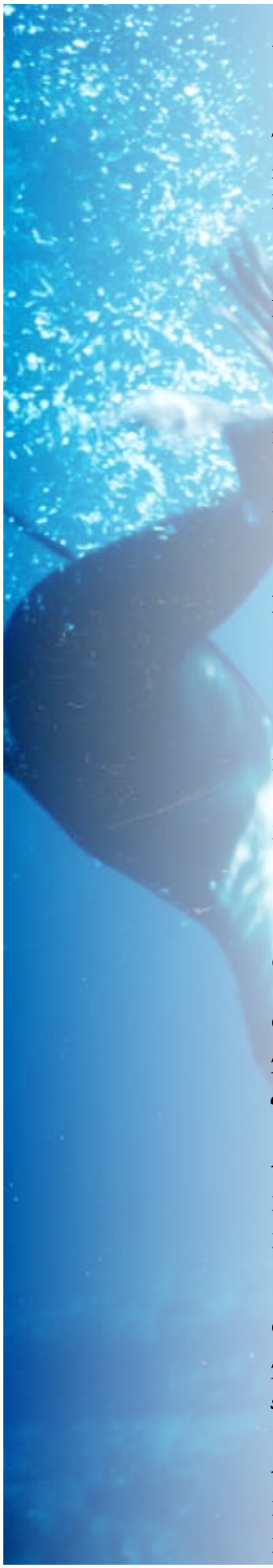
In addition to the specific actions undertaken for each goal, there are several general activities that occur. These are dealt with under each key output in Appendix 1.

Species work required is listed in tables of threatened plants (Appendix 2), birds (Appendix 3), and bats, herpetofauna, freshwater fish and some invertebrates (Appendix 4). For each species, presence in each place and key actions are noted, as well as whether the species will severely decline or go extinct if not protected in Wanganui Conservancy, and whether the conservancy is a natural stronghold for the species or it is best represented in the conservancy.

A bibliography of the main documents pertinent to natural heritage management in Wanganui Conservancy is included.

Wellington green gecko. Photo: Nga Manu Images

Native land snail. Photo: Nga Manu Images



Marine environment

This place covers the marine area from mean high water to 12 nautical miles offshore between the Mokau river in the north to the Manawatu River in the south.

PROPOSED CMS OUTCOMES

1. Representative and unique marine ecosystems are identified and conserved.
2. Marine reserves provide benchmarks against which other unprotected marine areas are compared.
3. Marine mammal species and populations are protected.

PROPOSED CMS OBJECTIVES

1. To protect and promote the special natural values within the Parininihi and Tapuae Marine Reserves, and the Sugar Loaf Islands Marine Protected Area.
2. To undertake survey and research to better understand the natural values present off the Taranaki and Whanganui coastline.
3. To advocate for the protection of natural marine values where these are threatened by coastal or marine activity.

GOALS

Goal ME 1

The Tapuae Marine Reserve fulfils the ecological, social, scientific and educational goals for which it was established.

Actions

ME 1.a. Establish governance structure by June 2011.

ME 1.b. Develop and implement an operational plan for the reserve by December 2011.

Goal 2

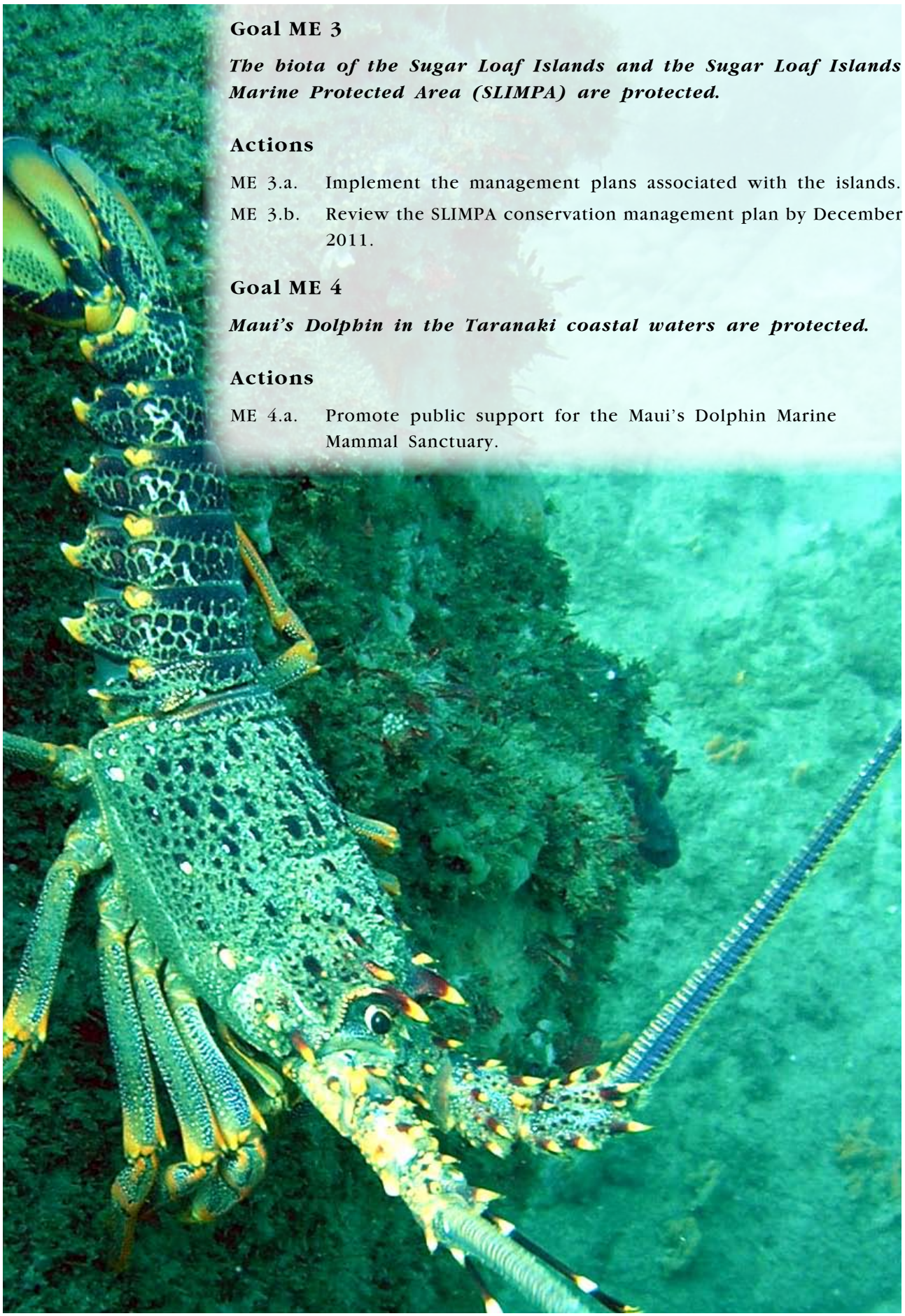
The Parininihi Marine Reserve fulfils the ecological, social, scientific and educational goals for which it was established.

Actions

ME 2.a. Support the Parininihi Marine Reserve governance structure.

ME 2.b. Implement the Parininihi Marine Reserve operational plan.

New Zealand fur seal. Photo: Ian Cooper



Goal ME 3

The biota of the Sugar Loaf Islands and the Sugar Loaf Islands Marine Protected Area (SLIMPA) are protected.

Actions

ME 3.a. Implement the management plans associated with the islands.

ME 3.b. Review the SLIMPA conservation management plan by December 2011.

Goal ME 4

Maui's Dolphin in the Taranaki coastal waters are protected.

Actions

ME 4.a. Promote public support for the Maui's Dolphin Marine Mammal Sanctuary.

Crayfish. Photo: Bryan Williams

Maunga Taranaki

This place covers Taranaki/Mt Egmont, the other andesitic volcanoes and the lahar features on the ring plain, and includes the area covered by the Egmont Ecological Region.

Daisy flower. Photo: DOC

PROPOSED CMS OUTCOMES

1. Mt Taranaki and the ring plain are valued for their landscape and natural character, and New Zealanders engage in their conservation.
2. Catchments are managed, in cooperation with other land managers, to maintain the ecosystem services they provide, such as carbon storage and improved water quality.
3. Representative populations of priority species and habitats are protected through control of key plant and animal threats.

PROPOSED CMS OBJECTIVES

1. To seek the integrated management of waterways flowing from Mount Taranaki to the sea, by working co-operatively with Tangata Whenua, Taranaki Regional Council, other land managers and community groups.
2. To protect the unique species, complete altitudinal sequence of habitats and characteristic volcanic landforms on Mount Taranaki through consultation and collaboration with tangata whenua, Taranaki Regional Council, adjacent land owners and community groups and through the careful management of development.
3. To protect the rare coastal habitats and unique species along the Taranaki coast by working co-operatively with Tangata Whenua, Taranaki Regional Council, other land managers, land owners and community groups.

GOALS

Goal MT 1

Ecosystem processes and biota associated with Egmont National Park and other areas managed by the Department are maintained or improved.

Actions

MT1.a. Undertake aerial 1080 possum control on a 10 year cycle from 2009 to control possums to below 5% residual trap catch (RTC)

and maintain or improve (on 2008 levels) current level of canopy health and cover in Egmont National Park Undertake systematic AFBI monitoring to provide effective measure of outcomes.

MT1.b. Investigate the feasibility of moving to a 3 year 1080 cycle to control predators to low levels to also improve whio, kiwi and forest bird populations.

MT1.c. Maintain control of possums on the boundary of ENP and other areas within the "area under sustained management for possums" (Figure 2) to or below 5% RTC in cooperation with Taranaki Regional Council and the local community, and monitor outcomes for kohekohe forest remnants as per the 10 year monitoring plan.

MT1.d. Maintain the understorey in ENP through a goat control programme that ensures hunting effort is at a level that provides complete coverage of the park and that maintains goats at or below 1 per hunting day. Monitor the outcomes of this operation through the existing permanent forest plot network as per the draft 10 year monitoring plan.

