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Assessment of Ecological Effects - Herpetofauna

December 2017

9(2)(g)(ii)

Technical Report 7d

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NZ TRANSPORT AGENCY WAKA KOTAHI

Mt Messenger Bypass

New Zealand Government

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Contents

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Glossary

Term	Meaning
ACO	Artificial Cover Object
AEE	Assessment of Effects on the Environment Report
AWA	Additional works area
CCFC	Closed Cell Foam Covers
DOC	Department of Conservation
Eastern Ngāti Tama forest block	The area of land largely owned by Ngāti Tama located east of existing SH3, including the Project footprint, approximately 3,098ha in size
EcIA guidelines	Ecological Impact Assessment guidelines
EIANZ	Environment Institute of Australia and New Zealand
ELMP	Ecology and Landscape Management Plan
Herpetofauna	Reptiles and amphibians
North Taranaki Ecological District	Part of the Taranaki Ecological Region, encompasses approximately 259,750ha, including the Project footprint
Parininihi	The area spanning the Waipingao Stream catchment located to the west of existing SH3, approximately 1,332ha in size
Project	The Mt Messenger Bypass project
Project footprint	The Project footprint includes the road footprint (i.e. the road and its anticipated batters and cuts, spoil disposal sites, haul roads and stormwater ponds), and includes the Additional Works Area (AWA) and 5m edge effects parcel.
RMA	Resource Management Act 1991
SH3	State Highway 3
Transport Agency	New Zealand Transport Agency
TRC	Taranaki Regional Council
VES	Visual Encounter Survey

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Term	Meaning
Wider Project area	An area approximately 4,430ha in size which encompasses Parininihi and the Ngāti Tama Eastern forest block, and includes the Project footprint.

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Executive Summary

The NZ Transport Agency is proposing to develop a new section of SH3, north of New Plymouth, to bypass the existing steep, narrow and winding section of highway at Mt Messenger. The Project comprises a new section of two lane highway, some 6km in length, located to the east of the existing SH3 alignment.

The overarching ecological aim for the Project is to ensure no net loss of biodiversity values or to achieve a net benefit of biodiversity values, in the medium term.

To assess the ecological effects of the Project on herpetofauna, this report:

a Identifies and describes herpetofauna values in the Project footprint and wider Project area;

b Describes the potential effects of the Project on herpetofauna arising from construction, operation and maintenance; and

c Recommends measures to avoid, remedy or mitigate potential adverse effects.

This report broadly follows Ecological Impact Assessment (EcIA) guidelines developed by the Environment Institute of Australia and New Zealand (EIANZ, 2015). Professional judgement and expertise have also been applied in the assessment process to reflect good practice. Herpetofauna characteristics and values within the wider Project area were assessed by reviewing existing information and data, and by undertaking field surveys within the wider Project area.

Herpetofauna surveys have not yet been carried out within the Project footprint. Desktop investigations indicate that several herpetofauna species, including At Risk and Threatened species, could be present. However, herpetofauna surveys carried out to date within the wider Project area have not confirmed the presence of any herpetofauna species.

For the purposes of the EcIA assessment it has been assumed that up to 13 relevant species (including the 'Threatened' Archey's frog (*Leiopelma archeyi*) and a number of 'At Risk' species) may be present within the Project footprint. This report includes a more detailed analysis of the likelihood that each species would in fact be present.

Applying the EcIA framework, adapted to include expert judgment in light of the specific circumstances of the Project:

a the overall ecological value of herpetofauna in the Project footprint has been assessed as 'Moderate-High';

b the overall magnitude of the unmitigated effects of the Project on herpetofauna has been assessed as 'Low-Moderate'; and

c the overall level of unmitigated effects of the Project on herpetofauna has been assessed as 'Moderate'.

This report also includes a species-by-species assessment of effects.

The most significant potential adverse effects identified are habitat loss and direct herpetofauna injury/mortality during vegetation removal and earthworks.

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Recommended measures to mitigate potential adverse effects on herpetofauna, and otherwise to improve the habitat value for herpetofauna in the wider area, include:

a the inclusion within the Ecology and Landscape Management Plan (ELMP) of appropriate herpetofauna management to be implemented prior to, and during, vegetation removal to avoid or minimise the likelihood of herpetofauna injuries or deaths;

b restoration planting and habitat enhancement, including to mitigate habitat loss described in the Mitigation and Offset Report (Technical Report 7h, Volume 3 of the AEE); and

c a predator management programme to mitigate residual effects, as also described in the Mitigation and Offset Report.

Overall, taking into account these measures, it is considered that any effects of the Project on herpetofauna are likely to be negligible, and possibly positive, in the medium to long-term.

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1 Introduction

1.1 Purpose and scope of this report

This report forms part of a suite of technical reports prepared for the NZ Transport Agency's Mt Messenger Bypass project (the Project). Its purpose is to inform the Assessment of Effects on the Environment Report (AEE) and to support the resource consent applications and Notice of Requirement to alter the existing State Highway designation, which are required to enable the Project to proceed.

This report assesses the ecological effects on herpetofauna of the Project as shown on the Project Drawings (AEE Volume 2: Drawing Set).

To assess the ecological effects of the Project on herpetofauna this report will:

a Identify and describe herpetofauna activity and habitat values in the Project footprint (which is defined for the purposes of this assessment of effects on herpetofauna in Section 2.3.2 below) and the wider Project area (Section 5);

b Describe the potential effects of the Project on herpetofauna arising from construction, operation and maintenance (Section 4); and

c Recommend measures to avoid, remedy or mitigate potential adverse effects.

1.2 Project description

The Project involves the construction and ongoing operation of a new section of State Highway 3 (SH3), generally between Uruti and Ahititi to the north of New Plymouth (Figure 1.1). This new section of SH3 will bypass the existing steep, narrow and winding section of highway at Mt Messenger. The Project comprises a new section of two lane highway, approximately 6 km in length, located to the east of the existing SH3 alignment (Figure 1.1 and Figure 1.2).

The primary objectives of the Project are to enhance the safety, resilience and journey time reliability of travel on SH3 and contribute to enhanced local and regional economic growth and productivity for people and freight.

A full description of the Project including its design, construction and operation is provided in the AEE (Volume 1) and accompanying Drawing Set (Volume 2).

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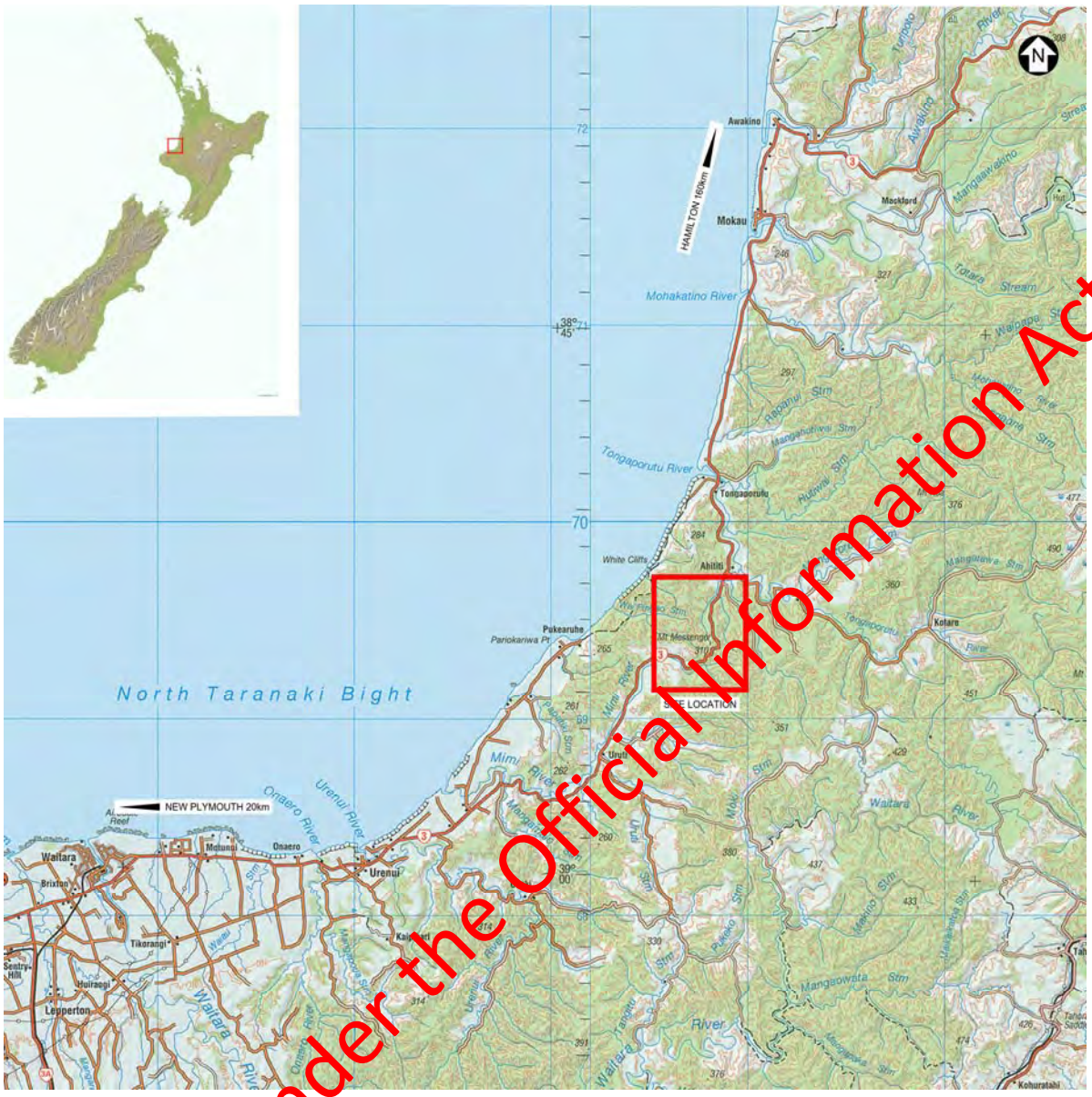

Figure 1.1 – Location of the Project in the Taranaki Region

1.3 Ecological aim for the Project

The overarching ecological aim for the Project is to ensure no net loss of biodiversity values, or to achieve a net benefit of biodiversity values, in the medium term. The ecologists engaged to provide advice and assessments in respect of the Project have been closely involved in recommending measures, including route selection and design features, to achieve this aim.

The ecological aim for the Project will ultimately be achieved through a range of measures to avoid, remedy or mitigate effects on ecological values, including in particular:

- A robust and transparent understanding of effects through detailed desktop and field assessments, as well as inputs from key stakeholders including Ngāti Tama, the Department of Conservation and New Plymouth District Council.

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- Demonstrable efforts to avoid, remedy or mitigate potential adverse effects, through:
  - The selection of a route option that avoids the generally higher ecological value land to the west of the existing SH3. The Project ecologists played an important role in the route selection process;
  - The use of structures (i.e. a tunnel and bridge) to minimise habitat loss and severance;
  - Within the Project footprint, alignment optimisations through changes to design and construction methodologies that produce the best ecological outcomes (e.g. avoidance of wetlands);
  - Intensive monitoring programmes that minimise the potential for vulnerable species being harmed during road construction (e.g. radio-tracking of kiwi);
  - Salvaging and relocation of important biodiversity values (e.g. lizards); and
  - The establishment and operation of a long-term pest mammal control programme to mitigate for residual adverse effects on indigenous biodiversity values.

These measures as they relate to herpetofauna are discussed in more detail in Section 5 of this report.

1.4 Background to the ecological assessment of the Project

In 2016, through the earlier stages of the Project, consideration of options for the Project focused on land to the west of SH3 known as Parininihi (Figure 1.2 below). As a consequence, much of the initial fieldwork (until mid-2017) was focused on assessing ecological values to the west of SH3 along the previously proposed 'MC23' alignment (Figure 1.1).

Nonetheless, much of the information gained from the initial surveys is relevant to this assessment because both routes pass through broadly similar ecosystem types, and the distance between the two routes is relatively small (i.e. <5km).

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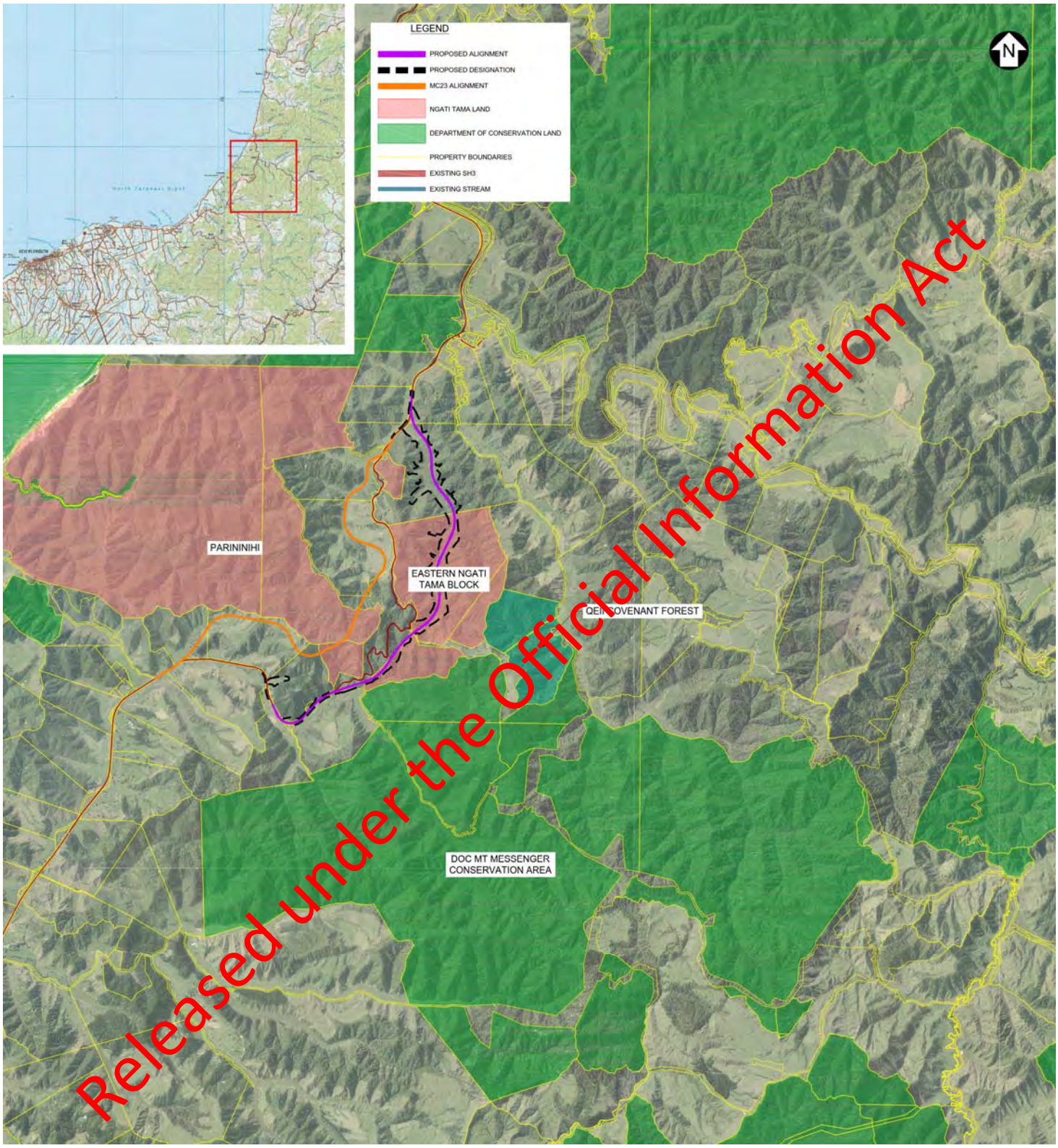

Figure 1.2 – The wider Project area, showing Parininihi and the previous MC23 alignment to the west of the existing SH3, and the Project footprint, Eastern Ngati Tama Block to the east, with the Mimi River to the south and Mangapepeke Stream towards the north

Given seasonal survey constraints, opportunistic survey effort has been undertaken along the Project footprint during the 2017 winter periods to augment this earlier survey information obtained to the west, and to inform the assessment of the likely nature and scale of effects of the Project. Importantly, the detailed vegetation mapping that has been undertaken for the wider Project area (Assessment of Ecological Effects – Vegetation (Technical Report 7a, Volume 3 of the AEE) provides a robust baseline habitat assessment for predicting the fauna species that are potentially present.

While the land to the west of SH3 has had the benefit of some 20 years of intensive pest management, this has not occurred to the east of SH3. In addition, large parts of the Project footprint have been used for pastoral farming or have otherwise been subject to browsing and pugging impacts attributed to both unfenced stock, and feral goats (*Capra hircus*) and pigs (*Sus scrofa*). Accordingly, the biodiversity values associated with Parininihi are recognised as generally being higher than those of the Project footprint.

In the absence of detailed baseline fauna surveys undertaken during the optimal season within the Project footprint, it has been conservatively assumed that any species recorded west of SH3 would also be present in similar habitats to the east of SH3. Further herpetofauna survey work is planned for the 4th quarter of 2017 to fully refine mitigation options, and to provide baseline data on herpetofauna populations within the Project footprint. However, the data obtained to date are sufficient for assessing the potential effects of the Project on herpetofauna; noting that a conservative approach has been taken to account for the lack of certainty about populations within the Project footprint.

1.5 The wider Project area

The wider Project area (i.e. the area in Figure 1.1 above) is situated in the North Taranaki Ecological District[1] (shown in Figure 1.3). The Ecological District includes a moderately diverse range of habitats, from stream flats and surrounding high productivity farmland to less developed steep hill country, through to high-diversity indigenous forest on hill country. The forest often occupies steep hillslopes with sparsely vegetated bluffs as well as a series of densely vegetated interconnected ridge systems. Warm, humid summers and mild, wet winters create conditions suitable for dense broadleaved dominant forest with an abundance of lianes and epiphytic plants over mostly hill country land, and kahikatea (*Dacrycarpus dacrydioides*), pukatea (*Laurelia novae-zelandiae*) and swamp maire (*Syzygium maire*) forest and associated wetlands in valley floor areas.

