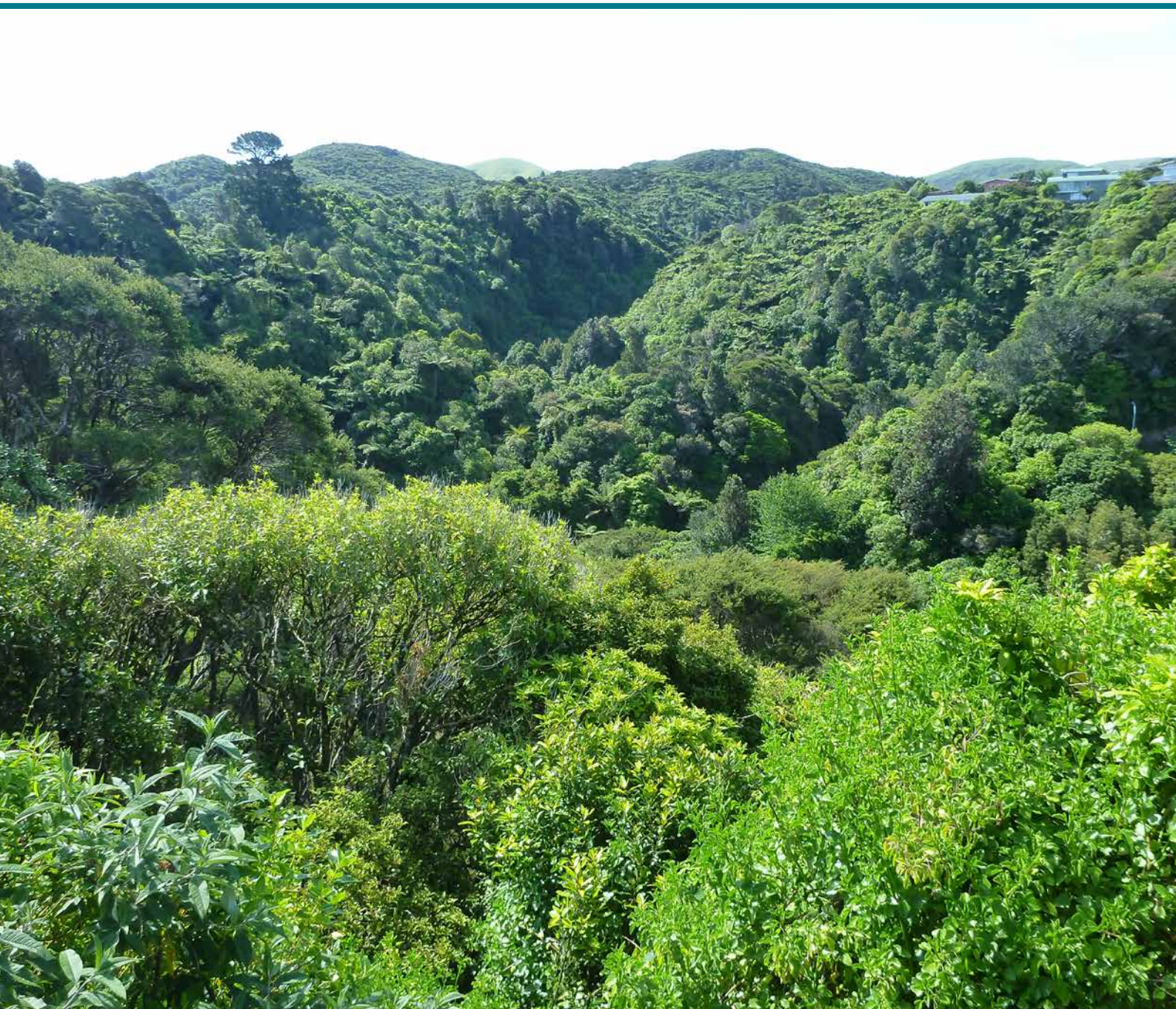
Key Native Ecosystem Plan for Belmont-Speedy's

2015-18

KNE
KEY NATIVE ECOSYSTEM

greater WELLINGTON
REGIONAL COUNCIL
Te Pane Matua Taiao



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1. Key Native Ecosystems Plans

New Zealand's indigenous biodiversity continues to decline nationally, and in the Wellington region. Major reasons for the decline are that native species are preyed on or outcompeted by invasive species and ecosystems and habitats are lost or degraded through human resource use and development. Active management to control threats is required to protect indigenous biodiversity. Regional councils have responsibility to maintain indigenous biodiversity, as well as to protect significant vegetation and habitats of threatened species, under the Resource Management Act 1991 (RMA).

Greater Wellington Regional Council's (GWRC's) vision for biodiversity is:

"The Wellington region contains a full range of naturally occurring habitats and ecosystems that are in a healthy functioning state and supporting indigenous biodiversity"

GWRC's Biodiversity Strategy 2011-2021[1] provides a common focus across the council's departments, and guides activities relating to biodiversity. One of its goals is: High value biodiversity areas are protected.

In order to achieve this vision and goal, the Key Native Ecosystem (KNE) programme seeks to protect some of the best examples of ecosystem types in the Wellington region by managing, reducing, or removing threats to their values. Sites with the highest biodiversity values have been identified and then prioritised for management. Active management of KNE sites can involve control of ecological weeds and pest animals, fencing to exclude stock, restoration planting and helping landowners to legally protect these areas.

KNE sites are managed in accordance with three-year KNE plans, such as this one, prepared for each area by the GWRC's Biodiversity department in collaboration with the landowners and other stakeholders. These plans outline the ecological values and threats specific to each KNE site, set out objectives for biodiversity management, and prescribe the operational actions and budget required to work towards achieving the objectives.

Much of the work planned in KNE sites will be carried out by GWRC staff or contractors engaged by GWRC. For example, the Biosecurity department carries out ecological weed and pest animal control to achieve the objectives set out in KNE plans.

GWRC also recognizes that working relationships between the management partners are critical for achieving the objectives for the KNE site. Under the KNE programme, GWRC staff also work with landowners and volunteer community groups involved in protection or restoration work within KNE sites.

KNE plans are reviewed regularly to ensure the activities undertaken to protect and restore the KNE site are informed by experience and improved knowledge about the site.

2. Belmont-Speedy's Key Native Ecosystem site

Belmont-Speedy's KNE site (158 hectares) contains remnant and regenerating lowland forest dominated by pukatea, tawa and rewarewa. It is situated on the western hills of the Hutt Valley between the suburbs of Belmont to the south-west and Kelson to the east in the Hutt City District (see Appendix 1, Map 1). Most of Belmont-Speedy's KNE site lies within Belmont Regional Park which continues beyond the KNE site boundary to the north-west. The KNE site is one of five KNE sites which make up a string of forest fragments along the western Hutt hills.

