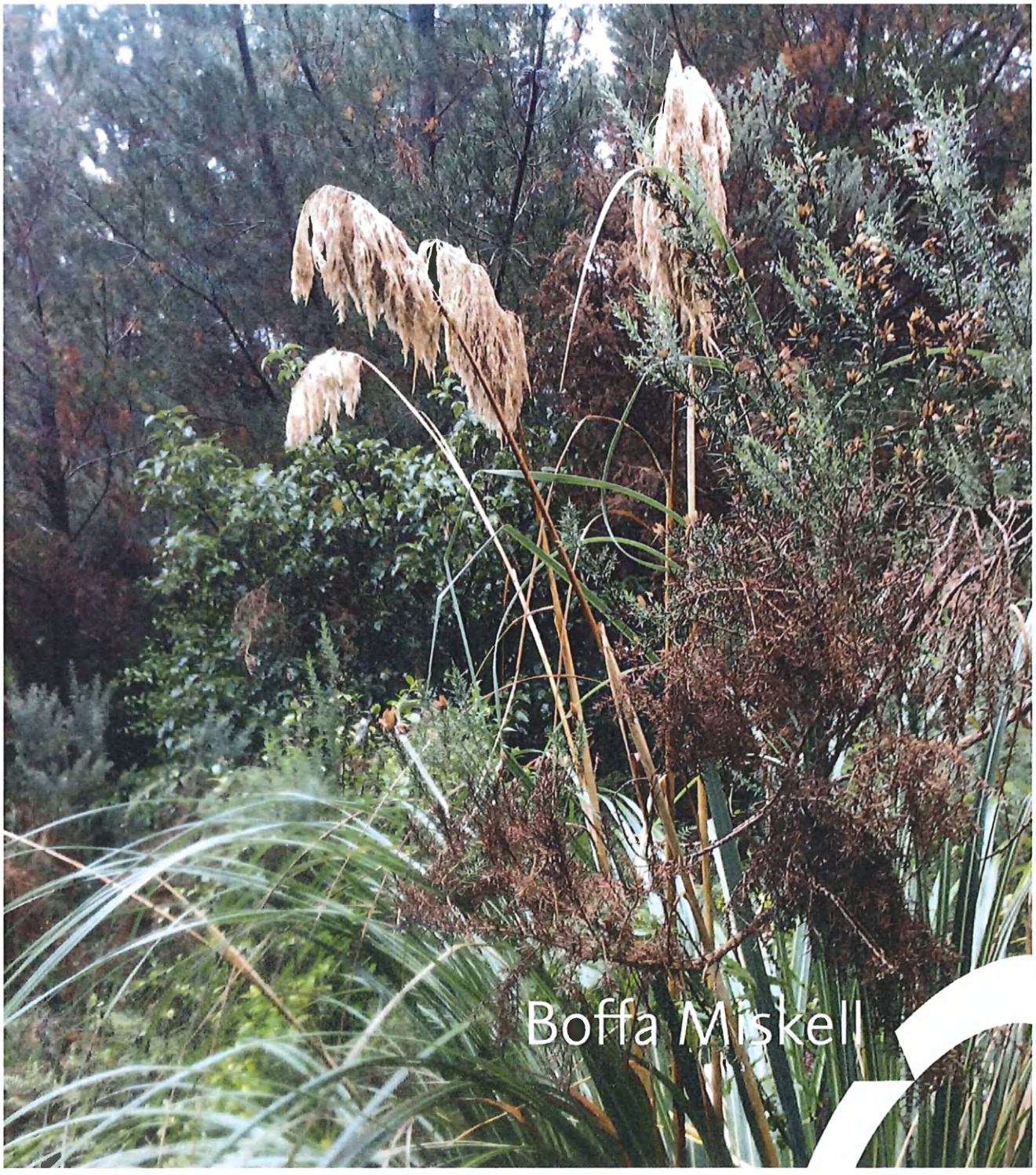
Silverstream Spur

Ecological Values Assessment
Prepared for Upper Hutt City Council

7 April 2015



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1 Introduction

1.1 Background

Boffa Miskell Limited (BML) were engaged by Upper Hutt City Council (UHCC) to undertake an ecological values assessment of Silverstream Spur Reserve, a 35.14ha site situated between the Eastern Hutt Road and Kiln Street, overlooking Taita Gorge.

As part of the Annual Plan process, UHCC wishes to sell the Silverstream spur parcel. To initiate this sale community engagement was taken including a submissions process. The submissions received raised a number of concerns by residents, including issues relating to ecological. In the submission analysis, Beca (2014) report that "*the Silverstream Spur is viewed by submitters as an important green space landform with a range of ecological and amenity values*". The main ecological concern raised by submitters was in regard to the loss of an ecological corridor.

This report is not an assessment of effects or significance in terms of RMA Section 6c. Rather, this report provides a description of species and communities present on the site and an assessment of the ecological condition and values of these.