[1] http://www.doc.govt.nz/Documents/science-and-technical/Ecoregions1.pdf

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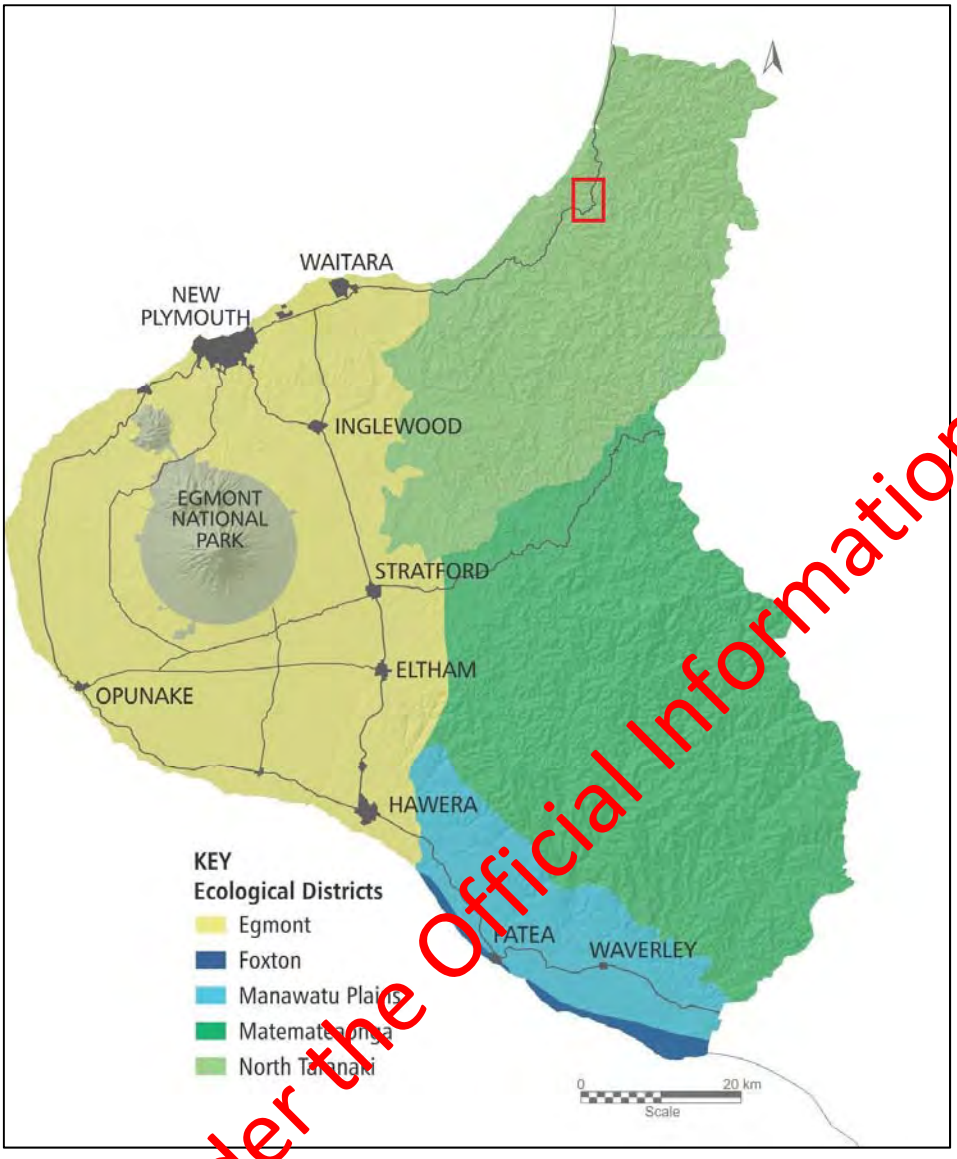

Figure 1.3 – Map showing the North Taranaki Ecological District (Taranaki Regional Council, 2017)

The wider Project area (refer Figure 1.2), within which the Project footprint is located, includes approximately 4430ha of predominantly indigenous forest habitat. The indigenous forest includes:

- a contiguous area of 1332ha of indigenous forest owned by Ngāti Tama that is located to the immediate west of Mt Messenger known as Parininihi (see Section 1.5.1); and
- a contiguous forest (approximately 3098ha in size) immediately adjacent to Mt Messenger and to the east of SH3 (see Section 1.5.2). This area is referred to as the Eastern Ngāti Tama forest block (but also includes land owned by the Department of Conservation and private landowners).

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1.5.1 Parininihi

Parininihi, previously known as "Whitecliffs Conservation Area" is 1332ha of mainly primary forest centred on the Waipingao Stream catchment (shown to the west of SH3 in Figure 1.2 above). This area is classified as "Rimu (*Dacrydium cupressinum*) tawa (*Beilschmiedia tawa*) forest" within the New Zealand Forest Service class map (NZFSMS6). The area encompasses a rare continuous forest sequence through coastal, semi-coastal and lowland bioclimatic zones. As such, the area is regarded as being ecologically significant, and has been described as "the best example of primary coastal hardwood-podocarp forest on the west coast of the North Island" by eminent forest ecologist 9(2)(a) (Bayfield et al. 199[illegible])

Ecological management of Parininihi was started in the early 1990s by the Department of Conservation, and involved possum and goat pest management activities. Since the return of this land to Ngāti Tama in 2003, management of these pests has continued, and control of rodents, mustelids and feral cats (*Felis catus*) has also occurred. Consequently, the health and ecological integrity of the area is now improving, with browse-sensitive plants regenerating and various predation-sensitive birds increasing in abundance.

Parininihi (and all land to the west of the existing SH3) is being avoided by the Project footprint, following the route selection process carried out in 2017.

1.5.2 Eastern Ngāti Tama forest block

The dominant forest to the east of the existing SH3 corridor is 3098ha in area (refer Figure 1.2) and would have originally been very similar forest type to the western part of Parininihi; however, it has not had consistent pest management. Consequently, the ecological condition of this area is poorer, with fewer palatable canopy trees remaining, such as thin-barked totara (*Podocarpus laetus*) and northern rata (*Metrosideros robusta*). Within the Mangapepeke Stream catchment to the east of existing SH3 (shown in Figure 1.2 adjacent to and within the northern end of the Project footprint), vegetation communities are more modified and have been affected by stock grazing, fire and logging.

Of greatest ecological significance in this area is the hydrologically intact swamp forest and non-forest wetland areas in the valley floor of the northern Mimi River catchment (shown in Figure 1.2 towards the southern end of the Project footprint), potential habitats of various threatened wetland birds. The valley floor sequence within the northern tributary of the Mimi River represents a full range of swamp forest, scrub and non-forest wetland communities.

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2 Assessment methods

Herpetofauna distribution, activity patterns, and habitat values within the wider Project area were assessed by reviewing existing information and data, and by undertaking field assessment in the wider Project area.

The assessment in this report broadly follows Ecological Impact Assessment (EcIA) guidelines developed by the Environment Institute of Australia and New Zealand (EIANZ 2015). As described in Section 2.3, professional ecological judgement and expertise have also been applied in the assessment process to reflect good practice.

2.1 Desktop review

A desktop assessment was undertaken to review available information and data relating to the ecology of the wider Project area. This included:

- A review of key documents, reports and data including:
  - Identifying areas within and surrounding the Project footprint that are listed as having significant ecological values;
  - Department of Conservation's BioWeb Herpetofauna database from the last 10 years within a 50km radius of the Project site;
  - Department of Conservation's Atlas of amphibians and reptiles of New Zealand; and
  - Herpetofauna distribution maps.
- Discussion with:
  - Department of Conservation (9(2)(g)(ii))
  - Landowners; and
  - Ngāti Tama (9(2)(a) , Ngāti Tama Trust).

2.2 Field Assessment Methods

Survey methods were determined using the decision tree and comparative tables for terrestrial and arboreal lizards contained within the Department of Conservation Inventory and Monitoring Toolbox: Herpetofauna (Lettink & Monks, 2012). Artificial retreats (Artificial Cover Objects (ACOs) and Closed Cell Foam Covers (CCFCs)) and Visual Encounter Surveys (VES) were determined acceptable field methods for distribution and inventory baseline surveys.

The use of VES is categorised as 'good' for inventory surveys for native frogs and terrestrial and arboreal lizards. VES have low-medium equipment and personal costs, and the high degree of skill required was met by the project team ecologists. The use of artificial retreats is categorised as 'medium' for terrestrial and arboreal lizards. Artificial retreats have low equipment and personal costs, and the high degree of skill required was met by project team ecologists.

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2.2.1 Survey sequencing and seasonality

As noted in Section 1.4, previous investigations during summer and autumn 2017 were focused on the MC23 alignment, with only limited vegetation survey work carried out to the east of the existing SH3. As it became apparent that the appointment of the Mount Messenger Alliance was likely to result in the options selection process being revisited, additional ecological surveys of a wider survey area, including areas to the east of the existing SH3, were undertaken.

With regard to herpetofauna, surveying in winter has greater limitations than spring and summer surveys as herpetofauna become less active as a result of lower temperatures.

Assessments of habitat quality within the Project footprint were undertaken during June 2017 to determine which species are likely to be present. Aside from opportunistic manual habitat searches carried out during the deployment of bat detectors during winter and early spring, no formal surveys of herpetofauna have been undertaken to date along the proposed Project footprint.

However, the habitat in many areas of the Project footprint is of lower quality compared with habitat encountered elsewhere within the wider Project area during the herpetofauna surveys carried out during summer and autumn 2017. As such, the data from those surveys are considered to be sufficient for the purposes of making this assessment.

2.2.2 Habitat Assessment

Prior to conducting field surveys in the wider Project area during the first half of 2017, a habitat assessment was conducted remotely using high resolution aerial maps to identify habitat types that may be utilised by native herpetofauna. Vegetation was categorised as mature/late regenerating forest, early successional/scrub, exotic forest, and rank pasture grass. Structural habitat was categorised as leaf litter, rock piles/debris, and logs/woody debris.

The potential locations for the deployment of artificial retreats and suitable areas for VES, were selected based on desktop habitat assessments, with field survey locations refined and finalised on the basis of validated in-field conditions determined during a site walkover. Further detailed habitat assessments of the Project footprint were undertaken during a site walkover in June 2017, where structural habitat types and vegetation were documented.

2.2.3 Artificial retreats

Artificial retreats were installed within the wider Project area in the first half of 2017 as a passive means to detect lizard species. ACOs were established within selected pasture/bush margin areas, and CCFCs in the main Waipingao Valley interior (Appendix A). Artificial retreats were installed within these targeted habitats by means of transects as they provide greater coverage of an area where species' presence and distribution is unknown (Lettink & Monks, 2012).

Six ACO transect lines were established in the pasture/bush margin areas south of the main forest, and four lines north of the main forest. These 10 transect lines comprised of 96

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individual ACOs in total. Each ACO was deployed along transect lines at approximately 10–20m intervals, with transects spaced at least 100 m apart. These transects covered a range of representative terrestrial habitat types existing in the wider Project area (e.g. rank grass, kanuka (*Kunzea spp.*)/manuka (*Leptospermum scoparium*) scrub, and mature indigenous forest) (Appendix A).

Single layer Onduline ACOs were considered to be appropriate for the lizard fauna likely to be present across the wider Project area. Onduline is a lightweight corrugated roofing and cladding material constructed in layers (400 x 280mm). ACOs were deployed in late January 2017, and left to settle in the environment for 12 weeks before they were checked.

Based on their accessibility and diversity of habitat, two transect lines were established with a total of 47 CCFCs within the main forest area on pest control tracks along ridges. CCFCs were installed during late January 2017 and aimed to detect arboreal lizard species (Appendix A). CCFCs require a settling period in the environment much longer than Onduline ACOs. Covers were therefore left undisturbed for a minimum three-month period after initial deployment. Covers have been left in the environment over winter 2017. Future checks may be done at a time when the covers have been deployed for at least 8–9 months.

All herpetology work was carried out under Wildlife Act 1953 (Wildlife Act) permit number 53708-FAU. For any herpetofauna species found during implementation of any of the survey methods, the following information was to be recorded for each individual:

- Species;
- Reproductive status;
- Snout-vent length (SVL) from the tip of the snout to the vent at the base of the tail;
- Vent-tail length (VTL), including separate measurements for regenerating tails;
- Weight;
- Sex and life stage (if possible);
- Habitat description;
- GPS coordinates of location; and
- Specimen photos.

As required by Wildlife Act permits for herpetofauna surveys, all records of individuals found were submitted to the Department of Conservation's national data repository for herpetofauna records (BioWeb Herpetofauna database).

2.2.4 Visual encounter surveys

Opportunistic daytime VES were undertaken in mild and still weather conditions, in areas identified as possible lizard and terrestrial frog habitat during artificial retreat deployment. Daytime searches are carried out to detect diurnal species, either terrestrial or arboreal, but also have the advantage of revealing inactive nocturnal species sheltering under objects or within refugia. Terrestrial herpetofauna VES effort involved scanning vegetation and inspecting areas of understorey with particular focus on light wells.

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Manual hand searching for terrestrial lizards and frogs was undertaken in conjunction with daytime visual searches. Hand searching was done through sedges, grasses, ferns and other forest groundcover vegetation, lifting ground cover objects, and searching crevices in dead wood or debris piles near artificial cover transects. Manual hand search effort for semi-aquatic frogs included searches along damp stream banks and lifting and inspecting under potential instream refuge habitat items. As recommended in the DOC Inventory and Monitoring Toolbox Herpetofauna: Systematic searches guidelines (Hare, 2012), care was taken to minimise potential for crushing when lifting objects and the lifter was always able to hold the object up long enough to catch any herpetofauna.

Nocturnal spotlighting searches for frogs and arboreal geckos were not carried out in steep areas of the wider Project area due to health and safety concerns. However, the lower sections with bush/farmland margins were suitable for night spotlighting which targeted arboreal lizards (Appendix A). Night searches were carried out using powerful torches mounted on binoculars for scanning habitat from a distance, or hand-held torches alone for close-range spotlighting. A total search effort of 18 person-hours of spotlighting was undertaken during late January (north side) and mid-April (south side). Night searches were undertaken by a team of experienced ecologists under the supervision of an experienced herpetologist.

2.3 Assessment of effects methodology

The assessment of ecological effects broadly follows the EcIA guidelines (EIANZ, 2015), with some adaptation, including to allow for the expert opinion of herpetofauna specialists to be applied within the context of the EIANZ framework[2].

The guidelines are useful in that they enable effects to be assessed in a systematic and transparent way.

2.3.1 Assessment of Ecological Values (Step 1)

Ecological values were assigned a level on a scale of 'Low', 'Moderate', 'Moderate-High', 'High' or 'Very High' based on assessing the values of species, communities, and habitats identified against criteria set out in the EcIA guidelines (Table 2.1). For this herpetofauna assessment, each individual species is assigned an 'Ecological Value' based on criteria set out in Table 2.1 in the column entitled 'Species Value Requirements'.

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[2] In terms of the EIANZ process steps, Step 4, which provides for the overall level of effects to be translated to an "RMA effect" has been omitted. The rationale for this includes that it is considered more appropriate / straightforward for ecological effects to be expressed in the high / moderate / low terms used in the other EIANZ steps.

Table 2.1 – Assignment of values within the footprint to species (adapted from EIANZ, 2015)

Value	Species Value requirements
Very High	Important for Nationally Threatened species
High	Important for Nationally At Risk species and may provide less suitable habitat for Nationally Threatened species
Moderate–high	May provide less suitable habitat for Nationally At Risk species
Moderate	No Nationally Threatened or At Risk species, but habitat for locally uncommon or rare species
Low	No Nationally Threatened, At Risk or locally uncommon or rare species

2.3.2 Magnitude of unmitigated Effect assessments (Step 2)

Step 2 of the EcIA guidelines requires an evaluation of the unmitigated magnitude of effects on ecological values based on footprint size, intensity and duration. The unmitigated 'Magnitude of Effect' that the Project is expected to have in the Project area is evaluated as being either 'No Effect', 'Negligible', 'Low', 'Moderate', 'High' or 'Very High', (see Table 2.2).

Table 2.2 – Summary of the criteria for describing the magnitude of unmitigated effect (based on EIANZ, 2015).

Magnitude of effect	Description
Very High	Total loss or major alteration of the existing baseline conditions; Loss of high proportion of the known population or range
High	Considerable loss or alteration of existing baseline conditions; Loss of high proportion of the known population or range
Moderate	Moderate loss or alteration to existing baseline conditions; Loss of a moderate proportion of the known population or range
Low	Minor shift away from existing baseline conditions; Minor effect on the known population or range
Negligible	Very slight change from the existing baseline conditions; Negligible effect on the known population or range
No Effect	No effect at all

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The 'Magnitude of Effect' is a function of:

- The scale of unmitigated effect per se (i.e. the areal extent of the Project footprint);
- The proportion of habitat loss versus local availability (e.g. the proportion of habitat loss relative to the contiguous habitat that remains);
- The duration of effect (e.g. permanent versus temporary); and
- The intensity of the unmitigated effect (i.e. the extent to which habitat loss within the Project footprint was complete or partial).

The 'Project footprint' is the principal spatial zone, where the direct effects of the Project on ecology (including herpetofauna) are considered to occur. The Project footprint includes:

- the road footprint (i.e. the road and its anticipated batters and cuts, spoil disposal sites, haul roads and stormwater ponds);
- an Additional Works Area (AWA), accounting for additional habitat loss for construction access, laydown areas and temporary stormwater drains (see detailed drawings in Volume 2: Drawing Set); and
- 5m edge effects parcel.

Note that the AWA is smaller in habitats with 'High' 'Ecological Values' because temporary work activities will be focused on the road footprint and immediately adjacent areas, and more precautions will be taken in managing construction effects, in order to mitigate potential adverse effects on the surrounding habitat. These measures will be set out in the Construction and Environmental Management Plan (Volume 5 of the AEE), which will include the Ecology and Landscape Management Plan.

The inclusion of the 5m edge effects parcel in the Project footprint accounts for the degradation of habitat suitability in close proximity to the direct effects footprint through edge effects. The creation of new edges where existing vegetation is removed is known to alter micro-climatic conditions (e.g. through increased exposure to temperature extremes, desiccation, and wind) with potential adverse effects on both habitat suitability and availability for a number of species (Young & Mitchell 1994; Davis-Colley *et al.* 2000).

Moreover, a variety of other factors, including invasion of weeds and occupancy of mammalian predators and browsers are generally considered to be higher in edge habitats (Murcia 1995; Lahti 2009) though evidence for higher predation rates is mixed (Ruffell *et al.* 2014). While edge effects do not result in the direct clearance of vegetation for the purposes of calculating offset, the 5m edge has been included in the calculation as though it were a direct total loss. The inclusion of a 5m edge parcel is considered appropriate for herpetofauna as some species may be adversely impacted by edge effects.

2.3.3 Level of effects assessment in the absence of mitigation (Step 3)

Step 3 of the EcIA guidelines requires the overall level of effect to be determined using a matrix that is based on the ecological values and the magnitude of effects on these values **in the absence of any efforts to avoid, remedy or mitigate for potential effects**. Level of effect categories adopted for the purposes of this assessment include 'No Ecological Effect', 'Very Low', 'Low', 'Moderate', 'Moderate/High', 'High' and 'Very High'. Table 2.3 shows the matrix

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used to describe the overall level of ecological effects, adapted from EIANZ (2015) to allow for the consideration of likelihood of presence and uncertainty with regard to magnitude of potential effects.