Forty hectares of the KNE site are protected by Recreation Reserve with the status of Significant Natural Area (SNR) 49 in the Hutt City District Plan. The majority of other land parcels in the KNE site that are within the regional park are in the process of being gazetted as Recreational Reserve by Hutt City Council.

Landowner and stakeholders

GWRC works in collaboration with landowners and other interested parties (management partners and stakeholders) where appropriate to achieve shared objectives for KNE sites. In preparing this plan GWRC has sought input from relevant stakeholders, and will continue to involve them as the plan is implemented.

Landowner

Most of the land within the KNE site is owned by Hutt City Council, but managed by GWRC as part of Belmont Regional Park under a powers and responsibility agreement[2] (see Appendix 1, Map 2). Management of Belmont Regional Park as a whole is guided by GWRC's Parks Network Plan[3] and Belmont Regional Park Sustainable Land Use Plan[4]. These plans guide the recreational and amenity uses of the park as well as identifying opportunities to protect and enhance biodiversity values. This KNE plan is consistent with the wider objectives and policies of these plans. The Biodiversity and Parks departments will work collaboratively to efficiently deliver the activities in these plans.

Two hectares of land owned by Hutt City Council adjacent to Belmont Regional Park is included in the KNE site. Hutt City Council manages other areas of native forest nearby under their Pest Tree Operational Plan[5] and Pest Plant Eradication Programme. They also undertake possum control in some reserves in the Western Hills. This management is likely to benefit biodiversity values in Belmont-Speedy's KNE site by reducing ecological weeds and pest animals in the wider landscape and therefore reducing infestation and immigration pressure on the KNE site.

There is no privately owned land included in the KNE site however some operational activities, i.e. pest control, will be carried out on some adjoining private properties to provide greater protection to the KNE site (see Appendix 1, Map 5).

Management partners and key stakeholders

The management partners to this plan within GWRC are the Parks, Biodiversity and Biosecurity departments. The Parks department manages recreational access and

maintains assets such as the road, tracks and amenity areas. The Biodiversity department plans and coordinates biodiversity management activities and provides biodiversity advice. The Biosecurity department carries out pest control activities.

The Hill Road Community Group is a stakeholder in the KNE site. This group undertakes activities in Belmont-Speedy's KNE site including revegetation planting, ecological weed control and track building. The Belmont Regional Park Ranger works with the group to guide and aligns their activities with the objectives and vision of the Parks Network Plan and this plan.

A pā site known as Pareraho has recently been rediscovered in Belmont-Speedy's KNE site by the Hill Road Community Group. They are working with the Historic Places Trust to determine the next steps for management of that particular site. This may be connected to the historic routes between Wellington and Porirua harbours for Ngāti Toa Rangātira and the many Taranaki iwi who have maintained mana whenua over land in the Hutt valley[6].

The Friends of Belmont Regional Park is also a stakeholder in the KNE site. It is a group of people and organisations jointly interested in the wellbeing and continued existence of the park.

The GWRC Flood Protection department owns a debris arrester structure situated in Speedy's Stream at its lower end. The structure is for the purpose of capturing debris flowing down the stream that could cause a blockage further downstream during heavy rainfall events. The Flood Protection department is responsible for managing the structure and for maintaining full channel capacity downstream of it to reduce the likelihood of flooding of State Highway 2 and local roads.

Ecological values

Ecological values are a way to describe indigenous biodiversity found at a site, and what makes it special. These ecological values can be various components or attributes of ecosystems that determine an area's importance for the maintenance of regional biodiversity. Examples of values are the provision of important habitat for a threatened species, or particularly intact remnant vegetation typical of the ecosystem type. The ecological values of a site are used to prioritise allocation of resources to manage KNE sites within the region.

Belmont-Speedy's KNE site contains remnant and regenerating lowland forest on hilly slopes and steep stream valleys. The KNE site is part of an ecological connection or corridor stretching from the Tararua Range south to the hills of Wellington City, and west to the Porirua Harbour basin[7]. The KNE site is located in the Wellington Ecological District[8].

Of note in recognising the ecological values at Belmont-Speedy's KNE site are the following:

Threatened environments: The Threatened Environment Classification system (LENZ)[9] is a broad classification system which shows how much indigenous vegetation remains within land environments, how much is legally protected and how past vegetation loss and legal protection are distributed across New Zealand's

landscape. Six threat categories cover New Zealand. Most of the KNE site falls within the At Risk category. There is 20-30% of the original cover of this indigenous vegetation type remaining in New Zealand[10] (see Appendix 1, Map 3).

Threatened species: The KNE site provides habitat for five threatened freshwater fish species and one threatened lizard species. Nationally threatened species are listed in Appendix 2.

The Singers and Rogers (2014)[11] classification of pre-human vegetation indicates the KNE site originally comprised two forest types; kohekohe-tawa forest (MF6) and tawa-kāmahi-podocarp forest (MF7). There is only about 15% and 22% of the original cover remaining respectively of these forest types, making them regionally Threatened and At Risk ecosystem types respectively[12].

Remnants of original forest types can be found in the two steep stream valleys within the KNE site which flow down to the Hutt River. These valleys have remained in lush native forest although it appears selective logging has occurred in the past as podocarp species that would have originally been present are now absent. These remnants are now dominated by pukatea (*Laurelia novae-zelandiae*), kaikōmako (*Pennantia corymbosa*), kāmahi (*Weinmannia racemosa*), rewarewa (*Knightia excelsa*), black maire (*Nestegis cunninghamii*), kohekohe (*Dysoxylum spectabile*), tītoki (*Alectryon excelsus*), and tawa (*Beilschmiedia tawa*). There are many broadleaf species beneath including māhoe (*Melicytus ramiflorus*), kōtukutuku (*Fuchsia excorticata*) and hīnau (*Elaeocarpus dentatus*) as well as large groves of mamaku tree ferns (*Cyathea medullaris*). Northern rātā (*Metrosideros robusta*) is also found in the forest as well as many lianes, vines and fern species[13].

Native forest is regenerating on the more gentle upper slopes of the KNE site where the forest was once cleared for pasture. The regenerating forest contains hangehange (*Geniostoma rupestre*), fivefinger (*Pseudopanax arboreus*), kaikōmako, lemonwood (*Pittosporum eugenioides*), mingimingi (*Leucopogon fasciculatus* and *Leptecophylla juniperina*), *Coprosma areolata* and various ferns[14].

