

Memorandum

To Tanya Running and Hamish Crawford

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From John Turner

Office Hamilton Environmental Office

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File

Subject Nukuhau Private Plan Change: Ecological Assessment

1 Introduction

1.1 Background and project description

WSP Opus was commissioned by three private landowners, CN Top Ltd, Lexus Trustees 11 Ltd and Rajasingham Family Trust, to prepare a Structure Plan (SP) and lodge an application for a Private Plan Change (PPC) to Taupō District Council (TDC) to rezone areas of land to enable residential development of approximately 780 residential lots (the Project).

The plan change area is located on rural land approximately 1.5km north of the Taupō Central Business District, immediately to the north of the existing Nukuhau residential area (Figure 1). It is bounded by Wairakei Drive to the east and the residential area of Rangatira Park and Huka Heights, and rural landscape to the north and west.

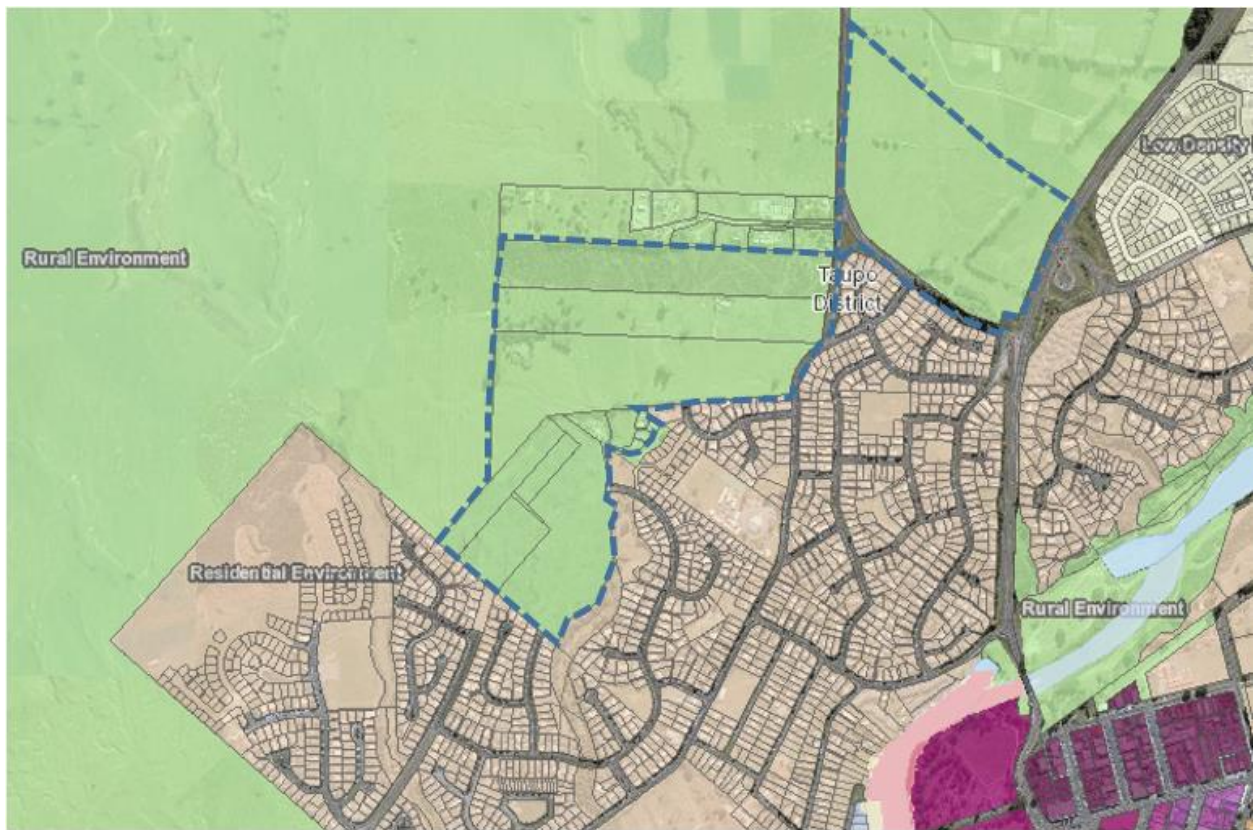


Figure 1: The land subject to the Plan Change outlines in blue dashed line showing current Rural Environment Zoning (Source: TDC)

1.2 Purpose and scope

The purpose of this memo is to provide an assessment as to whether the future development of the site can occur in a manner consistent with the relevant provisions of Part 2 of the Resource Management Act 1991 that relate to indigenous vegetation and habitat of indigenous fauna. This will be achieved by identifying the actual and potential ecological values of vegetation and habitats within the plan change area, assessing the likely potential adverse effects on the ecological values and the degree to which significant adverse effects can be avoided, remedied, mitigated or offset.

1.3 Methodology

The assessment is based on a review of existing information, including the Taupō District Plan, and the national bat database compiled by the Department of Conservation (DOC) (as at 5th June 2019).