After applying the EcIA guidelines and the table below for individual herpetofauna species, the authors have used their professional judgement to assess the overall level of effects on herpetofauna.

Table 2.3 – Criteria for describing overall levels of ecological effects (adapted from EIANZ, 2015).

Magnitude of effect	**Ecological Value**			
	Very High	High	Moderate or Moderate-High	Low
Very High	Very high	Very high	High	Moderate
High	Very high	Very high	Moderate-High	Low
Moderate	Very high	High	Low	Very low
Low	Moderate	Low	Low	Very low
Negligible	Low	Very low	Very low	Very low
No effect	No ecological effect	No ecological effect	No ecological effect	No ecological effect

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3 Herpetofauna survey/assessment results

3.1 Herpetofauna desktop review results

3.1.1 Herpetofauna database

The following table provides a summary of known herpetofauna records obtained from the Department of Conservation's herpetofauna database within 50km of the wider Project area. The results of this database search (Table 3.1) provide insight into the diversity of herpetofauna potentially present within the wider Project area.

Table 3.1 – Historic herpetofauna records within 50km of the wider Project area.

Name	Scientific Name	Threat Status	Years of Record
Goldstripe gecko	*Woodworthia chrysosiretica*	At Risk – Relict	2014, 2013, 2012, 2011, 2009, 2008
Striped skink	*Oligosoma striatum*	At Risk – Declining	2010, 2008
Hochstetter's frog	*Leiopelma hochstetteri*	At Risk – Declining	2009, 2008
Copper skink	*Oligosoma aeneum*	Not Threatened	2010
Forest gecko	*Mokopirirakau granulatus*	At Risk – Declining	2009
Ornate Skink	*Oligosoma ornatum*	At Risk – Declining	2001
Common gecko	*Woodworthia maculata*	Not Threatened	2002
Northern Grass skink	*Oligosoma polychroma*	Not Threatened	2001
Archey's frog	*Leiopelma archeyi*	Threatened – Nationally Vulnerable	2000
Pacific gecko	*Dactylocnemis pacificus*	At Risk – Relict	2000
Duvaucel's gecko	*Hoplodactylus duvaucelii*	At Risk – Relict	1984

3.1.2 Atlas of Amphibians and Reptiles of New Zealand

A review of herpetofauna distribution within the Taranaki Region under the Department of Conservation's *Atlas of Amphibians and Reptiles of New Zealand* details the potential for a further two lizard species within the wider Project area. These include both skink and gecko species (Table 3.2).

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Table 3.2 – Additional herpetofauna distributed within the Taranaki region

Name	Scientific Name	Threat Status
Elegant gecko	*Naultinus elegans*	At Risk – Declining
Brown skink	*Oligosoma zelandicum*	At Risk – Declining

3.1.3 Habitat assessment

A habitat assessment was conducted remotely, using high resolution aerial maps to identify habitat types that may be utilised by native herpetofauna. The assessment indicated that the Project footprint encompasses several habitat types, ranging from wetlands to mature remnant forest. To varying degrees, these habitat types fulfil the niche requirements for the diversity of herpetofauna identified in Section 3.1.1 and 3.1.2 of this report. A breakdown of these habitats and the species which may occupy them is described below, with a summary provided in Table 3.3.

3.1.3.1 Mature Forest

Mature or late successional forest is found within the Project footprint. This is a complex habitat that contains multiple features for a diversity of herpetofauna species to utilise. Old emergent trees such as rimu (*Dacrydium cupressinum*) and totara (*Podocarpus totara*) contain a large number of epiphyte plants, most commonly *Astelia* spp. This epiphyte microhabitat provides favourable habitat for arboreal and semi-arboreal species including goldstripe gecko, elegant gecko, forest gecko, Pacific gecko, and striped skink.

Mature tree trunks with deep crevices and loose bark could be used by the above-mentioned species, with addition to Duvaucel's gecko and common gecko for refuge. Forest geckos are often found on trunks and larger branches of trees in mature forest.

Where present, groundcover plants such as young tree ferns, ground ferns, fallen epiphytes, flax, and sedges (e.g. *Gahnia* and *Astelia*) provide habitat for species such as striped skink, Pacific gecko, Duvaucel's gecko, goldstripe gecko and Archey's frog.

Woody debris and deep leaf litter on the forest floor provide ideal refugia and feeding areas for copper and ornate skink. All these habitat types are located throughout the forested area of the Project footprint and it is possible the above species are present within these areas (Table 3.3).

Small upper reaches of the Mangapepeke Stream and the Mimi River are dominated by mature forest cover and are located within the wider Project area. These reaches are characterised by a naturally steep incised gully, with rocks and logs as the substrate. Superficially, these areas appear to provide potential habitat for Hochstetter's frog.

3.1.3.2 Scrub

Scattered areas of scrub and bush margin habitat is located throughout the wider Project area, including the Project footprint. These areas are predominantly comprised of manuka and kanuka. The canopy of manuka and kanuka is a known foraging habitat for arboreal

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geckos such as elegant, forest, and Pacific gecko. Rock areas and small clay banks within these areas may provide habitat for terrestrial gecko species. Scrub areas generally provide an abundance of woody debris, grasses, sedges and areas of deep leaf litter that provide suitable habitat for all skink species listed in Table 3.1and Table 3.2 that may be present within the wider Project area.

3.1.3.3 Rank Grass

Rank grass and pasture are found in several areas along the Project footprint. These areas were found around the periphery of wetland areas and adjacent to bush margins. This habitat matrix provides potential habitat for several of the skink species expected to occur within the wider Project area. The dense vegetation cover and moist ground-level conditions provided by rank grass environs are more suitable for these skink species when coupled with forest edges and scattered refugia provided by habitat items including woody debris that was found in these areas.

3.1.3.4 Wetland

The two major lowland wetland areas within the Project footprint provide overall marginal habitat for lizard species. Gecko species may be able to utilise the denser vegetation within these areas, while the Northern grass skink may be present within drier parts of wetlands (e.g. wetland edges).

Table 3.3 – Habitat types preferred by herpetofauna species most likely to be present within the Project footprint. Habitat suitability: √√√ High; √√ Moderate; √ Marginal.

Name	Mature Forest	Scrub	Rank Grass	Wetland
Archey's frog	√√√			
Brown skink	√√	√√√	√√	
Common gecko	√√√	√		
Copper skink	√√√	√√√	√√	
Duvaucel's gecko	√√√	√√		√
Elegant gecko	√√	√√√		√
Forest gecko	√√√	√√√		√
Goldstripe gecko	√√√	√√		√
Hochstetter's frog	√√√			
Northern Grass skink		√√√	√√√	√√
Ornate skink	√√√	√√	√	
Pacific gecko	√√√	√√		√

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Name	Mature Forest	Scrub	Rank Grass	Wetland
Striped skink	√√√	√	√	

3.2 Field surveys

Field surveys principally targeted areas in Parininihi with high quality habitat that had received long-term pest control. Though in-field investigations have currently been limited to opportunistic searches along the Project footprint, robust baseline field surveys within the wider Project area (which has been subject to long-term pest control) provide a strong degree of insight into the species and densities of resident herpetofauna within the Project footprint. However, it is important to note that the habitat within the Project footprint is generally of a lower quality than in Parininihi due to lack of long-term pest management.

3.2.1 Artificial Cover Objects

A total of 96 ACOs deployed in late January 2017 were checked in mid-April, mid-May, and late May 2017 (12, 16 and 18 weeks after initial deployment). ACOs were checked throughout the course of the day during cool, overcast days by two team members. No lizard species were detected during any of the 288 ACO checks. This result was somewhat unexpected given the level of effort employed. It would have been expected that at least low levels of common lizard species would have been detected during these checks.

3.2.2 Closed Cell Foam Covers

A total of 47 CCFC deployed in late January 2017, were checked in late April and late May 2017, during cool, overcast days with low to moderate wind by two team members. No lizard species were detected during any of the 94 CCFC checks. Though CCFCs are useful for detecting the presence of arboreal lizard species, these results were not unexpected. These covers require a significant part of the year settling within their environment, and are generally subject to relatively low herpetofauna occupancy rates, even in areas where lizards are in high abundance.

Though long-term pest control had been undertaken in Parininihi, legacy impacts from pests and relatively slow reproduction rates of New Zealand herpetofauna, result in slow population bounce backs. The current level of pest control undertaken within the area may require review as approximately 13% (6/47) of the deployed CCFCs exhibited damage from pest mammals (e.g. scratch marks and bites) during the first round of checks. Despite this, a diverse range of potential invertebrate food sources were detected under these covers which included weta, millipedes, cockroaches and spiders.

3.2.3 Nocturnal visual encounter surveys

Nocturnal VES (i.e. spotlighting) for arboreal geckos were undertaken during late January 2017 (northern end of MC23) and mid-April (southern end of MC23) (see Figure 1.1 for MC23 location). No arboreal gecko species were detected during a total search effort of 18 person hours. The presence of multiple moth species, katydids and flightless arboreal stick

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insects detected during these searches demonstrated plentiful food sources for arboreal geckos.

3.2.4 Daytime visual searches

No lizard or frog species were detected during daytime visual searches and manual habitat searches within terrestrial and aquatic environments. These opportunistic searches targeting the most likely habitat features encountered were undertaken in conjunction with artificial retreat checks as well as the installation of bat detectors across the wider Project area. While the Project footprint includes apparently suitable habitat for Hochstetter's frog, the geology of the area is such that the rocks along the valley floors and streambeds are soft and highly erodible. Consequently, many of the microhabitats preferred by Hochstetter's frog are in fact clogged with sediment.

3.2.5 Conclusions and discussion

Baseline survey efforts did not detect any herpetofauna species within the wider Project area or Project footprint.

However, the presence of herpetofauna cannot be discounted. The challenge of detecting species that are extremely cryptic in terms of camouflage and behaviour, is increased when they are in low population densities. Given the results of the habitat assessment and relevant database searches, it is possible (on a very conservative basis) that up to 11 species of lizard and two species of frog may be present within the wider Project area but may be at levels below detectability. This covers all 13 species discussed in section 3.1 above.

For these reasons, a very conservative approach would assume that these species within the relevant habitat types are likely to be present along the Project footprint. It is noted that the lack of ongoing pest management in the vicinity of the Project footprint reduces the quality of the habitat, so lower abundance of herpetofauna would be expected within the Project footprint compared with other parts of the wider Project area, such as Parininihi.

3.3 Species potentially present within the Project footprint

Up to 13 species of herpetofauna including skinks, gecko and frogs have been identified within Table 3.1 and Table 3.2 to be potentially present within the vicinity of the wider Project area. As noted above, a very conservative approach is to assume all 13 species are present within the Project footprint. In practice, though, it is unlikely that all of these species are present within the Project footprint given a range of factors including habitat suitability, known species ranges, distances of historical records and the expected abundance of pest species across the wider Project area.

Table 3.4 assesses the likelihood of each herpetofauna species being present within the wider Project area and Project footprint. This assessment is based on on-site conditions, available species information and expert opinion.

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Table 3.4 – Likelihood of species presence within the Project footprint: √√√ High; √√ Moderate; √ Marginal.

Name	Wider Project Area	Project Footprint
Archey's frog	√	√
Brown skink	√	√
Common gecko	√	√
Copper skink	√√√	√√√
Duvaucel's gecko	√	√
Elegant gecko	√√√	√√
Forest gecko	√√√	√√√
Goldstripe gecko	√√	√
Hochstetter's frog	√	√
Northern Grass skink	√√	√
Ornate skink	√√	√√
Pacific gecko	√√√	√√
Striped skink	√√√	√√

3.3.1 Constraints, limitations and assumptions

The initial survey effort that was employed across the Wider Project area was targeted for a preliminary alignment, 'MC23', which bisected the interior of the Waipingao Valley to the west of the existing SH3. While subsequent investigations have been carried out in the vicinity of the Project footprint, a lack of survey information along the Project footprint results in the assessment of effects being heavily reliant on expert opinion on actual infield conditions. However, the lack of herpetofauna found through the surveys in Parininihi mean that large populations in the Project footprint, which has been without sustained pest management, is not considered likely.

The survey methodologies and efforts employed across the wider Project area and footprint were undertaken with overview from an expert herpetologist. A proportion of this field survey effort was undertaken by experienced generalist ecologists.

Daytime VES surveys undertaken for both frogs and lizards were carried out in an opportunistic manner. A lack of dedicated time which focused on this survey methodology

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may have potentially biased the results of these efforts. Dedicated VES (specifically, manual habitat searches) are scheduled to be carried out along the Project footprint during late 2017.

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4 Assessment of effects on herpetofauna values

This assessment is broadly based on the EcIA guidelines produced by EIANZ (2015), adapted based on expert opinion as described in Section 2.3 to determine the overall unmitigated 'level of effect' of the Project on herpetofauna communities.

Based on the EcIA guidelines, in the absence of efforts to avoid, remedy or mitigate adverse ecological effects, the overall level of adverse effects on herpetofauna associated with the Project on is expected to be 'Moderate'.

4.1 Herpetofauna values assessment

The ecological value of herpetofauna affected by the Project was determined using step 1 of the EcIA guidelines (Table 2.1). The ecological value of each of the 13 herpetofauna species potentially present within the wider Project area has been weighted with consideration to their current threat status (Table 3.1and Table 3.2) and the presence of their known habitat within the Project footprint (Table 3.3).

For example, the ecological value of Archey's frog was assessed as 'High' instead of 'Very High' because the Project footprint is approximately 50km further south than the southern limit of the species' known current and historic distribution.

Table 4.1below describes the value of the species potentially present within the Project footprint.

Table 4.1 – Ecological values of herpetofauna within the Project footprint

Name	Value
Archey's frog	High
Brown skink	High
Common gecko	Low
Copper skink	Low
Duvaucel's gecko	High
Elegant gecko	High
Forest gecko	High
Goldstripe gecko	High
Hochstetter's frog	High

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Name	Value
Northern Grass skink	Low
Ornate skink	High
Pacific gecko	High
Striped skink	High
Overall score	**High**

As summarised in Table 4.1, Herpetofauna values within the Project footprint are likely to range from 'High' for Archey's Frog, which is a Nationally Vulnerable species, to 'Low' for more common species including copper skink and Northern grass skink. The overall ecological value for herpetofauna is considered 'Moderate-High'.

As noted in Table 3.4 above, the assessed likelihood of these species actually being present in the Project footprint varies; from 'marginal' (including for the high value Archey's frog), through to 'High'.

4.2 Magnitude of unmitigated effects assessment

The magnitude of unmitigated effects of the Project on herpetofauna was determined using the methodology set out in Section 2.3.2 (Step 2 of the EcIA guidelines). This requires an evaluation of the magnitude of effects on ecological values based on footprint size, intensity and duration and habitat availability within the Project area. An additional variable has been included into this evaluation which assumes the more realistic in-field conditions within the Project footprint by predicting the likelihood of a species being present (Table 3.4). As noted above in Section 3, the Project footprint is located in an area which has not been subject to ongoing pest management, therefore reducing the potential for many species to be present or abundant.

Table 4.2 - Magnitude of effect of the Project on herpetofauna species in the Project footprint

Name	Magnitude of effect
Archey's frog	Moderate
Brown skink	Low
Common gecko	Low
Copper skink	Low
Duvaucel's gecko	Moderate

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Name	Magnitude of effect
Elegant gecko	Low
Forest gecko	Low
Goldstripe gecko	Moderate
Hochstetter's frog	Moderate
Northern Grass skink	Low
Ornate skink	Low
Pacific gecko	Low
Striped skink	Moderate
Overall score	**Low-Moderate**

Following this methodology and applying professional judgement, the overall magnitude of effects on herpetofauna species is considered to be 'Low-Moderate' (refer Table 4.2). This reflects the fact that the herpetofauna population across the wider Project area is unlikely to be affected in any meaningful way by the Project. The key effects on herpetofauna associated with the construction and operation of the Project are habitat loss and fragmentation. Vehicle strike is also a potential effect of the Project, although the removal of the existing SH3 reduces this effect. These effects are described in more detail in Sections 5.2.1-3.

4.2.1 Habitat removal

Habitat removal poses the most significant impact to resident herpetofauna populations during the construction phase of the Project, if they are located in the Project footprint. The habitats present within the Project footprint include scrub, wetlands, rank grassland and mature forest which collectively provide a wide range of microhabitat conditions for the species identified in Table 3.3. Although the presence, abundance and distribution of these species has yet to be confirmed in surveys both in the wider Project area and within the Project footprint, it is highly likely that one or more will be present.

The most significant herpetofauna habitat loss is that of the removal of mature forest within the Project footprint. The localised loss of larger native trees from within the Project footprint would represent the loss of forest habitats which are relatively abundant within Parininihi, although some of this habitat is more degraded than in Parininihi due to browsing by pest animals and grazing by stock, which is significantly lower in Parininihi.

While the amount of forest that will be removed for the project represents a small proportion of the mature forest present within the wider Project area, the dynamic matrix of microhabitats provided by this forest environment could not be recreated through

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mitigation planting in the short- to medium-term. For example, within a 10-year period, mitigation planting could not provide mature trees containing crevices, loose bark, and epiphytes which provide optimal conditions for arboreal skink and gecko species. However, the proposed habitat recycling of felled vegetation (e.g. epiphytes and woody debris) in addition to pest management as part of the offset for the Project (see Section 5) could supplement mitigation planting in the short term. While no published studies have confirmed that pest control which excludes mice, benefits native mainland forest dwelling herpetofauna populations, anecdotal reports and unpublished studies indicate that long-term pest management can improve habitat quality for herpetofauna.

Removing vegetation could lead to the injury or death of native herpetofauna during the construction phase of the Project. A current lack of knowledge of herpetofauna species, distribution and abundance within the Project footprint poses uncertainties on the actual level of ecological impact that the Project will have on these resident populations. Given the range and quality of available habitat, it is highly likely that one or more lizard species is present within the Project footprint, and possible – although less likely – that frog species may also be present. The impacts on herpetofauna will be most significant if a Nationally Threatened species such as Archey's frog or a currently range restricted species such as Duvaucel's gecko is found and harmed during the construction phase.

4.2.2 Habitat fragmentation

Habitat fragmentation would likely have an adverse effect on native herpetofauna populations that are present, mostly within the scrub and main forest areas of the Project footprint. Herpetofauna's behavioural avoidance of roads is poorly documented, but it can be assumed that some degree of road avoidance may result due to noise, light and the open nature of the road itself (Andrews et al. 2008). The construction of a road would create a hard barrier that species or individuals within a population would not be able to traverse. However, the proposed 235m long tunnel and bridge will provide some level of connectivity for herpetofauna across the Project footprint.

