



**greater WELLINGTON**  
REGIONAL COUNCIL  
Te Pene Mātua Taiao

## Key Native Ecosystem Plan for Baring Head/Ōrua-pouanui

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2014 - 2017



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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<sup>1</sup> 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 KNEs can involve control of ecological weeds and pest animals, fencing to exclude stock, restoration planting and helping landowners to legally protect these areas.

KNEs 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, 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 KNEs 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. Under the KNE programme, GWRC staff also work with landowners and volunteer community groups involved in protection or restoration work within KNEs.

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

## **2. Baring Head/Ōrua-pouanui Key Native Ecosystem**

Baring Head/Ōrua-pouanui KNE (256 ha) is located on the coast south of Wainuiomata, between Palliser Bay and Wellington Harbour (see Appendix 1, Map 1). The KNE falls within the Tararua Ecological District but has greater affinities with the Cook Strait Ecological District with its exposed steep coastal escarpments, terraces and headlands combined with a maritime climate<sup>2</sup>.

### **Landowner and stakeholders**

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

### **Landowner**

The majority of the Baring Head/Ōrua-pouanui KNE is owned by GWRC (197 ha) and is part of the larger East Harbour Regional Park (see Appendix 1, Map 2). Management of East Harbour Regional Park as a whole is guided by the GWRC Parks Network Plan.<sup>3</sup> This plan guides the recreational and amenity uses of the park as well as identifying opportunities to protect biodiversity values. This KNE Plan is consistent with the objectives and policies of the Parks Network Plan. The Biodiversity and Parks departments work collaboratively to ensure the delivery of activities that have been identified in the plans that apply to Baring Head/Ōrua-pouanui KNE are consistent and efficient.

The land within the KNE not owned by GWRC (59 ha) is owned by the Tupoki Takarangi Trust. GWRC works collaboratively with the Tupoki Takarangi Trust to plan and implement activities on the Trust's land.

### **Management partners and key stakeholders**

The primary management partners within GWRC are the Biodiversity department (co-ordination of biodiversity management activities and biodiversity advice), the Parks department (overall park planning and site management) and the Biosecurity department (pest control).

The Friends of Baring Head Trust (FOBHT) has been actively involved in restoration activities in the KNE since the land was purchased in 2010. The primary purpose of the Trust is:

- (i) to support and promote the protection, maintenance, enhancement and restoration of the values of Baring Head and its environs, including its natural, historic, landscape, scientific, recreational and cultural values, for the benefit of current and future generations; and
- (ii) to disseminate information about the features and values of Baring Head and its environs to increase public understanding, enjoyment and stewardship of the area.

The Trust has funded fencing and an intensive predator control programme to protect banded dotterel nesting sites, assisted with the small mammal monitoring programme, hosted corporate volunteers, and have begun a planting project within the KNE. The Trust is working with corporate groups on horned poppy control, small mammal monitoring and planting days. They are also recruiting a team of volunteers to check predator control traps over the whole of the site.

Other key stakeholders include the Taranaki Whānui ki Te Upoko o Te Ika and the Wellington Natural Heritage Trust. The mandated iwi fisheries organisation (MIO) - Te Atiawa ki te Upoko o te Ika a Maui Potiki Trust has an interest in the coastal marine area adjacent to Baring Head.

### 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 KNEs within the region.

The Baring Head/Ōrua-pouanui KNE is one of the top coastal ecosystem sites in the region<sup>4</sup>. It has uninterrupted sequences of different ecosystem types ranging from coastal and valley escarpments through to the coast. Although highly modified by historic and current farming practices, it retains many components of its former flora and fauna.

Of note in recognising the ecological values at Baring Head/Ōrua-pouanui are the following:

- **Ecological connections:** The KNE contains several distinct ecosystem types which provide a link to other similar sites nearby: Parangarahu Lakes and Pencarrow dunes to the north and Turakirae Head to the south-east. The KNE also contains the lower reaches of the Wainuiomata River, which is a natural connection to the inland catchments.
- **Naturally uncommon ecosystems:** A number of naturally uncommon ecosystems are present at Baring Head/Ōrua-pouanui.<sup>5</sup> These are: coastal turf (Nationally Critical); stony beach ridges, shingle beaches, dune slacks, stable sand dunes, coastal lagoon (all Nationally Endangered), and estuary (Nationally Vulnerable).<sup>6</sup>
- **Threatened ecosystems:** The Land Environment New Zealand (LENZ) national environmental classification rates all the ecosystem types in the KNE as 'Threatened'. The freshwater wetlands, river terraces and coastal platform shingle beaches and dune ecosystem types are 'Acutely Threatened', and the coastal and valley escarpment ecosystem type is 'Critically Under-protected' (see Appendix 1, Map 6).

- **Threatened species:** Within the KNE there are nine 'Threatened' or 'At Risk' plant species. Among the fauna there are ten bird species, nine fish species, one lizard species and five invertebrate species that are 'Threatened.' Appendix 2 contains a list of threatened species found within the KNE.

There are four major areas with different ecological values in the KNE. As threats and management requirements differ between them, each has been identified as a distinct Operational Area in this plan (see Appendix 1, Map 3). A brief description of each follows.

#### **Area A: Coastal Escarpment**

The coastal escarpments are steep and rise up to 100 metres in height. Prior to human settlement, the original vegetation type on the coast would have been: ngaio, taupata treeland/ herffield/rockland<sup>8</sup>.

The coastal scarp vegetation is mainly 'grey scrub', now a rare plant community of mainly low-growing, divaricate plants which are salt-tolerant and provide important lizard, invertebrate and small bird nesting habitat. Given the extreme coastal climate, vegetation cover on the escarpments are slow to grow and uniform in height. Mingimingi (*Coprosma propinqua*), thick-leaved māhoe (*Melicytus crassifolius*) and speargrass (*Aciphylla squarrosa* var. *squarrosa*) are important vegetation components on the escarpments.

#### **Area B: Valley Escarpment**

The valley escarpments have similar vegetation to the coastal escarpment and are dominated by mingimingi. Coastal flax (*Phormium cookianum* subsp. *hookeri*), matagouri (*Discaria toumatou*), *Brachyglottis greyii*, leafless clematis (*Clematis afoliata*) and two species of mistletoe, leafless mistletoe (*Korhalsella lindseyi*) and green mistletoe (*Ileostylus micranthus*) are also present. The valley escarpment has the largest population of matagouri in the Wellington district.

Further inland, the scarps rise to 120 metres and the regenerating scrub includes some colonising forest species such as ngaio (*Myoporum laetum*), tītōki (*Alectryon excelsus* subsp. *excelsus*), mānuka (*Leptospermum scoparium*) and laikōmako (*Pennantia corymbosa*).

Four species of native lizard have been recorded on the Baring Head escarpments including spotted skink (*Oligosoma lineocellatum*) which was recorded on the valley escarpment. Scree slopes on the escarpments provide lizards with a refuge from predators.<sup>9</sup>

#### **Area C: Wainuiomata River and River Terraces**

The lower reaches of the Wainuiomata River bisect the inland valley. Its upper catchment is forested and the river is recognised as a Water of National Importance (WONI)<sup>10</sup>. The adjacent river terraces are grazed and vegetation communities are substantially modified, however an area at Khyber Pass has recently been fenced off from stock. Prior to human settlement, vegetation types would have been:<sup>11</sup>

- Kahikatea/pukatea forest on the river valley flats, including kōwhai, ribbonwood, cabbage tree;
- oioi, knobby clubrush sedgeland at the river mouth; and
- coastal turf, herbfield at the river mouth.

Extensive areas of oxbow (wet areas that were previously the course of the river) between the valley escarpment and the Wainuiomata River are reverting to wetland plant species. However, following years of grazing, the vegetation is dominated by plant species that are unpalatable to livestock.

Two bushes of the nationally endangered shrubby tororaro (*Muehlenbeckia astonii*) are found in one small area on the lower river terraces known as Khyber Pass. On the banks, near the river mouth, naturally uncommon species such as *Crassula mataikona*, Kirk's crassula (*Crassula kirki*) and teasel sedge (*Carex dipsacea*) are found<sup>12</sup>.

In the lower reaches of the river itself, there is only periodic salt water influence due to earthquake uplifts which have raised the river mouth several metres. The river mouth is a 'hāpua' coastal lagoon, an ecosystem classified as nationally endangered<sup>13</sup>, which breaks through the gravel barrier when river levels rise. Sedges and toetoe in the lower reaches of the river provide good spawning habitat for inanga. Eleven species of native fish have been recorded in the river<sup>14</sup>, nine of which are 'Threatened'.

#### Area D: Coastal Platform

The coastal platform extends from the high water mark along the beach to the bottom of the coastal escarpment. Pre-human vegetation types would have been:

- Scabweed gravelfield/ stonefield;
- shorebind weed, clubrush gravelfield/stonefield on the more stable areas of the foreshore; and
- spinifex, pingao sedge grassland/sedgeland on the more mobile beach areas.

The dune ecosystem here includes kōwhangatara (*Spinifex sericeus*), a native sand binding plant; two small remnants of pingao (*Ficinia spiralis*); and a significant population of the threatened sand tussock (*Poa billardierei*).

A *Raoulia australis*-dominated cushionfield occupies a large area of the foreshore. It provides habitat for native insects such as Wellington coastal moth, (*Natoreas perornata*), katipō spider, (*Latrodectus katipo*), red admiral butterfly (*Vanessa gonerilla gonerilla*) and Myers' cicada (*Maoricicada myersi*)<sup>15</sup>. Lizards have been found in driftwood accumulated behind the beach<sup>16</sup>.

Near the mouth of the Wainuiomata River, banded dotterel, (*Charadrius bicinctus*), and variable oystercatchers (*Haematopus unicolor*) nest. It is also an important roosting and potential nesting site for Caspian tern (*Hydroprogne caspia*), white-fronted tern (*Sterna striata*) and red-billed gull (*Larus novaehollandiae*).

Deep back dunes, up to 100 metres in places, run from behind the foreshore to the base of the escarpment. A swale runs parallel to the beach at the northern end and is occupied by wetland species such as swamp flax (*Phormium tenax*) and coastal tree daisy (*Olearia solandri*). A number of wetlands are present at the bottom of the

escarpment, fed by springs and seeps. Although native wetland species are present, they are grazed and degraded and palatable species have been largely eliminated.

### **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 composition 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.

The Baring Head/Ōrua-pouanui KNE has a number of threats which prevent natural ecological process and change the composition of the vegetation. Ecological weeds displace native plant species, preventing natural regeneration and altering the natural values of the KNE. On the coastal platform, marram and couch grass, gorse, boxthorn and lupin threaten native plant communities. The escarpments have a number of ecological weeds including gorse and some non-local native species such as karo and hybrid Pseudopanax. Gorse and pasture grass are the dominant weeds on the river terraces and the river has several aquatic weed species.

Throughout the KNE introduced predators and browsers are having an impact on the ecological values of the site. For example, high numbers of hedgehogs (78% TTI in November 2013<sup>17</sup> and 83% TTI in November 2012<sup>18</sup>) reduce the breeding success of ground nesting birds. Trapping of a small area east of the river mouth in the 2013-14 nesting season showed that cats and mustelids may also impact nesting success.

Off-road vehicles accessing the beaches destroy cushionfields and can disturb or crush nests and eggs of breeding birds. Fencing to exclude grazing will be gradually installed by the GWRC Parks department. Stock not only browse native vegetation, but camp under plants, trampling seedlings and opening up areas to weed invasion and excessive desiccation.

Fire is a natural occurrence, which can be instrumental in creating new ecosystems and providing for new succession opportunities, however, fire can be destructive to native flora and fauna and create conditions for pest plant invasion<sup>19</sup>.

The table below (Table 1) shows the identified threats at the site, which operational areas of the KNE they affect, and how the threats impact on ecological values. 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. Operational areas are shown in Map 3 (Appendix 1).



Table 1: Key threats to ecological values present at Baring Head KNE.

Threat code	Threat and impact on biodiversity in the KNE	Operational Area
<b>Ecological weeds</b>		
EW-1	The woody weeds boxthorn, gorse, karo & lupin displace native plant species in stable back dunes, ephemeral wetlands and on the coastal escarpment.	A, B, C, D
EW-2	Marram grass and couch grass displace native foredune species.	D
EW-3	Horned poppy, couch grass and marram are invading the cushion fields.	D
EW-4*	Although some karaka trees or groves are culturally important to local iwi, karaka does not occur naturally in the Lower North Island. Seedlings dominate forest floors and displace local native plant species. <sup>20</sup>	B
EW-5	Karo and hybrid <i>Pseudopanax</i> displace local native plant species.	A, B
EW-6	Gorse and boxthorn, present on the coastal platform displace native plant species.	C
EW-7	An increase in rank grass after cessation of grazing may result in grass invasion of lizard refuges impacting on the ability of lizards to avoid predation.	A, B, C, D
EW-8	Aquatic weeds, including the prolifically seeding Cape pondweed, dominate areas of the riverbed and have invaded the oxbows. Reinvansion from upstream during floods makes control difficult.	C
EW-9	Woody weeds such as lupin and gorse provide cover for predators around shore bird nesting sites.	C
EW-11*	New pest plant species can be accidentally introduced by mowers or vehicles or other sources from outside of the KNE.	A, B, C, D
<b>Pest animals</b>		
PA-1*	Sheep and cattle damage the health and composition of threatened plant communities by grazing and trampling on native vegetation. Cattle trampling can also destroy soil structure which will alter future restoration potential.	A, B, C, D
PA-2	Possums browse preferred plant species continuously until they can no longer recover, then move on to their next favoured species.	A, B, C, D
PA-3	Rats and mice eat seeds, slowing regeneration of native plant species.	A, B, C, D
PA-4	Rabbits and hares browse low growing native plants, particularly seedlings and newly planted areas. Rabbit numbers may increase following mustelid control.	A, B

Threat code	Threat and impact on biodiversity in the KNE	Operational Area
PA-5	Goats browse escarpment vegetation.	A, B
PA-6	Possums, hedgehogs, rats, mice, mustelids and feral cats all prey on native lizards, insects, birds, chicks and eggs. Following control of predators mice populations may increase substantially.	A, B, C, D
PA-7*	Wild pigs root up and disturb soil, eating roots and native plants and destroy habitats for native invertebrates.	A, B
PA-8	Pest animal species will continually reinvade from land outside the KNE.	A, B, C, D
<b>Human activities</b>		
HA-1*	Recreational activities off-track such as vehicle use, biking, and walking can impact on plant communities by damaging or destroying vegetation and bird nesting and roosting areas by disturbing birds or crushing nests or chicks.	A, B, C, D
<b>Other threats</b>		
OT-1*	Natural regeneration of desirable native plant species can be limited by environmental factors such as environmental weed species, pest animals, lack of seed source, lack of pollinators, lack of soil microfauna and climate events.	A, B, C, D
OT-2*	Fire can be destructive to native flora and fauna and create conditions for ecological weed invasion.	A, B, C, D

\*Threats marked with an asterisk are not addressed by actions in the Operational Plan. Not all threats can be adequately addressed. Threats might not be managed for a number of reasons including financial, legal, or capacity restrictions. However, in order to manage the KNE as a whole, it is important to be aware of all threats to ecological values.