1.2 Site Context

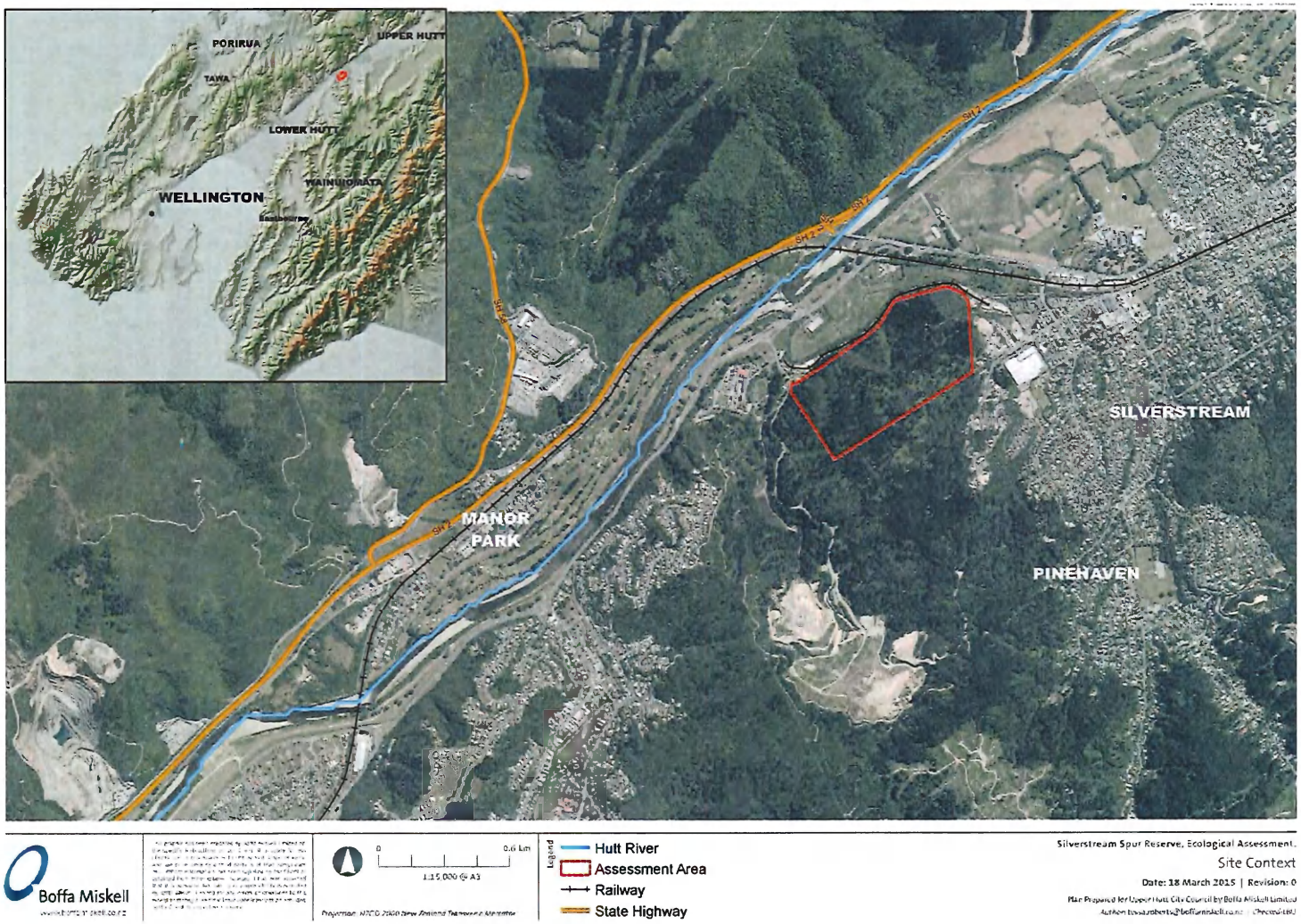
The Silverstream Spur, Pt Section 1 SO34755, is a 35 ha land parcel situated at the northern end of the Eastern Hutt Hills located between Silverstream and Stokes Valley (Figure 1). The northwest boundary of the site is bordered by the by the Silver Stream Railway, a heritage railway. Silverstream Landfill is located to the south of the site (Figure 1). Hulls Creek, running adjacent to the railway line, is a small tributary of the Hutt River.

The site lies within the Sounds-Wellington Ecological Region (39) and is within the Wellington Ecological District (39.01). The Ecological District is characterised by steep, strongly faulted hills and ranges (McEwen, 1987). The district is very windy with frequent NW gales, warm summers and mild winters. It includes a range of soils derived from greywacke and loess and areas of alluvial, peaty and stony soils in the valley (McEwen, 1987). The Wellington Ecological District was originally mostly forested, today it is modified by farming and urbanisation, with pasture, gorse, and regenerating shrublands throughout and only a few remaining remnant forest areas (McEwen, 1987).

This Silverstream Spur has not been identified as ecologically significant in the District or Regional Plans (GWRC, 2013; Upper Hutt City Council, 2004).

Beca (2014) provide further information regarding general site background, planning context and assessment of submissions related to the sale of Silverstream Spur.

Figure 1: Site context plan.



2 Methodology

The ecological assessment of the site was made with a combination of desktop analysis and field survey work, as outlined below:

- A review of the documentation provided (Beca Ltd, 2014);
- Checking existing biological databases;
- Information was derived from known datasets on landforms, soils, climate and topography of the site, including Land Environments New Zealand (LENZ) and Potential Vegetation of New Zealand (PVNZ – Leathwick *et al.* (2004));
- Familiarisation with published information on biological values within the area;
- Preparation (in GIS format) of site maps and plans to direct the field surveys;
- A site visit was conducted by a qualified ecologist on 17/3/2015 between the hours of 09:00 – 15:00 to survey the terrestrial vegetation and avifauna communities. The weather conditions were light showers in the morning, clearing to scattered cloud in the afternoon.
- The site was viewed from outer-vantage points (Eastern Hutt Road, Kiln Street and Reyonlds Bach Drive) to obtain an overall view of the site. This helped to confirm earlier desktop mapping and onsite recordings of vegetation community extent.

2.1 Vegetation

The extent and differences in vegetation within the site were delineated on geographic information systems (GIS) using topographical maps and high resolution aerial photography prior to site visit.