Common forest bird species which are found in the KNE site include silvereye (*Zosterops lateralis*), fantail (*Rhipidura fuliginosa*), tūī (*Prosthemadera novaeseelandiae*) and kererū (*Hemiphaga novaeseelandiae*). Whitehead (*Mohoua albicilla*) have been observed nearby.

A single barking gecko (*Naultinus punctatus*) has been recorded in the KNE site[15], and Raukawa gecko (*Woodworthia maculata*) and northern grass skink (*Oligosoma polychroma*) have been recorded nearby[16] and are also likely to be present within the KNE site.

Belmont Stream runs along the western boundary joining Speedy's Stream which runs along the eastern boundary (Kelson) before flowing into the Hutt River. There are records of longfin eel *(Anguilla dieffenbachii)*, shortfin eel (*Anguilla australis)*, giant kōkopu *(Galaxias argenteus)*, banded kōkopu *(Galaxias fasciatus)*, lamprey (*Geotria australis*), common bully *(Gobiomorphus cotidianus)*, bluegill bully (*Gobiomorphus hubbsi*), redfin bully (*Gobiomorphus huttoni*), giant bully (*Gobiomorphus gobioides*) and kōura (*Paranephrops planifrons*) being present in these streams.[17]

Key threats to ecological values at the site

Ecological values can be threatened by human activities, and by introduced animals and plants, that change the natural balance of native ecosystems. The key to protecting and restoring biodiversity as part of the KNE programme is to manage the threats to the ecological values at the site.

Throughout the KNE site introduced pest animals and ecological weeds are having a negative impact on the ecological values of the KNE site.

A large suite of climbing, woody and ground cover ecological weeds are present at the site in varying densities and distribution. These are impacting the forest ecosystem by preventing natural regeneration, altering the forest structure and causing the forest canopy to collapse. Climbing asparagus (*Asparagus scandens*) and Darwin's barberry (*Berberis darwinii*) are widely distributed throughout the KNE site and growing abundantly in much of it. Holly (*Ilex aquifolium*) has been present in dense infestations which could regenerate and spread more widely and densely through the site. Other highly invasive species such as those listed in Table 1 are less widespread and dense in their growth. Some weed species are spreading into the KNE site along the 3.5 km section of the boundary that adjoins private properties.

The pest animals that could pose the greatest threats to the ecological values of the KNE site are possums (*Trichosurus vulpecula*), rats (*Rattus* spp.), stoats (*Mustela ernimea*), domestic cats (*Felis catus*) and feral pigs (*Sus scrofa*). Populations of possums and rats are likely to be at low levels in the KNE site as a result of the existing control programme. Numbers would readily increase though through reproduction and immigration if control was curtailed or not managed well.

Stoats which are known to prey on birds, bird eggs and invertebrates, are likely to be present in moderate numbers. Extensive urban housing adjacent to the KNE site means that domestic cats may also be impacting ecological values.

Feral pigs have been present and have frequently moved into the KNE site from adjoining farm land in the past. Further incursions are likely in the future. There is also a risk of stock breaching fence lines and entering the KNE site from the adjacent farming operation in Belmont Regional Park.

Land slips have caused breaks in the sewer pipes that run along the edge and inside the KNE site boundary in the past allowing sewage to leak in to the streams affecting water quality and in-stream health. Parts of the sewer pipe and the land supporting it still appear to be unstable in places posing the threat of further sewage discharge into the streams.

While the key threats discussed in this section are recognised as the most significant, a number of other threats to the KNE site have also been identified. Table 1 presents a summary of all known threats to the KNE site (including those discussed above), detailing which operational areas they affect, how the threat impacts on ecological values, and whether they will be addressed by the proposed management activities.

Table 1: Threats to ecological values present at the Belmont-Speedy's KNE site.

The codes alongside each threat correspond to activities listed in the operational plan (Table 2), and are used to ensure that actions taken are targeted to specific threats. A map of operational areas can be found in Appendix 1 (see Map 4).

Threat code	Threat and impact on biodiversity in the KNE site	Location
Ecological weeds		
EW-1	Climbing ecological weeds smother and displace native vegetation, and cause the forest canopy to collapse. The key species at this site include climbing asparagus, old man's beard (*Clematis vitalba*), ivy (*Hedera helix*), Japanese honeysuckle (*Lonicera japonica*), jasmine (*Jasminum polyanthum*), blue passionflower (*Passiflora caerulea*), banana passionfruit (*Passiflora mollissima*) and convolvulus (*Convolvulus arvensis*).	Entire KNE site
EW-2	Woody weeds are displacing native vegetation, inhibiting regeneration, and altering vegetation structure and composition. Key species at this site include Darwin's barberry, barberry (*Berberis glaucocarpa*), cotoneaster (*Cotoneaster serotinus*), cherry (*Prunus laurocerasus*), holly, karo (*Pittosporum crassifolium*), gorse (*Ulex europaeus*), tutsan (*Hypericum androsaemum*), pine (*Pinus radiata*) and macrocarpa (*Cupressus macrocarpa*).	Entire KNE site
EW-3	Ground cover weeds are preventing natural regeneration and displacing native plant species. Key species at this site include African club moss (*Selaginella kraussiana*), bomarea (*Bomarea caldasiipampas*), buddleia (*Buddleja davidii*), elaeagnus (*Elaeagnus* x *reflexa*), pampas (*Cortaderia selloana*), wild ginger (*Hedychium flavescens*), Mexican daisy (*Erigeron karvinskianus*), hydrangea (*Hydrangea macrophylla*) and tradescantia (*Tradescantia fluminensis*).	Entire KNE site
Pest animals		
PA-1	Possums browse palatable vegetation continuously until it can no longer recover. They also prey on native lizards, insects and the chicks and eggs of native birds.	Entire KNE site
PA-2	Rats eat native seeds, slowing regeneration of native plant species. Rats also prey on native lizards, insects and the chicks and eggs of native birds.	Entire KNE site
PA-3*	Mustelids (weasels *Mustela nivalis,* stoats *M. ermina* and ferrets *M. furo*), hedgehogs (*Erinaceus europeaeus*), mice (*Mus musculus*) and cats prey on native lizards, invertebrates and the chicks and eggs of native birds.	Entire KNE site
PA-4*	Pigs damage the forest floor and understory by rooting through the soil, and consume roots, invertebrates, seeds and native plants and fruits.	Entire KNE site
PA-5*	Rabbits (*Oryctolagus cuniculus*) and hares (*Lepus europaeus*) browse low growing native plants on the edges of and within native bush, slowing regeneration of the forest understory.	Entire KNE site