MT1.e. Reduce significant weed threats by continuing a weed control programme at Lucy's Gully that controls climbing asparagus and ginger to zero density by 2020.

MT1.f. Continue to undertake species-specific protection and management of threatened species as per the species tables, particularly *Dactylanthus taylori, Melicytus drucei,* and *Powelliphanta* "Egmont".

Goal MT 2

Kiwi and whio and their habitat in Egmont National Park and on adjacent privately owned property are protected to a level where their populations are stable or increasing.

Actions

MT 2.a. Maintain existing predator trapping to protect whio and kiwi, as long as this work is supported by the Central North Island Blue Duck Trust, and the Taranaki Kiwi Trust.

MT 2.b. Cooperate with TRC, other land managers, community groups and adjacent landowners to encourage whio protection on neighbouring private property.

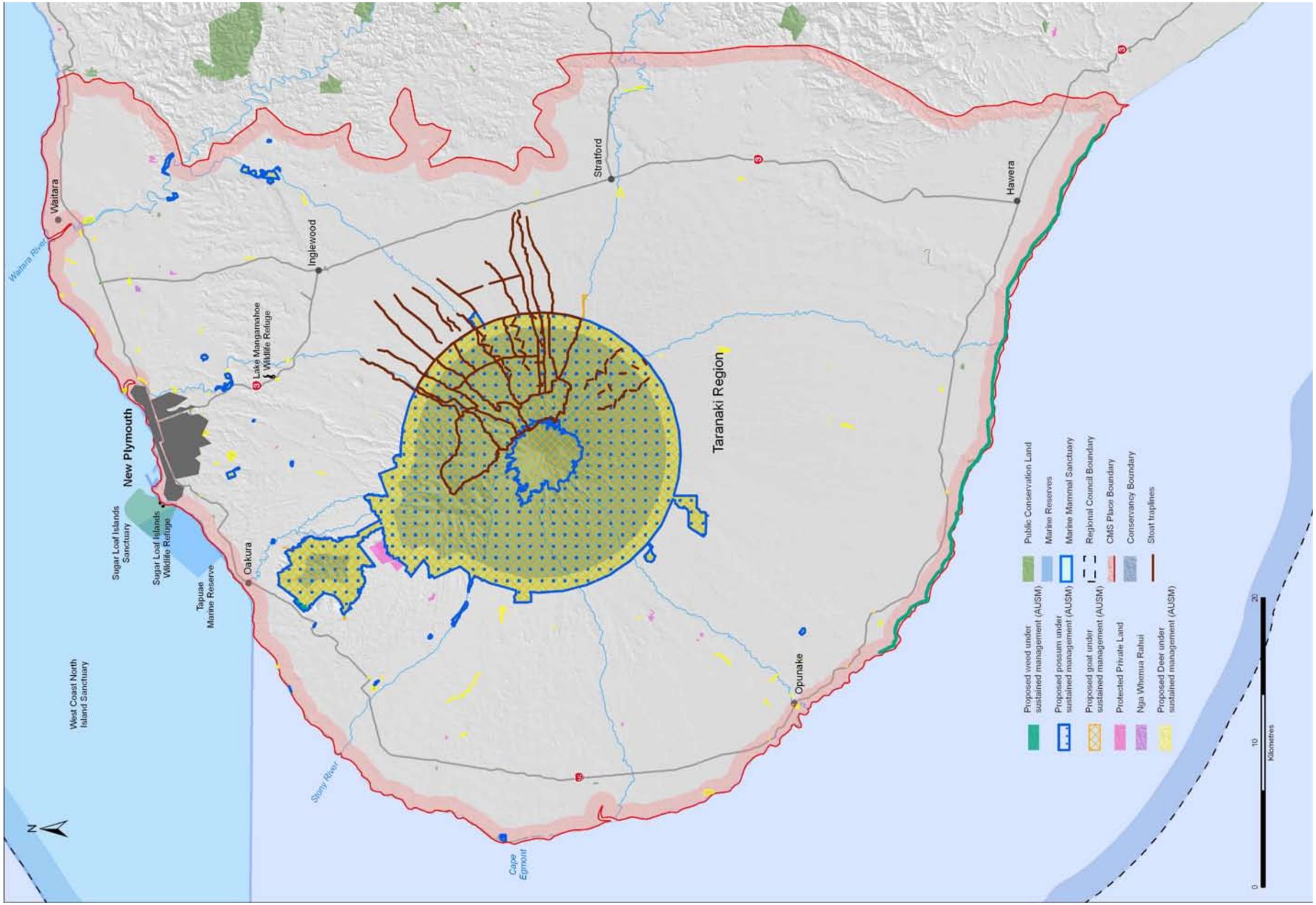
Goal MT 3

The ecosystem processes and the biota associated with coastal cliffs and herbfields in South Taranaki are protected.

Actions

MT 3.a. Control Chilean rhubarb on the marginal strip and adjacent private land on the south Taranaki cliffs to prevent the loss of any threatened plant populations and icon habitats.

FIGURE 2: MAUNGA TARANAKI



MT 3.b. Monitor threatened plants on the coastal herbfields and cliffs, and continue to build community support to assist in the ongoing protection and maintenance of these habitats.

MT 3.c. Continue translocation of threatened plants to suitable habitats, and plantings of *Pimelea prostrata* for *Notoreas* moth. Continue monitoring of *Notoreas*.

Goal MT 4

Mudfish and galaxid populations are maintained.

Actions

MT 4.a. Continue monitoring populations and advocate for protection of habitats of short jaw kokopu, giant kokopu and brown mudfish on the ring plain.

MT 4.b. Advocate for protection of habitat and spawning sites of other galaxid species.

Goal MT 5

Critical biosecurity threats that would impose significant threats to the existing regenerative capacity of the Maunga Taranaki forests and other natural habitats are controlled and if possible, eradicated.

Actions

MT 5.a. Control and eradicate new populations of feral deer in accordance with the Taranaki feral deer control plans, as per Figure 2.

Goal MT 6

Remaining areas of significant natural habitat within the Maunga Taranaki place that are not currently protected are protected.

Actions

MT 6.a. Advocate for protection of areas recommended for protection in the Egmont PNA report, TRC's Key Native Environments (KNEs), or other sites subsequently identified, through RMA plans and processes, and by supporting applications to the Natural Heritage Fund and Nga Whenua Rahui.

Taranaki/Whanganui Forests

This place is dominated by one of largest tracts of lowland forest in the North Island, stretching from the kahikatea stands on the Mokau River and Taranaki coast at Whitecliffs inland to Taumarunui and south to the Whanganui River. Besides the forest it also includes several major river systems, wetlands of national importance, karst systems, plus several other significant habitats within the forest. It includes areas of the North Taranaki, Matemateaonga and Taumarunui Ecological Districts.

Rata flower. Photo: Nga Manu Images

PROPOSED CMS OUTCOMES

1. The extensive remaining native forests and associated habitats are recognised as nationally important and valued for their landscape, natural character and scale.
2. Tangata whenua and the local community are connected to, and actively involved in the management of the Taranaki /Whanganui Forests, with formal partnerships where required.
3. Catchments are managed in cooperation with other land managers, to retain or improve natural cover and maintain ecosystem services such as carbon storage, and improve water quality.
4. Representative habitats and populations of priority species are protected through control of key plant and animal threats.

PROPOSED CMS OBJECTIVES

1. To improve and extend the areas where plant and animal pests are being managed by working cooperatively with tangata whenua, other land managers and community groups.

GOALS

Goal TWF 1

The Department's component of the Tautea Kia Wharite project, that aims to restore 180,000 ha of Taranaki/Whanganui forest and adjacent privately owned kiwi and whio habitat, is fully implemented by 2015.

Actions

TWF 1.a. Establish and maintain partnerships with tangata whenua, Horizons Regional Council and adjacent landowners to improve the protection of 180,000 ha of northern Whanganui National Park and adjacent privately owned kiwi and whio habitat.

TWF 1.b. Continue intensive predator control programmes in the core whio recovery sites of the Manganui-a-te-ao and Retaruke river environs, with a short-term goal of 40 pairs in a stable or increasing population by 2017.

TWF 1.c. Sustain planned 3 yearly cycle of aerial 1080 control of possums and predators over DOC managed section of Tautea Kia Wharite project area and monitor outcomes for forest canopy condition, kiwi, and whio populations.

TWF 1.d. Sustain goat control within the Tautea Kia Wharite project area as per figure 3, and monitor the outcomes of this operation with fenced exclosures, permanent forest plots and seedling ratio lines.

TWF 1.e. Investigate potential expansion of goat control to include the entire area and reduce goat populations to a level yielding less than one kill per hunter day.

TWF 1.f. Ensure progress and outcomes are effectively communicated to stakeholders and the wider community to maintain support for the project.

Goal TWF 2

By 2011, investigate and, if possible, initiate, a project similar in concept and objectives to the Tautea Kia Wharite project encompassing areas of Whanganui NP & Waitotara Conservation Area within the Taranaki Region.

Actions

TWF 2.a. Work with Taranaki Regional Council and tangata whenua to establish a working party to investigate opportunities.

TWF 2.b. Seek outside funding for any identified project.

Goal TWF 3

Forest canopy cover is maintained to protect carbon stocks, provide for ecosystem services, and to maintain restoration potential at sites as per figure 4.

Actions

TWF 3.a. Undertake aerial 1080 possum control as per Appendix 5 to maintain possum browse scores within tolerances developed for target species at specific sites, and monitored through systematic AFBI monitoring.

TWF 3.b. Where possible, undertake possum control in a manner providing occasional control of predators, e.g. rats & stoats.

TWF 3.c. Where partnerships provide additional resources, extend and/ or intensify forest canopy protection.