These delineated vegetation communities were then ground-truthed in the field, where each identified community type was walked and described. Any variations found in the field which differed from the desktop map were noted. Each community visited was assessed with photographs and descriptions including, species lists and basic structural measurements such as diameter at breast height and height of canopy.

2.2 Birds

Whilst on site any bird species heard or seen was identified and recorded, along with time of day, weather and vegetation community within which the bird was observed.

2.3 Lizards

Field surveys of lizards were not conducted, in part due to the time of the year not being optimal for such surveys. Rather, we have relied on the vegetation community descriptions obtained from the field investigations (refer to Section 4.1) to identify areas of potential habitat for species likely to occur within the area.

2.4 Limitations of Assessment

Assessment of the site vegetation, avifauna and watercourses on the site was limited to observational descriptions by an experienced ecologist during a single site visit. This does not provide quantitative data, not does it allow for seasonal variability that may occur.

2.5 Definitions

Vegetation development is described by three classes and those classes are generally age related, they are described as:

- **Pioneer:** Pioneer species are hardy species which are the first to colonize previously disrupted or damaged ecosystems, beginning a chain of ecological succession that ultimately leads to a more bio-diverse steady-state ecosystem. They species present is often fluid and the community highly response to outside pressures.
- **Seral:** A seral community (or sere) is an intermediate stage found in ecological successions in an ecosystem advancing towards its 'climax' community. In many cases more than one seral stage evolves until a steady state ecosystem is formed. This is typically the most diverse state with decreasing fluidity in species presence and abundance.
- **Climax:** A steady state ecosystem, in which the dominant biomass is usually woody and forms a closed canopy (for vegetation) and is at its maxima. This stage is resistant to change and other than large disturbances has a very stable representation of species in "fixed" niches.

We have used the following vegetation type definitions (Atkinson, 1962) in this report noting that these are ecologically based and may differ from those in the District Plan rules and definitions:

- **Shrub**: a woody plant with a diameter at 1.5m of less than 10cm.
- **Tree**: a woody plant with a diameter at 1.5m of 10cm or greater.
- **Scrub**: A plant community of trees and shrubs forming > 80% of the canopy and with shrubs dominating.
- **Forest**: A plant community of trees and shrubs forming > 80% of the canopy and with trees dominating.

In terms of species:

- **Endemic:** Plants and animals which are unique to an area or animals which may migrate but breed only in the area.
- **Native:** Species naturally found in a country but also found elsewhere (includes self-introduced species).
- **Exotic:** Not native; a species that was introduced into an area.

The four stream forms are defined as follow:

- **Watershed basins:** These basins are the upper catchment area where water is collected and moved downslope into lower stream beds, but do not typically have a stream channel, bed or banks. They often have headwater springs and seepages. This means they can have persistent high soil moisture and as a result slope failures are also common.

- **Ephemeral:** Streams that only flow for short periods following heavy or persistent rain. They may develop a bank or flow path depression but don't typically have an obvious aquatic substrate. They may retain sub-surface flows at other times and can therefore remain moist even when the visible bed is dry. They do not sustain fish populations.
- **Intermittent:** Streams that flow for longer periods, typically during wet seasons, but which can become dry during periods of seasonal soil moisture deficit (e.g. summer / autumn). They have a defined channel with bed and banks and can have good persistent flows during the wet seasons. During seasonal drought these streams typically reduce to a series of persistent pools which can act as refugia for fish.
- **Perennial Streams:** Streams with permanent flows year round.

3 Ecological Value

This is a complex concept and "value" may be interpreted in many ways. For the purpose of this report, we refer to ecological values as being those features which are either native species or are functions and processes used or "valued" by native species to persist in the landscape.

Some decision on how value is gradated and allocated has had to be made and generally follows the following process:

- Native species are valued more than exotic species.
- Native species are valued in terms of their rarity; *Threatened* or *At Risk* species, as defined by Townsend *et al.* (2008), are more valued than common species.
- Later successional species and "key stone" species are typically more valued than pioneer species.
- Functions and services relating to critical resources and processes are more valued than common resources or resources and services of minor (or transitory) importance.
- Intact and more representative assemblages (those with the "right" number of species in the "right" locations) are more valued than fragmented, weed invaded and species deficient habitat areas.

In this way we have made decisions on the ecological value of the Silverstream spur site.

4 Assessment of Ecology

Silverstream Spur, as the name suggests, is the terminal end of a complex of ridges and hills that form the southern edge of the Hutt River Valley. The spur forms one of many "pinch points" between the northern and southern valley surrounding hills. The flood plains and terraces below the spur are urbanised with many interceding infrastructure features including railway lines and the State Highway.

Historically the spur is likely to have been dominated by beech forest (hard beech –black beech). Fragments of this vegetation, along with kamahi and some other broadleaf hardwoods, can be seen further up the ridge line and hill gullies outside of the site. Rimu and rata may also have been prominent, especially in the gullies. According to the PVNZ data (Leathwick et al., 2004), the state of mature vegetation on the site in the absence of human intervention would be rimu-broadleaf-beech (Hall's totara-miro-rimu/kamahi-silver beech-southern rata and Rimu-miro/kamahi-red beech-hard beech forest types).

Today the vegetation, having been largely removed through human activities in the area is a mixture of conditions associated with fire, plantation forestry and tracking. The following describes the communities recorded form the site survey.

4.1 Vegetation

Some form of vegetation covers most of the 35 ha of the site. There are four basic vegetation community types present (Table 1 and Figure 2), each reflecting a human induced origin. In broad terms these comprise pine plantation (ridges and side slopes), young gorse, gorse/pioneer native broadleaf/manuka shrubland and tree fern/seral broadleaf gullies (see Figure 3). Photos of each of the vegetation communities are provided in Appendix 1. A full of the 67 native species recorded on the site is provided in Appendix 2.