Threat code	Threat and impact on biodiversity in the KNE site	Location
PA-6*	Introduced brown trout are present and prey on native fish and compete with them for food resources.	Speedy's and Belmont streams
Human activities		
HA-1	Stock from the neighbouring farm may occasionally breach fences and enter the KNE site and damage plant communities and soil structure by grazing and trampling.	Northern boundary
HA-2*	Stock accessing streams up-stream of the KNE site can cause sediment run-off, pollution from excreted waste, and spread ecological weeds, all of which degrade aquatic fauna habitat down steam in the KNE site.	Adjacent farmland
HA-3*	Mountain biking in an area near the Major Drive entrance to the regional park, and casual off track walking behind private properties on the KNE site boundary are damaging and destroying native vegetation and could introduce ecological weed seeds.	Regional Park entrance at Major Drive and boundaries with private properties
Other activities		
OT-1*	Sewage pipes servicing the surrounding urban areas may leak raw sewage into the stream affecting aquatic invertebrates and fish, and water quality.	Western and eastern boundaries and streams

***Threats marked with an asterisk are not addressed by actions in the operational plan.**

3. Objectives and Management activities

Objectives help to ensure that management activities carried out are actually contributing to improving the ecological condition of the site.

Objectives

The following objectives will guide the management activities at Belmont-Speedy's KNE site.

1. **To improve the structure* and function† of native plant communities**
2. **To improve the habitat for native birds**
3. **To raise community awareness of the ecological values of the KNE site**

* The living and non-living physical features of an ecosystem. This includes the size, shape, complexity, condition and the diversity of species and habitats within the ecosystem.

† The biological processes that occur in an ecosystem. This includes seed dispersal, natural regeneration and the provisioning of food and habitat for animal species.

Management Activities

Management activities are targeted to work towards the objectives above by responding to the threats outlined in Section 2. The broad approach to management activities is described briefly below, and specific actions, with budget figures attached, are set out in the operational plan (Table 2).

It is important to note that not all threats identified in Section 2 can be adequately addressed. This can be for a number of reasons including financial, legal, or capacity restrictions. This is discussed in the broad management approach.

The main management activities that will be undertaken in the Belmont-Speedy's KNE site comprise of ecological weed control, pest animal control, and community engagement.

Ecological weed control

An ecological weed survey carried out in 2008 and the expertise of GWRC Biosecurity staff have been drawn on when determining the weed control priorities and operational areas for the Belmont-Speedy's KNE site. Ecological weed control will focus mostly on areas of the KNE site that contain the highest ecological value; the stream valleys where the forest is most intact (operational area A; see Appendix 1, Map 4). Within this area ecological weed species listed as priority 1 species in Appendix 3 will be controlled with priority given to known and easily accessible infestations and large specimens that are producing large amounts of seed likely to be dispersing throughout the KNE site. Priority 1 species are deemed a priority for control due to their potential to impact the native ecosystem present and their ability to spread rapidly.

Permission may be sought from the owners of heavily infested adjacent private land to control ecological weeds on their properties that are likely to be spreading into the KNE site. Adjacent landowners may be encouraged to control ecological weeds elsewhere on their properties themselves.

Additionally, holly will be controlled within operational area B on the upper slopes of the KNE site. Work to control mature holly trees that have been providing large sources of seed has been underway for several years and will be continued. This work will slow the increase in the distribution and density of this species across the site.

Climbing asparagus and Darwin's barberry which are both present in large infestations are beyond widespread control within the KNE site within currently available resources and means. Control of these species will only be carried out to remove large seed sources present within operational area A, or to remove infestations on the boundary of the KNE site in order to reduce the risk of these species spreading into nearby KNE sites. Priority 2 species may be controlled in years beyond the term of this plan.

The Hill Road Community Group will continue to control ecological weeds along walking tracks that they are reinstating or building, and maintaining (operational area C, and parts of operational area A). This work will mostly target blackberry (*Rubus fruticosus*), Himalayan honeysuckle (*Leycesteria Formosa*), Darwin's barberry, gorse, climbing asparagus and cherry. The Belmont Regional Park ranger will supervise this

work and GWRC's Parks department will supply the herbicide to be used for poisoning the cut stumps of ecological weeds.

Pest animal control

Possums and rats have been controlled within the KNE site since 2004. The existing network of poison bait stations will continue to be used to dispense anticoagulant bait to maintain low population levels of both (see Appendix 1, Map 5). Some bait stations in this operation are located on private properties outside the KNE site which help to buffer the KNE site from reinvasion.

Similar pest animal control operations within adjoining and nearby KNE sites (Keith George Memorial Park, Belmont-Dry Creek and Kelson Bush) combine to reduce possum numbers across the landscape reducing the likelihood of reinvasion into Belmont-Speedy's KNE site.

Feral pigs have been controlled in the past by trapping however current funding does not allow for further control by this means. Some occasional hunting has been carried out by recreational hunters under the control of the GWRC Parks department which reduced the pig population to some degree at that time. If further incursions occur this method of control may be utilized again.

Current funding does not allow for the control of other pest animals such as stoats, hedgehogs and feral cats, although the current possum and rat control regime may have some effect on the numbers of stoats by causing secondary poisoning of them. If further funding becomes available a priority will be to install a network of predator traps.

Community engagement

The GWRC Parks department will continue to support the Hill Road Community Group in their weed control activities and will work closely with them to ensure that their track building activities don't have a negative impact on biodiversity values.

The Parks department with the support of the Biodiversity department will raise awareness of the ecological values of the KNE site at community events such as guided walks with Rangers, and will advise members of the public on how they can assist with management of the KNE site through actions such as ecological weed control and pest animal control on private properties neighbouring the KNE site.

Other Activities

GWRC Parks staff will maintain fences on the boundary of the KNE site through the Parks department's asset management programme. This will minimise the likelihood of fences failing and allowing stock to access the KNE site. Parks staff will also monitor mountain biking activity in the Major Drive entrance area with the aim of containing this activity to the existing area.

4. Operational Plan

The operational plan shows the actions planned to achieve the stated objectives for Belmont-Speedy's KNE site, and their timing and cost over the three-year period from 1 July 2015 to 30 June 2018. The budget for the 2016/17 and 2017/18 years are indicative only and subject to change. Maps showing ecological weed control operational areas and pest animal control infrastructure can be found in Appendix 1 (Maps 4 and 5).

Table 2: Three-year operational plan for Belmont-Speedy's KNE site.