### **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 guide the management activities at Baring Head/Ōrua-pouanui KNE:

1. To protect native plant communities
2. To increase native plant dominance
3. To re-introduce plant species to the site
4. To re-introduce missing or threatened plants
5. To increase abundance of threatened plants
6. To protect native fauna habitat
7. To increase populations of threatened fauna
8. To increase populations of native aquatic species

#### **Management Activities**

Management activities are targeted to work towards the objectives above by responding to the threats outlined in Table 1. The management activities are described briefly below, and specific actions, with budget figures attached, are set out in the Operational Plan (Table 2).

#### **Ecological weed control**

A large suite of ecological weeds are present in the KNE and will be controlled to enable existing native plant species to regenerate. Following best practice principles, outlying areas of weeds will be controlled first, followed by rolling back more densely infested areas over time. Regular follow-up is planned to avoid reinvasion from any untreated areas or subsequent seed germination. This strategy will be applied to gorse and boxthorn, which were previously sprayed on the escarpments in 2014 and the coastal platform in 2012 and 2013.

A progressive rollback of dense areas of gorse and lupin on the coastal platform will begin in 2014-15. Non-native species on the escarpment will be controlled and on the foreshore couch and marram grass will be gradually rolled back. Horned poppy is being manually removed by volunteers, however, follow-up spraying may be necessary to control seedlings.

Cape pondweed in the northern oxbow, an invasive aquatic weed, is being sprayed in 2014, and volunteers will hand pull remaining plants. If this strategy is successful, it can be repeated for aquatic weeds in the remaining oxbows.

#### **Past animal control:**

Landscape-wide control of pest animals will be undertaken to protect the native fauna present across the whole KNE (see Appendix 1, Map 4 & 5). Mustelids, rodents and hedgehogs that prey on native fauna will be controlled using DOC200 series traps. Pelleted bait stations, targeting possum and rats, will be installed throughout the KNE in 2016/17. These will be immediately adjacent to DOC traps throughout the KNE except where DOC traps are spaced at 50m intervals. In these areas, bait stations will be spaced at 100 metre intervals.

An intensive trapping system will be installed in some areas to protect threatened native fauna. In 2014, an area behind the banded dotterel nesting area (east of the river) was trapped more intensively by volunteers using Timms traps and DOC 200 traps at 50 metre spacing. Intensive predator trapping will be extended to the west of the river behind the nesting area and a trapping network will be installed on the Trust land (see Appendix 1, Map 5).

Pulsed control, increased frequency, during spring and early summer, when predator numbers are increasing, will allow predators to be controlled more effectively during the bird nesting season<sup>21</sup>. Volunteers will undertake extra servicing of traps during these periods. The frequency of servicing will be dependent on volunteer availability.

#### **Revegetation**

The aquatic and terrestrial ecosystems within the KNE have been modified by human activities. Future management aims to, not only protect the existing ecological values, but also to restore native plant species to enable healthy functioning ecosystems.

Natural regeneration and succession may not occur if plant species previously recorded in the KNE are no longer present or have a limited distribution within the KNE. While it is not possible or desirable to plant all areas, planting some riparian margins, wetlands and nodes in prioritised areas, will assist natural regeneration (see Appendix 4). Plant species favoured by native butterflies and other invertebrates, that also offer protection and a food source for lizards, have been included in the planting list for the valley and coastal escarpments and parts of the coastal platform.

Some native plant species have few individuals present (eg, *Muehlenbeckia astonii* and *Clematis foliata*) and the lack of genetic variability may jeopardise their survival within the KNE. Species that are rare within the KNE, as well as nationally and regionally threatened species, have been prioritised for protection or re-introduction. These plants are listed in Appendices 2 and 3. Plants will be grown from locally sourced seed and translocated species will be sourced from the nearest eco-domain if not available locally.

#### **Fencing**

Exclusion of vehicles and stock from the KNE is necessary to protect existing native plant and animal species and to enable species to recolonise their natural range or suitable habitat. New fences installed on the southern and eastern boundaries of the Park have meant a significant reduction of vehicles on the coastal platform. There are, however, currently no fences to keep stock out of the KNE. The Parks department will implement the fencing plan which will remove stock in stages and allow regeneration

and supplementary planting to occur. Temporary fencing may be erected annually during the shorebird breeding season and around planted areas on the coastal platform.

#### **Community engagement**

A project plan (not included here) has been developed for the Friends of Baring Head Trust which outlines biodiversity projects that could be undertaken with external funding. It involves management activities such as fencing, pest animal control, ecological weed control and restoration planting in addition to the actions outlined in this KNE plan.

#### **Lizard habitat protection**

Management techniques, including grass and predator control will need to be carefully planned and monitored for the benefit of lizard populations. Following the removal of grazing from the KNE, there may be an increase in the rank grass which will support a higher population of mice, which prey on lizard species. In turn cats and mustelids, which prey on both lizards and rodents, could increase in numbers due to the increase in rodents.

Rank grass could also invade rocky scree slopes, reducing refuges for lizards. A survey of the distribution and abundance of lizard species was carried out in 2013 and 2014. The results of these surveys will determine priority areas for intensive habitat protection and enhancement work.

#### 4. Operational Plan

The operational plan shows the actions planned to achieve the stated objectives for Baring Head/Pouanui, and their timing and cost over the three year period from 1 July 2014 to 30 June 2017. The budget for the 2015/16 and 2016/17 years are indicative only and subject to change as a result of the 2015-25 Long Term Plan process. Operational areas are shown on Map 4 (Appendix 1).

Table 2: Three year operational plan for Baring Head/Pouanui KNE

Objective	Threat	Activity	Operational area	Delivery	Description/Detail	Target	Timetable of Resourcing		
							2014/15	2015/16	2016/17
1,2	EW1	Ecological weed control	A, B	Biosecurity department	Follow up control of outlier gorse and boxthorn on coastal & valley scarps.	Reduction in distribution and abundance of weed species.	\$10,000	\$4,000	
1,2	EW-1	Ecological weed control	A, B, D	Biosecurity department	Follow up boxthorn control on coastal platform.	Reduction in distribution and abundance of weed species.	\$2,000	\$2,000	\$2,000
1,2	EW-6	Ecological weed control	D	Biosecurity department	Progressively reduce the extent of gorse and lupin on the coastal platform.	Reduction in distribution and abundance of weed species.	\$4,000	\$4,000	\$4,000
1,2	EW-5	Ecological weed control	A, B	Biosecurity department	Karo and hybrid Pseudopanax control on escarpment.	Reduction in distribution and abundance of weed species.	\$2,000	\$2,000	\$2,000
1,2	EW-2	Ecological weed control	D	Biosecurity department	Progressively reduce the extent of marram & couch grass in the cushion fields and adjacent to native foredune species.	Reduction in distribution and abundance of weed species. No non-target species to be affected.	\$2,000	\$2,000	\$2,000
1,2	EW-3	Ecological weed control	D	Biosecurity department	Progressively reduce the extent of horned poppy and broadleaved pest plants on the coastal platform.	Reduction in distribution and abundance of weed species. No non-target species to be affected.	\$2,000	\$2,000	\$2,000
1,2,6,7	EW-9	Ecological weed control	D	Biosecurity department	Progressively reduce the extent of woody weed around shorebird nesting sites.	Reduction in distribution and abundance of weed species.			\$4,000
6,7,8	PA-1	Pest animal control	C, D	Biosecurity department	Install 27 DOC200 traps.	Traps installed by September 2014.	\$2,500		

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Objective	Threat	Activity	Operational area	Delivery	Description/Detail	Target	Timetable & Resourcing		
							2014/15	2015/16	2016/17
6,7	PA-6	Pest animal control	D	Biosecurity department	Install 20 Timms traps on the western side of the river.	Traps installed by September 2014.	\$2,000		
6,7,8	PA-6	Pest animal control	A,B,C,D	Biosecurity department	Annual check to ensure traps are operating safely and effectively.	All traps checked and serviced by 30 June annually.	\$1,500	\$1,500	\$1,500
1,2,5,6,7,8	PA-2 PA-6	Pest animal control	A,B,C,D	Biosecurity department	Install 85 Petlic 3d bait stations.	Traps installed by September 2015.		\$4,500	
1,2,3,6,7,8	PA-2 PA-6	Pest animal control	A,B,C,D	Biosecurity department	Service baited bait stations 3 times annually.	Possums <5% RTG* Rats <10%TTI**			\$4,500
1,6	HA-1	Fencing	C	Park ranger	Fence to protect revegetation sites or store bird nesting sites.	Fences are installed as soon as practicable.	\$1,500	\$1,500	\$1,500
2,3,4,5,7	OT-1	Revegetation	A,B,C,D	Park ranger	Plant revegetation, missing or threatened species.	Plants are planted by 31 July of each year according to planting plan.	\$3,000	\$3,000	\$3,000
							\$26,500	\$26,500	\$26,500

\*Residual Trap Catch \*\*TTI = Tracking Turns; index

### 5. Funding summary

#### GWRC budget

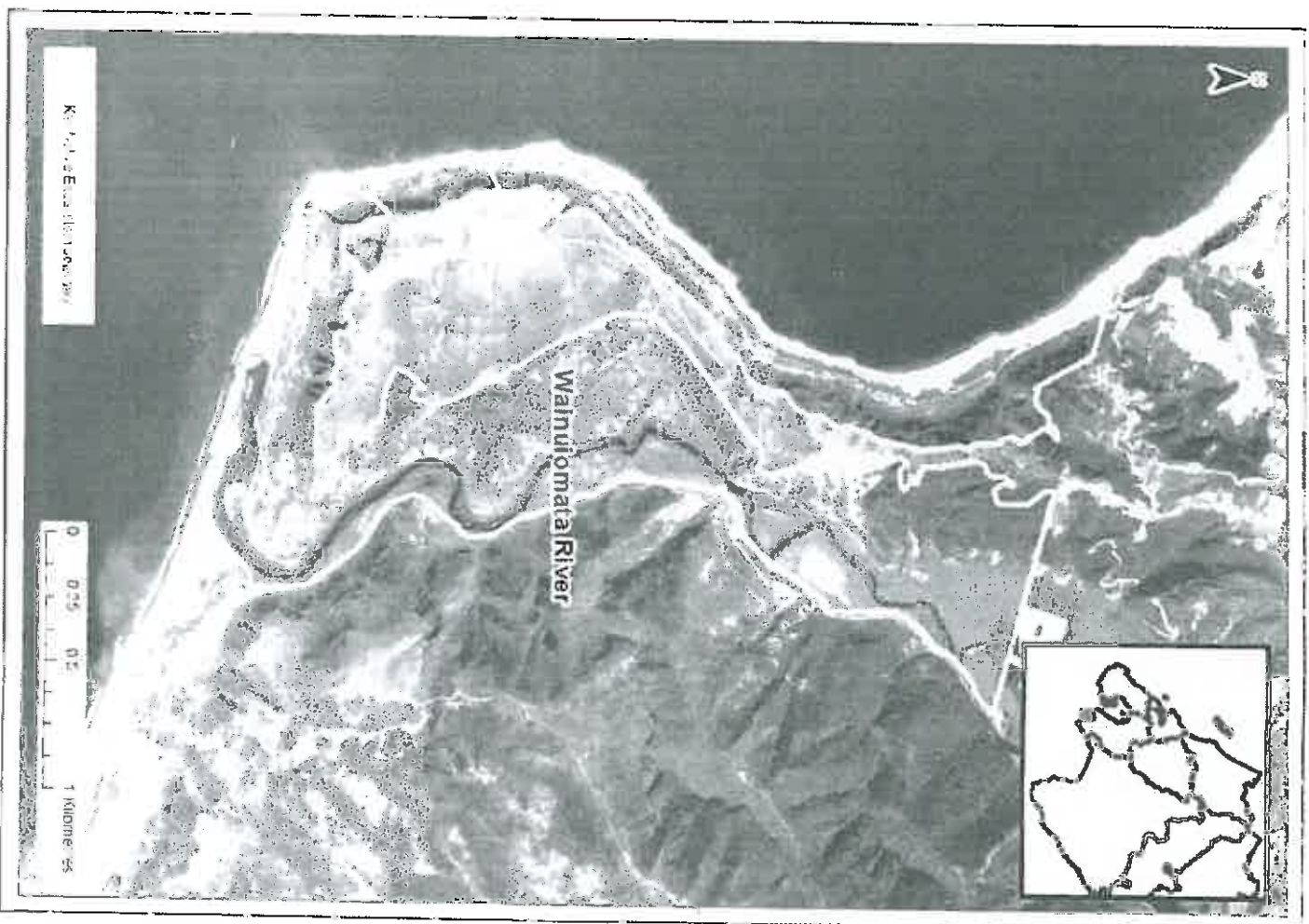
The budget for the 2015/16 and 2016/17 years are indicative only and subject to change as a result of the 2015-25 Long Term Plan process.

