

This memorandum addresses clarifications sought in Whangarei District Council and Northland Regional Council's joint letter (dated 5 July 2023) relating to the terrestrial vegetation assessment prepared by Boffa Miskell for the Northport Project (5 May 2023). Questions are set in italics with responses below.

1. <u>Terrestrial vegetation (3)</u>

a) Please clarify what is defined as "predominantly native vegetation" in Section 5.4 of the Boffa Miskell Vegetation Assessment. It is unclear which areas have been defined as predominantly indigenous and whether it includes the vegetation type Buffalo grass – pohuehue – spinifex sward (which is described as a mix of native and exotic species).

The Boffa Miskell report identifies two broad vegetation types, these being spinifex grassland and buffalo grass – pohuehue – spinifex sward. The former is "predominantly native vegetation", while the latter type varies from mainly buffalo grass on the upper part of the foredune (interspersed with spinifex) within the project footprint, to a variable mix of buffalo grass and pohuehue on the ridge crest (examples of this vegetation are shown in photographs attached to this memorandum). We did not treat the 'buffalo grass – pohuehue – spinifex sward' type as "predominantly native vegetation", though we acknowledge that this distinction was not made clear in the report.

- b) The report addresses the botanical value of the vegetation. Please provide detail on the proposal's potential adverse effects and mitigation on ecosystem function and services, using the EIANZ guidelines and methodology (Roper-Lindsay et al., 2018), including the public trees to be removed, and addressing the following:
 - *i.* Analyse and provide an assessment of ecological value of the indigenous (native) duneland vegetation, and the threatened / at risk flora (i.e., Pīngao) and significant areas present at the site.

Assessment matters for assigning ecological value using the EIANZ method are essentially the same as those used to evaluate significance in the NRPS, i.e., representativeness, rarity and distinctiveness, diversity and pattern, and ecological context. As set out in Table 1, the duneland vegetation is assessed as high value with respect to rarity and distinctiveness attributes, moderate value with respect to representativeness, and low value for other attributes using to the EIANZ method. This gives the feature an overall 'Moderate' value.

Table 1: Ecological evaluation of duneland vegetation and habitat within the project site as per Roper-Lindsay et al., 2018 guidelines

Matters	Evaluation	Attributes
representativeness	Μ	 Typical structure and composition (though simplified) Indigenous species dominant in parts of feature Species assemblages are typical of the habitat (though many characteristic species are absent).
rarity and distinctiveness	Н	 Pīngao (At Risk – declining) present.

		 Naturally uncommon habitat (though well represented in the region and ecological district). Protection of indigenous vegetation associated with sand dunes is identified as a national priority in the Mfe (2007) "Statement of National Priorities for Protecting Rare and Threatened Indigenous Biodiversity on Private Land"
diversity and pattern	L	 Limited biodiversity, ecosystem dynamics and patterns constrained and depleted
ecological context	L	 Small and poorly connected to other indigenous terrestrial ecosystems Well connected to the marine environment and located in the marine-terrestrial ecotone, though this is truncated by surrounding development

As identified in Section 5.4 of the Boffa Miskell report, the proposed works will have a moderate magnitude of effect on the indigenous dune vegetation community on the beachfront. Therefore, the level of effect at the site footprint scale (in accordance with the EIANZ guidelines) is **Moderate**. However, refer below to our overall conclusion as to the magnitude of effects using the "system-wide" approach specified in the Proposed Northland Regional Plan.

ii. In addition to the magnitude of effect on 'Predominantly Indigenous Vegetation', provide a magnitude of effect on any other identified ecological effect.

Removal of vegetation on the upper dune slope (mainly buffalo grass and spinifex) and crest (mainly buffalo grass and pohuehue, interspersed with weed infestations) amounts to a **Moderate** magnitude of effect at the site footprint scale (i.e., loss of a moderate proportion of this vegetation type from the Marsden Point beachfront, but minimal change to the composition of remaining vegetation).

As noted in Section 5.4 of the Boffa Miskell report, the proposed development is likely to result in a minor shift (i.e., a **Low** magnitude of effect) in the composition of vegetation in the immediate surrounds (for example, residual patches of indigenous vegetation on the landward side of the development will alter as it will no longer be part of a mobile dune system). Spinifex is likely to expand into any areas of new sand accretion that accumulate on areas of mobile sand along the eastern margin of the container terminal structure (as previously occurred following construction of the existing terminal and jetty), while pohuehue and buffalo grass will extend into this area as it stabilises.

iii. An evaluation of the vegetated duneland at the ecosystem level - the system created by the duneland and its vegetation as a whole (active sand dunes are considered a naturally uncommon and endangered in NZ (Holdaway et al. 2012)).

Section 3 of the Boffa Miskell report describes the project site in the context of Waipu Ecological District duneland ecosystems, while Section 4.2.4 of the Boffa Miskell report identifies that active duneland ecosystems are fairly well represented in the Northland region, to the extent that they do not meet the NRPS rarity and distinctiveness criterion 1(a). As elaborated on in the report and in response to *(iv)* below, the ecosystem function of the dune system in question is constrained by development of the surrounding area.

iv. Comment on the ecosystem services provided for coastal buffering, dune stabilisation and habitat provision for fauna.