Objective	Threat	Activity	Operational area	Delivery	Description/detail	Target	Timetable & Resourcing		
							2015/16	2016/17	2017/18
1	EW-1 EW-2 EW-3	Ecological weed control	A	GWRC Biosecurity department	Cut and treat, or spray priority 1 weed species (see Appendix 3)	Reduce distribution and density of target species	$8,900	$9,700	$9,700
1	EW-2	Ecological weed control	B	GWRC Biosecurity department	Stump treat holly targeting mature trees and dense infestations	Reduce distribution and density of holly	$1,600	$800	$800
1	EW-1 EW-2 EW-3 EW-4	Ecological weed control	A and C	Hill Road Community Group	Cut and treat ecological weeds along walking tracks	Reduce distribution and density of target species	$100†	$100†	$100†
1,2	PA-1 PA-2	Pest animal control	Whole KNE site	GWRC Biosecurity department	Service bait stations every 3 months with anticoagulant bait to control possums and rats	Possums < 5% RTC* Rats < 10% TTI**	$13,600	$13,600	$13,600
1	HA-1	Human activities	Northern boundary	GWRC Parks department	Boundary fences with the rest of Belmont Regional Park are maintained to prevent stock accessing the KNE site	Little to no impact on the KNE site by stock.	††	††	††

Objective	Threat	Activity	Operational area	Delivery	Description/detail	Target	Timetable & Resourcing		
							2015/16	2016/17	2017/18
3		Community engagement	Whole KNE site	GWRC Parks and Biodiversity departments	Support the work of the Hill Road Community Group within the KNE site and incorporate biodiversity information into community events and media	Increased community awareness of the values of the KNE site	Nil	Nil	Nil
						Total	**$24,200**	**$24,200**	**$24,200**

† = Herbicide funded by GWRC Parks department.

†† = This cost will vary annually and cannot be predicted at this time. Funded by GWRC Parks department.

*RTC = Residual trap catch. The control regime has been created to control possums to this level but monitoring will not be undertaken. Experience in the use of this control method indicates this target will be met.

**TTI = Tracking tunnel index. The control regime has been created to control rats to this level but monitoring will not be undertaken. Experience in the use of this control method indicates this target will be met.

5. Funding summary

GWRC budget

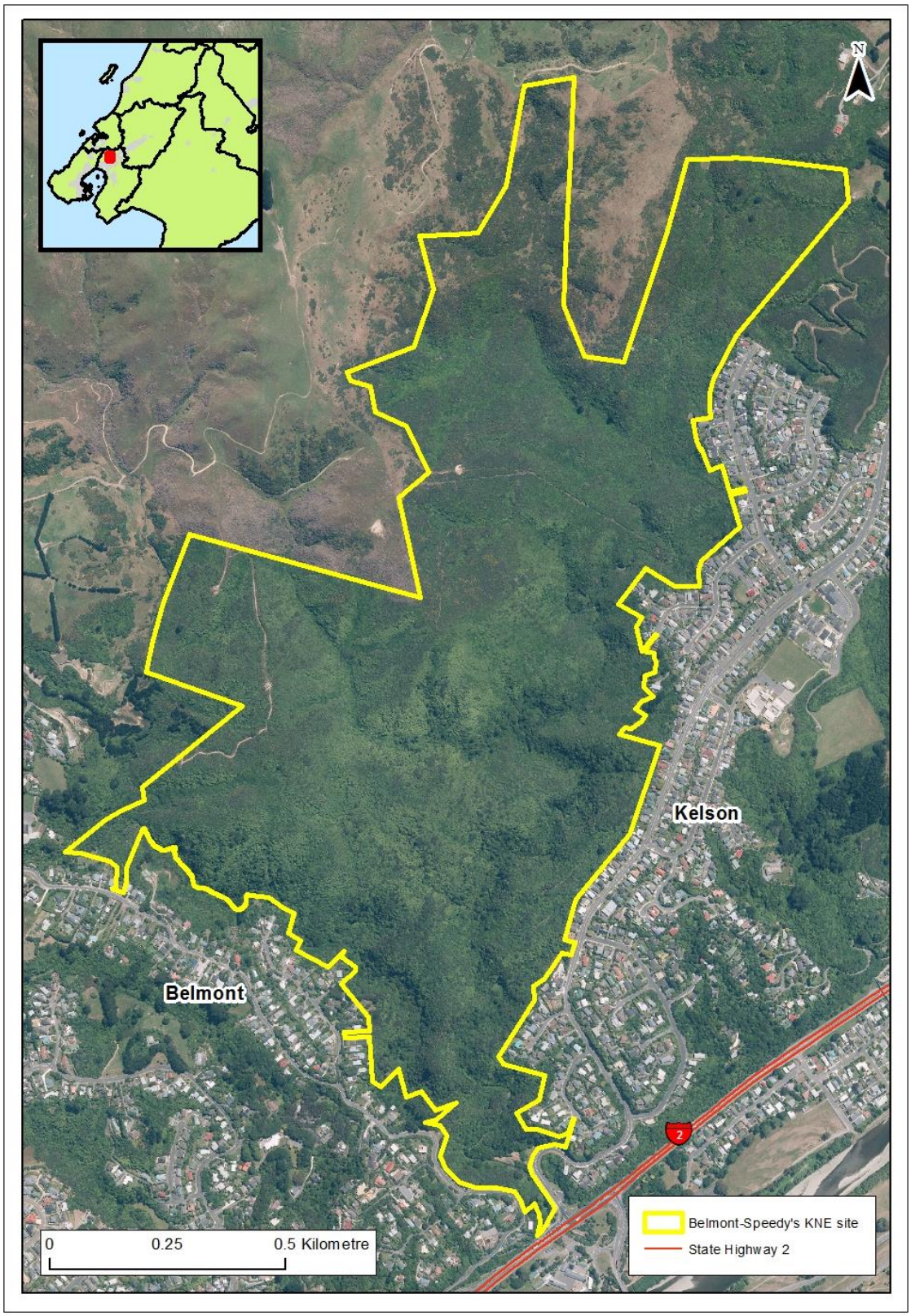
The budget for the 2016/17 and 2017/18 years are indicative only and subject to change.

Table 3: GWRC allocated budget for Belmont-Speedy's KNE site.

