Site visit report – 765 Muhunoa West Road, Ōhau.

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Summary

The purpose of this report is to provide an assessment of the property at 765 Muhunoa West Road, Ōhau to identity potential areas of indigenous vegetation that meet the description for rare, threatened or at-risk habitat under Schedule F of the One Plan. I visited the property with my colleagues at the request of Allan Mckay (Project Manager, Grenadier Developments) on Monday 22 June 2020. The assessment and additional information below draws on observations from that site visit, and other publically available published information and reports. This report is limited to an assessment on areas of rare, threatened and at-risk habitat as outlined in Schedule F on the One Plan, it does not consider values associated with the Ōhau River itself or the Coastal Marine Area.

It is my opinion that several areas on the property meet the criteria for rare or threatened habitat. These areas are indicated in the desktop mapping (Figure 1) and further described below.

Areas of rare, threatened or at-risk habitat are protected by rules under the combined Manawatū – Whanganui Regional Plan and Policy Statement (the Horizons One Plan). Any activities in or around these habitats may require resource consent; please contact a senior planner on 0508 800 800 for further information.

Past vegetation cover

Prior to human induced changes the vegetation cover in this area would have supported a mosaic of coastal sand dune vegetation and lowland coastal forest. Foredune vegetation would have supported fields of pīngao, spinifex, sand sedge and sand tussock. Shore bindweed, sand coprosma, sand daphne and tuahinau wuld have been increasingly common from the lee slope and into the more stable dunelands. Oioi, knobby clubrush sedgeland would likely have been dominant behind the foredune. The more stable areas of oioi and knobby clubrush sedgeland would likely have also contained both dry deflation hollows and seasonally wet areas (including sandy deflation hollows, sand plains dune slacks and low mounds).

This area would likely have graded into semi-stabledunes with open scattered dune scrub of braken, *Muhlenbeckia complexa*, toetoe, harakeke and cabbage trees. Mānuka, and kānuka and possibly *Olearia solandri* and matagouri would have been present.

The inland dune area would likely have been a mosaic of dune forest, described as podocarp broadleaved forest of mosaics of kānuka, red māpou, horokia and akeake grading into ngaio, tītoki, kōwhai, tōtara, mataī, rewarewa, maire speices, māhoe, lancewood and kaikōmako. Kohekohe may also have been present. In other areas podocarp broadleaf forest with occasional to frequent emergent kahikatea, occasional pukatea and rimu over a canopy of abundant tawa and tītoki. Māhoe and nikau would have been locally abundant in the sub canopy.

Today the area (including the estuary) has moderate habitat diversity – despite the natural vegetation having been altered through changes to the hydrology of the area, vegetation clearance and the introduction of exotic species (both plants and animals). However, the area remains important ecologically and supports a diverse range of indigenous species.

Rare, threatened, and at-risk habitats

Areas of indigenous vegetation were assessed under the criteria in Schedule F to identify areas which meet the definition of rare, threatened, or at-risk habitats. Area is calculated using desktop mapping (Figure 1). Schedule F is a component of Part II of the One Plan – the Regional Plan and Policy Statement for the Manawatū – Whanganui (Horizons) Region.

Resource consent is required for work that may affect habitats classified as rare, threatened, or at-risk in Schedule F (Table F.1), and which meet the criteria in table F.2(a) and are not excluded by criteria in Table F.2(b).

Several areas on the property were identified as likely to meet the criteria for rare or threatened habitat from our site visit. These habitats are: saltmarsh wetland (threatened), active duneland (rare), stable duneland (rare), inland duneland (rare), dune slack wetland (rare) and kānuka forest or treeland (threatened). This site assessment was not comprehensive and it is possible that rare, threatened or at-risk habitats may have been unintentionally missed from the assessment and subsequently this report.