Geneflow between meta-populations between the habitats to the east and west of the existing SH3 may further be reduced by the Project, which poses a secondary barrier within the environment (i.e. two roads to cross). However, the use of the existing SH3 (if it remains open at all) would be greatly decreased, and potentially limited to providing access for local property owners. As such, the 'barrier' effect of the existing SH3 road will be reduced somewhat. The Project will also create a forest fragment between the existing SH3 road and the Project footprint, although once the Project is complete, traffic volumes on the existing SH3 road will reduce to very low levels thereby reducing the barrier effect.

4.2.3 Vehicle strikes

The implications of vehicle strike on herpetofauna is poorly understood and documented within current literature, and does not appear to have been studied within the New Zealand context. Despite anecdotal observations of lizard roadkill, this potential impact on herpetofauna during the operation of the road is likely to be minor. While individual lizards may be killed, the Project is unlikely to pose a threat to lizards at the population level.

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4.3 Overall level of unmitigated effects assessment

4.3.1 Effects assessment

The assessment of the level of effects of the Project on herpetofauna, in the absence of mitigation, is set out in Table 3.3. This was assessed by applying 'Step 3' of the EcIA guidelines, adapted as described in Section 2.3.3.

In summary, based on the overall 'Moderate-High' ecological value and a 'Low-Moderate' predicted unmitigated magnitude of effects for herpetofauna, the overall level of effects in the absence of any efforts to avoid, remedy or mitigate for potential effects is assessed as 'Low' (Table 4.3).

The level of effect varies by species, as per the EcIA framework. The level of effect on each of the 13 species potentially present in the Project area has been assessed as 'Low' or 'Very low', with the exception of Archey's Frog. As discussed in section 3, there is at best, a marginal likelihood of Archey's Frog being present in the Project footprint.

It is likely that a number of herpetofauna species are present within the Project footprint, potentially including Archey's Frog (which is Nationally At Risk) and / or other species that are Threatened. While the Project footprint represents only a small proportion the available habitat in the wider Project area, the unmitigated removal of over 40 hectares of habitat would nonetheless adversely impact a potentially significant herpetofauna community. It is also possible that the Project footprint contains critical habitat for one or more very rare species (e.g. striped skink).

To account for that uncertainty, and for community-level impacts, it is considered reasonable to adopt a conservative approach and assign an overall level of effect of 'Moderate'.

Table 4.3 - Overall level of effect of the Project on herpetofauna in the absence of mitigation

Name	Level of effect
Archey's frog	High
Brown skink	Low
Common gecko	Very low
Copper skink	Very low
Duvaucel's gecko	Low
Elegant gecko	Low
Forest gecko	Low
Goldstripe gecko	Low

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Name	Level of effect
Hochstetter's frog	Low
Northern Grass skink	Very low
Ornate skink	Low
Pacific gecko	Low
Striped skink	Low
Overall level	**Moderate**

4.3.2 Assumptions and limitations

Due to seasonal and access constraints on the field-based herpetofauna investigations to date, only limited information is currently available about herpetofauna and their habitats in the Project footprint (as opposed to the wider Project area, particularly to the west of the current SH3 where surveys have been carried out). Consequently, the assessed values and effects are subject to a range of assumptions. This is reflected in the conservative nature of the effects assessment.

While sufficient information was available to reach the above tentative conclusions (including by extrapolating results from desktop review and surveys in the wider Project area), there is still a level of uncertainty around the value of herpetofauna and effects of the Project on herpetofauna. If any At Risk or Threatened herpetofauna species are present within the Project footprint, impacts would potentially be significant if unmitigated.

However, the programme of ecological investigations is continuing and will include spring and summer field surveys of herpetofauna and their habitats. Given the seasonal constraints on earlier surveys, this will provide the opportunity for much more data to be collected on any herpetofauna populations within the Project footprint.

As discussed in section 6 below, a range of mitigation measures will be implemented to manage potential adverse effects on herpetofauna. These measures are an additional and appropriate way of dealing with the current uncertainty and lack of information in respect of herpetofauna within the Project footprint.

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5 Proposed measures for addressing potential adverse effects

5.1 Overview

Extensive and ongoing effort has been made to avoid, remedy or mitigate potential ecological effects of the Project on herpetofauna. The ecologists engaged to advise on the Project, and provide expert assessments of the potential effects of the Project on ecological values, have been closely involved in these efforts.

Through the process of selecting the alignment, the inclusion of structures (a tunnel and bridge), and design and construction methods for the Project, ecological effects on herpetofauna have been either avoided or reduced in magnitude. The Project footprint now avoids Parininihi, a large area of high quality forest which was considered to have high herpetofauna habitat values.

Further proposed surveys will aim to provide increasing evidence of the herpetofauna present within the Project footprint, and inform measures to avoid accidental discoveries during construction.

Herpetofauna-specific mitigation measures have also been proposed, and have been accepted by the Transport Agency, as discussed in this section.

Given that the Transport Agency is proposing a comprehensive mitigation and offset package to address other ecological effects, this section of the report also assesses the potential for those proposed measures set out in the Mitigation and Offset Report (Technical Report 7h, Volume 3 of the AEE) to mitigate effects on herpetofauna.

5.2 Project measures to avoid or minimise effects

A number of adverse ecological effects on herpetofauna (and other ecological values) have been avoided through the selection of the Project footprint, which (unlike many other options considered) completely avoids the generally higher value land to the west of the existing SH3. These measures have been factored into the 'unmitigated' effects assessment detailed above.

5.2.1 Avoidance through the options assessment process

The options considered for the Project included alignments to the west of SH3 which traversed areas with significant biodiversity values, including the Waipingao catchment and Parininihi. Potential adverse effects identified for options west of SH3 are described in the options assessment reports (Volume 4 of the AEE). These effects include loss of significant habitats, severance of a nationally important vegetation sequence and effects on associated regionally and nationally significant flora. Moreover, a number of options excluded the use of structures (bridges and tunnels), which would have resulted in much more significant ecological effects; and would likely have resulted in more significant effects on herpetofauna than the Project as it is now proposed.

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5.2.2 Avoidance or minimisation of effects through optimisation of the Project footprint

The Project footprint traverses areas of significant habitat and vegetation types to the east of Mt Messenger, as described in various specialist reports (Volume 3 of the AEE). All vegetation types and significant trees (Assessment of Ecological Effects – Vegetation (Technical Report 7a, Volume 3 of the AEE) have been mapped and delineated to identify the most ecologically significant areas and relict trees in the wider Project area. Project ecologists have worked closely with design and construction engineers to avoid or minimise ecological effects on these significant habitat types. Such efforts include:

- Inclusion of a 235m long tunnel through the ridge dividing the Mangapepeke and Mimi catchments. The tunnel has greatly reduced the size of the cut and fill area that would otherwise have been required and has preserved the important east-west connectivity of habitat (ridge to coast) and mobile animal movement.
- Incorporation of a 120m bridge across a tributary valley to the Mimi River on the south side of the route. This bridge sits very close to the ecologically significant wetland area and has substantially reduced the impact that a cut and fill approach would have had on the wetland and will preserve east-west ecological connectivity.
- Minor adjustments to the route to avoid the need to fell significant trees. The number of trees potentially needing to be felled has been considerably reduced by this means.
- Avoidance or minimisation of effects on significant ecological values (i.e. significant vegetation/habitat types and trees through):
    - Realignment of the corridor, including shifting part of the corridor further from the ecologically significant wetland area.
    - Use of retaining walls to avoid loss of significant trees where possible.
    - Undertaking vegetation/habitat clearance in accordance with the Construction Environmental Management Plan (CEMP) and the Ecology and Landscape Management Plan (ELMP) to further reduce effects on significant habitat. The CEMP is supported by a suite of sub-plans, which outline the management of specific construction effects such as construction-related ecological effects in more detail.
    - Having an ecologist on site to advise the construction teams when vegetation is being cleared near wetlands.

Taken together, these measures have likely reduced the potential effects of the Project on herpetofauna.

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5.3 Specific measures to avoid or minimise effects on herpetofauna

As noted above, specific measures are proposed to avoid or minimise the assessed 'Moderate' level of unmitigated effects on herpetofauna.

5.3.1 Refined surveys and herpetofauna management

Further targeted surveys are scheduled to be undertaken within the Project footprint during the 4th quarter of 2017. These surveys will aim to detect the presence of herpetofauna species, and the habitats they occupy. This will inform the refinement of herpetofauna management and species-specific habitat enhancement measures to be included in the ELMP for the Project. Targeted herpetofauna management measures will reduce the risk of unexpected discoveries of significant herpetofauna species during construction.

The ELMP will include measures to manage effects on herpetofauna. These measures will be aimed at mitigating potential adverse effects on herpetofauna – especially the risk of injury or mortality to herpetofauna during construction of the Project. Herpetofauna-specific measures in the ELMP should include:

- Capture and relocation methods and timing;
- Release site selection based on habitat suitability and capability of supporting additional herpetofauna; and
- Habitat enhancement at the release site(s), including provision of refugia.

Suitable capture methods could include a combination of CCFCs, ACOs, live traps, spotlighting and destructive habitat searches prior to vegetation clearance. Construction supervision would be critical during vegetation clearance. Habitat most likely to be occupied by herpetofauna (e.g. vegetation, woody debris, leaf litter, rocks, etc.) would need to be searched by suitably qualified and experienced herpetologists who would then relocate any herpetofauna to alternative habitat before and during construction works. High risk trees with large epiphyte loads could be identified and climbed to search for arboreal herpetofauna species (e.g. striped skink).

5.4 Impact on herpetofauna of proposed offset programme

A comprehensive offset programme is proposed for the Project and described in the Ecological Effects Assessment – Ecological Mitigation and Offset Report (Technical Report 7h, Volume 3 of the AEE). That programme will benefit herpetofauna in the area, as discussed below.

5.4.1 Pest management

A long-term form of mitigation likely to contribute towards offsetting the Project's potential residual impacts on herpetofauna is to undertake a large-scale pest management programme as described in the Mitigation and Offset Report (Technical Report 7h, Volume 3 of the AEE). In contrast to offshore islands where eradication of some or all mammalian predators has been achieved, there is currently a paucity of published evidence that native

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herpetofauna populations in mainland forest habitats benefit from large-scale pest management programmes.

However, the lack of published evidence should not necessarily be interpreted as evidence that such programmes do not benefit herpetofauna. Rather, it most likely reflects the challenges in monitoring forest-dwelling herpetofauna populations. Unpublished and anecdotal evidence from some mainland areas where long-term management of mammalian predators has been carried out (eg Ark in the Park and Shakespear Regional Park) indicates that forest dwelling herpetofauna such as arboreal geckos do in fact benefit from long-term pest management.

For the purpose of this report it is considered reasonable to assume that the proposed long-term pest management programme will contribute to mitigating residual effects on herpetofauna. The details of the pest management programme are provided in the Mitigation and Offset Report (Technical Report 7h, Volume 3 of the AEE).

5.4.2 Restoration Planting and Habitat Enhancement

Overall, the proposed restoration planting and habitat enhancement programme summarised below and detailed in the Assessment of Ecological Effects - Ecological Mitigation and Offset (Technical Report 7h, Volume 3 of the AEE) will have beneficial and positive effects on herpetofauna. Restoration planting and habitat enhancement will either occur within the wider Project area or nearby, and will consist of both mitigation and offset measures, as follows.

Mitigation:

- Planted riparian margins of 10m each side of the channel will be created;
- Restoration planting of all secondary scrub areas along the footprint plus temporary access tracks and storage areas that retain soil, hydrology and growing conditions suitable for reinstatement (up to 9ha); and
- Deployment of felled logs within mitigation sites to improve biodiversity values for a number of plants and animals.

Offsets:

- Restoration planting of up to 8ha of swamp forest;
- Planting of 200 seedlings of the same species for every significant tree that has to be felled;
- Protection (fencing) and riparian planting of approximately 9km of existing stream; and
- 560ha of long-term pest management.

In time, restoration planting and habitat enhancement will create habitat, improve ecological connectivity and reduce edge effects on existing vegetation, all of which are likely to benefit the herpetofauna community affected by the Project.

The recreation of mature forest and the microhabitats it provides is not possible in the short- to medium-term, due to the timescales required for vegetation communities to

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mature. Appropriate secondary successional canopy species will be included in the mitigation planting (or follow-up enrichment planting) to increase habitat complexity in the long term. Ground cover plants will also be included in revegetation or follow up enrichment planting to provide habitat for terrestrial herpetofauna that utilise this habitat type.

Site preparation for revegetation will aim for heterogeneity as opposed to a homogenised flat surface prior to planting. Habitat complexity will be incorporated with artificially created mounds and slump as well as the incorporation of habitat recycling which could include the importation of epiphytes and woody debris from tree felling. Stripped topsoil during the construction phase will be recycled and used across revegetation areas, given that the diversity of soil organisms (symbiotic Mycorrhizae, invertebrates, fungi etc) within the mature forest environment may not be able to be recreated artificially. The presence of a seed bank within this topsoil will also facilitate revegetation and provide a greater species diversity more reflective of the one lost.

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6 Conclusions

While baseline surveys are ongoing, this assessment provides a strong indication that the Project's potential adverse effects on native herpetofauna can be appropriately addressed and managed. The most significant potential effects identified are habitat loss and direct injuries and mortalities during vegetation removal.

Recommended ecological management to mitigate potential adverse effects on herpetofauna include:

a the inclusion within the ELMP of appropriate herpetofauna management to be implemented prior to, and during, vegetation removal to avoid or minimise the likelihood of herpetofauna injuries or deaths, and

b a long-term pest management programme to mitigate residual effects as described in the Ecological Effects Assessment – Ecological Mitigation and Offset Report (Technical Report 7h, Volume 3 of the AEE).

Overall, taking into account these measures, it is considered that any effects of the Project on herpetofauna are likely to be negligible, and possibly positive in the medium- to long-term.

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7 References

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Appendices

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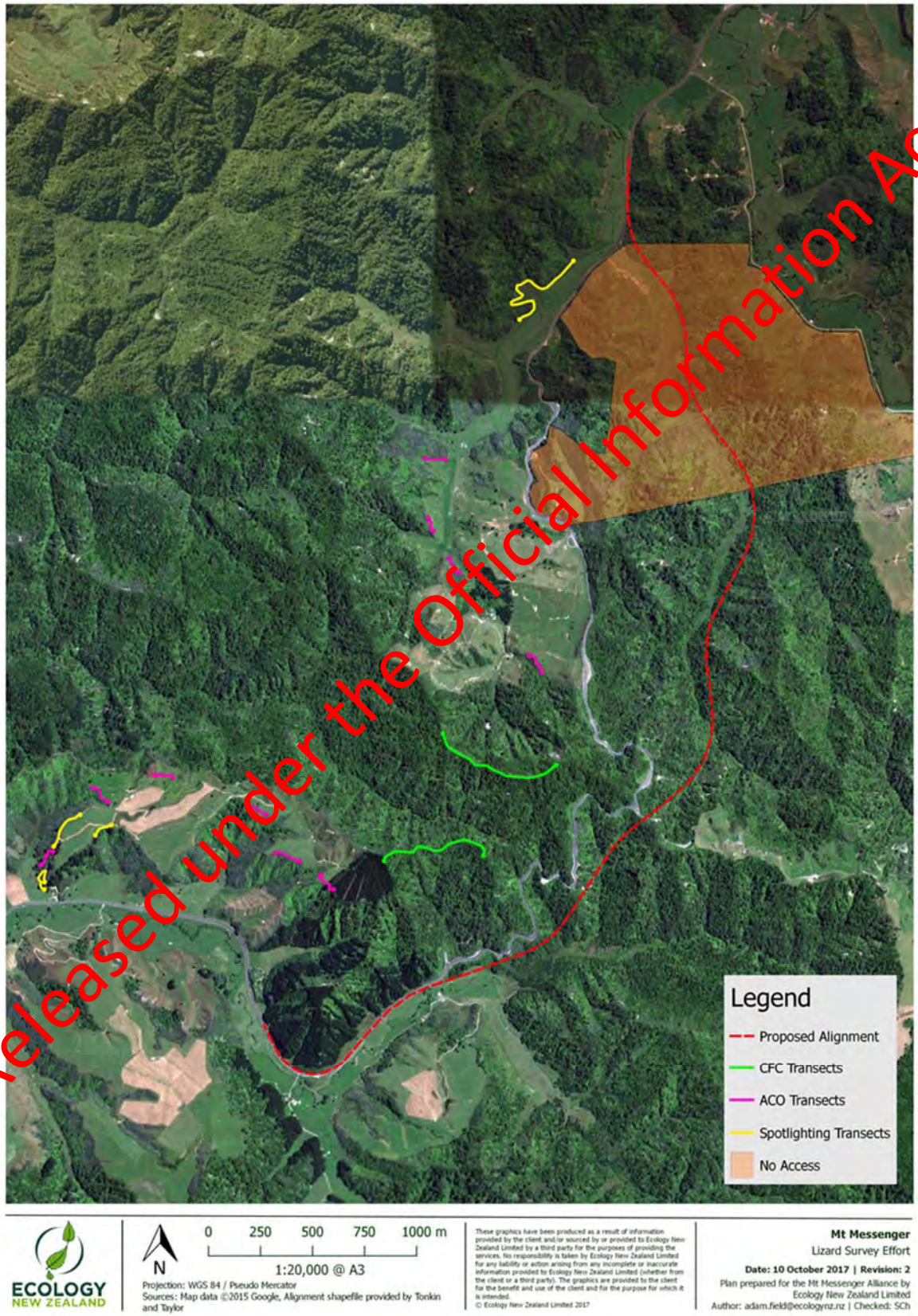
Appendix A: Field Survey Effort



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From: 9(2)(g)(ii)
To: 9(2)(a)
Subject: RE: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino
Date: Tuesday, 7 November 2017 5:01:00 pm
Attachments: image001.png
image002.png

Thanks very much 9(2)(a) I have just changed the official status of the application to 'Withdrawn', linked the e-mail exchange below to our database and done the various bureaucratic tidy-ups that our system requires.

There will be no charge by DOC to NZTA, for getting this far.

Cheers

9(2)(g)(ii)

From: 9(2)(a)
Sent: Tuesday, 7 November 2017 3:02 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: RE: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino

Thank you for your email 9(2)(g)(ii)

That all makes a lot of sense! As such, I'm writing to let you know that the New Zealand Transport Agency agrees to withdraw the 'Wildlife Act Authority Variation Application Form dated 19 October 2017.