FIGURE 3 TARANAKI/WHANGANUI FORESTS - GOAT

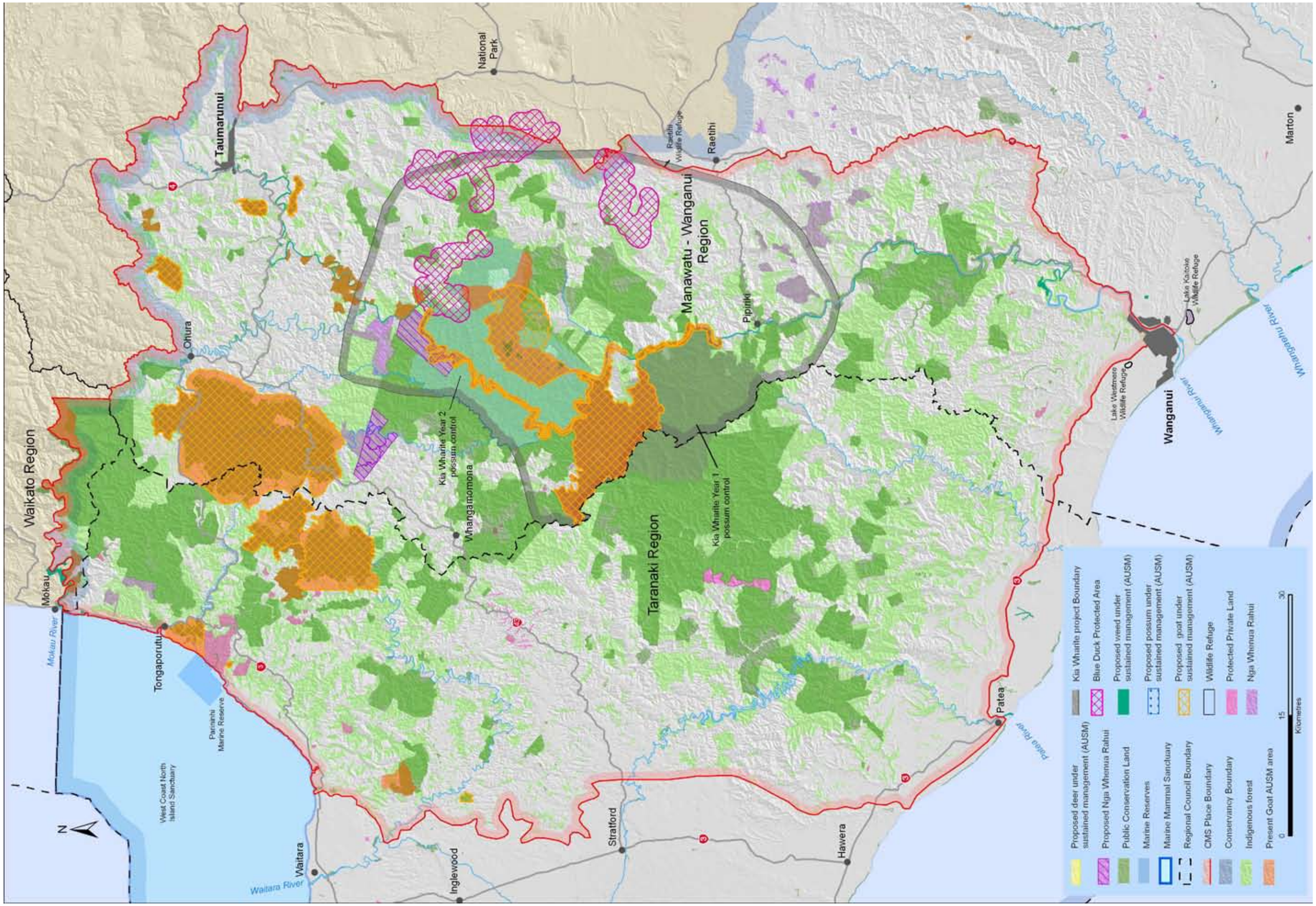


FIGURE 4 TARANAKI/WHANGANUI FORESTS -POSSUM

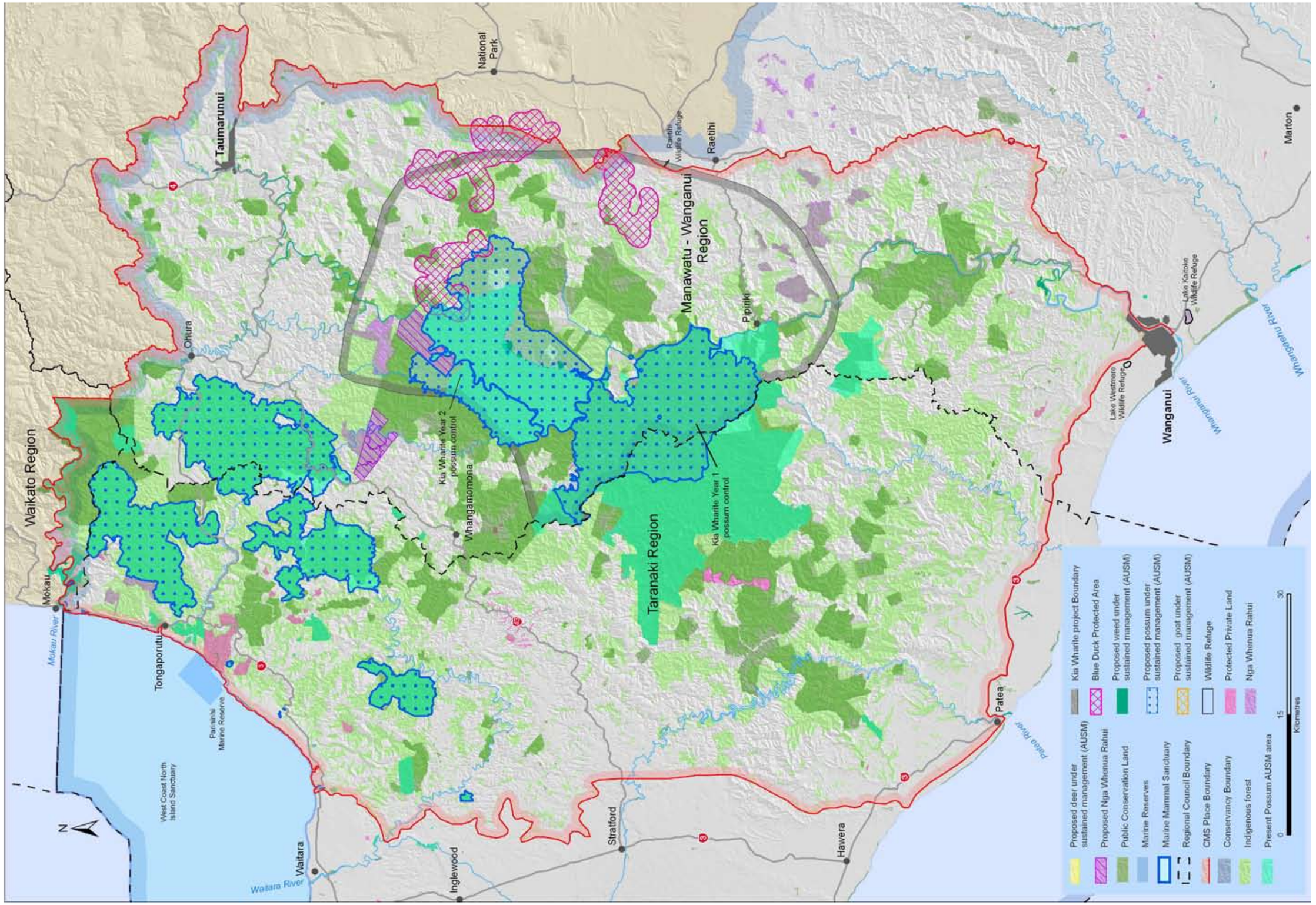
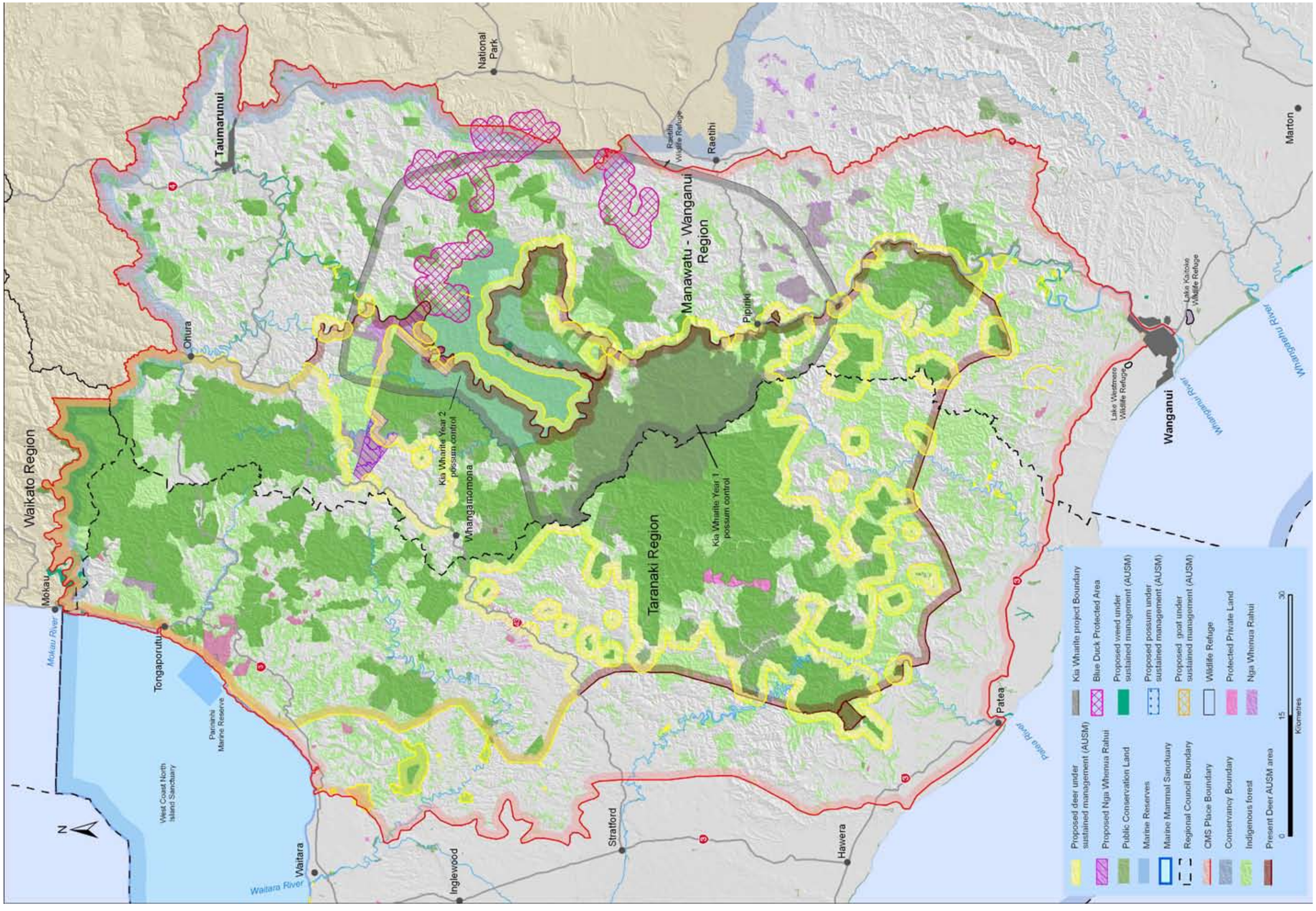