The habitats described below, would in the past have existed as contiguous and not ecologically independent of each other, grading in transition along exposure to the coast, salinity, and soil moisture gradients. The mapped habitats are therefore only approximations of where one habitat type can be distinguished from another. A clear differentiation can be made between these indigenous habitats (although they contain exotic species) and pasture. The separation between habitat types is made to provide context on habitat diversity and may also have value in distinguishing between areas that are threated and those that are rare when considering the One Plan regulatory and policy frameworks.

It is my opinion that several areas on the property meet the criteria for rare or threatened habitat. These areas are indicated in the desktop mapping (Figure 1) and each habitat type is listed and described in further detail below.

Areas of rare, threatened or at-risk habitat are protected by rules under the Regional Plan and Policy Statement known as the One Plan. Any activities in or around these habitats may require resource consent; please contact a senior planner on 0508 800 800 for further information.

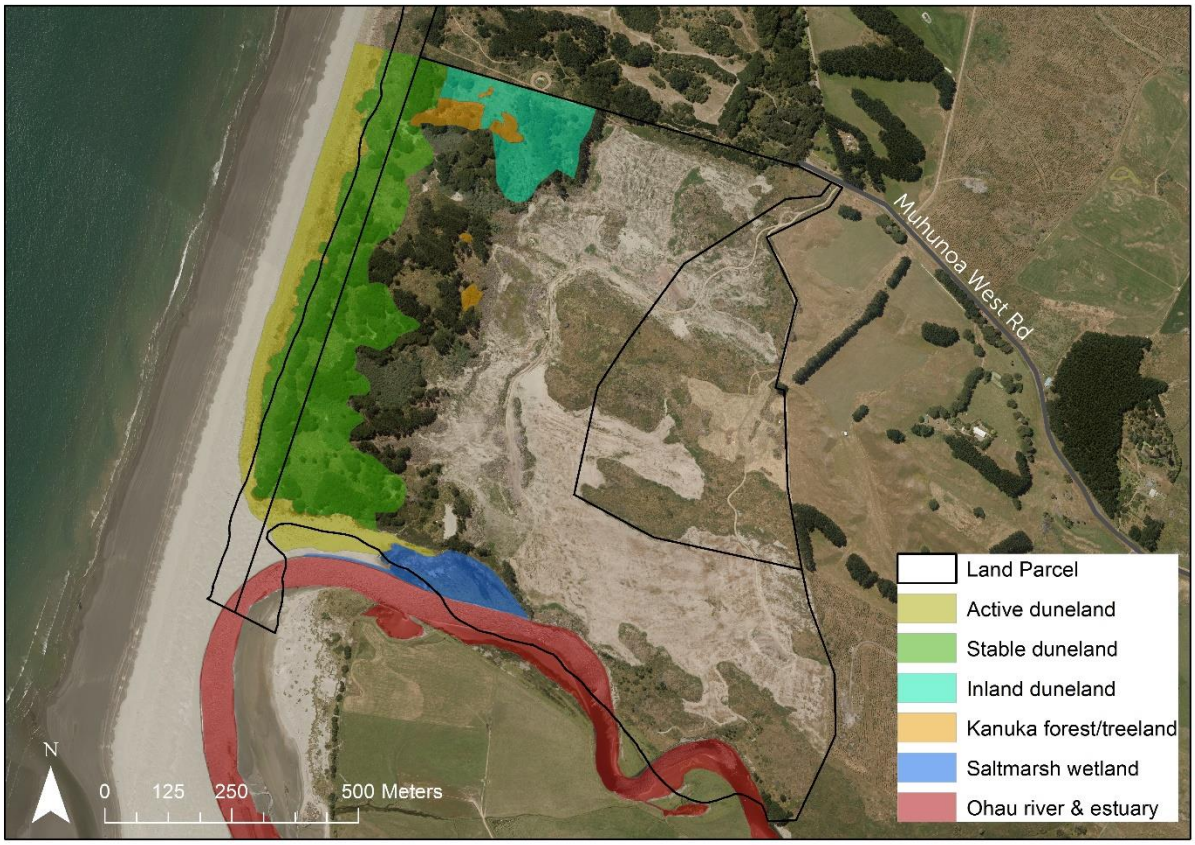

Figure 1: Map indicating potential areas of rare, threatened or at-risk habitat (all coloured areas) as described in Schedule F of the Horizons One Plan on the property at 765 Muhunoa West Road, Ōhau.