Much of the site is dominated by the exotic pine forest vegetation community, with it covering approximately 20 ha (57%) of the 35 ha site. While there are a number of interesting ecological features within the site relating to variations in age or occasional mature native trees, there were no *At Risk* or *Threatened* (de Lange et al., 2013) plant species found, nor were there any intact mature forest or climax habitat found. The majority of the non-pine plantation area is a mixture of regenerating simple assemblages of common pioneer native species and exotic weeds (e.g. gorse).

Table 1: Vegetation communities within the site

MAIN HABITATS and FEATURES	
Shrub	
1	**Young gorse** • Approximately 1 ha (3%) of the site carries this vegetation community type. • This is the youngest vegetation community, covering the extent of the most recent fire event on site, which began at the Silverstream Railway and travelled south-east up a small spur. Gorse (*Ulex europaeus*) is an exotic species. • An example of this vegetation community can be seen in Appendix 1.
2	**Gorse/Broadleaved** • Approximately 7.3 ha (16%) of the site carries this vegetation community type. • This vegetation community has arisen in recovery to past fire events. • The canopy consists of ageing gorse at an average height of 1.5m, subcanopy is sparse, mainly consisting of gahnia, manuka, Spanish heath, mingimingi and *Myrsine australis*. In older stands kanuka, silver fern, five finger, mahoe, hangehange and tree daisy are present. • An example of this vegetation community can be seen in Appendix 1.
Seral Forest	
3	**Mixed seral broadleaved (gully)** • Approximately 10 ha (35%) of the site carries this vegetation community type. • Found on the mid-toe slopes, most prominently on the gentler gully sides more common found on the eastern lower slopes of the site. • This forest represents a seral stage in the regenerating broadleaved forest from manuka scrub. With the exception of mamaku covering the gully floors, the composition of this community. The slopes contain a canopy of kamahi-manuka-broadleaved-silver fern mix, whereas the gullies consist of mamaku and mahoe. The • An example of this vegetation community can be seen in Appendix 1.
Exotic	
4	**Pine plantation** • Approximately 20 ha (56%) of the site carries this vegetation community type. • 15 years ago, a large proportion of the site, mainly on ridgelines and was planted in exotic pines (*Pinus radiata)*. • These large trees (DBH approx. 80 cm, >30m in height) form groves when canopies overlap. Little understory can be seen in these communities, mainly matipo, *Coprosma lucida, Psuedopanex aborea* and *Leucopogon fasticularis* • Lone, or scattered pines occur (throughout the eastern side of the assessment area and in the central ridgeline), yet these sit well above the scrub canopy and have minor influence on community below. • An example of this vegetation community can be seen in Appendix 1.

Figure 2: Silverstream Spur vegetation communities.

