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MEMORANDUM

Attention: Jono Tims, Te Awa Lakes Joint Venture

Date: 19 August 2022

From: Peter van Loon, Ecology New Zealand Ltd.

Project: Te Awa Lakes HES SNA Ground Truthing

1. INTRODUCTION

This memo¹, prepared by Ecology New Zealand Limited (ENZL) for Te Awa Lakes Joint Venture ('the client'), provides ecological comment on the proposed Significant Natural Area (SNA) at the HES site at the southern end of the Te Awa Lakes development ('the Site').

A recent review of SNAs for Hamilton City Council has been undertaken², with this review informing proposed SNAs to be included within an upcoming District Plan Review. Part of the review changes includes an area of proposed SNA within the subject site. ENZL has been engaged to review the proposed SNA area, undertake ground truthing of the proposed SNA and where appropriate, recommend adjustments to the proposed SNA boundary.

Site Location, Description and Ecological Context

The site is located at the southern end of the Te Awa Lakes development in north-western Hamilton (Figure 1). The western end of the site contains an existing residential dwelling with ornamental tree plantings, a tree shelterbelt and two open-grass fields. The eastern extent of the site is currently utilised as a series of paintball fields. It contains a large area of vegetation cover and the eastern boundary borders the Waikato River.

In the wider context, the vegetated eastern end of the site contributes to a relatively contiguous corridor of vegetation along the true left bank of the Waikato River that extends through the city of Hamilton and out to Ngaruwahia and beyond.

¹ This memo is subject to the Report Limitations provided in Appendix A.

² 4 Sight Consulting. May 2022. Significant Natural Areas of Hamilton City District: Terrestrial and Wetland Ecosystems for Hamilton City Council.



Figure 1: Location of the project site.

2. METHODOLOGY

A visit to the site was undertaken by ENZL ecologists on 12th August 2022 to survey and assess the proposed SNA area in accordance with The Waikato Regional Policy Statement criteria.

The survey included an assessment of flora species present on site, with areas of differing vegetation categorised. Fauna surveying involved habitat assessment and targeted hand-searching for native lizards, bird observation and habitat assessment and bat habitat assessment. Five differing vegetation units were identified on-site (Figure 2).