Many thanks for your help

Best wishes

9(2)

9(2)(a) | Senior Ecologist
PhD, MSc (Hons), BSc (Hons)
Tonkin + Taylor - ***Exceptional thinking together***
Level 2, 211 Victoria Street, Hamilton 3204 | PO Box 9544, Hamilton, New Zealand
9(2)(a) www.tonkintaylor.co.nz

To send me large files you can use my **file drop**

From: 9(2)(g)(ii) 9(2)(g)(ii) 9(2)(g)(ii)
Sent: Tuesday, 7 November 2017 10:55 AM
To: 9(2)(a)

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Subject: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino

Good morning 9(2)(a)

I am a Permissions Advisor with DOC in Hamilton, tasked with processing the above 'Application to vary'. I note that an earlier variation extended its expiry date to 30 April 2018

The original Wildlife Act Authority is numbered (on p1) "53606-FAU and 53707-FAU" . The latter is an error: it should be 53708 (53707 is concerned with shooting from helicopters, in the South Island!)

Back to your current application: we had a phone meeting about it this morning. Among the group was 9(2)(g)(ii) a Technical Advisor – fauna, who you and many of the NZ herpetologist that you work with, will know, I'm sure.

She is of the view that a formal variation of 53708 may not be required in this instance as long as your key personnel in that original application 9(2)(a) was mentioned specifically) maintain an active mentoring/supervision role with the six people that you wish to add.

That's not meant to imply in any way that the six newbies are inexperienced. We are very familiar with 9(2)(a) l for instance, and the range of skills and experience that they can offer. It's more a matter of referring to the special conditions in 53708-FAU (p6), which say:

2. The Authority Holder shall ensure that only persons who are suitably qualified and experienced Herpetologists, as approved by the Grantor, or persons under their direct supervision, are used to implement the actions required under this authority,

3. The approved Herpetologists must supervise all lizard handlers until they are satisfied that they are sufficiently experienced to continue unsupervised, but shall remain oversight of all lizard-related operations

DOC interprets those special conditions as allowing you to introduce additional people without advising us, and also recognises that you need to maintain a training role in your consultancy work.

This is survey rather than salvage work, and thus of relatively lower risk to the lizards. You may also find yourself under some time pressure later this summer, (especially if the weather remains as poor as it has been!) and will now have the freedom to add further personnel - over and above the six extras that you've applied for – should you need to.

Perhaps have a yarn to 9(2)(a) and see if he had any particular reason for wanting a formal variation document issued. If not, and if you e-mail me back to say that the above approach is acceptable to you; you can consider the variation process to be at an end.

If that's the case, be sure to put in your e-mailed response somewhere that 'New Zealand Transport Agency agrees to withdraw the 'Wildlife Act Authority Variation Application Form

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dated 19 October 2017”

Yours sincerely

9(2)(g)(ii)

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii)
Cc: 9(2)(g)(ii)
Subject: One less variation application to process! (53708-FAU)
Date: Tuesday, 7 November 2017 3:32:58 pm
Attachments: image001.png
image002.png

Yay! The NZTA variation application (Mt Messenger/Awakino lizard surveys) is no more. See 9(2)(a) response.
Cheers
9(2)(g)(ii)

From: 9(2)(a)
Sent: Tuesday, 7 November 2017 3:02 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: RE: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino
Thank you for your email 9(2)(g)(ii)
That all makes a lot of sense! As such, I'm writing to let you know that the New Zealand Transport Agency agrees to withdraw the 'Wildlife Act Authority Variation Application Form dated 19 October 2017.
Many thanks for your help
Best wishes
9(2)(a)

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9(2)(a) www.tonkintaylor.co.nz
To send me large files you can use my **file drop**

From: 9(2)(g)(ii) 9(2)(g)(ii) 9(2)(g)(ii)
Sent: Tuesday, 7 November 2017 10:55 AM
To: 9(2)(a)
Subject: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino
Good morning 9(2)(a)
I am a Permissions Advisor with DOC in Hamilton, tasked with processing the above 'Application to vary'. I note that an earlier variation extended its expiry date to 30 April 2018
The original Wildlife Act Authority is numbered (on p1) "53606-FAU and 53707-FAU" . The latter is an error: it should be 53708 (53707 is concerned with shooting from helicopters, in the South Island!)
Back to your current application: we had a phone meeting about it this morning. Among the group was 9(2)(g)(ii) a Technical Advisor – fauna, who you and many of the NZ herpetologists that you work with, will know, I'm sure.
She is of the view that a formal variation of 53708 may not be required in this instance as long as your key personnel in that original application (9(2)(a) was mentioned specifically) maintain an active mentoring/supervision role with the six people that you wish to add.

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That's not meant to imply in any way that the six newbies are inexperienced. We are very familiar with 9(2)(a) for instance, and the range of skills and experience that they can offer. It's more a matter of referring to the special conditions in 53708-FAU (p6), which say:

2. The Authority Holder shall ensure that only persons who are suitably qualified and experienced Herpetologists, as approved by the Grantor, or persons under their direct supervision, are used to implement the actions required under this authority,
3. The approved Herpetologists must supervise all lizard handlers until they are satisfied that they are sufficiently experienced to continue unsupervised, but shall remain oversight of all lizard-related operations

DOC interprets those special conditions as allowing you to introduce additional people without advising us, and also recognises that you need to maintain a training role in your consultancy work.

This is survey rather than salvage work, and thus of relatively lower risk to the lizards. You may also find yourself under some time pressure later this summer, (especially if the weather remains as poor as it has been!) and will now have the freedom to add further personnel over and above the six extras that you've applied for – should you need to.

Perhaps have a yarn to 9(2)(a) and see if he had any particular reason for wanting a formal variation document issued. If not, and if you e-mail me back to say that the above approach is acceptable to you; you can consider the variation process to be at an end.

If that's the case, be sure to put in your e-mailed response somewhere that 'New Zealand Transport Agency agrees to withdraw the 'Wildlife Act Authority Variation Application Form dated 19 October 2017"

Yours sincerely

9(2)(g)(ii)

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii)
Subject: FW: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino
Date: Tuesday, 7 November 2017 10:58:03 am

FYI. Rather long-winded e-mail I've just Sent to 9(2)(a), re. that NZTA lizard application we discussed this morning.
I'll let you know what response I get.
Cheers
9(2)(g)(ii)

From: 9(2)(g)(ii)
Sent: Tuesday, 7 November 2017 10:56 a.m.
To: 9(2)(a)
Subject: Your application to vary an existing Wildlife Act Authority (53708-FAU) Mt Messenger/Awakino

Good morning 9(2)(a)
I am a Permissions Advisor with DOC in Hamilton, tasked with processing the above 'Application to vary'. I note that an earlier variation extended its expiry date to 30 April 2018
The original Wildlife Act Authority is numbered (on p1) "53606-FAU and 53707-FAU" . The latter is an error: it should be 53708 (53707 is concerned with shooting from helicopters, in the South Island!)
Back to your current application: we had a phone meeting about it this morning. Among the group was 9(2)(g)(ii) a Technical Advisor – fauna, who you and many of the NZ herpetologist that you work with, will know, I'm sure.
She is of the view that a formal variation of 53708 may not be required in this instance as long as your key personnel in that original application 9(2)(a) was mentioned specifically) maintain an active mentoring/supervision role with the six people that you wish to add.
That's not meant to imply in any way that the six newbies are inexperienced. We are very familiar with 9(2)(a) for instance, and the range of skills and experience that they can offer. It's more a matter of referring to the special conditions in 53708-FAU (p6), which say:

2. The Authority Holder shall ensure that only persons who are suitably qualified and experienced Herpetologists, as approved by the Grantor, or persons under their direct supervision, are used to implement the actions required under this authority,
3. The approved Herpetologists must supervise all lizard handlers until they are satisfied that they are sufficiently experienced to continue unsupervised, but shall remain oversight of all lizard-related operations

DOC interprets those special conditions as allowing you to introduce additional people without advising us, and also recognises that you need to maintain a training role in your consultancy work.
This is survey rather than salvage work, and thus of relatively lower risk to the lizards. You may also find yourself under some time pressure later this summer, (especially if the weather remains as poor as it has been!) and will now have the freedom to add further personnel - over and above the six extras that you've applied for – should you need to.
Perhaps have a yarn to Simon Chapman and see if he had any particular reason for wanting a formal variation document issued. If not, and if you e-mail me back to say that the above approach is acceptable to you; you can consider the variation process to be at an end.
If that's the case, be sure to put in your e-mailed response somewhere that 'New Zealand Transport Agency agrees to withdraw the 'Wildlife Act Authority Variation Application Form

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dated 19 October 2017”

Yours sincerely

9(2)(g)(ii)

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From: Context Meetings
To: 9(2)(g)(ii) 9(2)(g)(ii) 9(2)(g)(ii)
Subject: Context Meeting 53708-FAU (NZ Transport Agency)

.....

--> Join Skype Meeting <https://meet.lync.com/docnz/cmeetings/FT5WF2WH>

Trouble Joining? Try Skype Web App <https://meet.lync.com/docnz/cmeetings/FT5WF2WH?sl=1>

Help <http://go.microsoft.com/fwlink/?LinkId=389737>

[!OC([1033])!]

.....

Purpose: 9(2)(g)(ii) will lead the team process for the following permissions application.

Please review the relevant application and identify any Critical Issues to bring to the meeting.

Please forward this calendar invitation to the Community Ranger.

Permission No.

Title

Application

Summary

Decision Maker

Advisors

Task Assignment

53708-FAU

NZ Transport Agency

3194387 <https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3194387>

The applicant is New Zealand Transport Agency, who hold a current authorisation to catch absolutely protected lizards for surveying at State Highway 3, Mt. Messenger. The applicant wishes to add more people as further authorised personnel to assist with the survey.

9(2)(g)(ii)

9(2)(g)(ii) (Permissions Advisor)
9(2)(g)(ii) (S&P Advisor)
DM to assign (Community Ranger)

DOC-3194389 <https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3194389>

Spark Conference Call Details (SPI) (if required as a back up)

08 30 33

Host Pin Code: 605412 (Decision Maker to host)

Guest Pin Code: 173799

Permission Ref: 53708-FAU

To: 9(2)(g)(ii)

From: 9(2)(g)(ii)

Date: 30th October 2017

Task Assignment: Process Application from New Zealand Transport Agency

Context

The applicant holds a current authorisation to catch absolutely protected lizards for surveying at State Highway 3, Mt. Messenger

The applicant wishes to add more people as further authorised personnel to assist with the survey.

Critical issues

1. How to ensure proposed people suitably trained to handle the wildlife safely?

The authority for agreeing fees sits with PPL Director to ensure a consistent approach across the country. Where the fee setting is consistent with the Price Book, place based decision makers can incorporate this into their decision.

Purpose

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To make a decision on the application.

Quantity:

* A decision or other appropriate closure of the application
* Written rationale for decision
* Share rationale for the decision with all team members
* Permissions processing complete (e.g. paperwork, database)

Quality:

* Ensure the public are not displaced by the activity when it is occurring
* Ensure appropriate engagement with iwi/hapu/whanau
* Ensure stakeholders are appropriately consulted
* Ensure a robust decision-making process following best practice
* Ensure appropriate interaction and communication with the applicant
* Use team process and follow the defined 'Type 2' process steps
* Arrange check in meeting unless a decision is made at the context meeting
* Utilise resources provided
* Request changes to resources if required
* Ensure final decision is appropriately shared
* Assess and escalate critical issues
* Learn how to shorten the cycle time

Resources

Decision Maker – 9(2)(g)(ii)

Permissions Advisor – 9(2)(g)(ii)

S&P Advisor – 9(2)(g)(ii)

Link to Application: 3194387 <https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3194387>

Timeframe

Within 20 working days of acceptance of Task Assignment. In this instance, the 20 working days will commence from 1st November 2017.

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From: 9(2)(g)(ii) on behalf of Permissions Hamilton
To: permissions
Subject: FW: Variation Application to permit number 53708-FAU
Date: Thursday, 19 October 2017 12:36:38 pm
Attachments: image001.png
image002.png
Variation Application to 53708-FAU.pdf

From: 9(2)(g)(ii)
Sent: Thursday, 19 October 2017 11:49 a.m.
To: Permissions Hamilton <permissionshamilton@doc.govt.nz>; 9(2)(g)(ii)
<9(2)(g)(ii)
Subject: FW: Variation Application to permit number 53708-FAU

Hi 9(2

Sure not a problem.. if this doesn't work I will follow up and see what it is happening!

Cheers, 9(2)(g)(ii)

From: 9(
Sent: Thursday, 19 October 2017 11:47 a.m.
To: 9(2)(g)(ii) <9(2)(g)(ii)
Subject: Variation Application to permit number 53708-FAU

Hi 9(2)(g)(ii)

I'm wondering if you can help me please. I've tried emailing a Variation Application to permit number 53708-FAU to the permissionshamilton@doc.govt.nz address and it says that email address is no longer valid. Are you able to forward my variation application to the correct department please?

Many thanks

9(2

9(2)(a) | **Senior Ecologist**
PhD, MSc (Hons), BSc (Hons)
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Level 5, 711 Victoria Street, Hamilton 3204 | PO Box 9544, Hamilton, New Zealand
9(2)(a) **www.tonkintaylor.co.nz**

To send me large files you can use my **file drop**

From: 9(2)(g)(ii) 9(2)(g)(ii)

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Sent: Monday, 16 October 2017 2:03 PM
To: 9(
Subject: 62221-FAU - Your application for a Wildlife Authority

Hi

Thank you for your application. I am the permissions advisor assigned to your application. Your reference number is 62221-FAU.

I will be able to update you on the progress of your application shortly. If you have any questions please don't hesitate to contact me.

Kind regards,

9(2)(g)(ii)
Permissions Advisor
Department of Conservation - *Te Papa Atawhai*

Kirikiriroa/Hamilton Office
Private Bag 3072,
Hamilton 3240
Conservation for Prosperity *Tiakina te taiao, kia puawai*
www.doc.govt.nz

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii)
Cc: 9(2)(g)(ii)
Subject: RE: FWG - Mt Messenger and Awakino Road realignment herpetofauna survey advise - DOC-3026048
Date: Thursday, 18 May 2017 12:42:00 pm

Hi 9(2)(g)(ii)

This is advice to decision maker 9(2)(g)(ii) and permit processor 9(2)(g)(ii) re. Wildlife permit applications. It seems likely that NZTA might come back to us on some aspects of this, but our advice is internally at this stage. So I think it could be slightly more formalised to 9(2)(g)(ii) (9(2)(g)(ii) copied in) as an "internal memo" from Frog RG leader and Herp TAG leader (and perhaps me as Frog RG member if you really want me in there, but I'm happy to be left off it).

Then if we need to provide formal advice to NZTA later, we could modify it slightly to make sense for an external party.

Cheers
9(2)(g)(ii)

From: 9(2)(g)(ii)
Sent: Thursday, 18 May 2017 12:29 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Cc: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: RE: FWG - Mt Messenger and Awakino Road realignment herpetofauna survey advise - DOC-3026048

Thanks 9(2)(g)(ii) very helpful.

I have edited and added this version to the DOCCM file. It is shaping up to be a frog survey advisory at this stage. 9(2)(g)(ii) did you want to add anything about lizard surveys or keep to frogs?

9(2)(g)(ii) are you happy to use this as a basis of further discussions with NZTA/Opus or do you think it needs to be formalised in writing?

https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3026048

9(2)(g)(ii)

From: 9(2)(g)(ii)
Sent: Thursday, 18 May 2017 11:25 a.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Cc: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: FWG - Mt Messenger and Awakino Road realignment herpetofauna survey advise - DOC-3026048

Hi 9(2)(g)(ii)

Comments attached. Looks good.

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Cheers

9(2)(g)(ii)

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Mt Messenger Frog and Lizard surveys - advisory note

Comments and advice on the proposed survey design and methodology (will use this as the basis for the separate letter/advisory note from DOC)

- The SH3 footprint referred to is that provided in the permit variation application.
- Methodology, as attached with the application, is insufficient in design and content to ensure confidence the survey would detect native frogs if present. The methods employed and effort undertaken should be sufficient to confirm a high likelihood of absence if no frogs are detected. The herpetofauna toolbox is a good resource, but further expertise and detail is necessary for design of frog surveys.
- The proposed effort is minimal (1-2 days per species) – this is unlikely to enable all suitable frog habitat to be surveyed, particularly for Archey's frog.
- Details on methods in terms of season and weather conditions to be targeted for survey are not specified for each species.
- The type of habitat to be searched for each frog is not specified and the Herpetofauna toolbox referred to does not include this detail.
- Targeting particular micro-habitats and weather conditions is very important when searching for new populations.
- Hochstetter' frog survey typically involve day time stream bed searches whereby observers walk along the bed looking for frogs under stones, small rocks, and other refugia in the streambed such as logs and fallen vegetation. Survey time will depend on access, length of stream-bed and density of searchable refugia.
- Archey's frog survey typically involves night-time searches of native forest ridgelines, faces and gullies whereby observers carefully search all vegetation, logs, rocks, stumps, leaf litter etc. from ground level up to 2-3 metres above ground for emerged frogs.
- For Archey's frog, temperature should be above 12 degrees Celsius at night when surveys are undertaken. A total of 5-20mm of rain should have fallen in the previous 24 hour period. Ideally, light drizzle should be falling during the survey or the ground and vegetation wet and humidity over 80 %. Targeting the first rain event after an extended dry period is an excellent strategy for maximising potential detection of Archey's frog.
- Examples of survey methods for Archey's frog could include transect searches or grid searches. This would require expert advice. For example:
    - Transect survey: search ridgelines and cool, damp faces and gullies (e.g. SW or SE facing) via marked out transects based on at least one transect sampling habitat along the full length of each ridge/face/gully identified for survey. We estimate one person can survey a 250m transect length (searching a 5 metre wide strip) per night, depending on access, terrain, vegetation density and distance between any transects.
    - grid searches: identify habitat similar to those occupied by Archey's frog in Whareorino (requires high level of expert knowledge of micro-habitats), and mark out and search grids intensively at night (repeat surveys may be necessary). The number of grids will depend on how much potential habitat is identified. The

Commented [AH1]: I doesn't matter if rain isn't falling as long as it has rained recently and the ground/veg is wet and the humidity high

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searching time will depend on number of grids and how dense the vegetation is. Estimated effort is 0.15ha per person per night using this method.