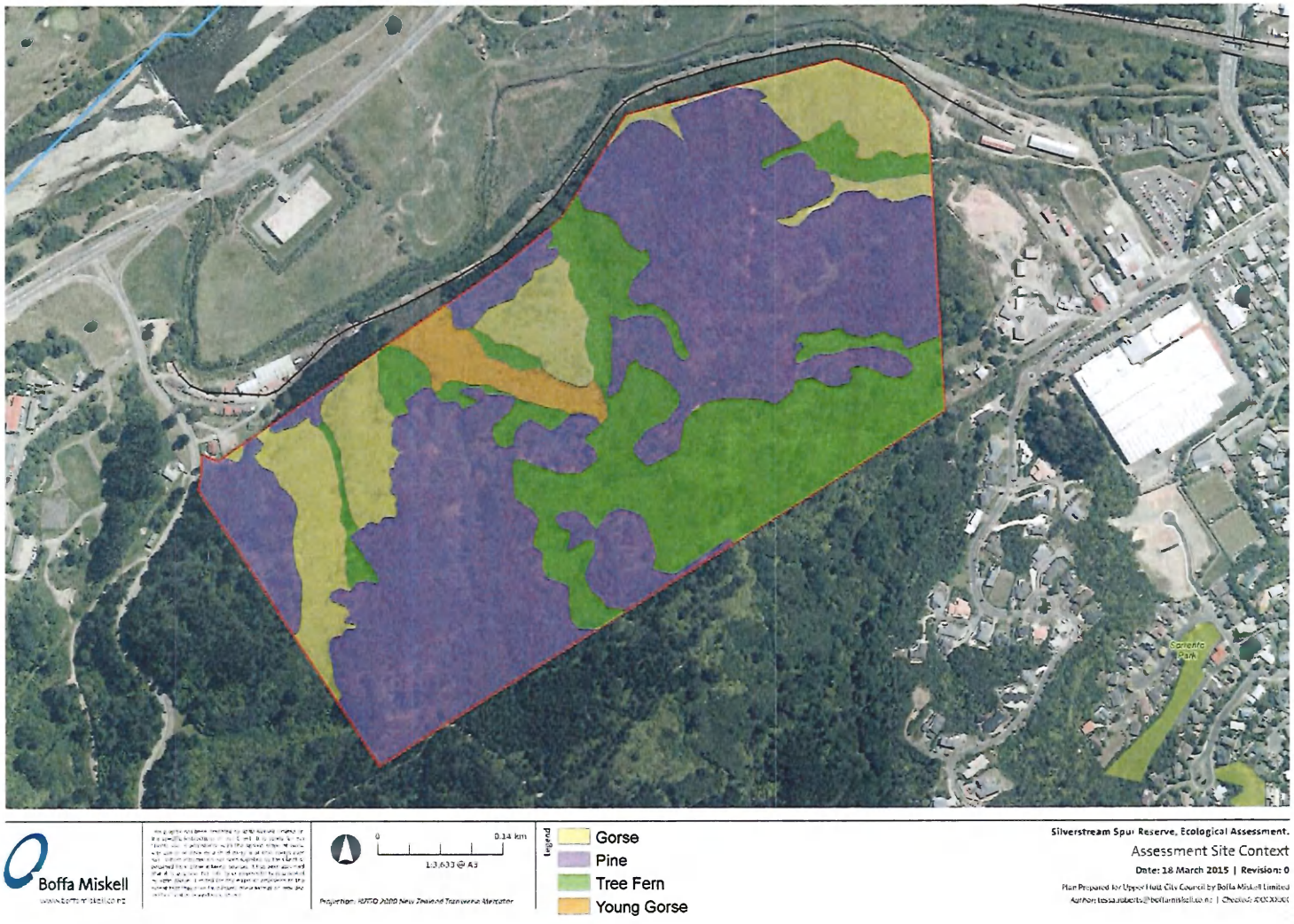
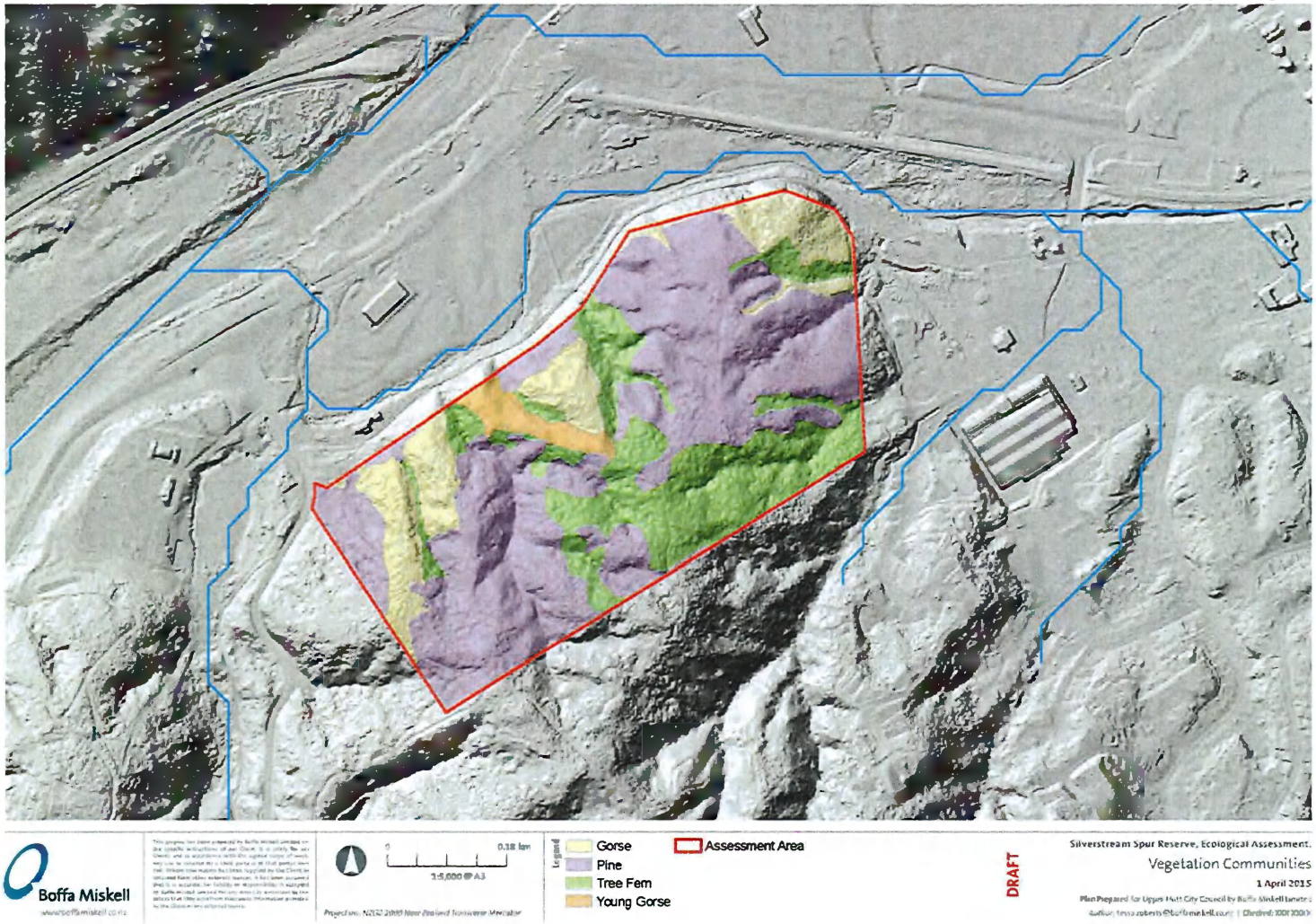


Figure 3: Distribution of vegetation communities over the topographic features of the site.



4.2 Avifauna

Though not conducted during optimal weather conditions for avifauna survey, following species were recorded on site: starling, grey warbler, fantail, silvereye (a flock). Starling in an introduced exotic species, while the remaining three are native but *Not Threatened* (Robertson et al., 2013). Given the vegetation and habitat types present (Section 4.1), it is likely that several other common native species such as tui which are persistent in semi-urban environments will be present from time to time. The site is unlikely to provide key habitat for any *Threatened* or *At Risk* avifauna species.

4.3 Lizard & Invertebrates

Small areas of manuka-toitoi-fern shrubland on the site may provide potential be habitat for lizards. However, we consider it unlikely given that there is no remnant vegetation around the spur that may have sustained a population while the young manuka habitats were absent (i.e. when the areas were gorse and weeds).