FIGURE 5 TARANAKI/WHANGANUI FORESTS -DEER



Goal TWF 4

Forest regenerative capacity is maintained at sites depicted on figure 3 to protect carbon stocks, ecosystem service provision and restoration potential.

Actions

TWF 4.a. Sustain goat control to a level where hunter kill results and effort reflects a stable or declining goat population with higher priority (if necessary) given to individual sites on the basis of current vegetation condition, large size and/or limited reinvasion potential.

TWF 4.b. Investigate potential opportunities for and benefits from expansion of this control to include all infested areas and reduce goat populations to a level yielding less than one kill per hunter day. New or additional programmes are to meet DOC best practice standards.

TWF 4.c. Monitor outcomes of goat control with fenced enclosures, permanent forest plots and seedling ratio index lines, as per the 10 year monitoring plan, to provide a programme level assessment of achievement.

Goal TWF 5

Critical biosecurity threats that would impose significant threats to the existing regenerative capacity of the Taranaki Whanganui forests are controlled and, if possible, eradicated.

Actions

TWF 5.a. Survey for and control new populations of feral deer on or near public conservation land to zero density as per the Taranaki Feral deer plan, as per figure 5.

TWF 5.b. Control new populations of feral deer elsewhere in Taranaki to zero density where community or other agency support is available.

TWF 5.c. Undertake perimeter fence inspections and manage permitting requirements of regulated deer farms under the Wild Animal Control Act 1977 in accordance with the Deer Farming Notice No.5 2008.

Tussocklands

This place covers those valleys and plateaux that are dominated by tussock grasslands and their associated bush pockets, and it equates roughly to the Moawhango Ecological Region.

Kaimanawa horses. Photo: DOC

PROPOSED CMS OUTCOME

1. The unique open landscapes, threatened and biogeographically special species and distinctive natural character of the tussocklands and their associated native forests, shrublands, waterbodies and wetlands, gain widespread public recognition and New Zealanders engage in their conservation.

PROPOSED CMS OBJECTIVES

1. To advocate for the protection of the tussocklands' natural character, rare habitats and species by other land managers and private landowners.
2. To improve management of plant and animal pests by working cooperatively with tangata whenua, other land managers and community groups.

GOALS

Goal TL 1

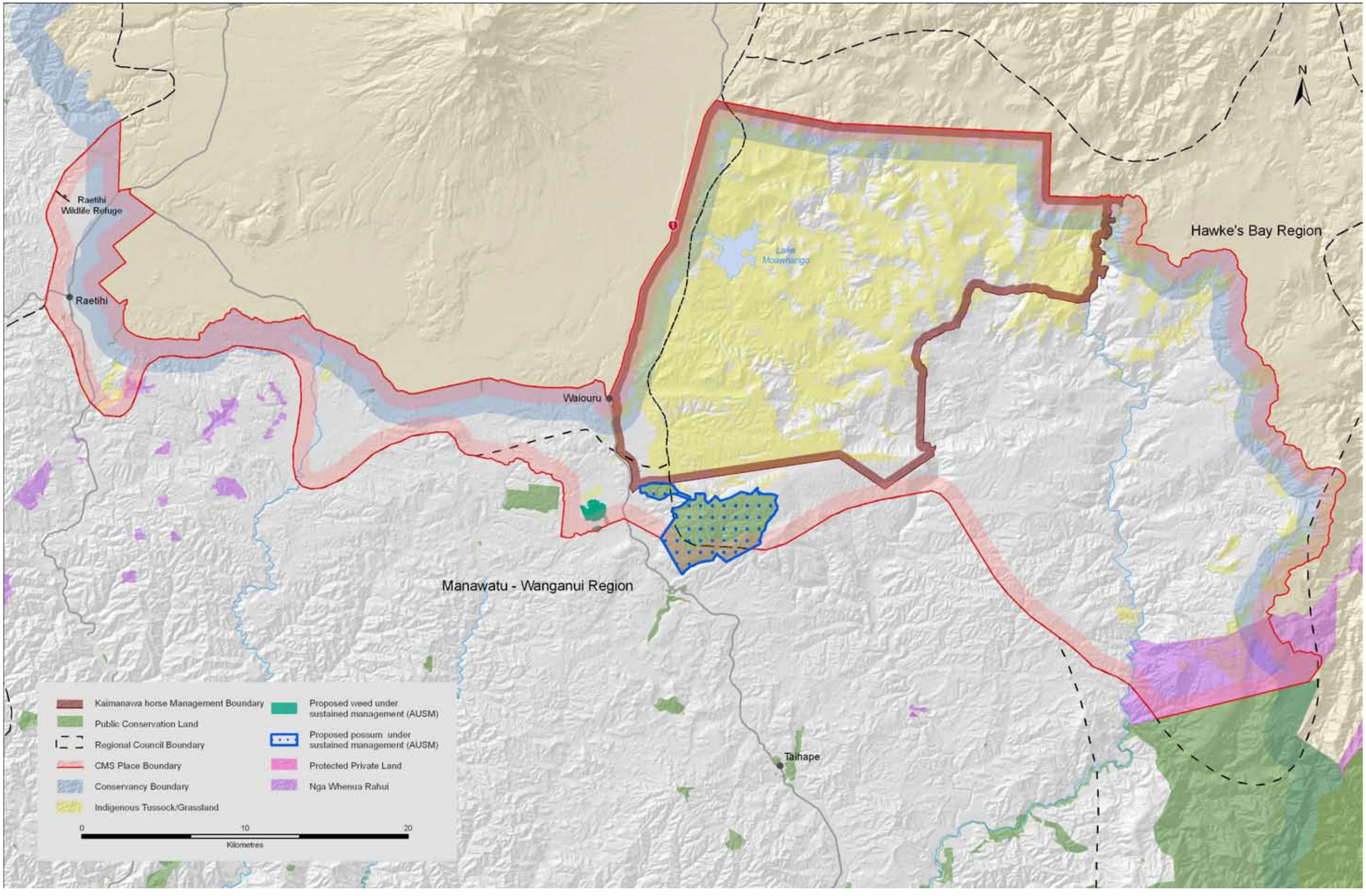
The ecosystem processes and the biota associated with the tussocklands and their associated wetlands and forests are protected.

Actions

TL 1.a. Manage the Kaimanawa wild horse herd in the Waiouru Military Training Area in accordance with the Kaimanawa Wild Horses Plan, by working cooperatively with the NZ Defence Force and other parties. Support the NZ Defence Force to maintain horse exclosures and grassland plots to monitor the outcomes of managing the Kaimanawa wild horses.

TL 1.b. Continue to research, monitor and locally manage critically threatened plants in Waiouru Military Training Area and elsewhere in association with landowners, particularly the Aorangi-Awarua Trust.

FIGURE 6: TUSSOCKLANDS



TL 1.c. Improve the protection of natural values at Hihitahi Forest Sanctuary by working co-operatively with tangata whenua, Meridian Energy, and adjacent landowners.

TL 1.d. Maintain ongoing possum control in the Hihitahi Forest Sanctuary to contain possum impacts to or less than current levels, and monitor the outcomes of this action by systematic FBI monitoring.

TL 1.e. Contribute agreed inputs to the joint management project with Horizons Regional Council for the Raketapauma Swamp, particularly weed control.

TL 1.f. During 09/10 undertake a survey for threatened plants, especially orchids, in the recently protected Raketapauma swamp and establish baseline monitoring and habitat management plans, as required.

TL 1.g. Assess the threat posed by deer to Hihitahi by monitoring the permanent forest plot network as per the draft long term monitoring strategy.

Ruahine Ranges

This place covers the Ruahine Ranges, including the mountain tops. Part of this place is managed by Wellington Hawke's Bay Conservancy. It includes parts of the Ruahine and Manawatu Gorge Ecological Regions.

Kingfisher. Photo: Nga Manu Images

PROPOSED CMS OUTCOMES

1. The Ruahine Ranges, Manawatu Gorge and northern Tararua ranges are valued for their landscape, natural character and recreation opportunities and New Zealanders engage in their conservation.
2. Ecosystem services provided by these ranges, such as water quality and flow, are maintained and improved.
3. Representative populations of priority species and habitats are protected through control of key plant and animal threats.

PROPOSED CMS OBJECTIVES

1. To improve and extend the areas where plant and animal pests are being managed by working cooperatively with tangata whenua, other land managers and community groups.
2. To work with tangata whenua, other land managers and local communities to protect and improve the biodiversity values of the Manawatu Gorge area and promote these values through the provision of quality recreation experiences, information and interpretation.

GOALS

Goal RR 1

Ecosystem processes and services in the Ruahine and northern Tararua ranges are maintained or improved.