- Using a transect design outlined above, it is estimated (from aerial photographs/maps) that a minimum of 2 km of transects may be needed to sample (one transect per ridge/gully/face identified) the proposed SH footprint for Archey's frog. This is equivalent to a minimum of 8 person nights.
- The effort required to search the proposed road footprint indicated for Hochstetter's frog is estimated (from aerial photographs/maps) to be a minimum of 2 km of stream habitat from those stream that will be affected.
- We recommend a minimum of 2-3 (?) nights per hectare per experienced person for Archey's frog as a rough guideline. For Hochstetter's frog, we recommend between 4-10 person-days depending on how many streams are identified for survey.
- Recommend Opus consult experienced frog ecologists/Native Frog Recovery Group on the most suitable survey design and effort necessary to be confident in a nil result. In particular, time of year and weather conditions in which to survey (including strategies to maximise the chance of detecting frogs), and, knowledge of frog habitats and where best to target search effort.
- Pitfall traps have been successful at detecting frogs. The Maungatautari Hochstetter's frog population was detected via insect pitfall traps, as were low elevation records for Archey's frog on Moehau. However, these haven't been mentioned in the methods and would need discussion amongst experts before any recommendation is made and possibly a permit variation as they have not been considered under the current variation request.

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S & P advice on Mt Messenger permit variation provided to permissions

(9(2)(g)(ii) 9(2)(g)(ii) 9(2)(g)(ii)

General comment on the application

The proposal to undertake baseline surveys for Hochstetter's frog and Archey's frog along the proposed Mt Messenger SH3 Road re-alignment is supported. Presence/absence surveys for native frog have the potential to increase our knowledge of native frog species distribution. Should any new populations be found, this would be extremely significant nationally. However, if frogs are not detected using the methods provided, it does not mean frogs are not present.

The following advice is made on the understanding that:

- The application is seeking a variation to add Archey's frog and Hochstetter's frog, and another ecologist, to an existing permit to survey lizards
- The site is Mt Messenger, and native frogs are not known from this site. However, the habitat present is similar to habitat in the Herangi Range, ~60 km North (straight line distance) where both Hochstetter's and Archey's frogs are present (refer to map).
- This activity is for a baseline native frog survey to enable preparation of an AEE and RM Act consent application, due to be submitted September 2017.
- There are uncertainties whether the map supplied represents the final footprint of the proposed re-alignment, but it has been assumed that the indicated area will include the final roading footprint.
- It is unclear whether further surveys would be undertaken when the final road footprint is confirmed, We regard further surveys as essential if the roading footprint changes from the current design and that this is communicated to the applicant.

Specific comments on the application

- It is important the ecologist leading frog field surveys have experience from multiple field trips before leading a survey, however other herpetofauna experience will assist.
- Detailed knowledge of micro-habitats that Archey's frog and Hochstetter's frog use is important so habitat (and frogs if present) are not accidentally trampled.
- Expertise is important where searching for potentially new populations to maximise the opportunity.
- The ecologists identified in the application as 'frog experts' have not demonstrated expertise in frog survey and handling based on the information supplied. In particular, they list one field trip to gain experience capturing and handling Archey's frogs and none for Hochstetter's frogs, and do not list any experience carrying out field surveys independently. We recommend that a permit condition be added that requires them to use more experienced staff or the people named in the application be directly supervised by a herpetologist with sufficient experience in both Archey's and Hochstetter's frog survey, capture and handling.
- The permit period requested (now until December) is not the ideal time to undertake frog surveys. Winter and early Spring is too cold, early summer is breeding and less frogs are likely to be emerging (males hide away when caring for eggs/froglets). Conditions in

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November and December is the best time during the period requested. Surveys are best carried out in late summer, early autumn during damp conditions. A longer period to end April 2018 would cover this.

- Further advice can be provided on survey design and sampling effort. The current survey designis considered inadequate (based on the info. provided) but is out of scope for consideration under this Wildlife permit. This issue will be raised via other forums with NZTA/Opus as part of the wider project.

Commented [RB2]: This will be decided by end of June 2017

Recommendation to the decision maker

The application be approved subject to the following special conditions.

Recommended Special Conditions

1. The Authority Holder must only use methods to search for frogs that preserve habitat quality; in particular, they must avoid searching habitat that may result in crushing or collapse of delicate refugia, e.g. stream seepages with small stacked pebbles that could collapse entirely if searching is attempted.

2. The Authority Holder must be supervised by a herpetologist experienced at searching frog habitats, and in frog capture and handling. This herpetologist must be approved by the Grantor.

3. Capture and handling methods shall follow those described in the Herpetofauna inventory and monitoring toolbox http://www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/herpetofauna/, the Frog Hygiene Protocol (refer condition below) and those listed below, to minimise the risk of injury or death:

- Catch frogs by gently scooping and holding the frog in cupped, gloved hands, or by gently holding the middle of the frog between 1 or 2 forefingers and thumb. Do not squeeze the frog and never hold it by the legs or head.
- Frogs should be placed in a safe location to avoid accidental trampling. If holding frogs during the day, they must be held out of direct sunlight and bright day light to minimise the risk of overheating, drying out, stress and/or death.
- Release frogs at the original capture point and check bags to ensure every frog has been released. If releasing frogs during the day time, they should be released next to the cover object under which they were found and gently tapped with a gloved hand to encourage them to return under the refugia.
- Frogs should be returned to their original capture point using a system of release that avoids the risk of liberated frogs being disturbed or trampled, i.e. so that observers are not walking back through habitat they have released frogs into.
- New gloves and new bags should be used for each new frog found

4. The Authority Holder must adhere to the current national Frog Hygiene Protocol attached to this Authority to minimise the possible spread of chytrid fungus and other pathogens to, within and between the sites listed in Schedule 1 of this Authority. *[Attach hygiene protocol DOCDM-214757].*

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5. The Authority Holder must mark the site where any frogs are found with flagging tape or similar, GPS and notify DOC as soon as practicable of the find and location, no later than 7 days.

6. The Authority Holder must submit completed Amphibian and Reptile Distribution System cards to the Grantor [OR name of person and address] and herpetofauna@doc.govt.nz for all herpetological sightings or captures (for more information refer to http://www.doc.govt.nz/conservation/native-animals/reptiles-and-frogs/reptiles-and-frogs-distribution-information/species-sightings-and-data-management/).

7. If any frogs are injured as part of the Authorised Activity, the Authority Holder shall contact a suitably qualified herpetologist to get advice on management of the lizard. The Authority Holder is authorised to euthanise injured animal(s) on recommendation of the qualified herpetologist

8. If any frog should die, the Authority Holder must:
a. inform the Grantor *[or insert other contact person]* within *X (hours/days)*;
b. chill the body if it can be delivered within 24 hours, or freeze the body if delivery will take longer than 24 hours;
c. send the body to Massey University Wildlife Post Mortem Service for necropsy along with details of the animal's history;
d. pay for any costs incurred in investigation of the death of any frog; and
e. If required by the Grantor, cease the Authorised Activity for a period determined by the Grantor.

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii)
Subject: RE: Variation to 53708-FAU and 53606-FAU
Date: Monday, 15 May 2017 4:19:25 pm
Attachments: image001.jpg
image002.jpg

Thanks 9(2)(g)(ii)

From: 9(2)(g)(ii)
Sent: Monday, 15 May 2017 3:00 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: RE: Variation to 53708-FAU and 53606-FAU

Kia ora 9(2)(g)(ii)

As requested, please see the attached document where I have captured the time spent by staff from this office as a result of this application being processed.

Nga mihi,

9(2)(g)(ii)
Ranger, Department of Conservation *Te Papa Atawhai*

DDI: 9(2)(a)
Ngamotu / New Plymouth Office
PO Box 462, New Plymouth 4340,
www.doc.govt.nz

doc

From: 9(2)(g)(ii)
Sent: Monday, 15 May 2017 2:32 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: RE: Variation to 53708-FAU and 53606-FAU

Hi 9(2)(g)(ii)

All good can you write on the signed dec support doc the additional time and then rescan to me?

Thanks

Best Regards

9(2)(g)(ii)

From: 9(2)(g)(ii)
Sent: Monday, 15 May 2017 11:35 a.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: RE: Variation to 53708-FAU and 53606-FAU

Kia ora 9(2)(g)(ii)

Please find attached signed copies of the documents linked below. The approved WAA and the approval letter have been posted to the applicant along with the hygiene protocol mentioned below.

Are you able to change the status of the application in the permissions database from pending to approved and update DOCCM appropriately.

I have not updated the time spent by the Decision Maker in the decision support document as the decision took <5 min. However, should it be appropriate, is it possible to account for the attendance of Gareth Hopkins and 9(2)(g)(ii) at our context meeting? I notice that this has not been captured. I estimated the duration of this meeting at 60 minutes (1 Tier 4 and 1 Tier 5). Please let me know if this would involve the re-signing of the decision support document.

Nga mihi,

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9(2)(g)(ii)
Ranger, Department of Conservation *Te Papa Atawhai*

DDI: 9(2)(a)
Ngamotu / New Plymouth Office
PO Box 462, New Plymouth 4340,
www.doc.govt.nz
doc

From: 9(2)(g)(ii)
Sent: Friday, 12 May 2017 4:06 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: Variation to 53708-FAU and 53606-FAU
Importance: High

Hi 9(2)(g)(ii)
Attached for 9(2)(g)(ii) s's perusal is the decision support document and draft authority for the above.
I have also attached a draft approval letter as approval is anticipated.
You have access to all documents.
DOC-3027026 Decision Support Document
DOC-3031637Authority
DOC-3033457 Approval Letter
If approval is forthcoming, please:
1. Print a copy of the attached decision support document and a copy of the authority
2. Have the authority signed and witnessed
3. Scan email to me the signed decision support document and the Authority separately.
4. Send the Authority and Approval letter to the applicant. Can you please enclose the hygiene protocol at DOCDM-214757. Thanks
Please confirm approval with me via email so that I can change the status of the application in the permissions database from pending to approved.
Can you please arrange for an update of time spent by the decisionmaker in the decision support document, for time recording purposes.
The due date for a decision on the application is 16 May 2017.
I look forward to hearing from you.
Best Regards

9(2)(g)(ii)
Permissions Advisor - *Kaihono takawaenga a tuku*
Department of Conservation - *Te Papa Atawhai*
9(2)(a)
Waikato District Office
Private Bag 3072, Hamilton 3240
73 Rostrevor Street, Hamilton

Conservation for prosperity *Tiakina te taiao, kia puawai*
www.doc.govt.nz

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii) 9(2)(g)(ii)
Subject: RE: 9(2)(g)(ii) can you have a look?: Draft advice on Mt Messenger permit variation for frogs
Date: Monday, 8 May 2017 5:18:00 pm

Done – looks good ☺

From: 9(2)(g)(ii)
Sent: Monday, 8 May 2017 4:47 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii) 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: 9(2)(g)(ii) can you have a look?: Draft advice on Mt Messenger permit variation for frogs
Importance: High

Thanks for your comments 9(2)(g)(ii) I have made a few changes. 9(2)(g)(ii) any comments??

9(2)(g)(ii) and I would like to be firm with regards to the low level of expertise demonstrated in the application. Link below.

https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3026048

Cheers

9(2)(g)(ii) ☺

From: 9(2)(g)(ii)
Sent: Friday, 5 May 2017 10:29 a.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii) 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: Draft advice on Mt Messenger permit variation for frogs - can you comment today?
Importance: High

HI 9(2)(g)(ii) and 9(2)(g)(ii)

Link below to first draft of advice on permit variation to include frog survey for Mt Messenger rd alignment (Nth Taranaki).
9(2)(g)(ii) 9(2)(g)(ii) and I had a type 2 meeting on wed with Taranaki team – see DOC3012742 and 3012746.

Would appreciate your comments today if you have time ☺.

I checked in with 9(2)(g)(ii) about 9(2)(a) and 9(2)(a) field trip to help with frog monitoring. She was happy with their frog handling in general and 9(2)(a) did some measuring, however I feel it is important to highlight in the advice that they haven't demonstrated sufficient expertise in their permit application. I've added some further detail around frog handling and duty of care during frog surveys in proposed conditions.

Still have to add conditions for: Survey report & ARDS card and if frogs killed/found dead. Any other condition?

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9(2)(g)(ii) we also discussed our general concerns around the survey design – minimal effort, detail of design limited, likelihood of limited knowledge when best to survey for frogs – and the best way to engage with NZTA/Opus about this. Aware you had similar concerns regarding lizards. We agree that 9(2)(g)(ii) and myself would work with you to write up an advisory note/letter that 9(2)(g)(ii) could take to a meeting on May 16th.

I started some brief notes on this after the draft permit advice. I will turn this document in to this advisory note/letter and paste the permit advice into the RFC (now call a Decision Support Document – DSD). We agreed to complete this next Friday. If you could put some comments in for lizards next week that would be grand.

https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3026048

Cheers

9(2)(g)(ii) ☺

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii) 9(2)(g)(ii)
Subject: Any comment? Frog survey permit - : assyst: 3 - Terrestrial natural heritage - Concessions – impacts on conservation values request with the reference number R112175 has been assigned to you.
Date: Wednesday, 26 April 2017 9:52:00 am

Hi 9(2)(g)(ii) and 9(2)(g)(ii)
Touching base whether you have any comments on this frog survey permit (NZTA).
This is an assyst request for advice on proposed frog survey's as part of the Mt Messenger road re-alignment, North Taranaki. Opus are applying on behalf of NZTA to vary their lizard survey permits to include frog surveys and add one extra person – 9(2)(a), an apparent "frog expert". They are applying to vary 53708 FAU (Mt Messenger) and 53606 FAU (Awakino).
See https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3012742
My initial thoughts are:

- They are applying to vary two permits (Mt Messenger -53708 FAU - and Awakino - 53606 FAU). They only refer to Mt Messenger in referenced to frog survey, so needs clarification.
- Support this from the perspective of a frog survey happening in the Mt Messenger area
- Needs further descriptions/detail for Archey's and Hochstetter's frog survey methods. Unclear from their survey method description whether they understand what micro habitat to specifically search, season and weather conditions that are best for frog survey – if they survey for Archey's frog in poor conditions (e.g. cool and/or dry), they will reduce the chance of detecting anything.
- The two ecologists listed 9(2)(a) and 9(2)(a) have limited frog survey experience (one trip to help with frog monitoring doesn't really make them frog experts but helps, as does experience with lizards) – if they are looking in a location where we have no records, it is important to have people with extensive frog survey experience involved. Do you know 9(2)(a) and 9(2)(a) skills as lizard experts?
- DNA sampling – if they found frogs, collecting swabs for DNA analysis by Luke Easton would be highly useful.
- If approved I am looking at conditions about: survey techniques, handling, hygiene protocols, experienced (frog) herpetologist approved by the native frog RG, ARD cards and submitting a report to DOC detailing the survey effort/outcomes (even if find nothing). Anything else?

I am waiting to hear from permissions/Taranaki to attend a meeting as referred to in the assyst request and TA below. No date yet.
Cheers
9(2)(g)(ii)

From: assystrequest@doc.govt.nz [mailto:assystrequest@doc.govt.nz]
Sent: Friday, 21 April 2017 3:38 p.m.
To: 9(2)(g)(ii)
Subject: assyst: 3 - Terrestrial natural heritage - Concessions – impacts on conservation values request with the reference number R112175 has been assigned to you.

Dear 9(2)(g)(ii)

A request with the reference number R112175 has been assigned to you to service.

Logged By	:	9(2)(g)(ii)
Logged Date	:	20/04/2017
Required by Date	:	26/04/2017

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Summary :

Frog expert for 53606-FAU and 53708-FAU

Assignor Message: :

Hello 9(2)(g)(ii)

Please find the attached Assyst request regarding frog surveys. Thank you for your assistance.

Kind Regards,
9(2)(g)(ii)

Request Description :

Context:
The applicant seeks a concession to add frog surveys to lizard survey authority

The Applications can be found here:

<a href="https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3012742">https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3012742">https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3012742

https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3012742

The Task Assignment can be found here:

https://doccm.doc.govt.nz/wcc/faces/wccdoc?dDocName=DOC-3012746

Purpose:
The purpose of this request is to obtain a frog expert to participate as a team member for the task assigned to the Decision Maker.

Output:
The Decision Maker requires an expert's advice at an initial meeting with other advisors, either in person or by teleconference. A meeting invite will be sent shortly. The expert will be invited to discuss any critical issues they have identified with the application at the meeting. At the meeting, tasks will be identified by the Decision Maker and the expert may be allocated a task(s) to complete within a required timeframe. There will be a follow up meeting to check progress.

If you have any concerns about this request, then please discuss them with your manager.

Thank You

9(2)(g)(ii)
Personal Assistant and Administrator (500/4001)
Terrestrial Ecosystems Unit

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9(2)(a)
[redacted]
Department of Conservation

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From: 9(2)(g)(ii)
To: permissions
Subject: FW: Approval of wildlife authorities 53606 and 53708
Date: Wednesday, 12 April 2017 10:12:34 am
Attachments: image001.gif
image002.gif
image003.png
image004.png
image005.png
image006.png
image007.png
image008.png
image009.jpg
Wildlife permit application.pdf
Attachment B1.docx
Attachment B3.1.docx
Attachment E Iwi Consultation.docx

Signed application form attached (first one)!!

From: 9(2)(a)
Sent: Wednesday, 12 April 2017 10:06 a.m.
To: 9(2)(g)(ii) <9(2)(g)(ii)
Subject: RE: Approval of wildlife authorities 53606 and 53708

Hi 9(2)

Apologies for that oversight, please see attached.

Best wishes

9(

9(2)(a), PhD
Senior Ecologist
Opus International Consultants Ltd, Opus House, Princes Street, Hamilton 3204, New Zealand
Private Bag 3057, Waikato Mail Centre, Hamilton 3240, New Zealand
+9(2)(a)
www.opus.co.nz

From: 9(2)(g)(ii) 9(2)(g) ; 9(2)(g)(ii)
Sent: Tuesday, 11 April 2017 4:04 p.m.
To: 9(2)(a)
Subject: RE: Approval of wildlife authorities 53606 and 53708
Importance: High

Hi 9(

We just need the declaration signed and scanned emailed to us. Thanks

Best Regards

9(2)

From: 9(2)(a)
Sent: Tuesday, 11 April 2017 3:13 p.m.
To: 9(2)(g)(ii) <9(2)(g)(ii)
Cc: 9
Subject: RE: Approval of wildlife authorities 53606 and 53708

Hi 9(2)

Find attached the completed application form for the variation and the required attachments.

If this can be processed asap it would be much appreciated.