A walkover of the site was undertaken by John Turner on 21st February 2019. The survey recorded and assessed the value of vegetation and habitat types. Any bird species heard or observed were recorded. No acoustic bat monitoring or detailed lizard surveys were undertaken. However, the potential for the site to support native bats and lizards was assessed during the visit.

Only land in the ownership of CN Top Ltd, Lexus Trustees 11 Ltd and Rajasingham Family Trust was accessible at the time of the site visit and covered during in the walkover.

Vegetation and habitat within parts of the plan change area that could not be accessed was observed and assessed from adjacent properties. Most of the key vegetation and habitat features within the areas that could not be accessed were visible properties or could be extrapolated using aerial images. Values could therefore be assessed with a reasonably high level of confidence. It should be noted however, that there is small risk that ecological values were missed using this approach.

2 Ecological Characteristics and Values

2.1 Significant Natural Areas

A review of the Taupō District Planning Maps found no Significant Natural Areas (SNA's) within the proposed plan change area or within areas immediately adjacent. The closest SNA is c.1100m to the north-east.

2.2 Vegetation and flora

The vegetation types within the plan change area are examples of highly modified ecosystems that are the result of historic clearance of the original forest and conversion to pasture and forestry. The forestry blocks have subsequently been cleared. Most of the remaining tree and shrub cover is associated with either shelterbelts or the result of amenity planting near residential dwellings (Photo 1). The vegetation is dominated by introduced plant species, including weed species, and there is virtually no indigenous vegetation.

Most of the land within the plan change area is occupied by grazed or rough pasture of low ecological value (Photo 2). Google Earth images from 2008 indicate that the parcel of land to the immediate north of the Rajasingham Family Trust property was likely rough pasture that has subsequently been invaded by shrubby weed species, including broom (*Cytisus scoparius*) and blackberry (*Rubus fruticosus agg.*) (Photo 3). The parcel of land immediately to the north of this is characterised by mown grassland and amenity tree and shrub plantings associated with several residential dwelling and commercial buildings.

The groupings of mature trees around properties and lining field boundaries are exotic conifer and deciduous species including: *Acacia spp.*, *Pinus sp.*, *Quercus spp.*, *Populus spp.*, *Salix sp.* and *Betula sp.*

Overall the vegetation within the proposed plan change area has very low intrinsic ecological value.



Photo 1: Mature trees associated with dwellings



Photo 2: Examples of rough and grazed pasture within the plan change area



Photo 3: Scrub occupying the block of land to the north of Rajasingham Family Trust property



Photo 4: Typical overland flow path within the plan change area

2.3 Fauna

2.3.1 Birds

Common introduced and native bird species were recorded during the site visit including welcome swallow (*Hirundo neoxena neoxena*), blackbird (*Turdus merula*), skylark (*Alauda arvensis*), house sparrow (*Passer domesticus*), goldfinch (*Carduelis carduelis*) and magpie (*Gymnorhina tibicen*). No bird species classified as *At Risk* or *Threatened* were recorded. With the possible exception of New Zealand pipit (*Anthus novaeseelandiae novaeseelandiae*), species classified as *At Risk*, it not expected that any *At Risk* or *Threatened* species regularly occur within the site based on the habitat types present. Some of the habitat within the site is potentially suitable for pipit i.e. rough grassland. No pipits were observed or heard during the site walkover, however the survey did not cover the entire site. There is therefore the potential for pipit to be present, although if the species does occur, numbers are expected to be low.

2.3.2 Lizards

Habitat exists for lizards within the plan change area i.e. wood piles, scrubby vegetation and rough pasture. The highly modified nature of the site means that the presence of *At Risk* or *Threatened* species is unlikely.

2.3.3 Bats

Two species of bats occur within New Zealand. The lesser short-tailed bat (*Mystacina tuberculata*) and long-tailed bats (*Chalinolobus tubaculatus*). The habitat within the plan change area is unsuitable for short-tailed bats as the species is usually associated with large tracts of mature native forest. The closest record for this species in the national bat database (DOC, June 2019) was approximately 40km to the east in the Kaimanawa Forest Park, recorded in 2018.

The long-tailed bat, a species with a threat status of Nationally Critical, is more adapted to edge habitat than the lesser short-tailed bat and this species occurs widely throughout the Waikato Region. It roosts in cavities in both native and exotic trees and can be found in landscapes where the dominant mature trees are exotic. Within the plan change area there are several stands of mature trees associated with dwellings that have the potential to provide roosting habitat for long-tailed bats. There are also rows of mature trees along field margins that could function as flight paths, as well as provide roost sites. Individual mature trees within paddocks could also provide roost habitat, although isolated trees tend to be less favourable roosting sites compared to trees located within groups.

The national bat database (DOC, June 2019) holds no records of long-tailed bat within the plan change area. The nearest survey record to the plan change area is within the Wairakei Golf Course and Sanctuary, approximately 3km to the north. The survey was undertaken in 2014 and recorded no bats. There are records for bats in the Kinleith Forest (2009), approximately 20km to the north-west. There have also been relatively recent newspaper reports of bat being recorded near Wairakei Village (NZ Herald, November 2018).