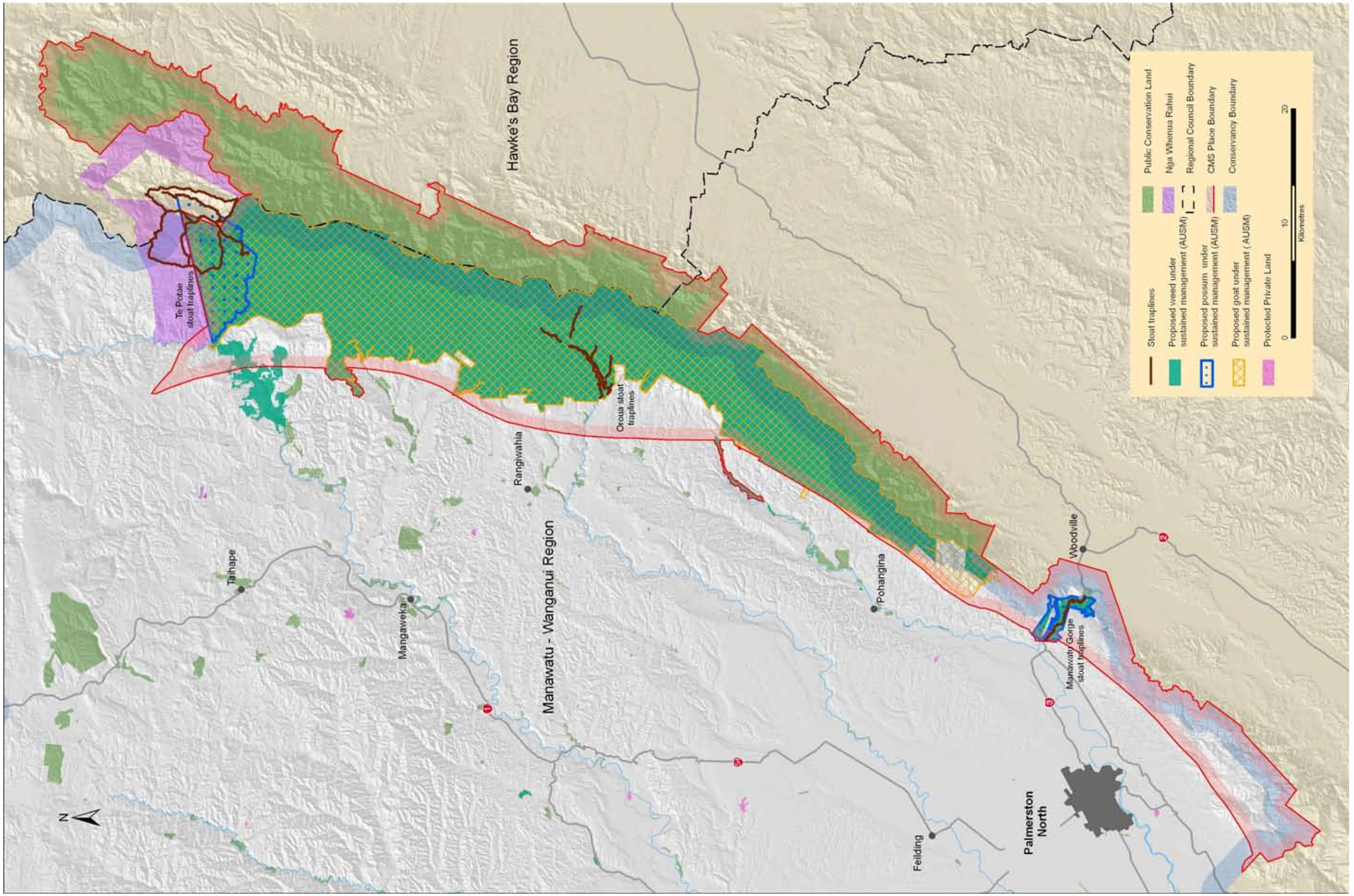
Actions

RR 1.a. Undertake aerial possum control in the Ruahine Corner/Lake Colenso area to a level where key indicator species such as *Powelliphanta marchanti* and *Raukawa simplex* are exhibiting minor possum impact only.

RR 1.b. Control *Pinus contorta* to zero density above the tree line by 2010, and elsewhere in Ruahine Forest Park by 2020.

RR 1.c. Control and contain plant and animal pests that currently have a minor distribution but have the potential to rapidly expand that range and cause irreversible change. Particular targets at present are feral goats and old mans beard.

FIGURE 7: RUAHINE RANGES



RR 1.d. Monitor feral deer and possum population levels and impacts to gather data for future decision making on the need for control of these pests.

RR. 1.e. Implement the Department's commitments to the Manawatu Gorge Biodiversity Project as agreed annually with Horizons Regional Council.

Goal RR 2

Threatened fauna and flora in the Ruahine ranges are protected.

Actions

RR 2.a. Continue to implement the Te Potae predator control project in partnership with the Aorangi Awarua Trust and community groups as long as national research objectives and community support are able to sustain the necessary field work.

RR 2.b. Monitor priority threatened plant and animal species within the Ruahine Forest Park.

RR. 2.c. Review objectives and methods for whio protection work in the NW Ruahine to ensure alignment with species recovery goals and best practise for predator control.

Rangitikei/Manawatu Country

This place encompasses the extensive rolling hill country and numerous valley systems of the Rangitikei region, and the low-altitude plains and terraces of marine origin from Hawera to the Manawatu River. It equates roughly to the Rangitikei Ecological Region and Manawatu Plains Ecological District.

Paridise ducks. Photo: Nga Manu Images

PROPOSED CMS OUTCOMES

1. The fragmented remnants of the once extensive indigenous forests and wetlands are valued and New Zealanders engage in their conservation.
2. Representative populations of priority species and habitats are protected through control of key plant and animal threats.

PROPOSED CMS OBJECTIVES

1. To improve the management of plant and animal pests by working cooperatively with tangata whenua, adjacent landowners, other land managers and community groups.
2. To advocate for the protection of significant remnant natural areas on private land.
3. To advocate for improved riparian management to enhance water quality by working with other land managers.
4. To promote the unique botanical and invertebrate values protected within the Paengaroa Mainland Island.

GOALS

Goal RM 1

The ecosystem processes, connectivity between the remnants and the biota associated with the remnant forests and other natural areas are protected.

Actions

RM 1.a. Maintain ongoing possum control and goat hunting programmes within priority reserves as per figure 8, to DOC standards of 5% RTC for possums and one goat per hunter day.

RM 1.b. Maintain ongoing old mans beard control with priority given to the prevention of spread to the Ruahine range, Paengaroa Scenic reserve and other Hautapu reserves upstream of Mataroa.

RM 1.c. Continue to manage white bryony control on contract to MAF Biosecurity, as per the management plan and contract.

RM 1.d. Cooperate with land owners, managers and members of the public to survey for, monitor, protect and manage priority threatened plants on non-conservation land, with particular emphasis on *Celmisia* "Mangaweka" and *Olearia gardneri.*

RM 1.e. Support regional and local authorities and interest groups in their riparian planting schemes, volunteer site management, and covenanting of wetlands and patches of forest.

RM 1.f. Promote the significance of connectivity between the forest remnants through education and interpretation.

RM 1.g. Support Forest and Bird with advice and advocacy in their management of the Turakina Valley reserves.

RM 1.h. Advocate for maintenance of water quality and protection of dwarf galaxid habitat.

Goal RM 2

Paengaroa Scenic Reserve is managed as a mainland island, with an emphasis on ecosystem processes, threatened plant and weed management, and associated research.

Actions

RM 2.a. Control woody weeds and vines to zero density, including elderberry, willow, sycamore, old man's beard, ivy, and Chilean flame creeper.

RM 2.b. Assess handpulling as a control technique for bittersweet by June 2010, and make recommendations for the 10/11 summer season.

RM 2.c. Assess the impacts of bittersweet on native vegetation by June 2013.

RM 2.d. Actively promote Paengaroa as a site to conduct research, both within the Department and with outside agencies, including universities.

RM 2.e. Review threatened plant and animal monitoring and management by June 2010, and make recommendations for future work.

RM 2.f. Involve the local community, especially Mataroa School, in the management and utilisation of Paengaroa.