Best wishes

9(

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9(2)(a), PhD
Senior Ecologist
Opus International Consultants Ltd, Opus House, Princes Street, Hamilton 3204, New Zealand
Private Bag 3057, Waikato Mail Centre, Hamilton 3240, New Zealand
9(2)(a)
www.opus.co.nz

From: 9(2)(g)(ii) 9(2)(g)(ii)
Sent: Tuesday, 11 April 2017 1:58 p.m.
To: 9(2)(a)
Subject: RE: Approval of wildlife authorities 53606 and 53708
Importance: High

Hi 9(2

Can you please fill out an application form see link - http://www.doc.govt.nz/Documents/about-doc/concessions-and-permits/wildlife-research-permits/wildlife-act-authority-application-9a.doc

Best Regards

9(2)(g)(ii)
Permissions Advisor - *Kaihono takawāenga ā tuku*
Department of Conservation - *Te Papa Atawhai*
9(2)(a)
Waikato District Office
Private Bag 3072, Hamilton 3240
73 Rostrevor Street, Hamilton

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www.doc.govt.nz
R74911_Manisha-Patel_CW15-email-sig_FINAL.jpg

From: 9(2)(a)
Sent: Tuesday, 11 April 2017 11:40 a.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Cc: 9(2)(a)
Subject: RE: Approval of wildlife authorities 53606 and 53708

Dear 9(2)

Thank you for sending this through. I would like to make a formal request to vary the lizard permit for Mount Messenger to include native frog surveys.

A variation to the existing DOC Wildlife Act Authority for lizard surveys is requested to include native frog surveys for the following reasons:

- Mt Messenger is within the historic range of Hochestetter's frog
- Some habitats within the alignment appear similar to habitats occupied by native frogs elsewhere
- The lack of native records for the area may simply reflect a lack of survey effort
- Any native frogs within the alignment would represent highly significant populations

A separate permit application for frog surveys is not considered appropriate or necessary for the following reasons:

- The Opus ecological assessment team has already been issued a permit to carry out lizard surveys

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- The likelihood of native frogs being present is low
- The other aspects of the ecological assessment investigations project are well advanced
- The surveys will be led and carried out by the experienced herpetologists already named on the lizard permit with the exception of an additional frog expert being added to the team

A methodology, details of iwi consultation and team expertise are detailed in the attached document.

Thank you in advance for considering this variation. It would be helpful if you are able to advise of a timeframe where this can be considered by DOC?

Best wishes,

9(

9(2)(a), PhD
Senior Ecologist
Opus International Consultants Ltd, Opus House, Princes Street, Hamilton 3204, New Zealand
Private Bag 3057, Waikato Mail Centre, Hamilton 3240, New Zealand
9(2)(a)
www.opus.co.nz

From: 9(2)(g)(ii) 9(2)(g)(ii) 9(2)(g)(ii)
Sent: Friday, 31 March 2017 2:38 p.m.
To: 9(2)(a)
Subject: Approval of wildlife authorities 53606 and 53708
Importance: High

Hi 9(,

Please find attached approval to the two wildlife act authority applications 53606-FAU and 53708-FAU Awakino and Mt Messenger.

Best Regards

9(2)(g)(ii)
Permissions Advisor - *Kaihono takawāenga ā tuku*
Department of Conservation - *Te Papa Atawhai*
9(2)(a)
Waikato District Office
Private Bag 3072, Hamilton 3240
73 Rostrevor Street, Hamilton
Conservation for prosperity *Tiakina te taiao, kia puawai*
www.doc.govt.nz

From: prwaico0303@doc.govt.nz [mailto:prwaico0303@doc.govt.nz]
Sent: Friday, 31 March 2017 6:32 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: Message from KM_C454e

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From: 9(2)(a)
To: 9(2)(g)(ii)
Cc: ..... 9(2)(a)
Subject: Re: Comments sought for an application from New Zealand Transport Association (NZTA) who are seeking authority to undertake lizard surveys
Date: Thursday, 23 March 2017 8:34:36 pm

Kia ora 9(2)(g)(ii)

Thank you for the information and the call today.

We have no objections to the NZTA applications to research the lizards and geckos in the affected areas; however we do have a couple of requests.

1. The committee would like to participate in the checking of the ACO's in Awakino to better understand the operation.
2. The committee would also like to receive a copy of the completed report to add to our library of understanding.

I will also discuss this directly with Opus and their consultants to facilitate any logistics; however noting these requests through the DOC process will also be helpful.

Nga mihi ki a koe

9(2)(a)
MKR RMC Chair

On 16 March 2017 at 10:13, 9(2)(g)(ii) < 9(2)(g)(ii) wrote:

> Tena koe 9(2)(a)
>
> Re: Comments sought for an application from New Zealand Transport Association (NZTA) who are seeking authority to undertake lizard surveys
>
> NZTA are seeking a Wildlife Act Authority to catch and handle Mokomoko/Lizards in order to conduct baseline ecology field surveys for NZTA's Assessment of Environmental Effects (AEE) in conjunction with their review of sections of State Highway 3 (SH3) around the Awakino Tunnel and Mt Messenger.
>
> The below email was sent to 9(2)(a) on 7 February 2017 following the Departments receipt of the attached applications from the New Zealand Transport Association (NZTA). The Department has not received any comments or concerns form 9(2)(a) to date, nor has the applicant according to the final Attachment, SH3 Awakino Gorge Wildlife Authority Application_Attachment E1.
>
> My request in this instance is to confirm that Mokau ki Runga Regional Management Committee have no comments or concerns to be brought to the attention of the Decision Maker, Natasha Hayward, Operations Manager, King Country in regards to the Wildlife Act Application for Awakino Gorge. If this is not the case and the Mokau ki Runga Regional Management Committee do wish to provide any comments or concerns regarding the impact of this activity on cultural values, the Department requests that these be provided within 20 working days of receipt of this e-mail (13 April 2017).
>
> Please feel free to give me a ring or email if you have any questions.

Released under the Official Information Act

Nga mihi,

9(2)(g)(ii)
Ranger, Department of Conservation *Te Papa Atawhai*

9(2)(a)

Ngāmotu / New Plymouth Office
PO Box 462, New Plymouth 4340,
www.doc.govt.nz

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From: 9(2)(g)(ii)
Sent: Tuesday, 7 February 2017 3:07 p.m.
To: 9(2)(a)
Subject: Re: Comments sought for an application from New Zealand Transport Association (NZTA) who are seeking authority to undertake lizard surveys

Tena koe,

Re: Comments sought for 2 Wildlife Act Authorisation applications from New Zealand Transport Association (NZTA) who are seeking authority to undertake lizard surveys

The Department requests that our Treaty partners provide any comments or concerns regarding the impact of this activity on cultural values. Please provide comments or concerns within 20 working days of receipt of this e-mail (7 March 2017).

Activity:

2 applications have been received from NZTA who have engaged Opus (Opus International Consultants Limited) to conduct baseline ecology field surveys for NZTA's Assessment of Environmental Effects (AEE) in conjunction with their review of sections of State Highway 3 (SH3) around the Awakino Tunnel and Mt Messenger. NZTA require a Wildlife Act Authority due to the potential need to handle lizards (skinks and geckos) found during the baseline survey for identification purposes.

Attachments:

- Application Form 9 Awakino Tunnel
- Application Form 9 Mt Messenger
- Attachment B1: Research/Management Project Proposal
- Attachment D: Applicant Skills and Experience
- Attachment E1: Iwi Consultation

Term:

The applicant applied for a term from December 2016 to December 2017.

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The Department would like you to consider whether:

1. you may have any concerns or comments you wish to add.
2. you require more information about the applicant or more detail on the activity or locations.
3. you require more time to make an assessment.
4. you support, oppose or are indifferent to the granting of this application.

Nga mihi,

9(2)(g)(ii)
Ranger, Department of Conservation *Te Papa Atawhai*

9(2)(a)

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PO Box 462, New Plymouth 4340,
www.doc.govt.nz

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Caution - This message and accompanying data may contain information that is confidential or subject to legal privilege. If you are not the intended recipient you are notified that any use, dissemination, distribution or copying of this message or data is prohibited. If you received this email in error, please notify us immediately and erase all copies of the message and attachments. We apologise for the inconvenience. Thank you.

Links to files that were attached to this message:

image001.jpg JPEG image, 11.9 KB
https://doccm.doc.govt.nz/cs/idcplg?IdcService=GET_FILE&dDocName=DOC-3001202&RevisionSelectionMethod=LatestReleased&allowInterrupt=1
Open WebCenter Content Server

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii)
Cc: 9(2)(g)(ii) 9(2)(g)(ii)
Subject: FW: mount messenger methodology
Date: Tuesday, 3 January 2017 2:23:11 pm
Attachments: image001.gif
image002.gif
image003.png
image004.png
image005.png
image006.png
image007.png
image008.png
Mt Messenger ecology specialists151216.pdf

Kia ora korua folks
Welcome back. I hope you all enjoyed a restful and prosperous Christmas/New Year break ☺.
FYI: Please find attached an updated version of OPUS consultants and their basic methodology for undertaking proposed field work within the Mt Messenger Option 2 bypass route – being the route NZTA have advised as their preferred and intended route from the public consultation documentation.
Please feel free to provide comments as and when required and I can forward them to Brendon. Please also feel free to give me a call.
I'm officially back on the 9th.
Regards

9(2)
9(2)(g)(ii)
Senior Ranger, Community Ngamotu/New Plymouth Office
Department of Conservation - *Te Papa Atawhai*
Ngamotu/New Plymouth office contact 9(2)(a)

From: 9(2)(a)
Sent: Thursday, 22 December 2016 2:51 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Cc: 9(2)(g)(ii)
Subject: mount messenger methodology
Hi,
Apologies for the significant delay in forwarding this to you.
I believe you have previously received the draft of this methodology; this version contains the missing methodology from that draft.
Thanks, have a great Christmas. Please let me know straight away in the New Year if you have any questions or require any further information.

9(2)(g)
9(2)(a)
Business Manager
Opus International Consultants (Canada) Limited, Level 4 The Square Centre, 478 Main Street, Palmerston North 4410, New Zealand
PO Box 1472, PN Central, Palmerston North 4440, New Zealand
9(2)(a)
www.opus.co.nz

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Focal Group	Lead Specialist	Contact	Support Ecologist/s for fieldwork	Technical Advisor/Reviewer	Methodology	Timeframe Fieldwork	Report complete
Birds (Farmland)	9(2)(a) Senior Ecologist (Opus)	9(2)(a)	9(2) Principal Ecologist, Opus		Field Survey of the farmland areas along the then proposed Mt Messenger Route (MC20) was undertaken in October 2016 using point counts (fmbc), and two nights of kiwi survey were undertaken on either side of the existing highway.	Completed	Combine with Forest Bird Report. 30-Mar-17
Birds (Forest)	9(2)(a), Senior Ecologist (Opus) (Forest birds) 9(2)(a) (Kiwi) (Living Matters Ltd)	9(2)(a)		9(2)(a) (Seabirds)	9(2) and 9(will undertake the field surveys. 9(2 will be the lead specialist for the kiwi survey and 9(2) will lead the survey for other forest bird species. 9(will provide technical advice on the survey methodology seabirds and interpretation of results for seabirds. - Diurnal survey using point counts (fmbc) within indigenous forest area. 19 sites have been selected, with stations at least 200m apart (as per protocol) in the vicinity (i.e straddling the proposed route). It is proposed that all sites be counted once by each survey on a single day, giving 38 counts in total. - In addition, special note will be made of any bird species not noted within a count period but heard or seen within the survey area i.e species of lower detectability. - Four person nights of kiwi survey (one night at each of four sites on either side of MC23), using standard protocol of 3 hours of survey starting at 45mins after sunset. Two experienced kiwi survey personnel undertake survey i.e 2 sites per surveyor, 4 kiwi survey nights total. - Automatic Recording devices (ARDs) be deployed at two sites to record seabirds. Two of these are also kiwi survey sites and this will give additional surveyor presence at each of these sites.	9(2) and 9(2 will undertake the fieldwork during the week of 23rd January over 3-4 days.	30-Mar-17
Bats	9(2)(a) 9(2)( )	9(2)(a)	9(2)(a), Ecologist, Opus 9(2)(a), Ecologist, Opus	9(2)(a) (University of Queensland)	9(2 to visit site and lead deployment of 40 ABMs throughout alignment. -Potential habitat for both species has been identified on Google Earth and ensures maximum coverage of the Project area. -Long-tailed bats will be targeted along linear features such as roads, forest edges, rive and gullies. Short-tailed bats will be targeted in the forest interior with detectors clusters placed within sites of continuous indigenous forest, including transects across th alignment and into the forest as a control. -Data extracted from BatSearch 3.11 will be analysed to determine presence/absence, distribution, levels of activity and whether activity is indicative of feedin or breeding behaviour.	9(2 will lead deployment of ABMs during the week of 23rd January over 3-4 days, assistance from 9(2)(a).	31-Mar-17
Vegetation	9(2)(a) Ecological Solutions) mobile: 9(2)(a)	9(2)(a)	9(2)(a) Senior Ecologist, Opus 9(2)(a) Ecologist, Opus	9(2) (Landcare Research)	9(to visit site and lead vegetation assessment- -Baseline survey to document all plant species found on the road realignment, including specifically looking for threatened species such as kiwi orn. The list of plants will provide a semi-quantitative assessment of abundance based on visual observations and sampling. -Sample vegetation communities using between 5-8 R ce plots with additional supplementary over-story measures to quanti tively describe and map these at fine scale community level.	9(will conduct the vegetation assessment during the week of the 16th (4 days) and 23rd January (1-2 days) with the assistance of 9	28-Feb-17
Invertebrates	9(2)(a) (Landcare Research)	9(2)(a)	9(2)(a) Senior Ecologist, Opus 9(2)(a) Ecologist, Opus	9(2) (Landcare Research) TBC	9(2) to visit field site (accompanied by an Opus senior ecologist) to walk the alignment. -Collection on invertebrates found by hand, log-turning, and sweep net. -2-3 soil pits dug to search for earthworms and identification. 9(2) will search invertebrate databases. Input from specialist taxanomists in key faunal groups. 9(2) will compile report including mitigation options for forest clearance and earth movements.	9(2) one day walkover site visit with 9(2) late Jan 2017.	31-Mar
Herpetology	9(2)(a) 9(2)(a)(ii)	9(2)(a)	9(2)(a), Ecologist, Opus, 9(2)(a), Ecologist, Opus, 9(2)(a) Ecologist, Opus		9(2 to visit site and lead deployment of ACOs and cell foam covers throughout alignment and conduct daytime VES and night spotlighting. Lizard habitat will be identified using Google Earth and during the vegetation assessment the prior week. -Daytime VES will be conducted in mild and still conditions involving scanning vegetation for basking lizards, lifting ground cover objects and searching crevacies with a boresope in dead wood or debris piles. Night searches will be conducted along lower sections of bush/farmland margin. -A series of transects will be established that encompass all representative vegetation/habitat types along the alignment. Onduline ACOs will be left in place for at least 8 weeks and will be checked at 6 and 8 weeks. Cell foam covers will be left in place for longer, at least 3 months. -Standard information will be gathered from each lizard captured eg species, gravidity, SVL, VTL, etc. Records will be submitted to DOCs herpetofauna database.	9(2 will lead lizard fieldwork during the week of the 23rd January over 3-4 days with assistance from 9(2)(a)	31-Mar-17
Aquatic	9(2)(a) (River Lake Ltd)	9(2)(a)	9(2)(a) Ecologist, Opus, 9(2)(a) Ecologist, Opus		9(to visit site and lead aquatic assessments. -Desktop review of information for the waterways to form a likely list of fish present. -Habitat survey, macrophyte cover, and macroinvertebrates at six sites and a fish survey at four sites. -SEV will be done at three sites where the most extensive disturbance is expected to occur to inform compensation ratios. -Habitat will be assessed using the National Rapid Habitat Assessment Protocol (Clapcott 2015) and a HQS calculated. Sites will be characterised using protocol P1 of the Stream Habitat Assessment Protocols (Harding et al. 2009). -Fish survey will use either fyke nets and gee-minnows or backpack electric fishing.	9(will lead aquatic assessments during the week of the 23rd of January over 3 days with assistance from 9(2)(a).	31-Mar

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From: 9(2)(g)(ii)
To: 9(2)(g)(ii)
Subject: RE: SH3 Mt Messenger wildlife act authority application
Date: Tuesday, 20 December 2016 8:02:14 am
Attachments: SKMBT_C364 16121915190.pdf

Hi 9(2)(g)(ii)
Attached conservation covenant as discussed for the Mt Messenger area re: wild life permits.
Regards

9(2)(g)(ii)
Senior Ranger, Community Ngamotu/New Plymouth Office
Department of Conservation - *Te Papa Atawhai*
Ngamotu/New Plymouth office contact 9(2)(a)

From: 9(2)(g)(ii)
Sent: Monday, 19 December 2016 3:25 p.m.
To: 9(2)(g)(ii) < 9(2)(g)(ii)
Subject: FW: SH3 Mt Messenger wildlife act authority application

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From: Permissions Hamilton
Sent: Friday, 16 December 2016 8:46 a.m.
To: permissions <permissions@doc.govt.nz>
Subject: FW: SH3 Mt Messenger wildlife act authority application

Morning 9(2)(g)(ii)

This one is for HWT.

Can you please capture it.

Thanks very much.

Kind regards,
9(2)(g)(ii)

From: 9(2)(a)
Sent: Thursday, 15 December 2016 3:26 p.m.
To: Permissions Hamilton <permissionshamilton@doc.govt.nz>
Cc: 9(2)(a)
Subject: SH3 Mt Messenger wildlife act authority application

Hi,

Please find attached a wildlife act authority application with apendices for lizard surveys and handling at SH3 Mt Messenger in 2017.

If you have any questions please be in touch.

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Kind Regards, 9(2)(a)

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CONSERVATION COVENANT

(Section 27, Conservation Act 1987; and

Section 77, Reserves Act 1977)

BETWEEN 9(2)(a) 9(2)(a) ("Ngati Tama")

AND **HER MAJESTY THE QUEEN** by and through the Minister of Conservation ("the Minister")

RECITALS

A. Ngati Tama and the Crown are parties to a Deed of Covenant dated 14 March 2003 under which Ngati Tama became party to a Deed of Settlement dated 20 December 2001.

B. Pursuant to that Deed and the Ngati Tama Claims Settlement Act 2003, the Crown agreed to vest in Ngati Tama certain land including the Land, with such vesting subject to Ngati Tama entering into a Conservation Covenant with the Minister to provide for the continued preservation and protection of the conservation values associated with the Land.

C. In achieving the primary purpose to preserve and protect the Land, Ngati Tama and the Minister agree the Conservation Covenant will also provide for the following matters:

- acknowledging the Kaitiaki status, rights and obligations of Ngati Tama as Tangata Whenua and registered proprietor of the Land;
- restrictions on development and activities on the Land to protect the Land's natural landscape and character;
- providing free public foot access for recreational use, tramping, hunting and fishing; and
- providing for certain management rights and obligations between the parties to achieve a co-operative and integrated approach to management of the Land consistent with the purposes set out in this Conservation Covenant.