The invertebrate fauna will also be simple and represent the pioneer resources present and the relatively young nature of the native vegetation. Those species that utilise the pine such as huhu beetle and some native carabid beetle will be present as will lepidoptera associated with native lianes. However such species are common and utilise a wide range of resources and it is highly unlikely that conservation important invertebrate are present.

4.4 Aquatic Systems

On the site, there are at least three gullies draining north towards the Hutt River and one eastward (see Figure 3). At the time of the survey (during rain), none of these gullies were considered to contain a perennial waterway; all were watersheds with a flow path but no permeant aquatic systems and no habitat for fish (see Photo 1 below).

Photo 1: Watershed flow path observed during March 2015 site visit.

5 Ecological Functions & Processes

5.1 Nectar, Pollen & Food Resources

The vegetation species on the site generally does not represent a valuable or abundant nectar or pollen source (refer to Appendix 2 for vegetation species list). The resource is largely entomophilus not ornithophilous (i.e. for insects not birds). The most abundant flowering native species on the site is manuka, and provides a small (relative to the local resource) resource for native flies, moths and exotic bees. We do not consider the site an important local source of either nectar or pollen and hence not a seasonal destination of congregation point of native fauna.

The pine wood and woody debris is limited and there is little native wood. Some resource is present for native wood boring insect but the resource is unremarkable.

5.2 Nutrient Recycling & Water Quality

Forests and vegetation communities in general, recycle dead organic material where there is sufficient bacteria, moulds and invertebrates. Mature, late climax forests have a rapid nutrient recycling capacity whereas younger seral stages, while nutrient hunger, have a slower recycling rate. The recycling rate has an impact on the availability of energy for plant biomass increase but little direct implication on biodiversity or fauna. The communities present are generally young seral ones or else exotic monocultures of pine. A reasonable expectation is that nutrient recycling processes are still poorly developed and that the litter and soils do not hold representative communities of decomposers and decomposed resource.

All forested and vegetated surfaces with humus and duff have a role in surface water runoff treatment. The current vegetation on the site has no special detention or treatment value, but does have values greater than pasture or bared soils and does provide some mitigation to rain runoff into the Hulls Creek. The Hulls Creek however, has many influences on its quality and is recognised as in a moderately degraded state (GRWR, 2007) and the vegetation on the Silverstream Spur makes little difference to the water quality in the stream.

We do note that the Silverstream Care group have undertaken considerable work on Hull's Creek to improve the stream habitat for fish and aquatic insects and to create a corridor of native plants for birds[1] (discussed further in Section 5.4 below).

5.3 Biodiversity

Areas of native and mixed exotic-native habitat supply a reservoir of species and functional diversity (biodiversity). Native middle serial and late seral systems supply the greatest biodiversity. While "biodiversity" in and of itself may have little other value than intrinsic value to many humans, the value to sustaining air, soil and water health should not be understated and the

[1] http://www.gw.govt.nz/Silverstream-Care-Group/

potential values into the future of retaining as full a compliment of species as possible not discounted.

The Silverstream Spur site was cleared of its original biodiversity, species and functions between 1840 and recently. The re-establishment of the early seral stages follows a reduction in use and disturbance probably since the pine plantation was installed. The current assemblage of native species is moderate (as evidenced in the species lists, Appendix 2) and the presence of ecological functions and features not high.

As such the area, while having potential and seen to be regenerating with the usual pioneer exotics and natives, currently has low biodiversity values.

5.4 Ecological Corridor

Another central function of remnant, plantation and regenerating vegetation is the assistance of species to move through the landscape. This typically means movement between sinks of native habitat. For non-flighted species, the corridor connection needs to be continuous, have a microclimate suitable for those species the entire length and whose connectivity might be through long term slow progressive connection rather than a single movement event.

For flighted species (birds, bats and winged insects) the movement will typically be through a single movement event and the corridor need not be continuous, nor all of it as intact or with features as good, as the source areas. Sometimes a corridor can simply be a series of patches that offer temporary refuge or food resource across a landscape. Often species such as birds do not require a corridor, but may prefer to travel over vegetation rather than urban surfaces. For insects, it is often the thermal difference and light "pollution" between "concrete" and vegetation that is important (such as for nocturnal moths).

The establishment of a species corridor requirements is not a simple matter and often a perceived corridor function may not be a required or even real corridor function.

The Upper Hutt Branch of Forest and Bird has undertaken planting to establish an ecological corridor along Hulls Creek to link Silverstream Spur with Keith George Memorial Park (refer to Figure 4). This "corridor" relates to local stream associated movements across the wider area and the Silverstream Spur vegetation plays little to no role in that creek associated riparian movement, as shown in Figure 4.

Any movement of fauna (or plant propagules) other than associated with the waterway itself requires flight and passage over the railway lines, local roads, under culverts, over the Hutt River (assuming the northern valley slope vegetation is the destination) and over the State Highway. There is no continuous vegetation passage.

The distance between the northern vegetated slopes and Silverstream Spur is between 700m and 900m (mid-slope). This distance is well within flight range of the avifauna species present and moving through the landscape. It is also within the range of most flighted invertebrates who undertake such movements too.

A change in the sites vegetation cover would make very little difference to the ability of these species to move across the valley.