Goal RM 3

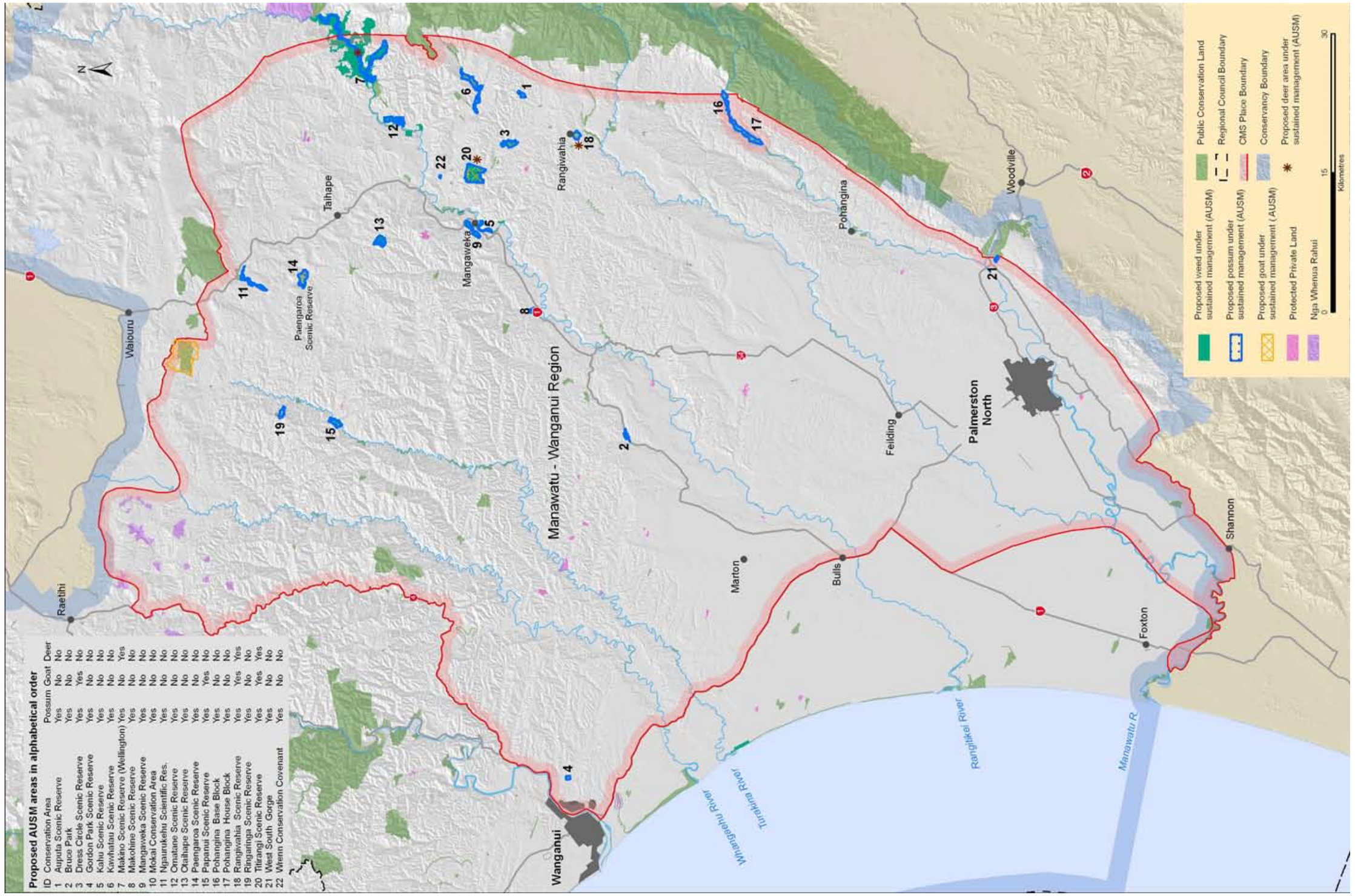
Gordon Park Scenic Reserve is managed and restored as an accessible example of formerly extensive kahikatea swamp forest.

Actions

RM 3.a. Support and sustain community group volunteer contributions towards pest and invasive weed control, restoration plantings, monitoring and promotion.

RM 3.b. Prepare a management and restoration plan to guide future contributions, by December 2010.

FIGURE 8: RANGITIKEI/MANAWATU COUNTRY



Proposed AUSM areas in alphabetical order

ID	Conservation Area	Possum	Goat	Deer
1	Aupuia Scenic Reserve	Yes	No	No
2	Bruce Park	Yes	No	No
3	Dress Circle Scenic Reserve	Yes	Yes	No
4	Gordon Park Scenic Reserve	Yes	No	No
5	Kahu Scenic Reserve	Yes	No	No
6	Kawhatau Scenic Reserve	Yes	No	No
7	Makino Scenic Reserve (Wellington)	Yes	No	Yes
8	Makohine Scenic Reserve	Yes	No	No
9	Mangaweka Scenic Reserve	Yes	No	No
10	Mokai Conservation Area	Yes	No	No
11	Ngaurukehu Scientific Res.	Yes	No	No
12	Omatane Scenic Reserve	Yes	No	No
13	Otaihape Scenic Reserve	Yes	No	No
14	Paengaroa Scenic Reserve	Yes	No	No
15	Papanui Scenic Reserve	Yes	Yes	No
16	Pohangina Base Block	Yes	No	No
17	Pohangina House Block	Yes	No	No
18	Rangiwahia Scenic Reserve	Yes	Yes	Yes
19	Ringaringa Scenic Reserve	Yes	No	No
20	Tiltrangi Scenic Reserve	Yes	Yes	Yes
21	West South Gorge	Yes	No	No
22	Wrenn Conservation Covenant	Yes	No	No

Coastal dune country

This area stretches from the Manawatu Estuary to Patea, and forms a large component of the Foxton Ecological District. Several sites that are important for conservation are not protected by the Department.

Pingao. Photo: DOC

PROPOSED CMS OUTCOMES

1. The natural values of the dune systems, associated wetlands and coastal forest remnants are recognised and New Zealanders engage in their conservation.
2. Representative populations of priority species and habitats are protected through control of key plant, human and animal threats.

PROPOSED CMS OBJECTIVES

1. To advocate for the protection of natural values and coastal processes with landowners, other agencies and recreational users.
2. To retain and improve the protection of the natural areas currently managed by the Department.
3. To increase the area of natural dune lands under protection and the quality of the habitat within them by seeking partnerships with tangata whenua, other land managers, land owners and community groups.

GOALS

Goal CD 1

Natural coastal dune ecosystems and their associated processes and biodiversity values are maintained or enhanced at key sites as per figure 9.

Actions

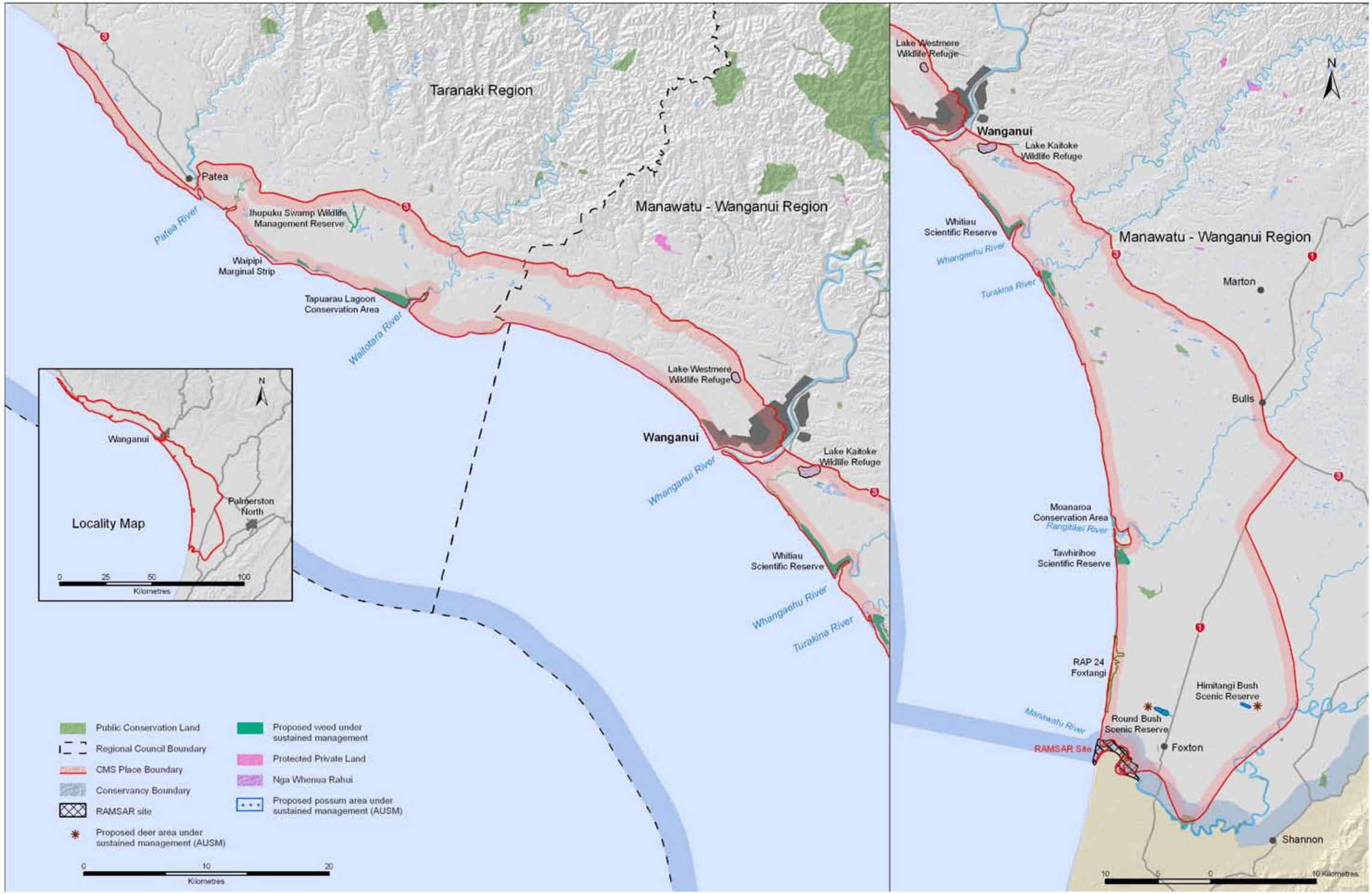
CD 1.a. Control weeds to a level that allows natural processes to proceed, and limit the spread of introduced sand stabilisers.

CD 1.b. Advocate for the restriction or closure of vehicular access that threatens coastal dune processes and biodiversity.

CD 1.c. Create wetlands and manipulate habitat for plants reliant on ephemeral wetlands, where these are not being formed through natural processes.

CD 1.d. Protect and rehabilitate foredunes with native sandbinders where marram dunes have collapsed or blowouts have been created, to prevent loss of rear dune habitat.

FIGURE 9: COASTAL DUNE COUNTRY



CD 1.e. Actively manage and translocate threatened plants as per Appendix 2 and monitor threatened species to ensure that management in these areas is effective.

Goal CD 2

Natural inland coastal country ecosystems and their associated processes and biodiversity are maintained or restored at key sites as per figure 9.

Actions

CD 2.a. Control possums and deer at key coastal forest sites to prevent substantial modification of the natural biodiversity values, and monitor the outcomes of this control.

CD 2.b. Advocate for the protection of high value sites which do not form part of the public conservation estate, as identified in the Foxton PNA Report and by Horizons Regional Council.

CD 2.c. Investigate by June 2011 the feasibility of linking Tawhirihoe with Pukepuke Lagoon as one conservation unit.

Goal CD 3

Wader habitat and wetlands are maintained or enhanced at the Manawatu Estuary RAMSAR Site, and waders are protected through the implementation of the multi-agency Manawatu Estuary Management Plan.