Table 3: GWRC Allocated budget for Baring Head/Ōrua-pouanui KNE.

Management activity	Timetable & Resourcing		
	2014/2015	2015/2016	2016/2017
Pest plant control	\$16,000	\$16,000	\$16,000
Pest animal control	\$6,000	\$6,000	\$6,000
Re-vegetation	\$3,000	\$3,000	\$3,000
Fencing	\$1,500	\$1,500	\$1,500
<b>Total</b>	<b>\$26,500</b>	<b>\$26,500</b>	<b>\$26,500</b>



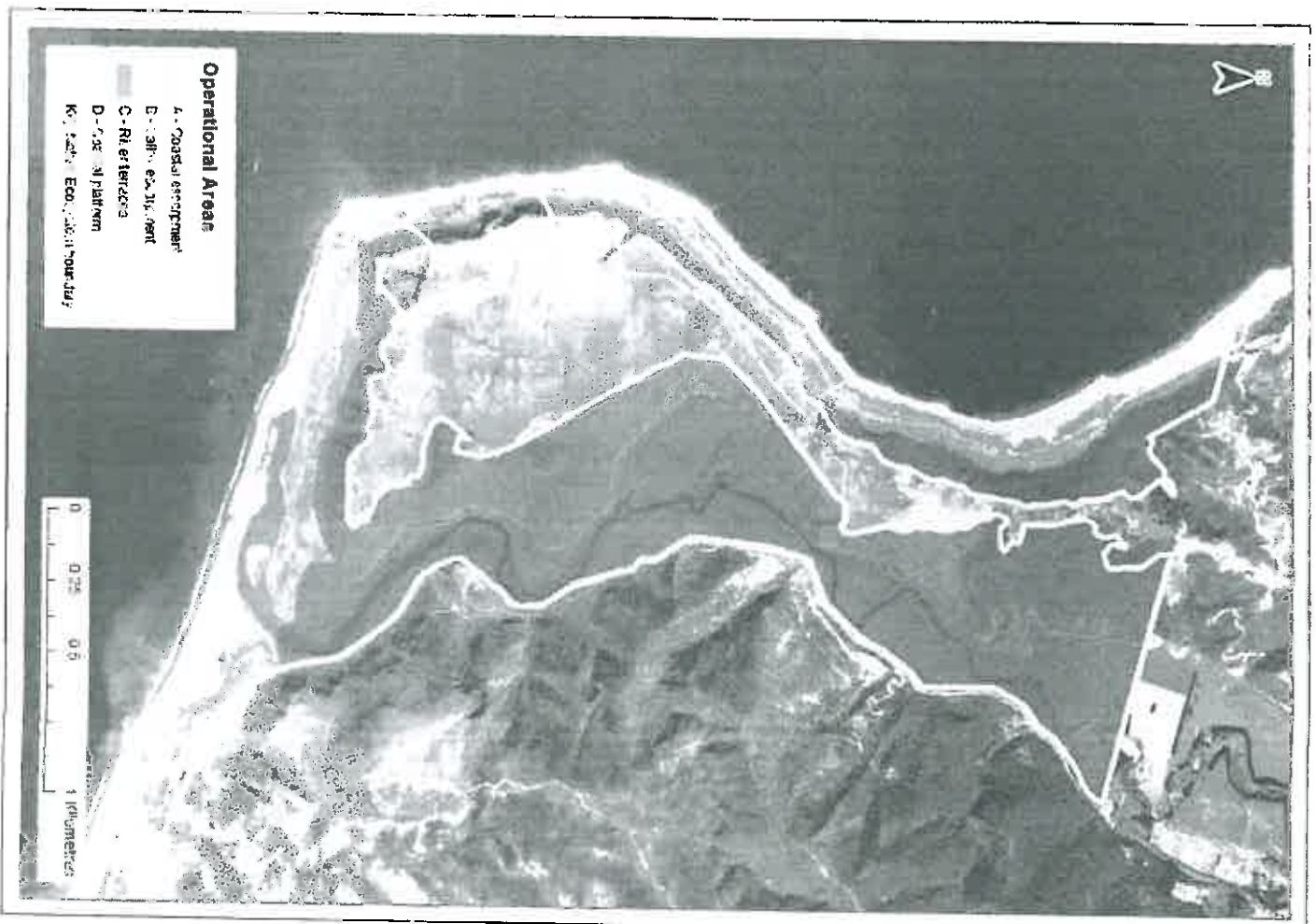
### Appendix 1: Site Maps



Map 1: Baring Head/Oriuapouenui KNE location map.



Map 2: Baring Head/Ōrua-pouanui property boundaries.



Map 3: Operational Areas in Baring Head/Ōrua-pouanui KNE.





Map 4: Existing trap map in Baring Head/Orua-pouanui KNE.



Map 5: Proposed traps and bait stations map for Baring Head/Orua-pourunui KNE.



Map 6: Land Environment New Zealand classification map for Baring Head/Ōrua-pouanui Kaitiaki

## 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 (birds, plants, reptiles, etc.) is assessed over a three-year cycle<sup>22</sup>. 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.

Table 4: Nationally Threatened species at Baring Head/Ōrua-pouanui KNE

Scientific name	Common name	Threat status	Source
<b>Plants(vascular)<sup>22</sup>(lichens)<sup>24</sup>(bryophytes)<sup>25</sup></b>			
<i>Brachyglottis grevii</i>		Naturally Uncommon	Hopkins et al 2010 <sup>26</sup>
<i>Crassula kirkii</i>	Kirk's crassula	Naturally Uncommon	Hopkins et al 2010
<i>Crassula malakona</i>		Naturally Uncommon	Hopkins et al 2010
<i>Ficinia spiralis</i>	Pirngao	Declining	Hopkins et al 2010
<i>Geranium aff. microphyllum</i>		Naturally Uncommon	Hopkins et al 2010
<i>Isopais basilaris</i>	Pygmy dunebush	Naturally Vulnerable	Hopkins et al 2010
<i>Leptinella tenella</i>		Declining	Hopkins et al 2010
<i>Muehlenbeckia astonii</i>	Tororaro	Nationally Endangered	Hopkins et al 2010
<i>Muehlenbeckia ephedroides</i>	Leafless pohuehue, dead stick plant	Declining	Hopkins et al 2010
<i>Meliccytus crassifolius</i>	Porcupine bush	Declining	Hopkins et al 2010
<i>Pimelea arenaria</i>	NZ Daphne	Declining	Hopkins et al 2010
<i>Poa billiardieri</i> (syn <i>Austrostyca fitzroyalis</i> )	Sand tussock	Declining	Hopkins et al 2010
<i>Trisetum antarcticum</i>		Declining	Hopkins et al 2010
<b>Birds<sup>27</sup></b>			
<i>Anas superciliosa</i>	Grey duck	Nationally Critical	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/03/2014)



Scientific name	Common name	Threat status	Source
<i>Aithya novaeseelandiae</i>	NZ pipit	Declining	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Charadrius bicinctus</i>	Banded dotterel	Nationally Vulnerable	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Eudyptula minor</i>	Little penguin	Declining	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Haematopus unicolor</i>	Variable oystercatcher	Recovering	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Himantopus himantopus</i>	Pied stilt	Declining	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Hydroprogne caspia</i>	Caspian tern	Nationally Vulnerable	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Larus novaehollandiae scopulinus</i>	Tarāpunga, red billed gull	Nationally Vulnerable	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Phalacrocorax varius</i>	Pied Shag	Nationally Vulnerable	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<i>Sterna striata striata</i>	Tara, white fronted tern	Declining	<a href="http://ebird.org/content/newzealand/">http://ebird.org/content/newzealand/</a> (accessed 22/01/2014)
<b>Reptiles</b> <sup>28</sup>			
<i>Oligosoma lineoocellatum</i>	Spotted skink	Relict	Romijn 2011 <sup>28</sup>
<b>Freshwater fish</b> <sup>30</sup>			
<i>Anguilla dieffenbachii</i>	Longfinned eel	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Anguilla australis</i>	Shortfinned eel	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Galaxias argenteus</i>	Giant kōkōpu	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Galaxias breviphinis</i>	Kōaro	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Galaxias maculatus</i>	Inanga, whitebait	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Galaxias postvectus</i>	Shortjaw kōkōpu	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Geotria australis</i>	Lamprey	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Gobiomorphus hubbsi</i>	Bluegill bully	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<i>Gobiomorphus huttoni</i>	Redfin bully	Declining	New Zealand Freshwater Fish Database (accessed 2013)
<b>(Araneae – spiders)<sup>31</sup> (lepidoptera – butterflies and moths)<sup>32</sup> (hemiptera – true bugs)<sup>33</sup></b>			
<i>Eriodesma aerodana</i>	Mohi	Nationally Endangered	Patrick 2004 <sup>34</sup>



Key Native Ecosystems Plan

Scientific name	Common name	Threat status	Source
<i>Latrodectus katipo</i>	Katipō spider	Nationally Endangered	Crisp 2011
<i>Maoricicada myersi</i>	Orongorongo black cicada	Nationally Threatened	Borger 1997
<i>Notoreas perornata</i> (Wellington)	Coastal moth	Nationally Critical	Patrick 2004

### Appendix 3: Regionally threatened species list

The following table lists regionally threatened species that have been recorded in the KNE. Native plant species have been identified in the Plant Conservation Strategy, Wellington Conservancy 2004-2010 prepared by JWD Sawyer. Native invertebrates have been identified in Coastal butterflies and moths of Wellington and South Wairarapa prepared by BH Patrick 2004.

**Table 6. Regionally threatened species at Baring Head/Ōrua-pouanui KNE.**

Scientific name	Common name	Threat status
<b>Vascular plants</b>		
<i>Aciphylla squarrosa</i>	Spaniard	Regionally Vulnerable
<i>Anthosacme solandri</i> (syn. <i>Elymus solandri</i> )	Blue wheatgrass	Data Deficient
<i>Clematis atfoliata</i>	Leafless clematis	Regionally Declining
<i>Discaria toumatou</i>	Matagouri	Serious Decline
<i>Rubus squarrosus</i>	Leafless lawyer	Regionally Sparse
<i>Scandia geniculata</i>		Serious Decline
<b>Native Invertebrates</b>		
<i>Austrocidaria ihirunga</i>		Rare species of the Wellington coast
<i>Helastia sirs</i>		Rare species of the Wellington coast

## Appendix 4: Planting plan



Map 5: Planting sites for Baring Head/Ōrua-pouanui KNE.

The tables below show the plant species and numbers of plants for re-vegetation areas within the KNE. The planting calendar identifies when site preparation, planting and maintenance activities will be completed in each planting area.

Planting Plan for Barter Head/Onu-pouarai KNE.

Plant (scientific name)	Grade	Spacing (m)	Cost per plant (\$)	2014/15		2015/16		2016/17	
				Number of Plants	Total	Number of Plants	Total	Number of Plants	Total
<i>Melicope crassifolia</i>	RTH	1	1.65	150	247.50				
<i>Phormium cookianum</i>	RTH	1	1.65	450	742.50				
<i>Discaria Journalou</i>	RTH	2	1.65	19	30.94				
<i>Cornelia arborea</i> var. <i>arborea</i>	RTH	3	1.65	8	13.75				
<i>Brachycolobis grevii</i>	RTH	2	1.65	38	61.88				
<i>Clematis atollata</i>	RTH	2	1.65	19	30.94				
<i>Carrichtera australis</i>	RTH	2	1.65	19	30.94				
<i>Scandelia paniculata</i>	RTH	2	1.65	19	30.94				
<i>Kunzea ericoides</i>	RTH	2	1.65			38	61.88		
<i>Sophora microphylla</i>	RTH	5	1.65			2	3.96		
<i>Cornelia arborea</i> var. <i>arborea</i>	RTH	3	1.65			10	16.50		
<i>Fuchsia nodosa</i>	RTH	2	1.65			7	11.00		

K. Y. Native Ecosystems Plan

Plant (Scientific name)	Grade	Spacing (m)	Cost per plant (\$)	2014/15		2015/16		2016/17	
				Number of Plants	Total	Number of Plants	Total	Number of Plants	Total
<i>Austroderia fulvica</i>	RTH	3	1.65			7	11.00		
<i>Corydine australis</i>	RTH	5	1.65			2	3.17		
<i>Coprosma robusta</i>	RTH	2	1.65			18	29.70		
<i>Pseudopanax arborescens</i>	RTH	3	1.65			7	11.00		
<i>Coprosma propinqua</i>	RTH	2	1.65					93	152.63
<i>Cyperus ustulatus</i>	RTH	2	1.65					46	76.31
<i>Kunzea ericoides</i>	RTH	2	1.65					62	101.75
<i>Oleaia solandri</i>	RTH	3	1.65					41	67.83
<i>Pannalia corymbosa</i>	RTH	3	1.65					21	33.92
<i>Austroderia toetoe</i>	RTH	3	1.65					21	33.92
<i>Leptospermum scoparium</i>	RTH	3	1.65					139	228.94
<i>Phormium tenax</i>	RTH	2	1.65					82	135.67
<i>Corydine australis</i>	RTH	3	1.65					21	33.92
<i>Melicopea ramiflorus</i>	RTH	3	1.65					93	152.63

Baring Head: Onu-puanui

Plant (scientific name)	Grade	Spacing (m)	Cost per plant (\$)	2014/15		2015/16		2016/17	
				Number of plants	Total	Number of plants	Total	Number of plants	Total
Plants and materials subtotal					1,189,39		148,20		1,017,50
Site preparation spray				900,00		1,100,00			1,000,00
Site prep for 2016-17				0		1,500,00			0
Planting labour				0		0			0
Maintenance spray					600,00		200		\$1,000,00
<b>Total</b>					<b>2,689,00</b>		<b>2,948,20</b>		<b>\$3,017,50</b>

Key Native Ecosystems Plan

Table 5: Revegetation calendar.