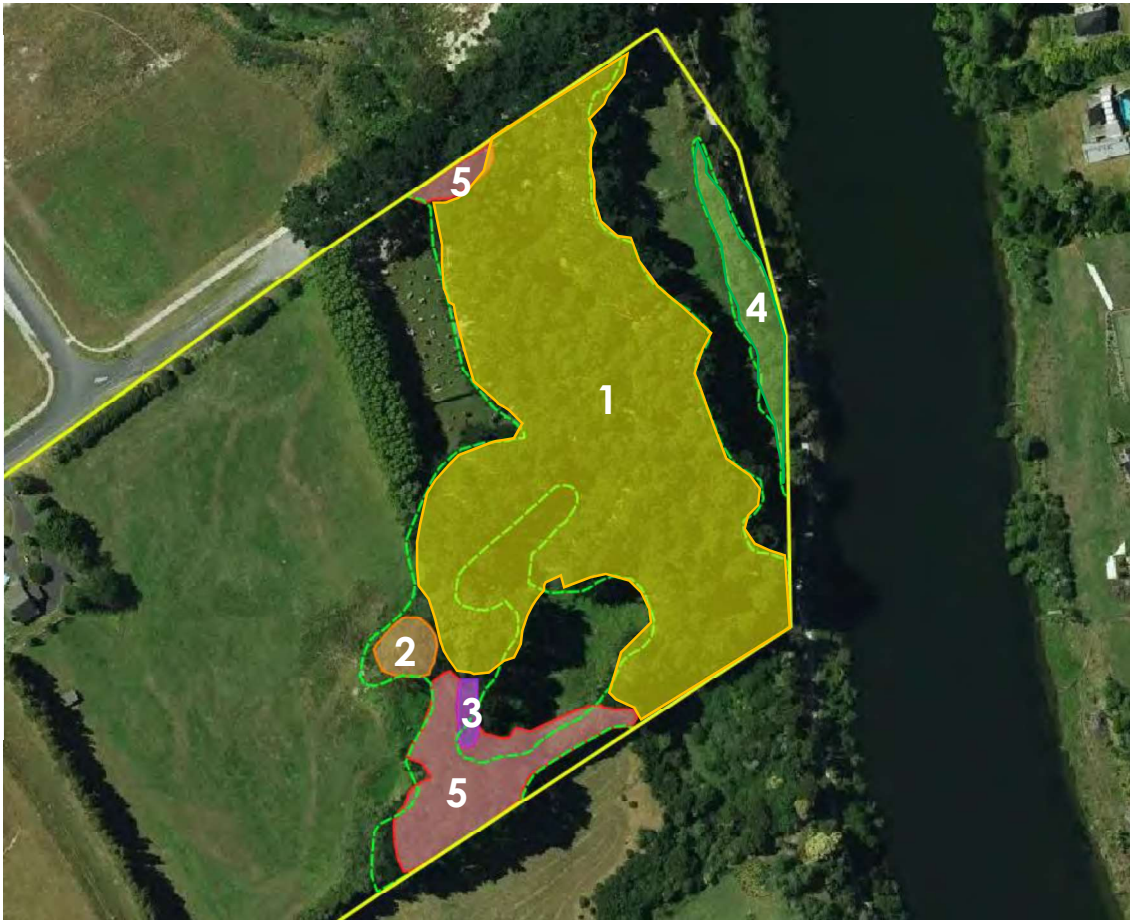


Figure 2: Vegetation units identified on site.

3. FINDINGS

Area 1

The greatest of the five areas was Area 1, which consisted of the majority of the vegetation and encompassed a stream flowing through a central gully. The canopy of this area consisted entirely of exotic pine trees (*Pinus* sp.) (Figure 3). The understory consisted of a mixture of native and exotic species. Native understory species included kawakawa (*Piper excelsum* subsp. *excelsum*), silver fern (*Cyathea dealbata*), mamaku (*Cyathea medullaris*), cabbage tree (*Cordyline australis*), wheki (*Dicksonia squarrosa*), lacebark (*Hoheria populnea*), ribbonwood (*Plagianthus regius* subsp. *regius*), lemonwood (*Pittosporum eugenioides*), titoki (*Alextrylon excelsus*), karamu (*Coprosma robusta*) and mapou (*Myrsine australis*). Exotic species in the understory were pest species including wild cherry (*Prunus* sp.), woolly nightshade (*Solanum mauritianum*) and Chinese privet (*Ligustrum sinense*). The north-western extent of the proposed SNA covers an area of walking path beneath the outer pine canopy. The SNA boundary should be re-aligned to exclude this walking path (Figure 4).



Figure 3: Pine forest within Vegetation Area 1.



Figure 4: Walking path along north-western extent of proposed SNA in Area 1.

A variety of Not Threatened native bird species were observed utilising habitat within Area 1, including north island fantail (*Rhipidua fuliginosa*), tūī (*Prosthemadera novaeseelandiae*) and grey warbler (*Gerygone igata*). A variety of exotic bird species were also present, including Australian magpie (*Gymnorhina tibicen*), eastern rosella (*Platycercus eximius*) and common myna (*Acridotheres tristis*).

Area 1 contained suitable habitat for ground-dwelling lizards in the form of dense leaf litter, inorganic debris and rotting logs and stumps. Fallen branches had been collected into piles in some areas, likely to clear the paths within the vegetation for paintball activities. These piles have effectively created eco-stacks, providing high quality habitat for native ground-dwelling lizards (Figure 5). The habitat within Area 1 was considered to be of low quality for arboreal lizards due to the disconnected nature of vegetation within the understory and between the understory and canopy.