D. Under section 30(2) of the Ngati Tama Claims Settlement Act 2003, this Conservation Covenant is deemed to have been entered into by the Minister pursuant to section 27 of the Conservation Act 1987 and section 77 of the Reserves Act 1977, and therefore binds future owners of the Land.

E. The parties recognise that this Conservation Covenant is between principals who have negotiated with authorised mandate and in good faith.

F. Ngati Tama acknowledges that it is consistent with its ownership and mana to agree to obligations for conservation and protection of the Land in a manner set out in this Conservation Covenant, not only for their own benefit but also for the benefit of the general public of New Zealand.

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NOW THEREFORE THIS COVENANT WITNESSES that in accordance with section 27 of the Conservation Act 1987 and section 77 of the Reserves Act 1977, Ngati Tama and the Minister **MUTUALLY AGREE** as follows:

1. INTERPRETATION

1.1 In this Conservation Covenant unless the context otherwise requires:

"Conservation" has the same meaning as provided in section 2 of the Conservation Act 1987.

"**Covenant**" means this Conservation Covenant duly executed by the parties.

"**Crown**" means Her Majesty the Queen in right of New Zealand acting by and through the Minister of Conservation.

"Customary Rights" means the rights arising under customary law, including the rights to occupy land; and rights in relation to the use of Land and/or natural or physical resources.

"**Deed**" means the Deed of Settlement referred to in Recital A of this Covenant.

"**Joint Advisory Committee**" means the Joint Advisory Committee established under section 9.8 of the Deed also referred to in the Ngati Tama Claims Settlement Act 2003;

"**Land**" means the land described in Schedule A of this Covenant which was vested in Ngati Tama under the Ngati Tama Claims Settlement Act 2003 and subject to this Covenant.

"**Management Plan**" means the Management Plan to be prepared by the Joint Advisory Committee as provided in clause 4 and Schedule B of this Covenant.

"**Minister**" means the Minister of Conservation and includes any officer or duly authorised agent of the Minister.

"Weeds and pests" includes noxious, troublesome or adventitious plants, trees or other vegetation, animals or pests.

1.2 For avoidance of doubt:

1.2.1 The reference to any enactment or any regulations in this Covenant is a reference to that enactment or those regulations and extends to, and includes, any amendment to or substitution for that enactment or regulations;

1.2.2 Clause and other headings are for ease of reference only and shall not be deemed to form any party of the context or to affect the interpretation of this Covenant;

1.2.3 Words importing the singular number shall include the plural and vice versa;

1.2.4 References to parties are references to parties to this Covenant;

1.2.5 References to clauses are references to clauses of this Covenant;

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1.2.6 References to persons shall be deemed to include references to individuals, companies, corporations, firms, partnerships, joint ventures, associations, organisations, trusts, states or agencies of state, government departments and local and municipal authorities in each case whether or not having separate legal personality;

1.2.7 Expressions defined in the main body of this Covenant bear the defined meaning in the whole of this Covenant including the Recitals. Where the parties disagree over the interpretation of any thing contained in this Covenant, then in determining the issue the parties shall have regard to the matters contained in the Recitals;

1.2.8 Any obligation not to do anything shall be deemed to include an obligation not to suffer, permit or cause that thing to be done;

1.2.9 Words importing one gender shall include the other gender;

1.2.10 The agreements contained in this Covenant shall bind and benefit the parties and their heirs, executors, successors and assigns in perpetuity; and shall bind any lessee of the Land for the term of any lease; and

1.2.11 Where clauses of this Covenant require further agreement between the parties, then such agreement must not be unreasonably withheld.

2. STATEMENT OF ASSOCIATION OF NGATI TAMA

2.1 The parties agree that the Land forms part of the lands confiscated by the Crown in 1865. The parties agree that the confiscations were wrong, unjustifiable, and were in breach of the principles of the Treaty of Waitangi. Ngati Tama are the Kaitiaki of the Land. The Land has important ownership, cultural, spiritual, traditional and historical values for them. Ngati Tama, are the registered proprietors of the Land on behalf of the Ngati Tama people who have a long history of association with the Land. In exercising rights and obligations as Kaitiaki of the Land, and recognising Ngati Tama's position as Tangata Whenua, Ngati Tama will manage the Land in accordance with Ngati Tama tikanga / custom and in doing so have agreed to enter into this Covenant on the terms and conditions set out herein.

3. PURPOSES OF COVENANT

3.1 Ngati Tama is the Kaitiaki of the Land and shall manage the Land in accordance with the Management Plan with the primary purposes of providing for the continued preservation and protection of the conservation values associated with the Land, and the balancing of Ngati Tama's ability to exercise their Customary Rights.

3.2 In achieving the primary purpose to preserve and protect the conservation values associated with the Land, Ngati Tama shall manage the Land in accordance with the Management Plan to further provide for the following matters:

3.2.1 Protect and enhance the spiritual, cultural and historical integrity and values of the Land and its associated water bodies;

3.2.2 Preserve the natural character of the Land with particular regard to the natural functioning of the ecosystem and to the native flora and fauna in their diverse and natural communities;

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3.2.3 Provide for public appreciation and recreational use of the Land, to the extent consistent with the primary and preceding purposes, and in accordance with clause 6 of this Covenant.

4. MANAGEMENT PLAN

4.1 The parties agree that the Joint Advisory Committee must prepare a Management Plan in relation to the Land.

4.2 The Joint Advisory Committee may determine the process for preparation and processing of the Management Plan having regard to Part IIIA of the Conservation Act 1987.

4.3 If requested by Ngati Tama, the Minister may, subject to clause 7.1, assist in the implementation of any matters identified in the Management Plan as requiring the Minister's assistance.

4.4 The Management Plan must recognise, implement and give effect to matters (but not limited to) referred to in clause 3, all other operational clauses contained in this Covenant and the particular matters set out in Schedule B of this Covenant.

4.5 The Management Plan may prescribe the responsibilities of the Minister in the management of the Land. The prior agreement of the Minister must be obtained before the Minister becomes responsible for implementation of any provisions of the Management Plan.

4.6 The Joint Advisory Committee will monitor the implementation of the Management Plan; and may review the Management Plan at any time and must review the Management Plan in its entirety at intervals of not more than 10 years.

5. IMPLEMENTATION AND MANAGEMENT FOR PURPOSES OF COVENANT

5.1 Unless agreed in writing by the Joint Advisory Committee or unless specifically provided for in the Management Plan, Ngati Tama shall not carry out or permit in relation to the Land:

5.1.1 The grazing of the Land by livestock (except to the extent permitted by any grazing licence referred to in Schedule A of this Covenant);

5.1.2 The felling, removal or damage of any indigenous tree shrub or other plant on the Land;

5.1.3 The planting of any exotic species of tree, shrub or other exotic plant on the Land;

5.1.4 The erection of any fence, building, structure or other improvements on the Land whether for Ngati Tama's purposes or for other private or public purpose;

5.1.5 Any burning, topdressing or the sowing of seed on the Land;

5.1.6 Any cultivation, earthworks or other soil disturbance on the Land;

5.1.7 Any archaeological or other scientific research involving disturbance of the soil.

5.2 Ngati Tama must use all reasonable endeavours to eradicate or control all weeds and pests that pose a threat to the Land or to adjoining land, which is required to be controlled under any enactment and at a level consistent with that delivered by the Department of

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Conservation at the time of execution of this Covenant and having regard to the purposes of this Covenant contained in clause 3.

5.3 Ngati Tama acknowledge that conservation specific due diligence information has been supplied prior to execution of this Covenant that demonstrates the level of commitment and resources required to maintain the conservation values of the Land at the level delivered by the Department of Conservation at the time of execution of this Covenant.

5.4 Ngati Tama must use all reasonable endeavours to prevent any wildfire upon or threatening the Land and not permit the wildfire to escape; and notify the Minister as soon as practical in the event of wildfire threatening the Land.

5.5 Ngati Tama acknowledges that this Covenant does not affect the Minister's exercise of powers under the Wild Animal Control Act 1977 and matters further provided for in clause 7.5 of this Covenant.

5.6 Ngati Tama must comply with all requisite statutes, regulations and bylaws in relation to the Land.

6. FREE PUBLIC FOOT ACCESS

6.1 Ngati Tama agrees to allow members of the public to have free foot access across, onto and through all parts of the Land at all times consistent with the purposes of this Covenant for recreational use, tramping, hunting and fishing.

6.2 Ngati Tama acknowledge that parts of the Land are subject to general public access rights secured by way of a Memorandum of Grant of Easement in gross for the purposes of the New Zealand Walkways Act 1990 granted from Ngati Tama to the Crown. This relates to an existing track more commonly known as the Whitecliffs Walkway and secondary walking tracks associated with that walkway.

6.3 Public access to the land shall be limited to those rights of access for the public to pass and repass over the Land on foot and shall be subject to Ngati Tama rights as registered owner and Kaitiaki of the Land. For the avoidance of doubt, it is agreed that the following activities are expressly prohibited unless consent is first obtained in writing from Ngati Tama:

6.3.1 **Camping**: camping on the Land;

6.3.2 **Horses and Animals**: passage on or through the Land by horses or any other animal used for transportation purposes;

6.3.3 **Dogs or Pets**: taking of dogs or pets of any description, whether retained on a leash or otherwise;

6.3.4 **Vehicles**: passage by motorcycle, bicycle or any other means of locomotion, mechanical, electrical or otherwise.

6.4 In continuing to provide free public foot access to the Land, Ngati Tama may (subject to inclusion of provisions within the Management Plan) do any of the following matters:

6.4.1 require the public to register their intention to enter onto or pass through the Land or specified areas within the Land having regard to clause 3 purposes of this Covenant;

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6.4.2 charge the public for the use of facilities or services provided by Ngati Tama within the Land; or

6.4.3 require persons intending to carry or discharge a firearm and/or other weapons on the Land, to register that intention with Ngati Tama.

7. JOINT OBLIGATIONS

7.1 If the Minister or Ngati Tama is requested by the Joint Advisory Committee to provide any assistance and support for any implementation or management activity for the purposes of this Covenant in respect of the Land, then such assistance and support will be subject to:

7.1.1 the extent of such assistance and support being identified in the Management Plan;

7.1.2 the relevant party agreeing to provide such assistance and support; and

7.1.3 any financial, statutory or other constraints that may apply to either party from time to time.

7.2 The Minister shall in the event of wildfire upon or threatening the Land, render assistance to Ngati Tama in suppressing the fire.

7.3 Any assistance by the Minister under clause 7.2 shall be at no cost to Ngati Tama unless Ngati Tama was responsible for the wildfire through wilful action or negligence.

7.4 Ngati Tama shall be responsible for the payment of rates and any other outgoing in respect of the Land required by operation of statute, regulation or bylaw.

7.5 The Minister may, subject to the Management Plan, use any practical means and be responsible for the control of wild animals as defined in the Wild Animal Control Act 1977 at a level consistent with and having regard to the purposes of this Covenant contained in clause 3.

7.6 Ngati Tama grants to the Minister a right of access onto and through the Land (including reasonable access and use of the hunters' hut located on the Whitecliffs area) for the purpose of undertaking activities provided in this clause, any assistance or support or any other matter for the purposes of this Covenant. In exercising this right, the Minister shall take all reasonable steps to minimise disruption to Ngati Tama's operations or any third party rights granted by Ngati Tama in respect of the Land.

8. REGISTRATION OF COVENANT

8.1 The Minister will cause registration of this Covenant to be recorded against the title to the Land in the manner provided for in section 27 of the Conservation Act 1987 and section 77 of the Reserves Act 1977, as soon as reasonably practicable after the execution of this Covenant. The intention of registering the Covenant against the title in this way is to bind future owners and/or successors in title to the Land.

9. DURATION OF COVENANT

9.1 This Covenant shall bind the parties in perpetuity to the rights and obligations contained within it.

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10. INDEMNITY

10.1 The Minister agrees to indemnify Ngati Tama from and against all actions, claims, demands, losses, damages, costs and expenses for which Ngati Tama shall become liable arising from loss or damage to property of, or death or injury to, any person on any part of the Land, unless such loss, damage, death or injury is caused or contributed to by any act, omission, neglect or breach of this Covenant on the part of Ngati Tama or any employee, contractor or agent of Ngati Tama.

11. MISCELLANEOUS MATTERS

11.1 The rights hereby granted are expressly declared to be in the nature of a Covenant in gross but the Crown shall not assign or otherwise dispose of its interest under this Covenant.

11.2 Except as provided in this Covenant, nothing in this Covenant in any way diminishes or affects the rights of Ngati Tama to exercise rights of a landowner under the Trespass Act 1980, any other statute or generally at law or otherwise. For the avoidance of doubt, these rights may be exercised if Ngati Tama reasonably believes a person is in breach of the rights and/or restrictions of access conferred by this Covenant.

11.3 Subject to clause 1.2.10, the parties acknowledge the agreements contained in this Covenant are between Ngati Tama and the Crown and, are not intended to be a promise conferring benefits on any third party which support or sustain any right of enforcement by any third party pursuant to the terms of section 4 of the Contracts (Privity) Act 1982.

11.4 While this Covenant remains in force and subject to the terms and conditions set out in this Covenant, sections 93 to 105 of the Reserves Act 1977 shall apply to the Land as if the Land were a reserve, except to the extent expressly or impliedly amended by this Covenant.

12. NOTICES

12.1 Any notice required to be given in terms of this Covenant shall be sufficiently given if made in writing and served as provided in section 152 of the Property Law Act 1952 and shall be sufficiently given if actually received by the party to whom it is addressed or that party's solicitor.

12.2 Any notice required to be given by the Minister shall be sufficiently given if it is signed by the Conservator Wanganui Conservancy, Department of Conservation, Wanganui. Any notice required to be served upon the Minister shall be sufficiently served if delivered to the office for the time being of the Conservator Wanganui Conservancy, Department of Conservation, Wanganui.

12.3 Any notice required to be given by Ngati Tama shall be sufficiently given if it is signed by a duly authorised officer or Trustee of Ngati Tama. Any notice required to be served on Ngati Tama shall be sufficiently served if delivered to the Registered Office for the time being of Ngati Tama.

13. DEFAULT

13.1 Should either party to this Covenant be of the reasonable view that the other ("the defaulting party") has defaulted in the performance or observance of any of its obligations under this Covenant, then that party shall by written notice prior to taking any remedial action:

13.1.1 Advise the defaulting party of the default;

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13.1.2 State the action reasonably required of the defaulting party to perform in accordance with this Covenant; and

13.1.3 State a reasonable timeframe within which the defaulting party is to take such action to remedy the breach.

13.2 Where there is any breach of any agreement contained in this Covenant by either party, then the other party shall be entitled to take such action as may be necessary to remedy the breach or prevent any further damage occurring as a result of the breach and shall also be entitled to recover from the party responsible for the breach as a debt due, all costs incurred by the other party as a result of remedying such breach or preventing further damage.

14. DISPUTE RESOLUTION PROCESSES

14.1 **Resolution by Joint Advisory Committee:** In the event the defaulting party fails to take the requisite action/s required within the time given in the notice under clause 13.1 or if the defaulting party disputes the notice or any aspect of it; or if any other dispute arises in connection with this Covenant and the rights and obligations contained herein; then the parties agree to first make efforts to resolve the issues through negotiation with the Joint Advisory Committee acting in a mediator capacity.

14.2 **Resolution by the Chairperson and the Minister:** In the event a resolution is not agreed within one (1) month of the date given in clause 13.1.3, then the matter will be referred directly to the Chairperson of Ngati Tama and the Minister for the time being for negotiation and/or resolution.

14.3 **Mediation:** In the event a resolution contemplated by the process provided in clause 14.2 is not agreed within three (3) months of the date given in clause 13.1.3, then the matter will be referred to formal mediation by the parties with a mediator agreed between them. Failing agreement between the parties as to an agreed mediator, then such will be appointed by the President of the New Zealand Law Society.

14.4 **Failure of Mediation:** In the event that the matter is not resolved by mediation within nine (9) months of the date referred to in clause 13.1.3, then the parties agree that the provisions of the Arbitration Act 1996 shall apply. The parties further agree that the outcome of arbitration shall be binding on the parties.

IN WITNESS WHEREOF THIS COVENANT HAS BEEN EXECUTED

this day of

SIGNED BY NGATI TAMA

Released under the Official Information Act

Signed by 9(2)(a)

.....

In the presence of:

Witness .....

Occupation .....

Address .....

Signed by 9(2)(a)

.....

In the presence of :

Witness .....

Occupation .....

Address.....

Signed by 9(2)(a)

.....

In the presence of

Witness .....

Occupation .....

Address .....

Released under the Official Information Act

Signed by 9(2)(a)

.....

In the presence of:

Witness .....

Occupation.....

Address.....

Signed by 9(2)(a)

.....

In the presence of

Witness .....

Occupation .....

Address.....

Signed by 9(2)(a)

.....

In the presence of :

Witness .....

Occupation .....

Address.....

Released under the Official Information Act

SIGNED by the Hon Chris Carter)
Minister of Conservation on behalf)
of the Crown and in the presence of)

_____

Witness: _____

Occupation: _____

Address: _____

Released under the Official Information Act

SCHEDULE A

Taranaki Land District

1310.7777 hectares more or less being Lot 3 DP 316317, Section 2 SO 313261 and Section 12 Block VIII Mimi Survey District. All Computer Freehold Register

Released under the Official Information Act

SCHEDULE B

Management Plan

BACKGROUND

Pursuant to clause 4 of this Covenant, the Joint Advisory Committee has responsibility for compiling a Management Plan in relation to the Land. The Management Plan is to achieve a co-operative and integrated approach to management of the Land consistent with the purposes set out in clause 3 and having regard to the operational clauses provided in this Covenant.

MANAGEMENT PLAN

The Management Plan may provide (but is not limited) to the following matters in relation to the Land:

1. Describe the Land (ie resources on Land, geological features, habitats, wildlife, wild animals)

2. Describe current uses of Land

3. Identify and discuss management issues

4. Identify and provide appropriate provisions for Ngati Tama Customary Rights

5. Provide the objectives, policies and implementations for management and may include (but is not limited to) management objectives for one or more of the following:

    - Identification of the responsibilities

    - Matters concerning public access including any matter provided by clause 6 of the Covenant

    - Details of facilities and services which are available

Released under the Official Information Act

- Details of charges for facilities or services, who receives the charges, and who enforces and collects the charges

- Conditions for hunting

- Restrictions or prohibitions on the use of the Land for conservation management reasons and/or having regard to the purposes of the Covenant

- Rahui / spiritual prohibition in the case of death or serious accident on the Land

- Contact names and details for parties to the Covenant for notices and in the case of responses to emergency situations

Released under the Official Information Act

Certified Correct for the purposes of the Land Transfer Act 1952

Solicitor for the Minister of Conservation

Released under the Official Information Act