	2014			2015			2016		
	Autumn	Winter	Spring	Autumn	Winter	Spring	Autumn	Winter	Spring
Area A	Site preparation. Spot spray for planting	Planting	Release spraying 1 <sup>st</sup> site preparation for 2015	Release spraying 2 <sup>nd</sup> site preparation Spot spray for planting	Planting	Release spraying 1 <sup>st</sup> site preparation for 2016	Release spraying 2 <sup>nd</sup> site preparation Spot spray for planting	Planting	Release spraying 1 <sup>st</sup> site preparation for 2017

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## **ANNEX 3— Project Maps and Photos**

**Map -- Baring Head Project Area**

**Map -- Baring Head Operational Areas**

**Map -- Baring Head Operational Areas -- Upper Valley**

**Map -- Baring Head Operational Areas -- Lower Valley**

**Map -- Baring Head Existing Traps and Tracking Tunnel Lines**

**Map -- Baring Head Proposed Fence**

**Photos**

**Baring Head Project Area**



Baring Head project area

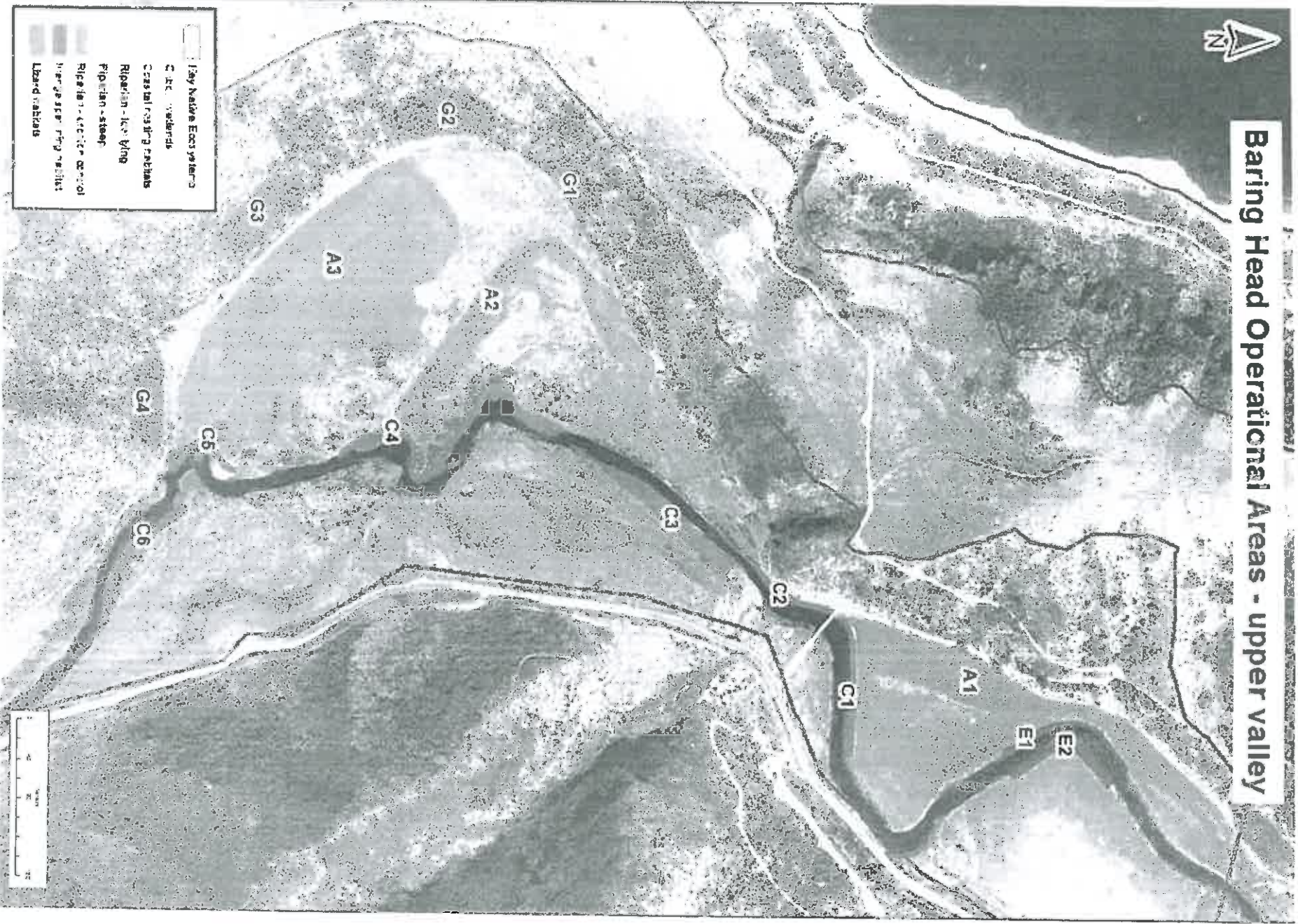


# Baring Head Operational Areas -





# Baring Head Operational Areas - upper valley





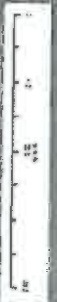
# Baring Head Operational Areas - lower valley





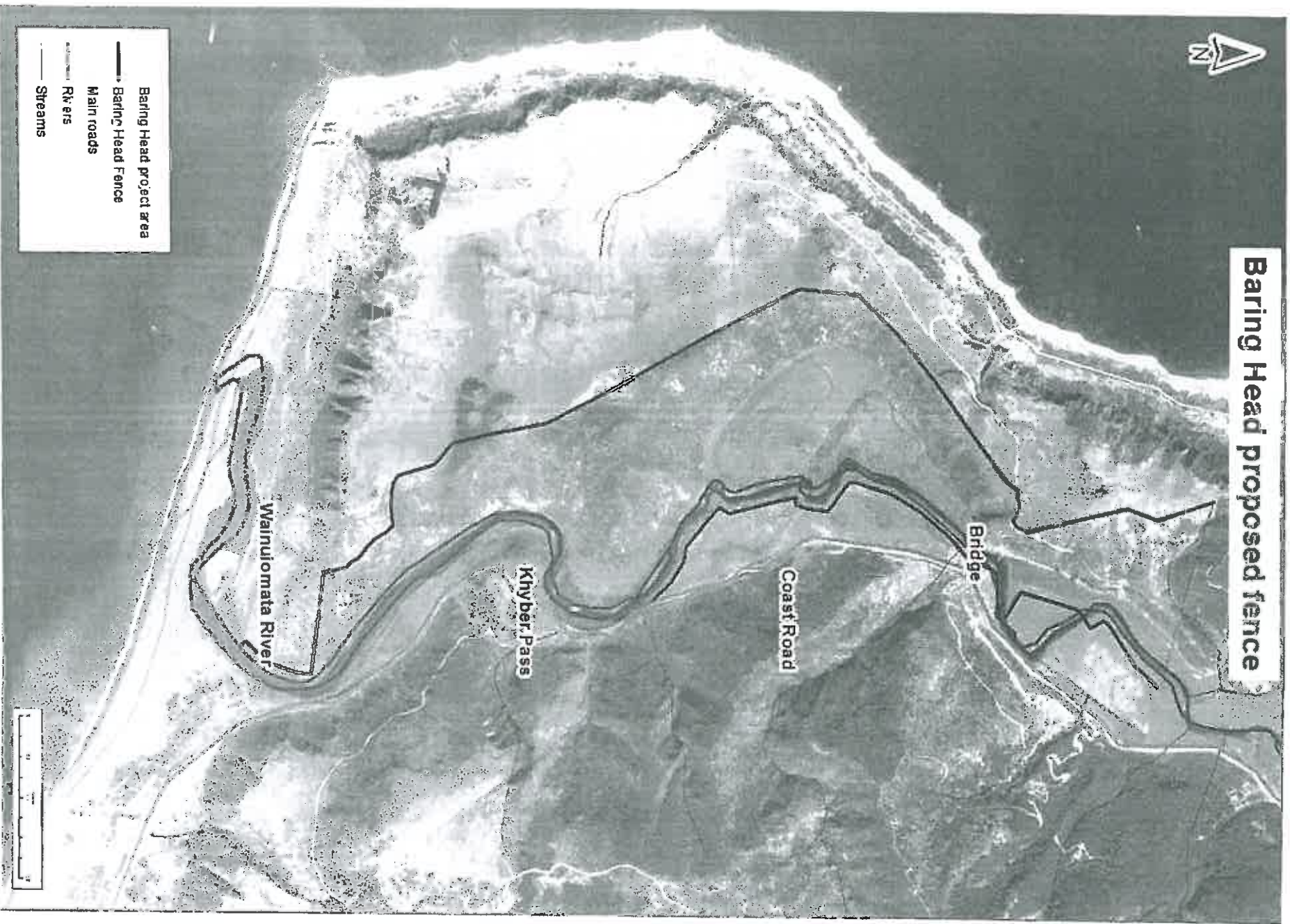


- Existing G. & RC traps
- Tracking Turrah lines
- Key: Native Eucalyptus





# Baring Head proposed fence





Baring Head



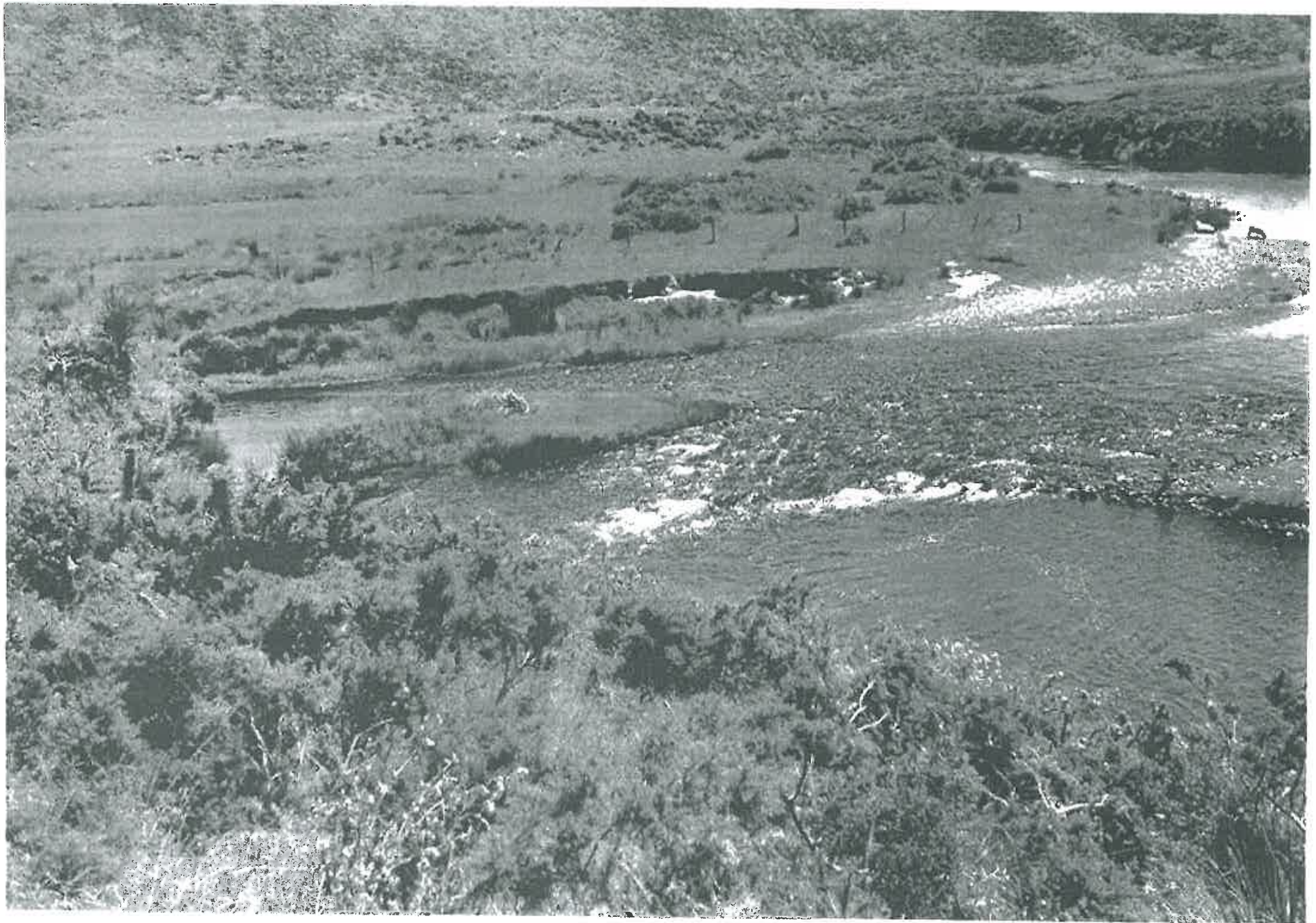
Weeds providing cover behind  
Dotterel Nesting Area  
Revegetation Site B1