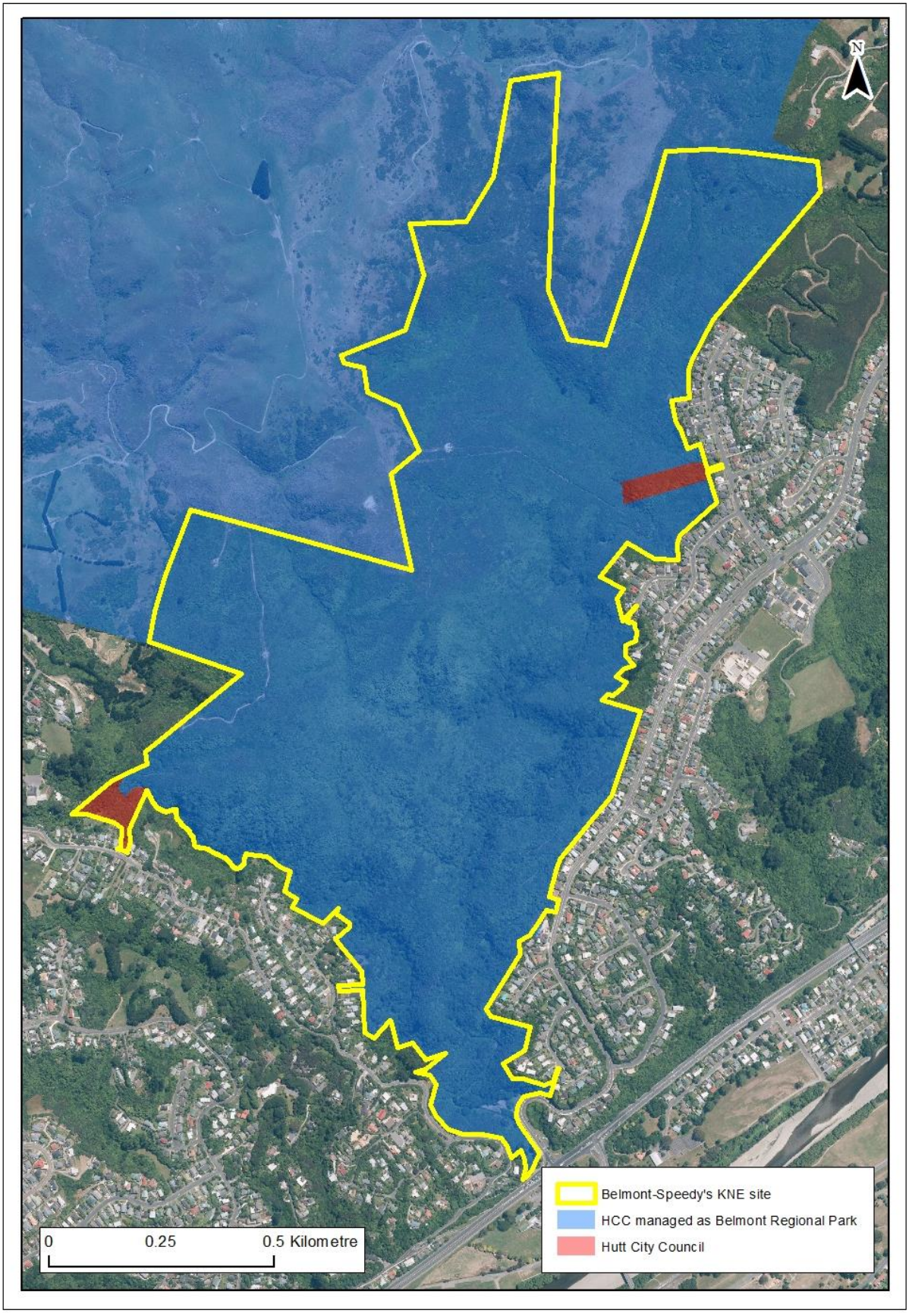
Management activity	Timetable & Resourcing		
	2015/16	**2016/17**	**2017/18**
Ecological weed control	$10,600*	$10,600*	$10,600*
Pest animal control	$13,600	$13,600	$13,600
Total	**$24,200**	**$24,200**	**$24,200**

*Includes $100 funded by GWRC Parks department.