Figure 5: Example pile of pine debris providing habitat for ground-dwelling lizards.

Targeted hand-searching on site identified the presence of a copper skink (*Oligosoma aeneum*) within Area 1; a native species classified as At Risk – Declining. Considering the site context, it is expected that exotic predators are abundant through the area and a high level of possum (*Trichosurus vulpecula*) sign was detected including scat and claw markings. Predator numbers are expected to be impacting on lizard population densities within the site.

The stream channel through the vegetation area along with mature pine trees provided potential foraging habitat for native long-tailed bats (*Chalinolobus tuberculatus*), though roosting habitat was primarily restricted to edge trees due to the growth form of the stand and general branch failure pattern of the trees. It is expected that roosting habitat potential within this area will increase over time as the pines mature.

In addition, vegetation Area 1 provided important, functional riparian habitat for At-Risk Declining galaxias species including inanga (*Galaxias maculatus*) and giant kōkopu (*Galaxias argenteus*) within the permanent stream.

Area 2

Area 2 consisted of a stand of gum trees (*Eucalyptus* sp.), the canopy of which was separated from the canopy of Area 1 (Figure 6). The understory within the stand consisted almost entirely of woolly nightshade and Chinese privet with exotic grasses forming the groundcover. The trees were inspected for bat roosting habitat and some minor potential cavities were present in some of the trees. The trunks of the gum trees contained a high number of possum claw markings. Habitat provision for native fauna of the gum tree stand was considered low quality.



Figure 6: Vegetation Area 2 – gum tree stand.

Area 3

Area 3 consisted of a shelterbelt of cypress trees (*Cupressus* sp.) (Figure 7). These trees are remnants of a larger shelterbelt along the southern boundary of the site (discussed further in Area 5 below). No understory was present surrounding the trees and they provided little habitat for native fauna beyond bird nesting habitat.

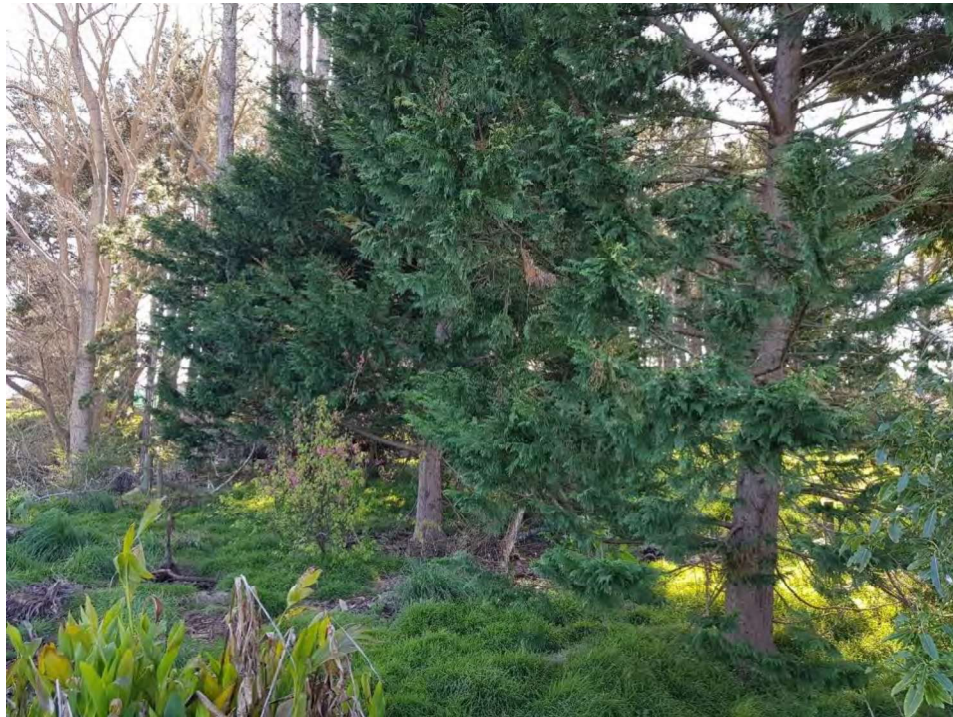


Figure 7: Vegetation Area 3 – remnant cypress shelterbelt.