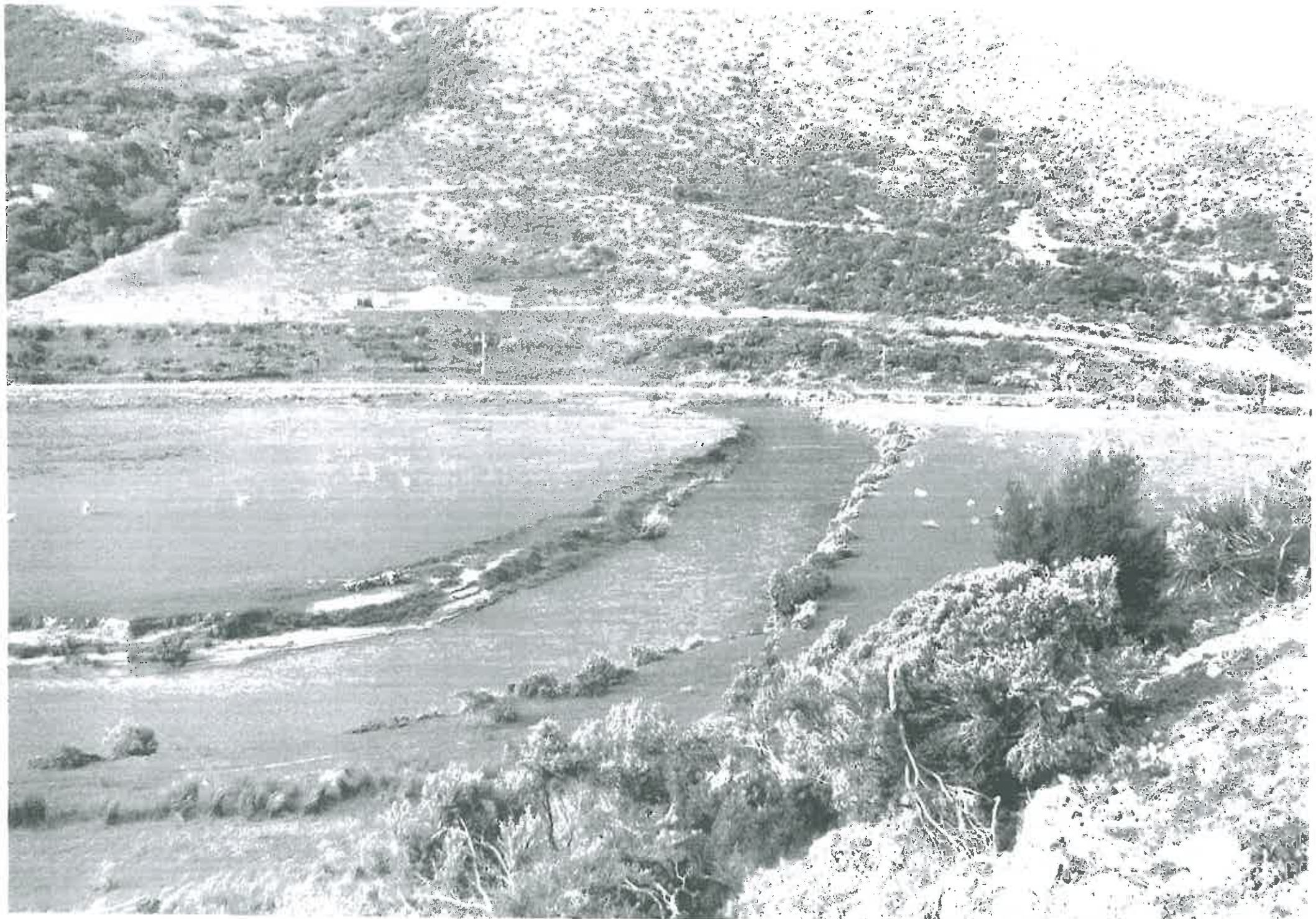
Revegetation Site C5  
Lowlying Riparian





Revegetation Sites E1 & E2  
Erosion Control







*Muehlenbeckia astonii*  
at Bering Head



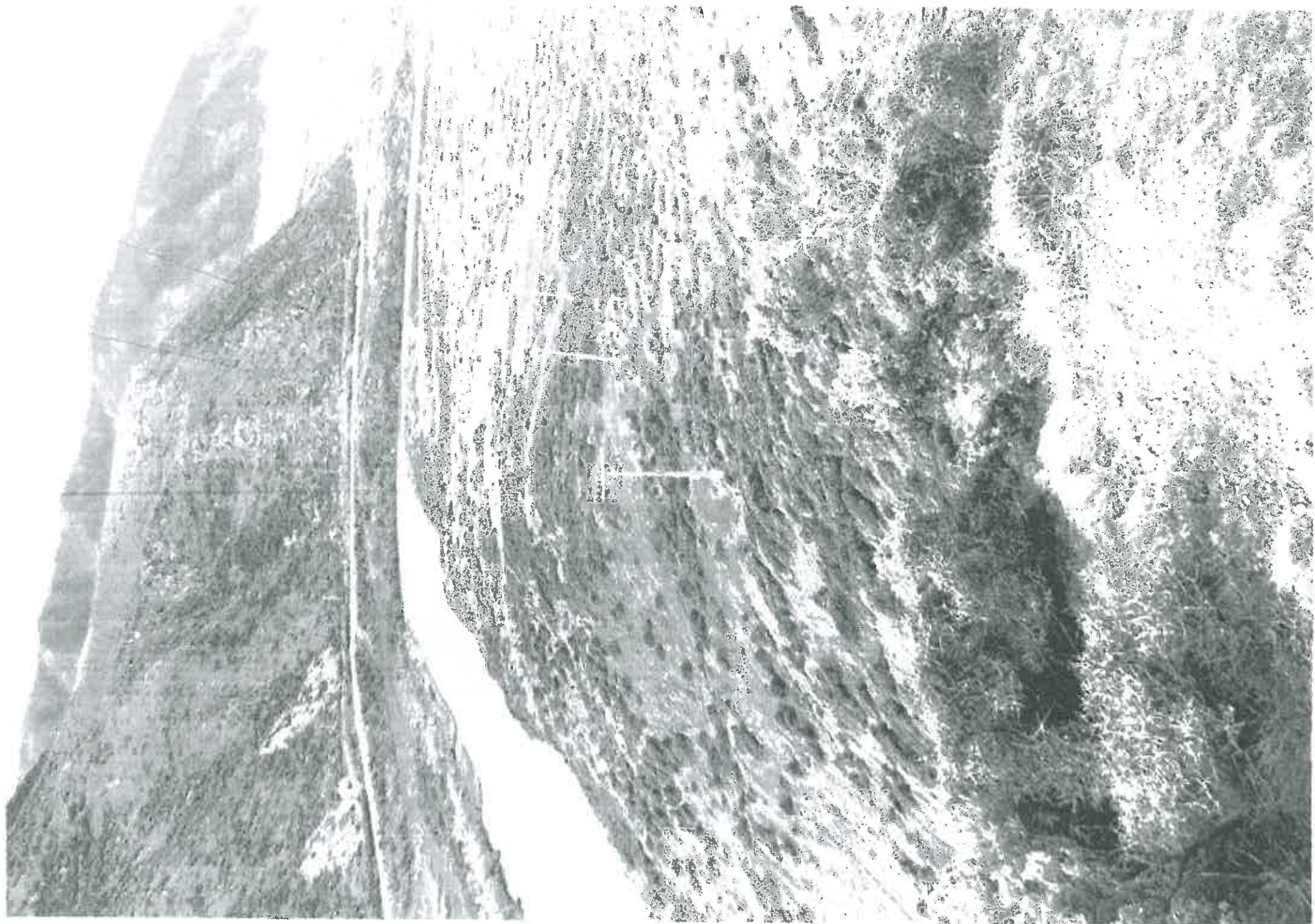
Revegetation Sites C7 & F2  
Lizard Habitat & Inanga Spawning Habitat.





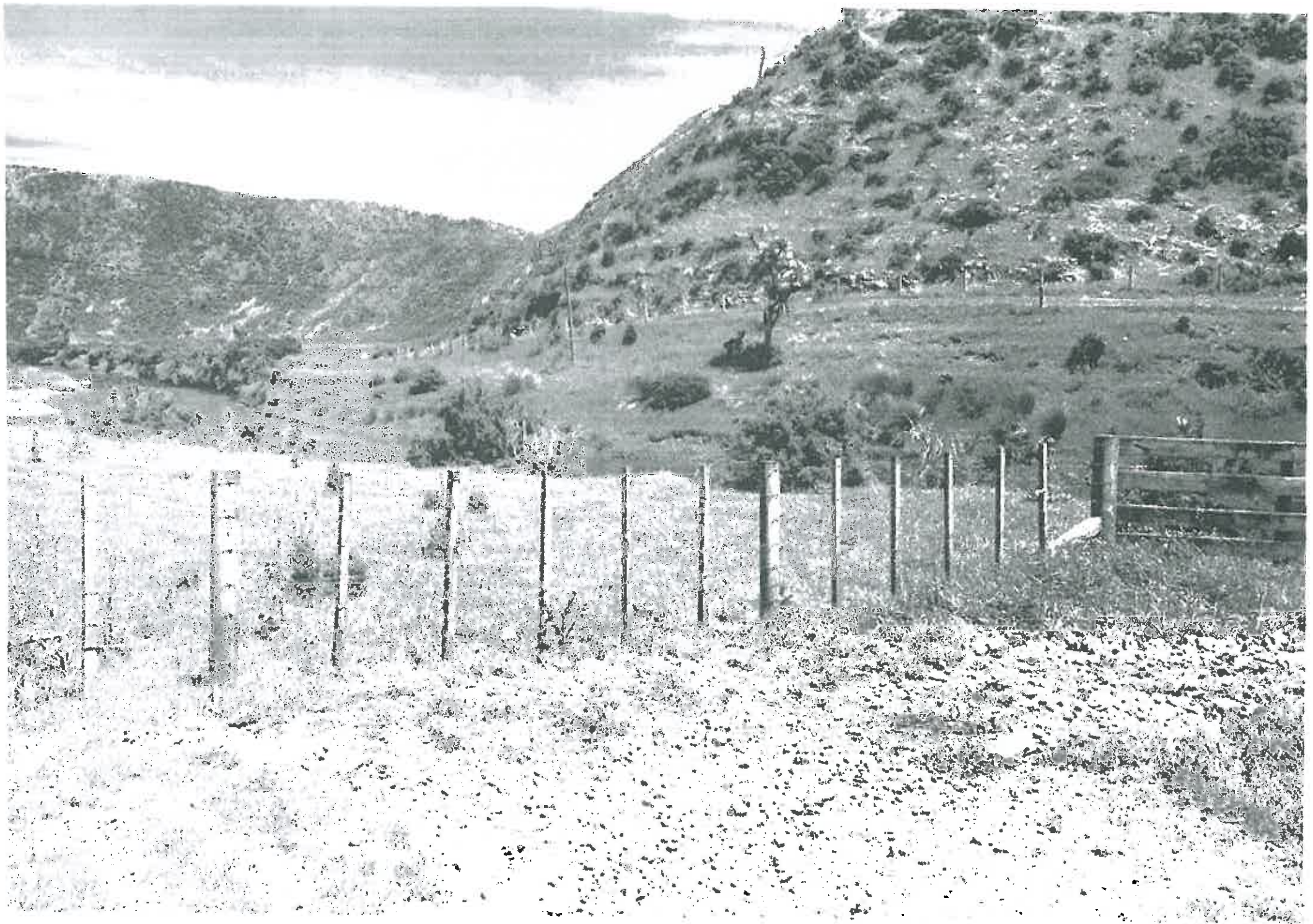
Revegetation Sites F1 & F2  
Inanga Spawning Habitat