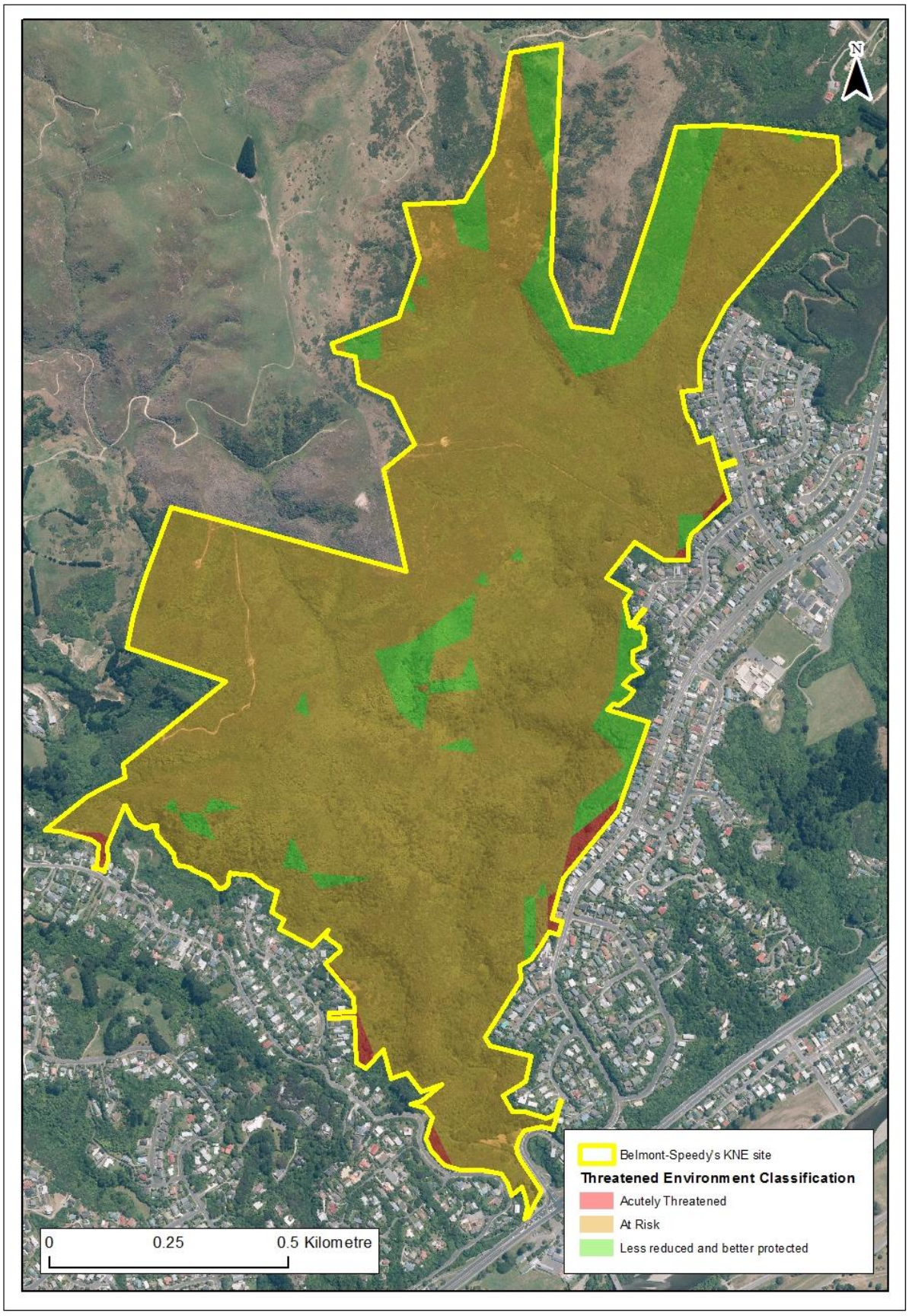
Appendix 1: Site Maps



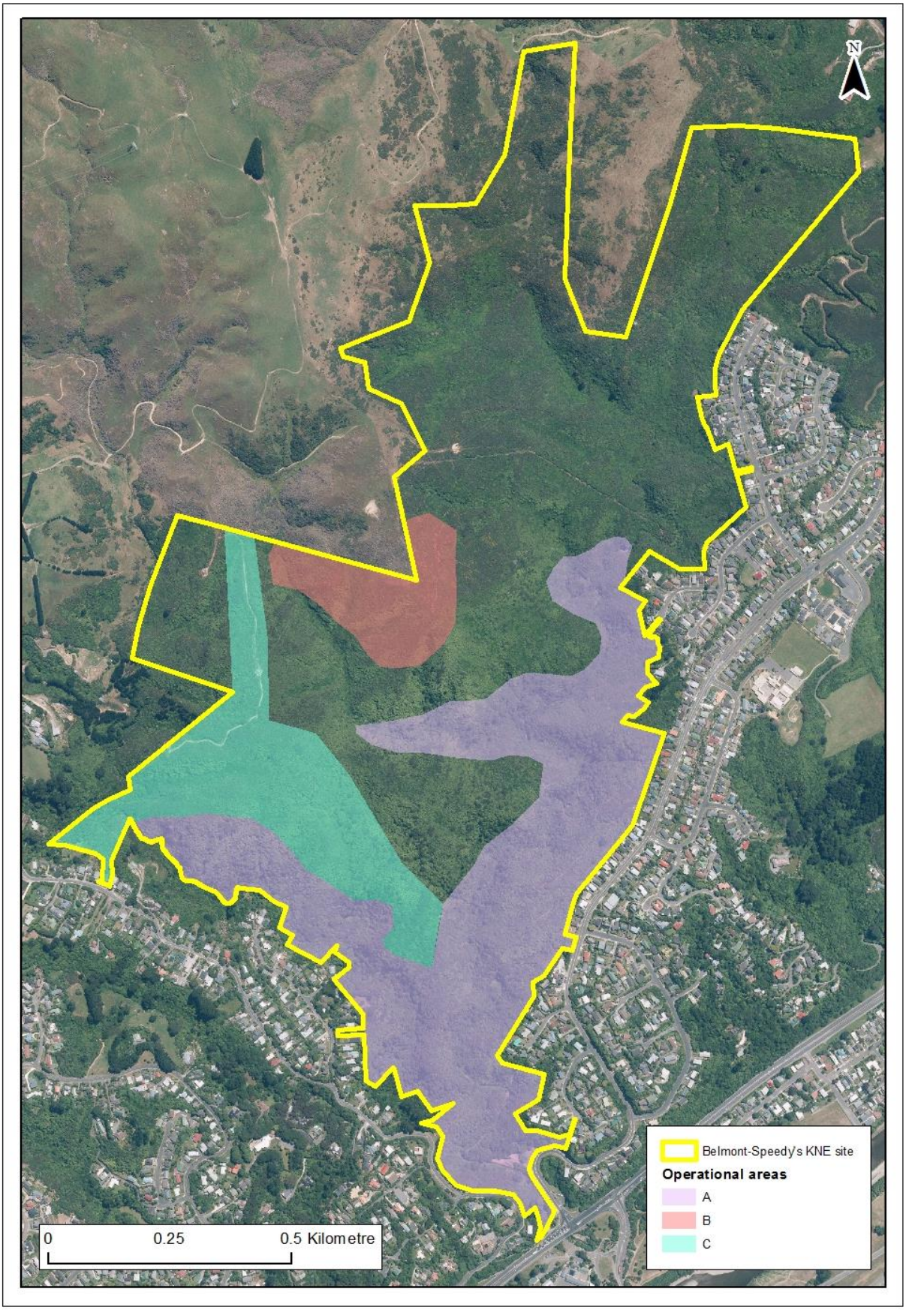
Map 1: Belmont-Speedy's KNE site boundary.