Saltmarsh Wetland – threatened

An area of 2.06 hectares of naturally occurring saltmarsh habitat was mapped on the true right of the Ōhau River (Figure 1). Vegetation was observed to follow a gradient transitioning from shrubland, to rushland to herbfield as we moved downstream. Shrubland vegetation included *Coprosma sp*, flax, and gorse over rank pasture with occasional cabbage tree. Sparse salt marsh ribbonwood was also present in one of these areas. Rushland included distinct areas of abundant sea rush and oioi, abundant threesquare, and abundant raupō. At the most downstream section herbfield habitat included glasswort, *Isolepis sp*, pink bindweed, shore celery sea primrose, and *Selliera radicans*. Exotic species including rank pasture, gorse, and lupin were scattered throughout the area but becoming more common toward terrestrial margins.

Figure 2: left -area at upstream end of saltmarsh comprising shrubs with occasional flax over rank pasture. Right – an area identified from earlier site visits by others as three square.

Figure 3: left – mostly sea rush (Juncus kraussii) with oioi (Apodasmia similis). Right- herbfield at lower reaches of estuary.

Saltmarsh wetlands are defined in Schedule F as supporting herbfield, rushland, and scrub within areas of tidal intertidal zones and are fed from groundwater and estuary waters. These wetlands comprise a mosaic of indigenous species and bare substrate (mudflats). Exotic species may be present.

This saltmarsh wetland meets the minimum size (0.1 hectare) for naturally occurring indigenous wetlands classified as threatened outlined in Table F.2(a) and is not excluded by any of the criteria outlined in Table F.2(b).

Active Duneland – rare

An area of 6.46 hectares of active duneland vegetation was mapped (Figure 1). This area included a mosaic of bare sand, spinifex grassland, with occasional pīngao sedgeland. Sand convolvulus was also present. Sand carex is also known in this area although none was identified during this site visit. Exotic speices are present with the invasive exotic grass marram dominant in many areas along the coastal foredune. Lupin is also common in places.

Figure 4: Left – view of active dune, pīngao present in front left, lupin middle left with marram and bare sand. Top right – close up of pīngao. Bottom right – spinifex was also present in this area.

Schedule F defines active dunelands as comprising of indigenous grassland or sedgeland occurring on active duneland formed on raw coastal sand. Exotic species will also be present. Active dunelands are characterised by unstable sands, and constant disturbance create environments within which species can establish. The continual change is an important component of active dunelands. The dynamic nature of this environment prevents the formation of soil and influences the type of vegetation present in this habitat.

This habitat meets the requirements in Table F.2a which requires that habitat that is defined as rare covers at least 0.05 hectares. It is not excluded by any of the criteria in Table F.2b.

Stable Duneland – rare

An area of 15.37 hectares of stable duneland vegetation (Figure 1) was mapped. This area included abundant knobby clubrush (Figure 5 – left and middle bottom), occasional sand coprosma (Figure 5 – right), sand daphne (Figure 5 – middle top), tauhinau, coprosma speices. Large macrocarpa are present throughout the stable duneland planted possibly as a shelterbelt. Native spinach (*Tetragonia implexicoma*) was more abundant around macrocarpa trees. Other exotic species are also present.

Figure 5: Left – stable duneland with macrocarpa, lupin and knobby clubrush. Midddle top – Sand daphne. Middle bottom knobby clubruch. Right - Sand coprosma. Tauhinau was also present in this area.