Revegetation site 02  
Low lying riparian



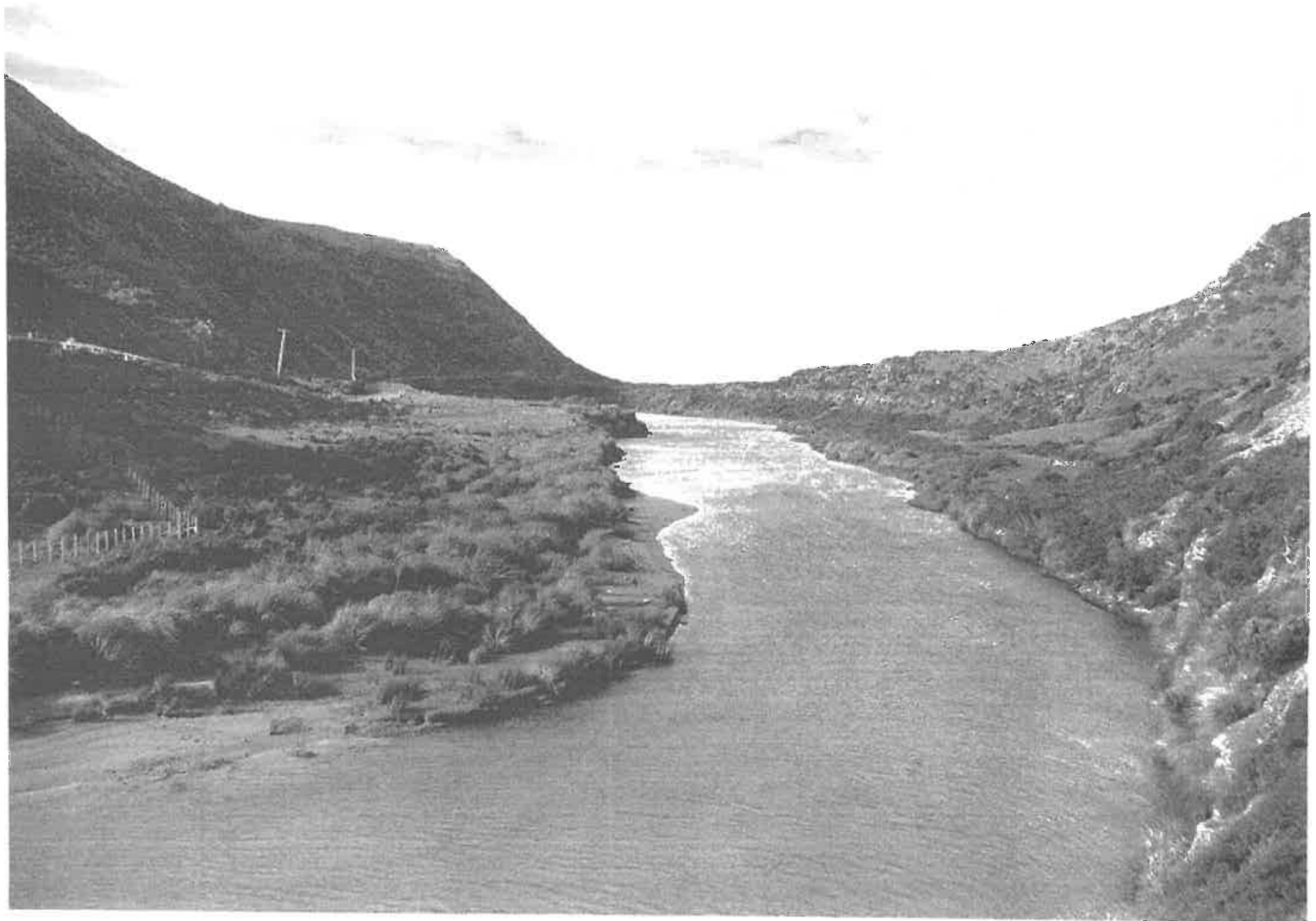




Revegetation Site Dirt Scree  
Steep Riparian

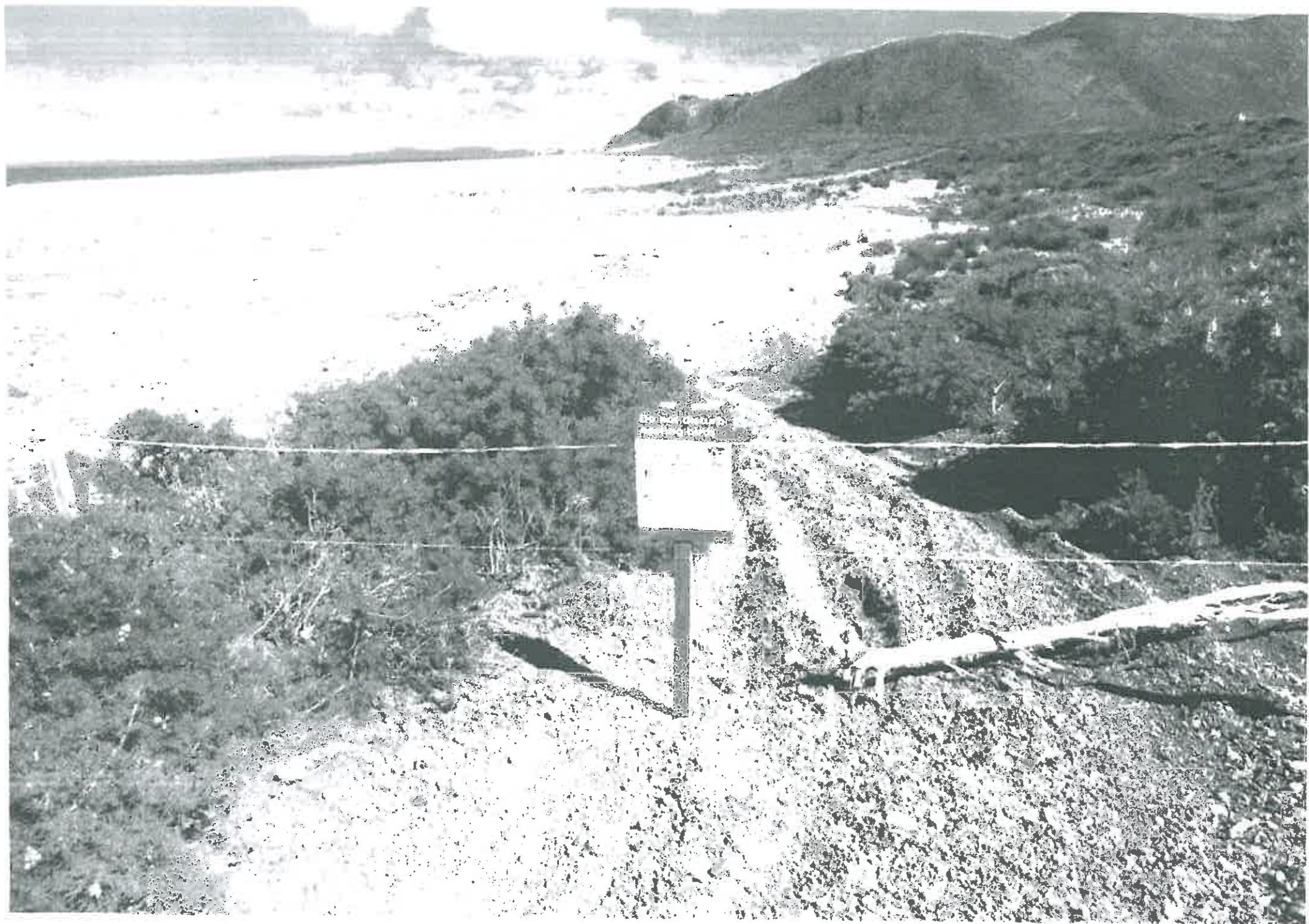


Revegetation Sites F2 & C7  
Inanga Spawning Habitat - low lying Riparian



Temporary Fence + Signage  
(Funded by Friends) ✓  
Site B1





## **ANNEX 4 - Cost Information**

**Cost Summary**

**Pest Animal Control Costs**

**Plant Species by Area**

**Weeding and Planting Activities (2014 – 2017)**

Cost Summary (incl GST & Vols @ \$15 Per Hour)

2014 -15				2015-16				2016-17				
	Total Cost	Vols	GWRC	FBH	Total Cost	Vols	GWRC	FBH	Total Cost	Vols	GWRC	FBH
Coastal Shorebird Habitat	8,625	6,900	1,725	6,587	4,000	2,587	9,175	4,000	5,175	9,175	4,000	5,175
Ground Spraying				8,138	8,138	0						
Plant Propagation				6,450	6,450	0						
Planting	1,500	1,500	0	1,500	1,500	0			1,500	1,500	0	0
Temporary Fencing	1,976	1,976	0	0	0	0			0	0	0	0
Trap Installation	2,430	2,430	0	2,430	2,430	0			2,430	2,430	0	0
Trap Servicing	14,531	2,430	1,725	25,105	13,638	2,587	13,105	2,430	5,500	2,430	5,500	5,175
Total	49,200	43,200	17,250	53,774	36,524	39,312	8,000	5,760	0	2,240	0	1,640
Possum/Rat Control Installation	5,472	4,924	548	3,080	1,640	548	3,080	1,440	1,640	1,440	4,320	600
Possum/rat control servicing	600	600	4,920	4,920	600	4,920	600	4,320	600	4,320	600	600
Fencing	40,250	23,000	17,250	53,774	17,250	36,524	8,000	5,760	0	2,240	0	1,640
Total	45,170	43,200	17,850	67,246	57,760	22,174	39,312	8,000	5,760	0	2,240	1,640
Lizard Habitat	11,500	11,500	0	4,600	4,600	0	10,925	2,300	8,625	10,925	2,300	8,625
Helicopter Spraying				5,290	2,300	2,990						
Ground Spraying	4,209	4,209	0	1,725	1,725	0	2,300	1,725	8,625	2,300	1,725	8,625
Plant Propagation	1,470	1,470	0	1,365	1,365	0	1,725	1,365	0	1,725	1,365	0
Planting	2,665	2,665	4,360	2,665	4,360	531	5,571	5,040	531	5,571	5,040	531
Rodent Control - Installation	4,360	4,360	5,571	4,360	5,571	19,586	6,405	4,025	9,156	19,586	6,405	4,025
Cat Control - Installation	5,571	5,571	22,486	5,571	22,486	6,900	5,040	5,040	531	19,586	6,405	4,025
Cat/Rodent Control Servicing	17,179	1,470	15,709	0	6,900	10,546	5,040	5,040	531	19,586	6,405	4,025
Total Lizard Habitat	17,179	1,470	15,709	0	6,900	10,546	5,040	5,040	531	19,586	6,405	4,025
River Flat Habitats	5,405	867	4,538	5,405	1,862	5,405	6,210	6,210	6,210	6,210	6,210	6,210
Ground Spraying				4,162	1,862	5,405	6,210	6,210	6,210	6,210	6,210	6,210
Plant Propagation	4,474	4,474	0	4,162	1,862	5,405	6,210	6,210	6,210	6,210	6,210	6,210
Planting	3,510	3,510	0	3,300	3,300	0	6,210	6,210	6,210	6,210	6,210	6,210
Total River Flat Habitats	13,389	5,341	4,538	12,867	1,862	7,705	6,210	6,210	6,210	6,210	6,210	6,210
Other Costs	121	1,500	121	1,500	1,500	121	1,500	121	121	1,500	121	121
Pestoff Bait				1,150	1,150	0	1,150	1,150	0	1,150	1,150	0
Annual Traps Check	1,500	1,500	0	1,500	1,500	0	1,500	1,500	0	1,500	1,500	0
MOH Notifications	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150
Total Other Costs	2,771	1,500	1,271	2,771	1,500	1,271	2,771	1,500	1,271	2,771	1,500	1,271
TOTAL	93,040	11,730	55,926	25,384	22,980	46,074	61,421	49,672	14,595	11,025	24,052	

**Pest animal Control - Landscape**

Landscape wide		possum/rat control		possum/rat control	
Installation	units	cost/unit	Total		
Pelleted bait stations	101	12.70	1,282.70		
Warratahs	101	10.25	1,035.25		
Signs	10	10.00	100.00		
Labour	24	45.00	1,080.00		
Trip & quad bike costs	3	120.00	360.00		
Running costs	1	400.00	400.00		
Admin			500.00		
<b>Total cost to install</b>			<b>4,757.95</b>		
Landscape wide		possum/rat control		possum/rat control	
Service bait stations	units	cost/unit	Total		
Labour	24	45.00	1,080.00		
Bait	1	410.00	410.00		
Trip costs	1	96.00	96.00		
Quad bike costs	3	50.00	150.00		
<b>Total cost per service</b>			<b>1,736.00</b>		
					<b>6,544.00</b>
x 4 visits per annum					

Landscape wide		Mustelid/hedgehog/rat control		101 DOC 200 SS traps already installed	
Service traps	units	cost/unit	Total		
Labour	24	45.00	1,080.00		
Trip costs	1	52.00	52.00		
Quad bike costs	3	50.00	150.00		
Materials	1	50.00	50.00		
<b>Total cost per service</b>			<b>1,282.00</b>		
					<b>\$8,526.45</b>



x 12 visits per annum 15,984.00

Intensive Predator Control - Shore bird nesting sites	DOC 200 traps already installed.	units	cost/unit	Total
Materials	Timms traps	5	\$ 42.00	\$ 210.00
	Rabbit bait	1	\$ 12.00	\$ 12.00
	Waratahs	7	\$ 10.25	\$ 71.75
	Pelleted bait stations	2	\$ 12.70	\$ 25.40
	Signage	3	\$ 10.00	\$ 30.00
	Installation cost of	1	\$ 52.00	\$ 52.00
	Quad bike costs	1	\$ 50.00	\$ 50.00
	Labour	4	\$ 45.00	\$ 180.00
	Temporary fence			\$ 1,500.00
	Materials			\$ 150.00
	Signage for nesting	6	\$ 25.00	\$ 150.00
	Total cost to install			\$ 2,281.35

Intensive Predator Control - Shore bird nesting sites	West of river 1,000m	Installation	units	cost/unit	Total
	50m spacing	Timms traps	20	42.00	840.00
	12 existing DOC 200	DOC 200 traps	9	66.00	594.00
	12 existing waratahs	Waratahs	9	10.25	92.25
		Signage	4	10.00	40.00
		Materials	1	50.00	50.00
		Labour	8	45.00	360.00
		Total cost to install			1,976.25

Intensive Predator Control - Shore bird nesting sites

Intensive Predator Control - Shore bird nesting sites	West of river 1,000m	Service			
	Service 20 DOC 200 SS traps & 20 cat traps	Trip costs	1	52.00	52.00
		Quad bike costs	1	50.00	50.00
		Labour	8	45.00	360.00
	Total service cost				462.00
	x 12 visits per annum				5,544.00

Intensive predator control - Lizard habitat	Rodent control - Lizard sites		Installation	units	cost/unit	Total
	G1 - 65 x 35m		Sidekick bait stations	12	9.00	108.00
			Warahs - half size	12	6.00	72.00
			Trip/quad costs	1	52.00	52.00
			Materials	1	50.00	50.00
			Signage	2	10.00	20.00
	Cat control - Lizard sites		Installation	units	cost/unit	Total
	G1 - 65 x 35m		Timms traps	2	42.00	84.00
			Rabbit bait	1	12.00	12.00
			Warahs	2	10.25	20.50
			Labour	8	45.00	360.00
			Admin	1	40.00	40.00
		Total cost to install			409.00	
Rodent/cat control		Service	units	cost/unit	Total	
G1 - 65 x 35m		Labour	8	45.00	360.00	
		Trip/quad costs	1	52.00	52.00	

Rabbit bait	1	12.00	12.00
Total service cost			424.00
x 6 visits per annum			2,544.00

Installation	units	cost/unit	Total
Sidekick bait stations	15	9.00	135.00
Waratahs - half size	15	6.00	90.00
Trip/quad costs	1	52.00	52.00
Materials	1	50.00	50.00
Signage	2	10.00	20.00
G2 - 100 x 45m			347.00
Cat control - Lizard sites			

Installation	units	cost/unit	Total
Timms traps	3	42.00	126.00
Rabbit bait	1	12.00	12.00
Waratahs	3	10.25	30.75
Labour	10	45.00	450.00
Admin	1	40.00	40.00
Total cost to install			1,005.75
Service	units	cost/unit	Total
Labour	8	45.00	360.00
Trip/quad costs	1	52.00	52.00
Rabbit bait	1	12.00	12.00
Total service cost			424.00
x 6 visits per annum			2,544.00
Rodent/cat control			