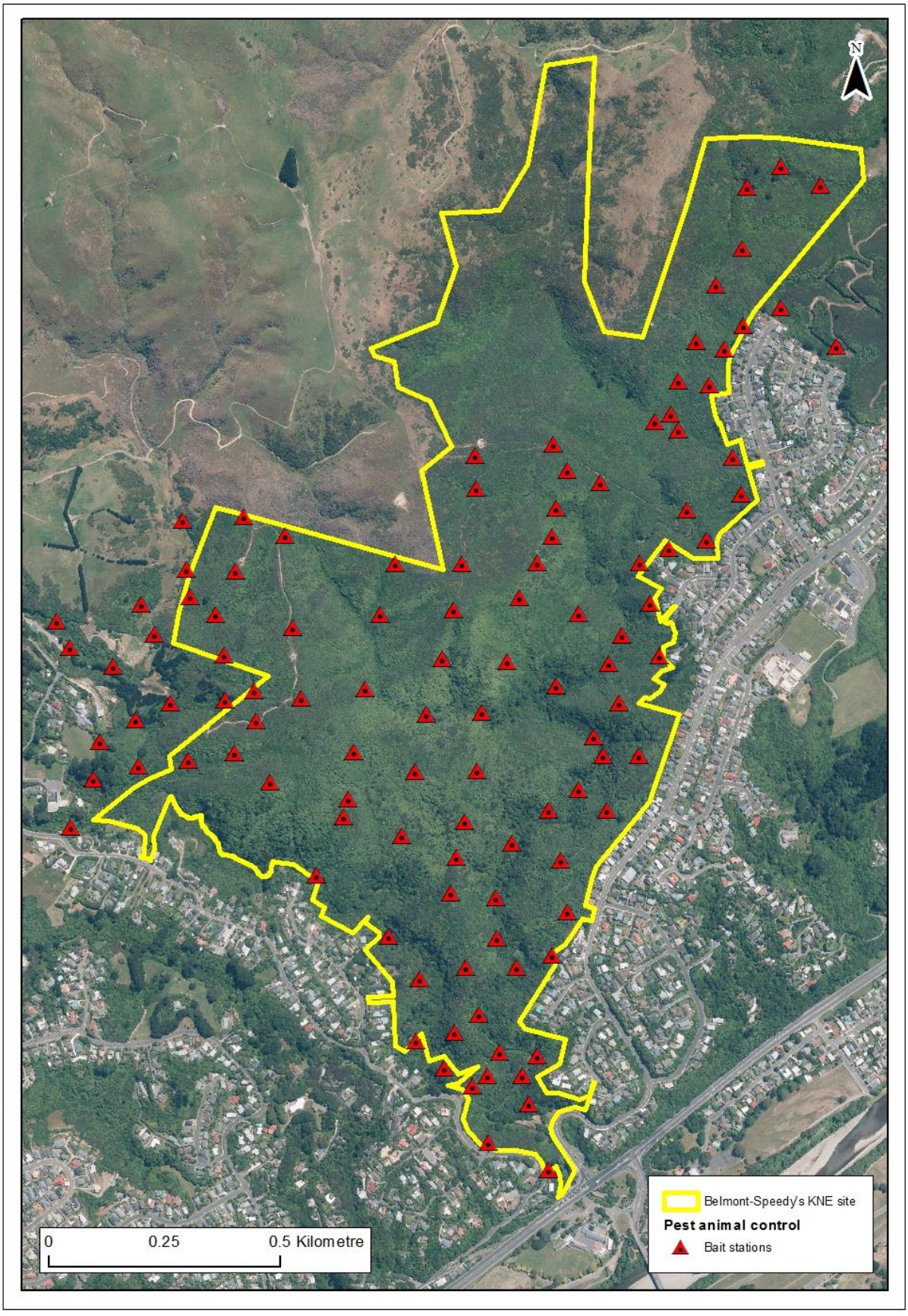
Map 2: Belmont-Speedy's KNE site land ownership.



Map 3: Land Environment New Zealand threat classification map for the Belmont-Speedy's KNE site.



Map 4: Ecological weed control operational areas in Belmont-Speedy's KNE site.



Map 5: Pest animal control in Belmont-Speedy's KNE site.

Appendix 2: Threatened species list

The New Zealand Threat Classification System lists extant species according to their threat of extinction. The status of each species group (plants, reptiles, etc.) is assessed over a three-year cycle[18] with the exception of birds that are assessed on a five-year cycle[19]. Species are regarded as Threatened if they are classified as Nationally Critical, Nationally Endangered or Nationally Vulnerable. They are regarded as At Risk if they are classified as Declining, Recovering, Relict or Naturally Uncommon. The following table lists threatened species that are known to live within the KNE site.

Table 4: Threatened species at Belmont-Speedy's KNE site.

Scientific name	Common name	Threat status	Source
Reptiles[20]			
Naultinus punctatus	Barking gecko	At Risk	Reille, B. 2015[21]
Freshwater fish[22]			
Anguilla dieffenbachii	Longfin eel	Declining	NIWA 2015[23]
Galaxias argenteus	Giant kōkopu	Declining	NIWA 2015
Geotria australis	Lamprey	Declining	Greater Wellington Regional Council, 2007[24]
Gobiomorphus hubbsi	Bluegill bully	Declining	NIWA 2015
Gobiomorphus huttoni	Redfin bully	Declining	NIWA 2015

Appendix 3: Ecological weed species

Ecological weed species recorded in Belmont-Speedy's KNE site are listed in order of priority for control. Species have been prioritised for control according to their weediness and the practicality of control[25].

Table 5: Ecological weed species recorded in Belmont-Speedy's KNE site.

Scientific Name	Common name	Weed tier	Priority
Acer pseudoplatanus	sycamore	woody	1
Berberis glaucocarpa	barberry	woody	1
Buddleja davidii	buddleia	woody	1
Clematis vitalba	old man's beard	climber	1
Cortaderia selloana	pampas	ground cover	1
Cotoneaster glaucophylla	cotoneaster	woody	1
Crataegus monogyna	hawthorn	woody	1
Elaeagnus x reflexa	elaeagnus	climber	1
Hedera helix subsp. *helix*	ivy	climber	1
Hedychium gardnerianum	wild ginger	ground cover	1
Hydrangea macrophylla	hydrangea	ground cover	1
Hypericum androsaemum	tutsan	ground cover	1
Ilex aquifolium	holly	woody	1
Jasminum polyanthum	jasmine	climber	1
Lonicera japonica	Japanese honeysuckle	climber	1
Passiflora caerulea	blue passionflower	climber	1
Passiflora tripartita var. *mollissima*	banana passionfruit	climber	1
Pinus radiata	radiata pine	woody	1
Pittosporum crassifolium	karo	woody	1
Prunus spp.	cherry, plum	woody	1
Selaginella kraussiana	African clubmoss, selaginella	ground cover	1
Agapanthus praecox	agapanthus	ground cover	2
Asparagus scandens	climbing asparagus	climber	2
Berberis darwinii	Darwin's barberry	woody	2
Crocosmia x *crocosmiiflora*	montbretia	ground cover	2
Cupressus macrocarpa	macrocarpa	woody	2
Cytisus scoparius	broom	woody	2
Erica lusitanica	Spanish heath	ground cover	2
Erigeron karvinskianus	Mexican daisy	ground cover	2
Genista monspessulana	Montpellier broom	woody	2
Leycesteria formosa	Himalayan honeysuckle	woody	2
Tradescantia fluminensis	tradescantia, wandering Willie	ground cover	2

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The Greater Wellington Regional Council's purpose is to enrich life in the Wellington Region by building resilient, connected and prosperous communities, protecting and enhancing our natural assets, and inspiring pride in what makes us unique

Greater Wellington Regional Council:

Wellington office
PO Box 11646
Manners Street
Wellington 6142

T 04 384 5708
F 04 385 6960

Upper Hutt office
PO Box 40847
Upper Hutt 5018

T 04 526 4133
F 04 526 4171

Masterton office
PO Box 41
Masterton 5840

T 06 378 2484
F 06 378 2146

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info@gw.govt.nz
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