Area 4

Vegetation Area 4 consisted of thin strip of predominantly native vegetation along a steep bank on the eastern boundary of the site, situated above the cycle path. The vegetation consisted predominantly of kānuka (*Kunzea robusta*), but also included titoki, mahoe (*Melicytus ramiflorus*), silver fern, ribbonwood and lemonwood. The groundcover consisted of exotic grasses (Figure 8).

This area provided potential habitat for common native bird species only. The vegetation provides only low-quality habitat for native ground-dwelling lizards, though is suitable for arboreal lizards. The presence of arboreal lizards within this area of vegetation was considered unlikely due to the small vegetation extent and separation from any likely source population. The vegetation is relatively young and contains few, if any, potential roosting holes for native bats or birds.

Area 5

Area 5 constitutes areas of the site where vegetation cover present on aerial photography has subsequently been removed. The tree removal has predominantly taken place in the south-western corner of the proposed SNA area (Figure 9), but also includes a small area at the north-western end of the proposed SNA. These areas formerly contained a mixture of pine trees and cypress shelterbelts.



Figure 8: Vegetation Area 4 – native bank strip.



Figure 9: Vegetation Area 5 – previously removed pine trees.

4. SNA CRITERIA ASSESSMENT

Each vegetation area on site was assessed under the criteria for determining significance of indigenous biodiversity in accordance with Table 11-1 of The Waikato Regional Policy Statement³.

Table 1. SNA assessment criteria for Vegetation Area 1.

Table 11-1 Criteria		Criteria Met?
Previously assessed site		
1	It is indigenous vegetation or habitat for indigenous fauna that is currently, or is recommended to be, set aside by statute or covenant or by the Nature Heritage Fund, or Ngā Whenua Rāhui committees, or the Queen Elizabeth the Second National Trust Board of Directors, specifically for the protection of biodiversity, and meets at least one of criteria 3-11.	No
Ecological Values		
2	In the Coastal Marine Area, it is indigenous vegetation or habitat for indigenous fauna that has reduced in extent or degraded due to historic or present anthropogenic activity to a level where the ecological sustainability of the ecosystem is threatened.	No
3	It is vegetation or habitat that is currently habitat for indigenous species or associations of indigenous species that are: <ul style="list-style-type: none"> Classed as threatened or at risk, or Endemic to the Waikato region, or At the limit of their natural range. 	Yes
4	It is indigenous vegetation, habitat or ecosystem type that is under-represented (20% or less of its known or likely original extent remaining) in an Ecological District, or Ecological Region, or nationally	No
5	It is indigenous vegetation or habitat that is, and prior to human settlement was, nationally uncommon such as geothermal, chenier plain, or karst ecosystems, hydrothermal vents or cold seeps.	No
6	It is wetland habitat for indigenous plant communities and/or indigenous fauna communities (excluding exotic rush/pasture communities) that has not been created and subsequently maintained for or in connection with: <ul style="list-style-type: none"> Waste treatment; Wastewater renovation; Hydro electric power lakes (excluding Lake Taupō); Water storage for irrigation; or Water supply storage; Unless in those instances they meet the criteria in Whaley et al. (1995).	No
7	It is an area of indigenous vegetation or naturally occurring habitat that is large relative to other examples in the Waikato region of similar habitat types, and which contains all or almost all indigenous species typical of that habitat type. Note this criterion is not intended to select the largest example only in the Waikato region of any habitat type.	No
8	It is aquatic habitat (excluding artificial water bodies, except for those created for the maintenance and enhancement of biodiversity or as mitigation as part of a consented activity) that is within a stream, river, lake, groundwater system, wetland, intertidal mudflat or estuary, or any other part of the coastal marine area and their margins, that is critical to the self sustainability of an indigenous species within a catchment of the Waikato region, or within the coastal marine area. In this context "critical" means essential for a specific component of the life cycle and includes breeding and spawning grounds, juvenile nursery areas,	No