Figure 4: Eco-corridor as proposed by Forest and Bird[2]

6 Summary & Conclusions

- The species and habitats present on the Silverstream Spur are either exotic pine plantation systems or early successional pioneer systems (refer to Table 1 and Figure 2). In terms of distribution and abundance, the exotic vegetation communities dominate the site.
- The native systems present are common and minor in terms of resource value, quantity or ecological value on a local scale.
- The system as a whole reflects development after a high level of human disturbance and modification (e.g. previous farming, planting of exotic forest and fire).
- No flora or fauna species were recorded that have particular conservation value (i.e. *Threatened* or *At Risk* according to the NZ threat classification system).
- It is unlikely that there are bird, invertebrate or lizard communities or populations of species of note.

[2] http://www.forestandbird.org.nz/what-we-do/branches/lower-hutt/ecological-corridors-lower-hutt-f-b

- While the site has a potential value into the future, that is only so where the native systems are allowed to continue to regenerate and that enrichment of the otherwise simple species assemblages occur, and providing weed and pest species are managed.
- As such, we can find no evidence nor reason to conclude that the Silverstream Spur has any current important ecological values, nor has it any critical ecological functional roles in the wider or local landscape including a corridor function.

7 References

Atkinson, I. A. E. (1962). Semi-quantitative measurements of canopy composition as a basis for mapping vegetation. *Proceedings of the New Zealand Ecological Society, 9*, 1–8.

Beca Ltd. (2014). *Disposal of Silverstream Spur Reserve Land Assessment of Concerns Raised*.

De Lange, P. J., Rolfe, J. R., Champion, P. D., Courtney, S. P., Heenan, P. B., Barkla, J. W., ... Hitchmough, R. A. (2013). *Conservation status of New Zealand indigenous vascular plants, 2012* (New Zealand Threat Classification Series No. 3). Wellington: Department of Conservation.

GRWR. (2007). *Hulls Creek - water quality and ecology* (No. GW/EMI-T-07/219). Greater Wellington Regional Council.

GWRC. (2013). *Regional policy statement for the Wellington Region* (No. GW/EP-G-13/21). Wellington: Greater Wellington Regional Council.

Leathwick, J., McGlone, M., Walker, S., & Briggs, C. (2004). *Predicted potential natural vegetation of New Zealand*. Landcare Research, Lincoln New Zealand: Manaaki Whenua Press.

McEwen, W. M. (Ed.). (1987). *Ecological regions and districts of New Zealand. Booklet to accompany Sheet 3: Descriptions of districts in central New Zealand, from eastern Wairarapa to Akaroa, also Chathams, not shown on map* (3rd rev. ed. in four 1:500 000 maps). Wellington: Department of Conservation.

Robertson, H. A., Dowding, J. E., Elliott, G. P., Hitchmough, R. A., Miskelly, C. M., O'Donnell, C. F. J., ... Taylor, G. A. (2013). *Conservation status of New Zealand birds, 2012* (New Zealand Threat Classification Series No. 4). Wellington: Department of Conservation.

Townsend, A. J., de Lange, P. J., Duffy, C. A. J., Miskelly, C. M., Molloy, J., & Norton, D. A. (2008). *New Zealand threat classification system manual*. Wellington: Department of Conservation.

Upper Hutt City Council. (2004). *Upper Hutt City Council district plan*. Upper Hutt City Council.

Appendix 1: Vegetation Community Site Photos

VEGETATION COMMUNITIES

1. Young gorse

2. Gorse/broadleaved

3. Mixed seral broadleaved (gully)

4. Pine plantation

Appendix 2: Native Vegetation Species List

The following table provides a list of native species recorded during the March 2015 site survey.

The structural class assigned to each species is derived from the NZ Plant Conservation Network website, while the threat classifications are from de Lange *et al.* (2013).

Species	Common Name	Structural Class	Threat Status
Aristotelia serrata	Makomako, wineberry	Dicotyledonous Trees & Shrubs	Not Threatened
Asplenium bulbiferum	Hen and chicken fern, pikopiko, mother spleenwort	Ferns	Not Threatened
Asplenium flaccidum	Drooping spleenwort, hanging spleenwort	Ferns	Not Threatened
Asplenium oblongifolium	Shining spleenwort	Ferns	Not Threatened
Asplenium polyodon	Sickle spleenwort	Ferns	Not Threatened
Beilschmiedia tawa	Tawa	Dicotyledonous Trees & Shrubs	Not Threatened
Blechnum chambersii	Lance fern, nini, rereti	Ferns	Not Threatened
Blechnum discolor	Crown fern, petipeti, piupiu	Ferns	Not Threatened
Blechnum filiforme	Thread fern, climbing hard fern	Ferns	Not Threatened
Blechnum fluviatile	Kiwikiwi, kiwakiwa, creek ferm	Ferns	Not Threatened
Blechnum novae-zelandiae	Kiokio, horokio, palm leaf fern	Ferns	Not Threatened
Brachyglottis repanda	Rangiora, bushman's toilet paper, bushman's friend	Dicotyledonous Trees & Shrubs	Not Threatened
Carpodetus serratus	Putaputaweta, marbleleaf	Dicotyledonous Trees & Shrubs	Not Threatened
Caprosma grandifolia	Kanono, manono, large-leaved coprosma, raurekau	Dicotyledonous Trees & Shrubs	Not Threatened
Coprosma propinqua var. propinqua	Mingimingi	Dicotyledonous Trees & Shrubs	Not Threatened
Coprosma rhamnoides		Dicotyledonous Trees & Shrubs	Not Threatened
Coprosma robusta	Karamu, glossy karamu	Dicotyledonous Trees & Shrubs	Not Threatened
Cordyline australis	Cabbage tree, ti, ti kouka, palm lily	Monocotyledonous Trees and Shrubs	Not Threatened
Coriaria arborea var. arborea	Tutu, tree tutu	Dicotyledonous Trees & Shrubs	Not Threatened
Cyathea cunninghamii	Gully tree fern, slender tree fern, ponga	Ferns	Not Threatened
Cyathea dealbata	Silver fern, ponga	Ferns	Not Threatened
Cyathea medullaris	Black tree fern, mamaku, black mamaku	Ferns	Not Threatened
Cyathea smithii	Katote, Smiths tree fern, soft tree fern	Ferns	Not Threatened
Dianella nigra	Turutu, New Zealand blueberry, inkberry	Monocotyledonous Herbs	Not Threatened
Dicksonia squarrosa	Rough tree fern, harsh tree fern, wheki	Ferns	Not Threatened
Fuscospora solandri	Black beech	Dicotyledonous Trees & Shrubs	Not Threatened