Actions

CD 3.a. Establish a formal monitoring programme for indigenous bird populations and vegetation within the Manawatu Estuary designed to identify threats to waders and their habitat, and the outcome of management actions.

CD 3.b. Implement a weed management plan for the site, based on a weed survey to be completed by June 2010.

Goal CD 4

The dunes between Foxton and Himatangi are protected.

Actions

CD 4.a. Document the values of the area to strengthen the case for its conservation and to raise awareness of the value of the site, by June 2010.

CD 4.b. Actively advocate for the protection of this site, and support other agencies in discussions with the landowners.

Goal CD 5

Maintain and enhance the natural processes and biodiversity values within and surrounding the Tapuarau Conservation Area.

Actions

CD 5.a. Establish a multi-agency and community partnership to maintain and enhance biodiversity values at Tapuarau.

CD 5.b. Establish a Tapuarau management plan in consultation with stakeholders, outlining the goals and objectives and stakeholder responsibilities for the area, by June 2011.

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Appendix 1:

GENERAL ACTIVITIES PER KEY OUTPUT

1.01 Fire

- Action public fire permit requests.
- Respond to fire incidents or fire management issues as per National Fire Plan QD 1658.

1.04 Natural Heritage restoration

- Provide advice on restoration projects that meet the requirements of the Natural Heritage Strategy.

1.08 Possums

- Pesticide consent processing (e.g. AHB operations).
- Poison tracking/storage to ERMA requirements (i.e. maintenance of legal processes and systems).
- General advice to public.

1.09 Deer

- Hunting advice.
- Deer farming – compliance with legal requirements under the Deer farming Notice no. 5.
- WARO enquiries.

1.10 Goats

- WARO enquiries.
- Hunting advice.

1.13 Other terrestrial animal pests

- WAC Act 1977 permitting.

1.14 Aquatic animal pests

- Public awareness around the risks that aquatic animal pests pose.
- Eradication of pest fish when funds allow.
- General advice to the public.

1.15 Island management and restoration

- Manage the Sugar Loaf Islands according to the conservation management plan (Fechney, 1997), biosecurity plan, species requirements as per appendices 2-4, and associated recovery plans.

1.16 Fencing

- Processing new fencing bids as per the Conservancy fencing database (DOCDM 383387).

1.17 Weed control

- Continue with maintenance phase of weed control operations where these meet the overall goals of the strategy.
- Undertake passive surveillance for new weeds or new locations of weeds.
- Didymo surveillance as agreed with Regional partners.
- Public awareness around the risks that aquatic plant pests pose.

1.19 Legal protection of areas and sites

- Assessment of areas put forward by landowners for legal protection.
- Applications for funding to meet the costs of legal protection and associated costs such as cadastral survey and fencing, where the values of an area merit the pursuit of legal protection.
- To review, where appropriate, the status and classification of land managed by the Department so that it is managed within the most appropriate legal and administrative framework.

1.22 RMA advocacy

- Processing of forestry permits.
- Advice on RMA issues will be limited to the highest risk most significant proposals.

1.24 Species

- Continual compilation of new and historic records of nationally and regionally significant species, including marine.
- maintenance of databases.
- processing of herbarium specimens and other collections, including marine biopsies.
- processing of collecting and research permits, wildlife permits, and other species-related permits.

1.26 Mainland Islands

- Contribute to national MI discussions and take part in appropriate hui.
- Provide advice to sanctuary managers when requested.

1.27 CITES

- Compliance as and when required. Reactionary activity.
- Processing of permits.

1.34 RPMS

- provide comment on proposed regional pest management strategies for Horizons, TRC and Environment Waikato.
- Undertake weed and pest animal control in terms of the pest management strategies, and as 1.34 funding allows.

1.35 Inventory and monitoring

- Visit every conservation site at least once every 10 years, and report on its status.

Appendix 2:

WANGANUI CONSERVANCY THREATENED PLANT SPECIES DISTRIBUTION, AND NATIONAL AND REGIONAL SIGNIFICANCE OF THE SPECIES IN WANGANUI CONSERVANCY. (AFTER DE LANGE ET AL 2009).

W will go extinct or severely decline if not protected in Wanganui CO

w natural stronghold, or best represented within Wanganui CO

C highly valued by community especially if active in assisting DOC effort

x present in conservancy

e historical records exist, but presumed extinct in conservancy

RP recovery plan

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Extinct								
Logania depressa					e			Predict type locality from Colenso diaries; search
Threatened/Nationally critical								
Acaena rorida					W			Complete monitoring study; 5 yearly monitoring
Crassula peduncularis			e?					Survey historic localities
Celmisia aff. gracilentis (b) Mangaweka						W		Protect site, ranslocated, establish in captivity, taxonomy
Limosella (b) Manutahi			W					Protect site, monitor
Olearia gardneri						W, C, RP		Protect habitat; translocate; research (recovery plan)
Ophioglossum petiolatum	e		e					Record sightings
Ourisia modesta				x				5 yearly monitor
Pimelea actea		W						Protect site; survey; translocate.
Pomaderis apetala subsp. maritima	W							Population assessment, site protection
Pterostylis micromega		x						biannual survey
Sebaea ovata translocate; survey		W, C						Restore dune processes;
Threatened/Nationally endangered								
Amphibromus fluitans			e		x	e		Follow up historical records
Carex uncifolia					x			5 yearly site visit and assessment
Isolepis basilaris record sightings		w						Maintain ephemeral wetlands;
Myosotis petiolata var. pansa	x			x				Record sightings

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Myosotis pygmaea var.								
minutiflora			x					Document observations, weed control
Uncinia strictissima					x			Document observations
Schoenus carsei			x		x			Record sightings
Threatened/Nationally vulnerable								
Anagramma leptophylla				e?				Document observations
Crassula manaia			W					Document observations
Dactylanthus taylorii	x C RP		X RP	x RP		x RP		As per recovery plan
Drosera pygmaea				x	x			Document observations
Gratiola concinna			x			x		Monitor 2 yearly; protect habitat. Survey at Gordon's Park.
Hebe speciosa			e					Follow up historical records
Isolepis fluitans var. fluitans					x			Record sightings.
Lepidium flexicaule			w C RP					Monitor annually
Lepidium oleraceum			x RP					Monitor biannually
Libertia peregrinans		w			e?			Conserve habitat, document new sightings.
Myosotis pygmaea var.glauca					x			Monitor as part of Waiouru threatened plant schedule
Pimelea tomentosa						e		Check historical records; record sightings.
Pittosporum obcordatum						x		Monitor as per Paengaroa plan
Pittosporum turneri				W				Maintain protection; monitor on 2 yearly cycle
Rorippa divaricata			e? RP					Follow up historical records

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
At Risk/declining								
Alepis flavida	x C RP							Maintain protection of trees at Raetihi Motor Camp and advocacy. Record sightings.
Anemanthele lessoniana						x		Record sightings. Supplementary planting at Paengaroa.
Austrofestuca littoralis		e						Translocate; record sightings.
Brachyglottis kirkii			x	x		x?		Record sightings.
Brachyglottis sciadophila						x		Record sightings.
Carex litorosa		X						Record sightings.
Coprosma acerosa		w						Support taxonomic revision.
Coprosma obconica						x		Record sightings.
Coprosma wallii						x		Record sightings.
Deschampsia cespitosa					x			Record sightings.
Eleocharis neozelandica		x						Record sightings.
Elymus tenuis					x			Record sightings.
Euphorbia glauca			x					Record sightings. Maintain weed control on S Taranaki cliffs.
Gunnera arenaria		x						Record sightings.
Juncus pauciflorus			x			x		Record sightings.
Leptinella tenella		x						Record sightings.
Mazus novaezeelandiae subsp. novaezeelandiae			x					Record sightings.
Melicytus flexuosus						x		Record sightings.
Myosotis pygmaea var. pygmaea			x					Record sightings.
Muehlenbeckia ephedroides								Record sightings.

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Myriohpyllum robustum			x			x		Record sightings.
Nephrolepis flexuosa		x						Record sightings.
Peraxilla colensoi	x RP							Record sightings.
Peraxilla tetrapetala	x RP			x RP				Record sightings.
Pimelea arenaria		x						Record sightings.
Pimelea aridula					x			Record sightings.
Pittosporum kirkii	x		x					Record sightings.
Ptsina salicina	x							Record sightings.
Ranunculus limosella			x					Record sightings.
Ranunculus recens			x		x			Record sightings.
Scandia rosifolia			x			x		Record sightings.
Schoenus fluitans					x			Record sightings.
Selliera rotundifolia		W						Record sightings.
Tertrachondra hamiltonii					x			Record sightings.
Teucridium parvifolium						x		Record sightings.
Thelypteris confluens						x		Record sightings.
Tupeia Antarctica	x				x	x		Record sightings.
Urtica linearifolia		x						Record sightings.
At risk/relict								
Adiantum formosum				x		x		Record sightings.
Desmoschoenus spiralis		x						Record sightings. Dune management and restoration.
Prasophyllum hectorii			x		x			
Sonchus kirkii		x	x					Record sightings. Maintain weed control on S Taranaki cliffs.

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Utricularia delicatula	e							Record sightings.
Regionally significant that meet NHS objectives								
Brachyglottis turneri	W							Record sightings. Monitor translocations and main populations.
Melicytus drucei			W					Manage threats; record sightings.

Appendix 3:

WANGANUI CONSERVANCY THREATENED BIRD SPECIES DISTRIBUTION, AND NATIONAL AND REGIONAL SIGNIFICANCE OF THE SPECIES IN WANGANUI CONSERVANCY (AFTER MISKELLY ET AL. 2008).