Schedule F defines Stable dunelands as comprising of indigenous grassland, tussockland, herbfield or shrubland occurring on stable duneland formed on recent coastal sand. Exotic invasive species are also a feature of stable duneland.

This habitat meets the requirements in Table F.2a which requires that habitat that is defined as rare covers at least 0.05 hectares. It is not excluded by any of the criteria in Table F.2b.

Dune Slack Wetland – rare

Schedule F defines dune slack wetlands as areas larger than 0.05 hectares supporting low-growing indigenous herbfield and can comprise a mosaic of indigenous species and bare sand. Dune slack wetlands are found close to the sea on sand country and typically occur in topographically low sites where wind has eroded hollows or depressions in raw sand or where water is permanently or seasonally ponded. Exotic species are frequently present.

Although we did not observe (and so were unable to map) areas fitting the description of a dune slack wetland, the property includes areas where these wetlands are likely to occur. If areas fitting the description of dune slack wetlands were found they would be considered rare habitat under the One Plan.

Inland Duneland – rare

An area of 4.78 hectares of inland duneland vegetation was mapped (Figure 1). This includes the areas of kānuka within and directly adjacent to the inland duneland (Figure 6 - middle). Vegetation in this area is includes knobby clubrush, kānuka, mānuka, māhoe, several *Coprosma sp* & hybrids and cabbage trees. This also includes a gully area with early successional native vegetation, including māhoe, pseudopanax, and tōtara (Figure 6 – right). Exotic species including wilding pines, lupin, boxthorn and pampas are also present. The area contained cattle sign and appeared to have been recently grazed.

Figure 6: Inland dune. Right – area typical of this habitat, middle – mature kānuka, right – area of early successional native vegetation.

Schedule F defines inland dunes as areas of indigenous scrub, tussockland, herbfield or forest occurring on inlands duneland formed on raw or recent sands inland. Vegetation types typically found include tussock, low growing or semi-woody herbs, shrubs, and trees. Exotic species may also be present.

This habitat meets the requirements in Table F.2a which requires that habitat that is defined as rare covers at least 0.05 hectares. It is not excluded by any of the criteria in Table F.2b.

Kānuka forest or treeland – threatened

Five areas of mature kānuka were mapped on the property (Figure 1) ranging in size from 0.02 – 0.59 hectares. Two areas were in pasture and trees appeared to have recently felled (Figure 7 – right). Only the largest area 0.59 hectares meet the minimum size requirements (0.5 hectares) in Table F.2(a). However all areas in the north of the property (Figure 7), excluding the two areas in the paddock, fall within habitat described as stable duneland and are included within the stable duneland habitat (see Figure 1 and habitat description above).

The dwarf mistletoe (*Korthalsella salicornioides*), which grows on twigs of another plant (mainly mānuka and kānuka), has previously been recorded in this area north of the Ōhau Estuary. No dwarf mistletoe were recorded during our site visit, although this is not unexpected given the short time spent searching.

Figure 7: Left - Edge of the large stand of stand of kānuka. Right – Kānuka in pasture, which showed evidence of recent felling.

Kānuka forest or treeland is defined as being dominated by almost pure stands of well-developed (greater than 4.5 m tall or 20 cm diameter measured at 1.4 m above the ground) kānuka. Mānuka and other broadleaved species can also be present but will not be dominant.

This habitat meets the requirements in Table F.2a which requires that habitat that is defined as threatened covers at least 0.05 hectares. It is not excluded by any of the criteria in Table F.2b.

Conclusion

Despite the highly modified nature of the habitats identified – all habitats discussed above maintain as signature of indigenous vegetation which allows them to be easily classified as rare and threatened habitats under the criteria outlined in Schedule F of the One Plan.

Areas of rare, threatened or at-risk habitat are protected by rules under the Regional Plan and Policy Statement known as the One Plan. Any activities in or around these habitats may require resource consent; please contact a senior planner on 0508 800 800 for further information.