³ Waikato Regional Council. Updated December 2018. The Waikato Regional Policy Statement – Te Tauāki Kaupapahere O Te Rohe O Waikato

Table 11-1 Criteria		Criteria Met?
	important feeding areas and migratory and dispersal pathways of an indigenous species. This includes areas that maintain connectivity between habitats.	
9	It is an area of indigenous vegetation or habitat that is a healthy and representative example of its type because: <ul style="list-style-type: none"> its structure, composition, and ecological processes are largely intact; and if protected from the adverse effects of plant and animal pests and of adjacent land and water use (e.g. stock, discharges, erosion, sediment disturbance), can maintain its ecological sustainability over time. 	No
10	It is an area of indigenous vegetation or habitat that forms part of an ecological sequence, that is either not common in the Waikato region or an ecological district, or is an exceptional, representative example of its type.	No
Role in protecting ecologically significant area		
11	It is an area of indigenous vegetation or habitat for indigenous species (which habitat is either naturally occurring or has been established as a mitigation measure) that forms, either on its own or in combination with other similar areas, an ecological buffer, linkage or corridor and which is necessary to protect any site identified as significant under criteria 1-10 from external adverse effects.	No

Vegetation Area 1 met criteria 3 for inclusion as SNA due to the habitat for At Risk native copper skinks as well as At-Risk galaxias species including inanga (*Galaxias maculatus*) and giant kōkopu (*Galaxias argenteus*) within the permanent stream. The area also provides potential habitat for long-tailed bat, though level of activity within the stand is unknown and acoustic monitoring would be required to provide detailed information. As such, Vegetation Area 1 is considered to be suitable for inclusion as SNA.

Table 2. SNA assessment criteria for Vegetation Areas 2-5.

Table 11-1 Criteria	Criteria Met?			
	Vegetation Area 2	Vegetation Area 3	Vegetation Area 4	Vegetation Area 5
Previously assessed site				
1	No	No	No	No
Ecological Values				
2	No	No	No	No
3	No	No	No	No
4	No	No	No	No
5	No	No	No	No
6	No	No	No	No
7	No	No	No	No
8	No	No	No	No
9	No	No	No	No
10	No	No	No	No
Role in protecting ecologically significant area				
11	No	No	No	No

Vegetation Areas 2-5 did not meet any of the criteria for inclusion as SNA. Most relevant to the assessment of these areas is their suitability for providing habitat for native fauna, the criteria that was met by Vegetation Area 1. The habitat availability for native fauna within Vegetation Areas 2-5 was considered low, with few potential bat roost trees and little understory and groundcover suitable for native lizards. Only common, Not Threatened native bird species are expected to utilise these areas of habitat.

5. CONCLUSIONS

An assessment of the proposed SNA at the Te Awa Lakes HES site was undertaken against the SNA criteria in accordance with the Waikato Regional Policy Statement. The majority of the proposed SNA consisted of pine forest with mixed native and exotic understory. This area of forest was identified as habitat for an At-Risk native skink species (copper skink) along with At-Risk galaxias species (inanga and giant kokopu) within the permanent stream. The area may also provide foraging and possibly roosting habitat for native long-tailed bats.

Four additional smaller areas of proposed SNA on-site were assessed but did not meet the criteria for inclusion as SNA. It is recommended that these areas are removed from the proposed SNA boundary.

APPENDIX A

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- ix) Where lengths or other measurements have not been provided by a surveyor, ENZL has used basic GIS mapping and measurement systems to estimate these numbers. These should not be taken as surveyor-level accuracy for the purposes of decision making.

APPENDIX B

Aerial Maps