W will go extinct or severely decline if not protected in Wanganui CO

w natural stronghold or best represented within Wanganui CO

C highly valued by community especially if active in assisting DOC effort

x present in conservancy

e historical records exist, but presumed extinct in conservancy

RP a Recovery Plan exists for this species/genus

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Threatened / Nationally critical								
black stilt		x						Document observations.RP.
grey duck	x	x	x	x				Document observations.
takahe	e		e					
Threatened / Nationally endangered								
Australasian bittern	x	W C	x					Habitat advocacy. Survey/ monitor?
black-billed gull		x						Document observations.
black-fronted tern		x						Document observations.
stitchbird			e					
Threatened / Nationally vulnerable								
banded dotterel		x	x		x			Document observations; statutory advocacy.
black petrel			e					No action currently.
blue duck, whio	w C		w C	w C	x			Predator protection; technical advice; manage security and recovery sites as per Recovery Plan and CNIBDT agreements. RP.
North Island brown kiwi	w C		w C	w C				As per taxon plan for western and eastern taxa (in prep.).
bush falcon	x		x	x	x	x C		Document observations.
New Zealand dabchick	x	x	x					Document observations; statutory advocacy.
North Island kaka	x	x	x	x	x			Document observations.

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
North Island kokako	e		e	e				Technical advice for approved reintroductions. RP.
North Island weka	e		e	e				Technical advice for approved reintroductions. RP.
northern New Zealand dotterel protection;			x C					Monitor numbers; site national census. RP.
red-billed gull	x	x	x				x	Document observations.
reef heron Document observations; statutory advocacy.		x	x					
wrybill, ngutu-parore		x C						Document observations; statutory advocacy; monitor.
Caspian tern	x	x	x					Document observations
At risk / Declining								
New Zealand pipit		x						Document observations.
North Island fernbird, Matata	x	w C	x C	x	x			Technical advice to sanctuary sites. Document observations. Monitor?
northern little blue penguin	x	x	x			?	x	Document observations. Survey?
pied stilt	x	x	x					Document observations.
rifleman	x		x §	x	x			Document observations.
? New Zealand pied oystercatcher		x	x					Document observations.
At risk / Recovering								
brown teal	e C	e						Technical advice for approved reintroductions. RP.
saddleback	x							Technical advice for approved reintroductions. RP.
variable oystercatcher	x	x	x					Document observations.

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
At risk / Relict								
flesh-footed shearwater							w	Rat surveillance; periodic boxthorn control.
kakariki, red-crowned	x				x	x?		Document observations.
marsh crake	x	?x	?x					Document observations.
northern diving petrel							x	Rat surveillance; periodic boxthorn control; monitor.
sooty shearwater							x	Rat surveillance; periodic boxthorn control.
spotless crake	x C		x			x		Document observations.
white-fronted tern		x						Document observations, follow up historical records.
At risk / Naturally uncommon								
black shag	x	x	x	x				Document observations.
long-tailed cuckoo	x		x	x				Document observations.
royal spoonbill		x C	x					Document observations.
? little black shag			x?					Document observations.
? little shag			x?					Document observations.

Appendix 4:

WANGANUI CONSERVANCY THREATENED MAMMALS, FISH, INVERTEBRATES AND REPTILES DISTRIBUTION, AND NATIONAL AND REGIONAL SIGNIFICANCE OF THE SPECIES IN WANGANUI CONSERVANCY (AFTER HITCHMOUGH ET AL. 2007)

W will go extinct or severely decline if not protected in Wanganui CO

w natural stronghold or best represented within Wanganui CO

C highly valued by community especially if active in assisting DOC effort

x present in conservancy

e historical records exist, but presumed extinct in conservancy

RP a Recovery Plan exists for this species/genus

Serious decline and Gradual decline would equate to "At risk: declining" under the system used for birds and plants, and At risk: range restricted and At risk: sparse to At risk: naturally uncommon.

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Acutely threatened / Nationally endangered								
Powelliphanta traversi tararuaensis						W C		Provide management advice to landowner PNCC, monitor population trends. RP.
Acutely threatened / Nationally vulnerable								
long tailed bat (North Island)	W			x		C		Monitor outcomes of pest control, population trends, when methods are available. RP.
southern North Island speckled skink		W C	W C					Identify species distribution, plan management. Site and predator protection at key populations. RP.
Chronically threatened / Serious decline								
katipo, red		W C	x?					Evaluate monitoring programme and results.
Powelliphanta marchanti								? (outcome monitoring plots). RP.
Notoreas “Taranaki Coast”			W C					Monitoring, site protection, landowner liaison.
Forest ringlet butterfly	x							Document observations
small scaled skink				x	x	W C		Document observations, follow up historical records; population monitoring; facilitate research. RP.
Chronically threatened / Gradual decline								
Auckland green gecko	x		x?					Document observations, follow up historical records.
Brown mudfish		x	W			x		Logan.
Giant kokopu		x	X					Logan.

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
Long fin eel	x	x	X	x		x		
Dwarf galaxiid				x				
gold stripe gecko sites.	W C		W C					Document observations, follow up historical records; technical support to fenced sanctuary
ornate skink	x		X					Confirm distribution, identify management priorities. RP.
Pacific gecko	x		x?					Confirm distribution, identify management priorities.
Wellington green gecko	?		?	x		x		Document observations, follow up historical records.
At risk / Range restricted								
Mecodema angustulum RP.	?		?					Confirm species id./presence.
Powelliphanta “Egmont”			W C					Follow up records; presence/ absence and distribution surveys. RP.
Short-tailed bat	x			x				Clarify management requirements. RP.
Tara taranaki			W					Clarify management requirements.
At risk / Sparse								
Brullea antarctica		x	X					Clarify priority and requirements with Recovery Group. RP.
Shortjaw kokokpu	x		x	x				Logan
Piharau	x					x		
Data deficient								

SPECIES AND THREAT STATUS:	TARANAKI/ WHANGANUI FORESTS	COASTAL DUNE COUNTRY	MAUNGA TARANAKI	RUAHINE	TUSSOCK LANDS	RANGITIKEI/ MANAWATU	MARINE	KEY ACTIONS
striped skink	W		W					Document observations, follow up historical records; opportunistic survey; facilitate research. RP.

Appendix 5:

HIKOI OUTCOMES - CYCLIC POSSUM CONTROL PROGRAMME

AREA	SIZE (HA)	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
Kia Wharite Yr 1 - northern	30000	$401,500	$30,000		$401,500	$30,000		$401,500	$30,000		$401,500
Kia Wharite Yr 2 - southern	30000		$401,500			$401,500			$401,500		
Kia Wharite Yr 3		$30,000		$401,500	$30,000		$401,500	$30,000		$401,500	$30,000
Subtotal		**$431,500**	**$431,500**	**$401,500**	**$431,500**	**$431,500**	**$401,500**	**$431,500**	**$431,500**	**$401,500**	**$431,500**
Hutiwai Conservation Area	12500			$16,000	$200,950	$16,000				$16,000	$40,000
Ruahine Corner - Lake Colenso	3500	$5,000	$5,000	$77,810	$5,000	$5,000	$5,000	$5,000	$5,000	$77,810	$5,000
Pouiatoa	3800								$82,248		
Hihitahi	3300	$4,000				$4,000			$4,000	$74,851	$4,000
Waitaanga A	10600						$179,176				
Waitaanga B (includes Tangarakau)	10600							$179,176			
Moki/Makino CA incl. Extension	11000		$32,000		$32,000	$183,760	$32,000				$32,000
Egmont National Park, includes Kaitake/Pouakai	33500	$334,000	$294,000	$40,000				$40,000		$40,000	
Subtotal		**$343,000**	**$331,000**	**$133,810**	**$237,950**	**$208,760**	**$216,176**	**$224,176**	**$91,248**	**$208,661**	**$81,000**
Total Treatment / monitoring cost		**$774,500**	**$762,500**	**$535,310**	**$669,450**	**$640,260**	**$617,676**	**$655,676**	**$522,748**	**$610,161**	**$512,500**

Note 1: Cost estimates for aerial 1080 treatment are based on a treatment of 1Kg/Ha pre feed and 2 Kg/Ha toxic bait

Note 2: Cost estimates for ENP are based on 08/09 & 09/10 actual costs

Note 3: Costs include mid-cycle RTC monitoring and Outcome monitoring

Note 4: Average annual cost is $625,587.

AREA	SIZE (HA)	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Kia Wharite Yr 1 - northern	30000	$30,000		$401,500	$30,000		$401,500	$30,000		$401,500	$30,000
Kia Wharite Yr 2 - southern	30000	$401,500			$401,500			$401,500			$401,500
Kia Wharite Yr 3			$401,500	$30,000		$401,500	$30,000		$401,500	$30,000	
Subtotal		**$431,500**	**$401,500**	**$431,500**	**$431,500**	**$401,500**	**$431,500**	**$431,500**	**$401,500**	**$431,500**	**$431,500**
Hutiwai Conservation Area	12500			$16,000	$200,950	$16,000				$16,000	
Ruahine Corner - Lake Colenso	3500	$5,000	$5,000	$5,000	$5,000	$77,810	$5,000	$5,000	$5,000	$5,000	$5,000
Pouiatoa	3800								$82,248		
Hihitahi	3300				$4,000		$19,000		$4,000	$74,851	$4,000
Waitaanga A	10600						$179,176				
Waitaanga B (includes Tangarakau)	10600							$179,176			
Moki/Makino CA incl. Extension	11000		$40,000		$32,000	$183,760	$32,000				$32,000
Egmont National Park, includes Kaitake/Pouakai	33500	$334,000	$294,000	$40,000				$40,000		$40,000	
Subtotal		**$339,000**	**$339,000**	**$61,000**	**$241,950**	**$277,570**	**$235,176**	**$224,176**	**$91,248**	**$135,851**	**$41,000**
Total Treatment / monitoring cost		**$770,500**	**$740,500**	**$492,500**	**$673,450**	**$679,070**	**$666,676**	**$655,676**	**$492,748**	**$567,351**	**$472,500**

Note 1: Cost estimates for aerial 1080 treatment are based on a treatment of 1Kg/Ha pre feed and 2 Kg/Ha toxic bait

Note 2: Cost estimates for ENP are based on 08/09 & 09/10 actual costs

Note 3: Costs include mid-cycle RTC monitoring and Outcome monitoring

Note 4: Average annual cost is $625,587.