Installation	units	cost/unit	Total
Sidekick bait stations	18	9.00	162.00
Waratahs - half size	18	6.00	108.00
Trip/quad costs	2	52.00	104.00
G3 - 130 x 40m			424.00
Rodent control - Lizard sites			

Rodent control- Lizard sites		Cat control - Lizard sites	
G4 - 100 x 40m	Installation	units	cost/unit
	Sidekick bait stations	15	9.00
	Waratahs - half size	15	6.00
	Trip/quad costs	1	52.00
	Materials	1	50.00
	Signage	2	10.00
	Total		135.00
G4 - 100 x 40m	Installation	units	cost/unit
	Timms traps	3	42.00
	Rabbit bait	1	12.00
	Waratahs	3	10.25
	Labour	10	45.00
	Total		126.00
Total			347.00

Cat control - Lizard sites		Rodent/cat control	
G3 - 130 x 40m	Installation	units	cost/unit
	Materials	1	50.00
	Signage	3	10.00
	Total		454.00
G3 - 130 x 40m	Installation	units	cost/unit
	Timms traps	4	42.00
	Rabbit bait	1	12.00
	Waratahs	4	10.25
	Labour	12	45.00
	Admin	1	40.00
	Total		580.00
	Total cost to install		1,255.00
G3 - 130 x 40m	Service	units	cost/unit
	Labour	8	45.00
	Trip/quad costs	1	52.00
	Rabbit bait	1	12.00
	Total service cost		424.00
	× 6 visits per annum		2,544.00





Rodent control- Lizard sites		G6 - 125 x 30m		Installation	units	cost/unit	Total
				Sidekick bait stations	18	9.00	162.00
				Waratahs - half size	18	6.00	108.00
				Trip/quad costs	2	52.00	104.00
				Materials	1	50.00	50.00
				Signage	2	10.00	20.00
							441.00
Cat control - Lizard sites		G6 - 125 x 30m		Installation	units	cost/unit	Total
				Timms traps	2	42.00	84.00
				Rabbit bait	1	12.00	12.00
				Waratahs	2	10.25	20.50
							116.50
				Labour	10	45.00	450.00
				Admin	1	40.00	40.00
							490.00
				Total cost to install			1,050.50
Lizard site		G6 - 125 x 30m		Service	units	cost/unit	Total
				Labour	8	45.00	360.00
				Trip/quad costs	1	52.00	52.00
				Rabbit bait	1	12.00	12.00
							424.00
				Total service cost			424.00
				x 6 visits per annum			2,544.00
Rodent control- Lizard sites		G7 - 90 x 35m		Installation	units	cost/unit	Total
				Sidekick bait stations	15	9.00	135.00
				Waratahs - half size	15	6.00	90.00
				Trip/quad costs	1	52.00	52.00
				Materials	1	50.00	50.00
							327.00

Cat control - Lizard sites		Lizard site	
G7 - 90 x 35m	Installation	units	cost/unit
	Timms traps	2	42.00
	Rabbit bait	1	12.00
	Waratahs	2	10.25
	Labour	8	45.00
	Admin	1	40.00
	Total cost to install		843.50
G7 - 90 x 35m	Service	units	cost/unit
	Total		
	Labour	8	45.00
	Trip/quad costs	1	52.00
	Rabbit bait	1	12.00
	Total service cost		124.00
	x 6 visits per annum		

Overall additional costs for lizard habitat	
All sites	105.00
Pestoff rodent bait	105.00
MOH/ notifications	1,000.00
	1,000.00

PLANT SPECIES BY AREA

Area A1 - standing water - upper oxbow						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$)	
	30	1	711	1.90	1,349.12	2,370
Carsec	30	1	711	1.90	1,349.12	Area = 2,370sqm
Carvir	30	1	711	1.90	1,349.12	
Cargem	10	3	26	1.90	49.97	
Typori	15	2	89	1.90	168.64	
Schtab	5	3	13	1.90	24.98	
Junc	10	3	26	1.90	49.97	
	100		1577		2,991.80	

Area A1 - outer edges - upper oxbow						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$)	
	10	2	93	1.90	175.52	3,700
Copro	10	2	93	1.90	175.52	Area = 3,700sqm
Cypust	5	2	46	1.90	87.76	
Kuneri	15	3	62	1.90	117.01	
Olesol	10	3	41	1.90	78.01	
Pencor	5	3	21	1.90	39.00	
Austoe	5	3	21	1.90	39.00	
IepSCO	15	2	139	1.90	263.28	
Photen	20	3	82	1.90	156.02	
Coraus	5	3	21	1.90	39.00	
Melram	10	2	93	1.90	175.52	
	100		617		1,170.13	

Area A2 - standing water - middle oxbow						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$)	
	30	1	291	1.90	552.17	970
Carsec	30	1	291	1.90	552.17	Area = 970sqm
Carvir	30	1	291	1.90	552.17	
Cargem	10	3	11	1.90	20.45	
Typori	15	2	36	1.90	69.02	
Schtab	5	3	5	1.90	10.23	
Junc	10	3	11	1.90	20.45	
	100		645		1,224.49	



Area A2 - outer edges - middle oxbow						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$)	
Copro	10	2	89	1.90	169.35	3,570
Cypust	5	2	45	1.90	84.68	
Kunerl	15	3	60	1.90	112.90	
Olesol	10	3	40	1.90	75.27	
Pencor	5	3	20	1.90	37.63	
Austoe	5	3	20	1.90	37.63	
Iepsco	15	2	134	1.90	254.03	
Photen	20	3	79	1.90	150.54	
Coraus	5	3	20	1.90	37.63	
Melram	10	2	89	1.90	169.35	
	100		595		1,129.01	

Area A3 - standing water - lower oxbow						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$)	
Carsec	30	1	900	1.90	1,707.75	3,000
Carvir	30	1	900	1.90	1,707.75	
Cargem	10	3	33	1.90	63.25	
Typori	15	2	113	1.90	213.47	
Schtab	5	3	17	1.90	31.63	
Junc	10	3	33	1.90	63.25	
	100		1996		3,787.09	

Area A3 - outer edges - lower oxbow						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$)	
Copro	10	2	150	1.90	284.63	6,000
Cypust	5	2	75	1.90	142.31	
Kunerl	15	3	100	1.90	189.75	
Olesol	10	3	67	1.90	126.50	
Pencor	5	3	33	1.90	63.25	
Austoe	5	3	33	1.90	63.25	
Iepsco	15	2	225	1.90	426.94	

Photen	20	3	133	1.90	253.00
Coraus	5	3	33	1.90	63.25
Meltram	10	2	150	1.90	284.63
	100		1000		1,897.50

Area B1 & 2 - coastal nesting habitat

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Olesol	10	2	200	1.90	436.43
Poabil	10	1	800	1.90	1,745.70
Muecom	15	1	1200	1.90	2,618.55
Actsqu	5	1	400	1.90	872.85
Ficnod	10	2	200	1.90	436.43
Pimcry	10	1	800	1.90	1,745.70
Phocoo	30	2	600	1.90	1,309.28
Melcra	10	3	89	1.90	193.97
	100		4289		9,358.89

Area = 8,000sqm

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	50	3	28	1.90	52.71
Cypust	10	2	13	1.90	23.72
Austoe	5	3	3	1.90	5.27
Photen	15	3	8	1.90	15.81
Coraus	5	3	3	1.90	5.27
Pencor	5	2	6	1.90	11.86
Sopmic	5	5	1	1.90	1.90
hebstr	5	2	6	1.90	11.86
	100		68		128.40

Area C1 - Low lying riparian

Area = 500sqm

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	50	3	27	1.90	42.17
Cypust	10	2	10	1.90	18.98
Austoe	5	3	2	1.90	4.22

Area = 400sqm

Area C2 - Low lying riparian

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Photen	15	3	7	1.90	12.65
Coraus	5	3	2	1.90	4.22
Pencor	5	2	5	1.90	9.49
Sopmic	5	5	1	1.90	1.52
hebstr	5	2	5	1.90	9.49
	100		54		102.72

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	50	3	50	1.90	94.88
Cypust	5	2	11	1.90	21.35
Austoe	5	3	5	1.90	9.49
Photen	20	3	20	1.90	37.95
Coraus	5	3	5	1.90	9.49
Pencor	5	2	11	1.90	21.35
Sopmic	5	5	2	1.90	3.42
hebstr	5	2	11	1.90	21.35
	100		116		219.26

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	40	3	89	1.90	168.67
Cypust	10	2	50	1.90	94.88
Austoe	5	3	11	1.90	21.08
Photen	20	3	44	1.90	84.33
Coraus	5	3	11	1.90	21.08
Pencor	5	2	25	1.90	47.44
Sopmic	10	5	8	1.90	15.18
hebstr	5	2	25	1.90	47.44
	100		264		500.10

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	30	3	23	1.90	44.28

Area C5 - Low lying riparian

Area = 700sqm

700

Area C4 - Low lying riparian

Area = 2,000sqm

2,000

Area C3 - Low lying riparian

Area = 900sqm

900

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cypust	5	2	9	1.90	16.60
Austoe	10	3	8	1.90	14.76
Photen	20	3	16	1.90	29.52
Coraus	5	3	4	1.90	7.38
Pencor	10	2	18	1.90	33.21
Sopmic	10	5	3	1.90	5.31
hebstr	10	2	18	1.90	33.21
	100		97		184.26

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	30	3	60	1.90	113.85
Cypust	6	2	27	1.90	51.23
Austoe	5	3	10	1.90	18.98
Photen	25	3	50	1.90	94.88
Coraus	6	3	12	1.90	22.77
Pencor	10	2	45	1.90	85.39
Sopmic	8	5	6	1.90	10.93
hebstr	10	2	45	1.90	85.39
	100		255		483.41

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Cargem	10	3	22	1.90	42.17
Cypust	5	2	25	1.90	47.44
Austoe	5	3	11	1.90	21.08
Photen	15	3	33	1.90	63.25
Coraus	7	3	16	1.90	29.52
Pencor	20	2	100	1.90	189.75
Sopmic	18	5	14	1.90	27.32
hebstr	20	2	100	1.90	189.75
	100		322		610.28

Area C7 - Low lying riparian

Area =2,000sqm

2,000

Area D1- Steep riparian



Area =3,000sqm						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	
Kuneri	25	2	188	1.90	355.78	
Puarb	10	3	22	1.90	42.17	
Pencor	10	2	50	1.90	94.88	
Carus	10	2	50	1.90	94.88	
Myolae	15	3	33	1.90	63.25	
meIram	10	3	22	1.90	42.17	
Coprob	10	2	50	1.90	94.88	
Sopmic	10	5	8	1.90	15.18	
	100		423		803.17	

Area E1- Erosion control riparian						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	
Kuneri	25	2	38	1.90	71.16	
Puarb	10	3	7	1.90	12.65	
Corarb	15	3	10	1.90	18.98	
Ficnod	10	3	7	1.90	12.65	
Austful	10	3	7	1.90	12.65	
Coraus	8	5	2	1.90	3.64	
Coprob	12	2	18	1.90	34.16	
Sopmic	10	5	2	1.90	4.55	
	100		90		170.43	

Area E2- Erosion control riparian						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	
Kuneri	25	2	80	1.90	151.21	
Puarb	10	3	14	1.90	26.88	
Corarb	15	3	21	1.90	40.32	
Ficnod	10	3	14	1.90	26.88	
Austful	15	3	21	1.90	40.32	
Coraus	5	5	3	1.90	4.84	
Coprob	10	2	32	1.90	60.48	
Sopmic	10	5	5	1.90	9.68	
	100		190		360.61	

Area E3- Erosion control riparian						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	600
Kuneri	25	2	38	1.90	71.16	
Puarb	10	3	7	1.90	12.65	
Corarb	15	3	10	1.90	18.98	
Ficnod	10	3	7	1.90	12.65	
Austul	10	3	7	1.90	12.65	
Coraus	8	5	2	1.90	3.64	
Coprob	12	2	18	1.90	34.16	
Sopmic	10	5	2	1.90	4.55	
	100		90		170.43	

Area F1- Inanga spawning habitat						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	3,800
Cargem	20	3	84	1.90	160.23	
Austoe	10	3	42	1.90	80.12	
Myolae	25	3	106	1.90	200.29	
Cardip	5	1	190	1.90	360.53	
Pladiv	15	3	63	1.90	120.18	
Coprep	15	2	143	1.90	270.39	
Aposim	5	1	190	1.90	360.53	
Photen	5	1	190	1.90	360.53	
	100		1008		1,912.79	

Area F2- Inanga spawning habitat						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	6,000
Cargem	25	3	167	1.90	316.25	
Austoe	10	3	67	1.90	126.50	
Myolae	20	3	133	1.90	253.00	
Cardip	10	1	600	1.90	1,138.50	
Pladiv	15	3	100	1.90	189.75	
Aposim	10	1	600	1.90	1,138.50	
Photen	10	1	600	1.90	1,138.50	

			2257		100		4,301.00
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Area G1- Lizard habitat							
Area = 658sqm	Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) inc GST	
658	Melra	10	1	66	1.90	124.86	
	Phocoo	30	1	197	1.65	325.71	
	Distou	5	2	8	1.65	13.57	
	Mueast	10	2	16	1.65	27.14	
	Pimecry	5	1	33	1.65	54.29	
	Corarb	5	3	4	1.65	6.03	
	Bragre	10	2	16	1.65	27.14	
	Cleato	5	2	8	1.65	13.57	
	Acisqu	10	1	66	1.65	108.57	
	Scagen	5	2	8	1.65	13.57	
	Caraus	5	2	8	1.65	13.57	
		100		431		728.02	