Dune stability and buffering

The dune vegetation and habitat within the proposed project site and surrounds is a small remnant of the original duneland ecosystem, comprising the front face and crest of a single foredune. As noted in the Boffa Miskell report (Section 3.2.1 & Section 6), the surrounding dune system in this location has already been built over and stabilised, limiting the extent and occupancy of indigenous sand-binding species, and removing the hind dune ecosystem that this vegetation would otherwise form a buffer to.

Indigenous vegetation within the footprint would have no more than a small, localised influence on dune stability. Furthermore, encroachment of buffalo grass and other introduced plants into the duneland has reduced the extent of the indigenous dune ecosystem, and stabilised parts of the dune system that would naturally be dynamic.

Fauna habitat

The focus of the Boffa Miskell report was on terrestrial vegetation.

The spinifex, rank grass and pohuehue vegetation cover along the ridge crest offers potential habitat for native lizards, and shore skink and ornate skink (both at risk – declining) have been observed elsewhere in forest remnants and rural parts of the wider One Tree Point/ Ruakaka area (according to iNaturalist records).

However, the Project Site and adjacent beachfront has minimal intact, remnant habitat (much of the vegetation cover having regenerated following prior clearance). Mice were observed in burrows through the spinifex grassland, and animal tracks were common), and the area is likely to attract other mammalian predators (hedgehogs and domestic cats, in particular). Therefore, the probability of a viable native lizard population there is fairly low.

v. If the vegetation provides habitat for indigenous fauna, any updated assessment against the significance criteria under Appendix 5 Regional Policy Statement; and vi. Recommended management measures and/or offsite mitigation for the identified adverse effects.

The RPS Appendix 5 evaluation set out in the Boffa Miskell report identifies that the coastal dune vegetation meets criterion 2(b) due to the presence of a small population of pīngao. In the same vein, the site may provide habitat for a small native lizard population (most likely shore skink), and therefore is regarded as significant under criterion 2(b).

We recommend that a lizard management plan is required as a condition of consent, which includes a comprehensive lizard survey of the Marsden Point foreshore. If native lizards are detected, an ongoing programme of mammalian pest control along the beachfront area is recommended, targeting mice and rats, along with hedgehogs and mustelids. We understand that Channel Infrastructure (the owner/operator of the adjacent site) undertake a predator control programme in this area, nevertheless comprehensive targeting of rodents in particular may improve the viability of the habitat for native fauna that reside here and would assist in mitigating the reduced habitat extent by improving the condition of remaining habitat.

The LMP would also provide specifications for vegetation clearance and lizard salvage (if required). Given that the vegetation clearance required is relatively small in scale, and immediately adjacent vegetation cover will be retained, we envisage that managed vegetation clearance (cutting vegetation back and removing any woody debris or other potential refuges) will be sufficient to ensure any lizards present move out of the works footprint and into the surrounding habitat prior to development.

Overall level of effect

The further assessments set out above are consistent with the assessment in the Boffa Miskell report that the proposed port expansion will have a localised adverse effect (by way of permanent reduction) on the coastal dune ecosystem along the Marsden Point beachfront, and is likely to result in a minor shift in the composition of adjacent vegetation inland of the site. This amounts to a moderate level of effect at the scale of the site. However, the effect of the development will be minor relative to the overall extent and quality of indigenous duneland vegetation in Waipu ED, being the appropriate system-wide scale.

2. <u>Arboricultural report/assessment in the Boffa TV Assessment – removal of public trees (9a)</u>

Approximately 10 pōhutukawa trees along the landward margin of the dune crest will be removed as a result of the proposed development (i.e. they are within the proposed development footprint, being a necessary expansion of regionally significant infrastructure). Half are larger trees that were planted by Northport in 2000 as a condition of the original port development (now approximately 6 - 8 m tall), while the remainder are smaller specimens (~4 m tall, probably replacement plantings). Two pine trees and several Sydney golden wattle (mostly dead) are also present (see attached photographs).

The removal of this area of vegetation has been considered, including against the relevant criteria set out in TREE-REQ2 of the Whangarei District Plan, and we note as follows.

As a group, the trees within the proposed works footprint score "**Low**" for all value attributes in the EIANZ guidelines, as they are not a representative example of an indigenous vegetation type; have no rare or

distinctive attributes; and have limited diversity or opportunities for ecosystem processes and functions to occur (e.g., recruitment and succession). The ecological value of these trees is in keeping with the benefits that all trees provide, i.e., incidental habitat for visiting birds and insects, localised shade, air quality improvement, etc. The trees in question are fairly small and young, and therefore are not of particular importance with respect to carbon storage.



"Buffalo grass – pohuehue – spinifex" community on upper foredune (buffalo grass generally dominant).



"Buffalo grass – pohuehue – spinifex" community on dune crest (buffalo grass generally dominant).



Pine trees, pohutukawa and dead woody vegetation on dune crest.



Partly dead Sydney golden wattle (foreground) and large pohutukawa specimen (background)