Species	Common Name	Structural Class	Threat Status
Fuscospora truncata	Hard beech	Dicotyledonous Trees & Shrubs	Not Threatened
Geniostoma ligustrifolium var. ligustrifolium	Hangehange	Dicotyledonous Trees & Shrubs	Not Threatened
Griselinia lucida	Puka	Dicotyledonous Trees & Shrubs	Not Threatened
Hedycarya arborea	Porokaiwhiri, Pigeonwood	Dicotyledonous Trees & Shrubs	Not Threatened
Histiopteris incisa	Histiopteris, water fern, mata, bat's wing fern	Ferns	Not Threatened
Hypolepis ambigua		Ferns	Not Threatened
Knightia excelsa	Rewarewa, NZ honeysuckle	Dicotyledonous Trees & Shrubs	Not Threatened
Kunzea ericoides	Manuoea, Titira, Atitira, Kanuka	Dicotyledonous Trees & Shrubs	Not Threatened
Leptospermum scoparium var. scoparium	Manuka, tea tree, kahikatoa	Dicotyledonous Trees & Shrubs	Not Threatened
Leucopogon fasciculatus	Mingimingi, tall mingimingi	Dicotyledonous Trees & Shrubs	Not Threatened
Lycopodium volubile	Climbing clubmoss, waewaekoukou	Lycophytes (clubmosses, selaginella, quillworts)	Not Threatened
Melicope simplex	Poataniwha	Dicotyledonous Trees & Shrubs	Not Threatened
Melicytus ramiflorus	Mahoe, hinahina, whitey wood	Dicotyledonous Trees & Shrubs	Not Threatened
Microsorum pustulatum subsp. pustulatum	Hounds tongue, kowaowao, paraharaha	Ferns	Not Threatened
Microsorum scandens	Fragrant fern, mokimoki	Ferns	Not Threatened
Muehlenbeckia australis	Pohuehue, large-leaved muehlenbeckia	Dicotyledonous Lianes and Related Trailing Plants	Not Threatened
Myrsine australis	Red mapou, red matipo, mapau, red maple	Dicotyledonous Trees & Shrubs	Not Threatened
Myrsine salicina	Toro	Dicotyledonous Trees & Shrubs	Not Threatened
Olearia rani var. colorata	Heketara	Dicotyledonous Trees & Shrubs	Not Threatened
Ozothamnus leptophyllus	Tauhinu	Dicotyledonous Trees & Shrubs	Not Threatened
Paesia scaberula	Lace fern, Ring fern, Scented fern	Ferns	Not Threatened
Parsonsia heterophylla	New Zealand jasmine	Dicotyledonous Lianes and Related Trailing Plants	Not Threatened
Passiflora tetrandra	Kohia, NZ passionflower, NZ passionfruit	Dicotyledonous Lianes and Related Trailing Plants	Not Threatened
Pellaea rotundifolia	Round-leaved fern, New Zealand cliff brake	Ferns	Not Threatened
Pennantia corymbosa	Kaikomako	Dicotyledonous Trees & Shrubs	Not Threatened
Piper excelsum subsp. excelsum	Kawakawa, pepper tree	Dicotyledonous Trees & Shrubs	Not Threatened

Species	Common Name	Structural Class	Threat Status
Pittosporum cornifolium	Tawhirikaro	Dicotyledonous Trees & Shrubs	Not Threatened
Pittosporum eugenioides	Tarata, lemonwood	Dicotyledonous Trees & Shrubs	Not Threatened
Pneumatopteris pennigera	Gully fern, feather fern, piupiu	Ferns	Not Threatened
Podocarpus totara var. totara	Totara	Gymnosperm Trees & Shrubs	Not Threatened
Polystichum neozelandicum subsp. zerophyllum	Shield fern	Ferns	Not Threatened
Pseudopanax arboreus	Fivefinger, five finger, whauwhaupaku	Dicotyledonous Trees & Shrubs	Not Threatened
Pseudopanax crassifolius	Horoeka, lancewood	Dicotyledonous Trees & Shrubs	Not Threatened
Pteridium esculentum	Bracken, rarauhe, bracken fern	Ferns	Not Threatened
Pyrrosia eleagnifolia	Leather-leaf fern, Pyrrosia	Ferns	Not Threatened
Ripogonum scandens	Supplejack, kareao	Monocotyledonous Lianes	Not Threatened
Rubus cissoides	Tataramoa, bush lawyer	Dicotyledonous Trees & Shrubs	Not Threatened
Schefflera digitata	Patete, pate, seven-finger	Dicotyledonous Trees & Shrubs	Not Threatened
Solanum laciniatum	Poroporo, bullibulli	Dicotyledonous Trees & Shrubs	Not Threatened
Uncinia uncinata	Bastard grass, hook sedge, kamu, matau-a-maui	Sedges	Not Threatened
Weinmannia racemosa	Kamahi, tawheo, tawhero, tawherowhero	Dicotyledonous Trees & Shrubs	Not Threatened