Area G2- Lizard habitat							
Area = 1,300sqm	Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) inc GST	
1,300	Melra	10	1	130	1.90	246.68	
	Phocoo	30	1	390	1.90	740.03	
	Distou	5	2	16	1.90	30.83	
	Mueast	10	2	33	1.90	61.67	
	Pimecry	5	1	65	1.90	123.34	
	Corarb	5	3	7	1.90	13.70	
	Bragre	10	2	33	1.90	61.67	
	Cleato	5	2	16	1.90	30.83	
	Acisqu	10	1	130	1.90	246.68	
	Scagen	5	2	16	1.90	30.83	
	Caraus	5	2	16	1.90	30.83	
		100		852		1,617.09	

Area G3- Lizard habitat							
Area = 1,400sqm	Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) inc GST	

Area G5- Lizard habitat						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	1,900
Melcra	10	1	190	1.90	360.53	
Phocoo	30	1	570	1.90	1,061.58	
Distou	5	2	24	1.90	45.07	
Mueast	10	2	48	1.90	90.13	

Area G4- Lizard habitat						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	1,200
Melcra	10	1	120	1.90	227.70	
Phocoo	30	1	360	1.90	683.10	
Distou	5	2	15	1.90	28.46	
Mueast	10	2	30	1.90	56.93	
Pimecry	5	1	60	1.90	113.85	
Corarb	5	3	7	1.90	12.65	
Bragre	10	2	30	1.90	56.93	
Cleafo	5	2	15	1.90	28.46	
Acisqu	10	1	120	1.90	227.70	
Scagen	5	2	15	1.90	28.46	
Caras	5	2	15	1.90	28.46	

Area G4- Lizard habitat						
Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST	1,400
Melcra	10	1	140	1.90	265.65	
Phocoo	30	1	420	1.90	796.95	
Distou	5	2	18	1.90	33.21	
Mueast	10	2	35	1.90	66.41	
Pimecry	5	1	70	1.90	132.83	
Corarb	5	3	8	1.90	14.76	
Bragre	10	2	35	1.90	66.41	
Cleafo	5	2	18	1.90	33.21	
Acisqu	10	1	140	1.90	265.65	
Scagen	5	2	18	1.90	33.21	
Caras	5	2	18	1.90	33.21	

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Pimecry	5	1	95	1.90	180.26
Corarb	5	3	11	1.90	20.03
Bragre	10	2	48	1.90	90.13
Cleafo	5	2	24	1.90	45.07
Actsqu	10	1	190	1.90	360.53
Scagen	5	2	24	1.90	45.07
Caras	5	2	24	1.90	45.07
<b>Total</b>	<b>100</b>		<b>1246</b>		<b>2,363.44</b>

**Area G6- Lizard habitat**

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Melra	10	1	130	1.90	246.58
Phocoo	30	1	390	1.90	740.03
Distou	5	2	16	1.90	30.83
Mueast	10	2	33	1.90	61.67
Pimecry	5	1	65	1.90	123.34
Corarb	5	3	7	1.90	13.70
Bragre	10	2	33	1.90	61.67
Cleafo	5	2	16	1.90	30.83
Actsqu	10	1	130	1.90	246.68
Scagen	5	2	16	1.90	30.83
Caras	5	2	16	1.90	30.83
<b>Total</b>	<b>100</b>		<b>852</b>		<b>1,617.09</b>

**Area G7- Lizard habitat**

Species	Proportion (%)	Spacing (m)	Total Plants (no)	Cost /plant (\$)	Total cost (\$) Inc GST
Melra	10	1	150	1.90	284.63
Phocoo	30	1	450	1.90	853.88
Distou	5	2	19	1.90	35.58
Mueast	10	2	38	1.90	71.16
Pimecry	5	1	75	1.90	142.31
Corarb	5	3	8	1.90	15.81
Bragre	10	2	38	1.90	71.16
Cleafo	5	2	19	1.90	35.58
<b>Total</b>	<b>1,500</b>		<b>1,500</b>		<b>284.63</b>



				100			
				5	2	19	
				5	2	19	
				10	1	150	
							1,865.88
							35.58
							35.58
							284.63

**Weeding and Planting Activities (2014 - 2017)**

Area	Activity	Comments	Year	
Valley escarpment	Follow up gorse spray	Helicopter spraying	2014-15	
	Follow up gorse spray	Ground control	2015-16	
	Follow up gorse spray	Ground control	2016-17	
A1 - Upper oxbow	Follow up Cape pondweed	Hand weed	2014-15	
	Follow up Cape pondweed	Hand weed	2015-16	
	Planting	Collect seed	2014-15	
	Site prep general weed control	Ground spraying	2015-16	
	Follow up general weed / Spot spray	Ground spraying	2015-16	
	Planting	Plant propagation	2015-16	
	Planting	Planting	2015-16	
	Plant releasing spring	Ground spraying	2015-16	
	Plant releasing autumn	Ground spraying	2016-17	
	Plant releasing spring	Ground spraying	2016-17	
	A2 - Middle oxbow	Follow up Cape pondweed	Hand weed	2015-16
		Follow up Cape pondweed	Hand weed	2016-17
Planting		Collect seed	2015-16	
Site prep general weed control		Ground spraying	2016-17	
Cape pondweed control		Ground spraying	2014-15	
Follow up Cape pondweed		Hand weed	2015-16	
Follow up Cape pondweed		Hand weed	2016-17	
Planting		Collect seed	2015-16	
Site prep general weed control		Ground spraying	2016-17	
Cape pondweed control		Ground spraying	2014-15	
A3 - Lower oxbow		Follow up Cape pondweed	Hand weed	2015-16
		Follow up Cape pondweed	Hand weed	2016-17
	Planting	Collect seed	2015-16	
	Site prep general weed control	Ground spraying	2016-17	
	Cape pondweed control	Ground spraying	2014-15	
	Follow up Cape pondweed	Hand weed	2015-16	
	Follow up Cape pondweed	Hand weed	2016-17	
	Planting	Collect seed	2015-16	
	Site prep general weed control	Ground spraying	2016-17	
	Cape pondweed control	Ground spraying	2014-15	
	B1, B2 - Coastal shorebird habitat	Follow up general weed / Spot spray	Ground spraying	2014-15
		Planting	Plant propagation	2015-16
Planting		Planting	2015-16	
Plant releasing spring		Ground spraying	2015-16	
Plant releasing autumn		Ground spraying	2016-17	
Plant releasing spring		Ground spraying	2016-17	
C7 - Low lying riparian		Planting	Collect seed	2015-16
		Planting	Collect seed	2015-16

2016-17	Ground spraying	Site prep general weed control	D1 - Steep riparian
2017-18	Ground spraying	Follow up general weed / Spot spray	
2017-18	Plant propagation	Planting	
2017-18	Planting	Planting	
2017-18	Ground spraying	Plant releasing spring	
2018-19	Ground spraying	Plant releasing autumn	
2018-19	Ground spraying	Plant releasing spring	
2019-20	Ground spraying	Plant releasing autumn	
2019-20	Ground spraying	Plant releasing spring	
2020-21	Ground spraying	Plant releasing autumn	
2015-16	Collect seed	Planting	D1 - Steep riparian
2016-17	Ground spraying	Site prep general weed control	
2013-14	Ground spraying	Site prep general weed control	E3 - Erosion control
2014-15	Ground spraying	Follow up general weed / Spot spray	
2014-15	Plant propagation	Planting	
2014-15	Planting	Planting	
2014-15	Ground spraying	Plant releasing spring	
2015-16	Ground spraying	Plant releasing autumn	
2015-16	Ground spraying	Plant releasing spring	
2016-17	Ground spraying	Plant releasing autumn	
2016-17	Ground spraying	Plant releasing spring	
2015-16	Collect seed	Planting	F1 - Inanga spawning habitat
2016-17	Ground spraying	Site prep general weed control	
2014-15	Ground spraying	Follow up general weed / Spot spray	
2014-15	Plant propagation	Planting	
2014-15	Planting	Planting	
2014-15	Ground spraying	Plant releasing spring	
2015-16	Ground spraying	Plant releasing autumn	
2015-16	Ground spraying	Plant releasing spring	
2016-17	Ground spraying	Plant releasing autumn	
2016-17	Ground spraying	Plant releasing spring	
2016-17	Collect seed	Planting	G1, G2 Lizard habitat
2016-17	Ground spraying	Plant releasing spring	

G7 Lizard habitat

Planting	Plant propagation	2014-15
Planting	Planting	2014-15
Woody weed control	Ground spraying	2015-16
Grass control	Ground spraying	2015-16
Woody weed control	Ground spraying	2016-17
Grass control	Ground spraying	2016-17

**ANNEX 5 -- Letters of Support**

**Fran Wilde -- Chair, Greater Wellington Regional Council**

**Amanda Cox -- Manager, Parks, Greater Wellington Regional Council**

**Ray Wallace -- Mayor - Lower Hutt**





**greater WELLINGTON**  
REGIONAL COUNCIL  
Te Pūnē Mārua Tūroa

9 April 2014

File Ref: PK/01/01/01-v2

Manager  
Community Conservation Partnerships Fund  
Department of Conservation

PO Box 10420  
Wellington 6143

Office of the Chair  
Shed 39, Harbour Quays  
PO Box 11846  
Mairangi Street  
Wellington 6142  
T 04 384 5708  
F 04 385 6980  
[www.gw.govt.nz](http://www.gw.govt.nz)

Dear Sir/Madam

### **Funding application - Doc Community Conservation Partnerships Fund**

Greater Wellington Regional Council (GWRC) would like to express its support and thanks to the Friends of Baring Head Trust for this application to the CCP Fund. Since the purchase of Baring Head in 2010, we have been impressed by the Friends' commitment and contribution to helping manage and improve Baring Head. They participated fully in development of the management plan, restored the historic pump shed and are now working closely with us in protecting the ecological values of the reserve.

GWRC has recognised the unique values of this site through development of a Key Native Ecosystem Plan, and a basic level of funding to address key threats. However, as recognised by the partners in purchasing the block, this site contains rare and threatened ecosystems. Support from the Community Conservation Partnerships Fund would enable the Friends to both assist the conservation effort and more fully engage with the community so that people could learn about and make a real difference to the site.

Yours sincerely

Fran Wilde  
Chair

1340763-V1

23 April 2014

Shed 39, Harbour Quay's

PO Box 11646

Manners Street

Wellington 6142

T 04 384 5708

F 04 385 6960

[www.gw.govt.nz](http://www.gw.govt.nz)

File Ref: PK/12/02/05

General Manager

Department of Conservation (Head Office)

PO Box 10420

The Terrace

Wellington 6143

Dear Sir/Madam

## **Friends of Baring Head Trust - application to Community Conservation Fund**

On behalf of Greater Wellington Regional Council's Parks department I would like to endorse this application by the Friends of Baring Head Trust to the Community Conservation Fund.

Since Greater Wellington Regional Council (GWRC), with the support of several partners including DoC, purchased Baring Head/Oroua-pouanui in 2010, we have worked closely with the Friends to protect and enhance the special values of this area

Over the last year GWRC has initiated a programme of developing Key Native Ecosystem (KNE) plans, which include detailed work programmes and funding to protect regionally important ecosystems. This proposed project was developed in conjunction with GWRC and supports the objectives outlined in the Management Plan and KNE Plan for the site. GWRC is happy for it to proceed as outlined in the application.

Yours sincerely



**Amanda Cox**  
Manager, Parks  
Parks

DD: 04 330 4126

[amanda.cox@gw.govt.nz](mailto:amanda.cox@gw.govt.nz)

1353154-V1

28 April 2014

The Manager  
Community Conservation Partnerships Fund  
Department of Conservation  
PO Box 10-420  
Wellington 6143

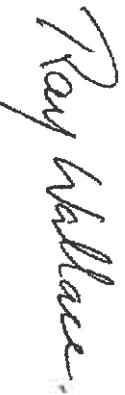
Dear Sir or Madam

As a resident of Wainuiomata, I know Baring Head well. It is an attractive and important part of the valley with many attributes. Accordingly, when the property was up for sale in 2010, I was a strong advocate on the Council for it to make a meaningful contribution towards the property's purchase by the Greater Wellington Regional Council. Subsequently, I fully supported the formation of the Friends of Baring Head and have watched with interest and appreciation their work to protect and restore the property's myriad values. I also welcome the steps the Friends are taking to enable visitors to better enjoy the area and to facilitate community involvement in its recovery.

I have been impressed with the Friends' achievements to date and have no doubt that they have the capacity and the capability to succeed in delivering the outcomes described in this proposal, as well as to undertake the other work streams mentioned in their application. Several Trustees, including two as Councillors, have strong links with the Hutt Valley community, environmental and business sectors. Others bring passion and specialist skills and experience to the table, including the successful management of large and complex projects, often involving the participation of other stakeholders.

For these reasons, I am pleased, both personally and on behalf of the Hutt City Council, to support this application.

Yours faithfully

A handwritten signature in black ink that reads "Ray Wallace". The signature is written in a cursive, slightly slanted style.

Ray Wallace  
Mayor – Lower Hutt

**Westpac**



**deposit**

**Petone**  
**284-286 Jackson Street, Petone, NZ**

DATE  
NOTES \$  
COINS \$

IF MORE THAN THREE CHEQUES RECORD DETAILS ON REVERSE

**DRAWER (i.e. CHEQUE ISSUED BY)**

BANK

BRANCH

CHEQUES \$  
AS PER BACK

**PAID IN BY: (PLEASE PRINT NAME)**  
POSTAL OR OTHER INC. LAW  
NOT A MAHARUITI DRAWER

SUB TOTAL \$  
LESS CHARGES \$

**CREDIT FRIEND OF BARING HEAD CHARITABLE TRUST TOTAL \$**

⑈030543⑈ 0326859⑈00 ⑈ 50