Although no long-tailed bats have been recorded within the plan change area, the presence of potential roost trees and flight paths, together with records of long-tailed bats within the wider landscape, means that there is a moderate risk of this species being present within the plan change area on a regular basis.

2.4 Aquatic Habitats

While there are overland flow paths through the site, there are no permanent streams. At the time of the site visit there was no surface water. Overland flow paths were dry with

pasture grasses and weeds through their base (Photo 4). There are no habitats within the site supporting aquatic habitat values.

2.5 Summary of values

Based on currently available information the site has low ecological value and no areas within the site qualify as significant indigenous vegetation. If long-tailed bats are confirmed to be present in the future then this may qualify parts of the site as being significant habitat of indigenous fauna, notably the stands of mature trees.

3 Assessment of potential effects and mitigation options

As this application is for a plan change, to change the zoning from rural to residential, actual development will not occur for several years. Furthermore, at this stage it is not known exactly how any future subdivision would occur and hence the ecological effects cannot be accurately assessed.

However, to enable the actual construction of houses on the site in the future, a subdivision consent (and maybe a landuse consent) will be required. As part of this process, the person subdividing the land will need to undertake an assessment of effects, one matter needing to be assessed being ecology. This assessment would need to be undertaken by an ecologist and will focus on the land being subdivided. Should ecological surveys be needed it would occur at this time and become a condition of any consent council would grant.

3.1 Summary of potential effects

As the site has been highly modified it supports almost no indigenous vegetation and therefore there will be no significant adverse effects on the intrinsic value of the vegetation. There will also be no direct adverse effects on watercourses. Potential adverse effects will be limited to effects on fauna and indirect effects on watercourses downstream of the plan change area.

There are four potential adverse ecological effects that will need to be addressed as part of any future resource consent application, being:

- Effects on long-tailed bats;
- Effects on NZ pipits;
- Effects on lizards; and
- Effects on watercourses downstream of the plan change area.

3.2 Effects on long-tailed bats

The existence of mature trees within parts of the site raises the potential for long-tailed bats being present. Therefore, any application for the subdivision of land or a landuse consent, should include an acoustic survey for bats¹.

If the acoustic survey confirms bats are regularly using the site, then an assessment of adverse effects will need to be undertaken. Adverse effects could include loss of roosting habitat and disruption of flightpaths. Measures will need to be developed to avoid, remedy, mitigate and/or offset any significant adverse effects. Such measures may include retention of high value stands of mature trees, provision of alternative artificial roost sites and provision of offset mitigation e.g. pest control within known high value bat habitat.

¹ To be undertaken between 1st October and 30th April (optimal survey period for bats)

3.3 Effects of NZ pipit

Given that habitat exists within the plan change area that could support NZ pipit it is recommended that any application for the subdivision of land or a landuse consent, should include a full site survey (breeding season August to February) to confirm the status of NZ pipit. If pipits are found to be breeding within the site then measures to avoid, remedy or mitigate the effects will need to be implemented. Typical measures include keeping grass mown short within known breeding locations to prevent birds from starting nesting, thereby avoiding nest destruction site clearance.

3.4 Effects on lizards

The existence of lizard habitat within the site means that there is the potential for lizards to occur within the plan change area. While it is considered unlikely that *At Risk* or *Threatened* species are present in the area, all native lizards are protected under the Wildlife Act 1953.

Therefore, it is recommended that any application for the subdivision of land or a landuse consent includes a lizard survey. The results of the survey should be used to inform the preparation of a lizard management plan (LMP) that would ensure that the risk of lizards being killed or injured during site clearance is minimised.

3.5 Effects on watercourses downstream of the plan change area

Given that the site only has overland flow paths that are dry most of the time and have no aquatic ecology values, development of the site will not result in direct effects on any watercourses. However, erosion and control measures will need to be implemented as part of any future development on the land to ensure that suspended sediments do not contaminate watercourses downstream of the plan change area during rain events.

4 Conclusions

The plan change area comprises mainly pasture, amenity planting around private properties and pasture land that has been invaded by shrubby weed communities over the past 10 years. It is a highly modified environment supporting no areas of indigenous vegetation and no permanent streams. The review of existing information and site visit undertaken on 21st February 2019 found no significant ecological values within the plan change area. However, there is habitat within the site that could support long-tailed bats (threat status - *Nationally Critical*), New Zealand pipit (threat status - *At Risk*) and native lizard species. Detailed surveys would for these species/species groups would therefore need to be undertaken to confirm their status, assess the effect of site development and provide a basis for developing suitable measures to avoid, remedy and mitigate significant adverse effects. With such measures in place it is expected that future development of the site could be undertaken in a manner consistent with the relevant provisions of Part 2 of the Resource Management Act 1991 that relate to indigenous vegetation and habitat of indigenous fauna.