

To: John Dobrowolski
From: Matt Baber, Project Ecologist
Date: 30 April, 2024
Subject: Beachlands Fast Track Referral Application Specialist Assessment: Ecology

Overview

In relation to the referral application by Beachlands South Limited Partnership, this ecology memo describes:

- the existing ecological characteristics and values of the Plan Change 88 ("PC88") site (the Site), focussing on the 'Live Zone' (approximately 160 hectares) and immediate surrounds;
- the potential effects of the proposed subdivision and development project on those values; and
- the PC88 provisions established to manage those effects.

The PC88 precinct and surrounds contain terrestrial, coastal, wetland and stream habitats, including Significant Natural Areas (Terrestrial and Marine) under the Auckland Unitary Plan (AUP) (**Figure 1 and Figure 2**) and species which are classified as nationally 'Threatened' or 'At Risk' under the NZ Threat Classification System.¹

Ecological effects on these values are proposed to be addressed predominantly through the approved PC88 Precinct provisions which sought to avoid or minimise adverse effects within the Site and adjoining environment as far as possible, by:

- Establishing an 88.7 ha Ecological Protected Area Network (EPAN) to ensure the long-term protection and enhancement of terrestrial, wetland and stream habitats with the highest ecological values.

The stated purpose of the EPAN is: To protect and enhance identified significant terrestrial vegetation/habitat types, recorded archaeological sites and significant ecological areas from subdivision and development and contribute to addressing residual ecological effects' (PC88 provision IXXX.6.6).

- Including indigenous vegetation and riparian buffers, coastal setbacks, and a minimum riparian yard setback of 10m along permanent or intermittent streams.
- Providing for fauna management and coastal bird management including the restoration and enhancement of existing roosting, nesting and foraging habitats via intensive mammalian predator control, weed management and selective mangrove management
- Providing for best-practice stormwater and erosion control.

¹ Townsend, A.J., de Lange, P.J., Duffy, C.A.J., Miskelly, C.M., Molloy, J., Norton, D.A. (2007): New Zealand Threat Classification System manual. Department of Conservation, Wellington. 35p.

Further measures to minimise potential adverse ecological effects will be addressed in proposed consent conditions through any subsequent resource consent applications that are applied for under the planning provisions set out in PC88.

With the suite of effects management measures proposed, the adverse ecological effects associated with subdivision and development within the live zoned land (and more broadly the wider PC88 area) can be appropriately managed. Net positive ecological outcomes are expected within 20 years of commencement of these measures. These positive ecological outcomes will be enabled at the commencement date of an application for subdivision in the precinct involving the Ecological Protected Area Network (EPAN) as identified on Precinct Plan 2.

Methodology

The PC88 application was supported by a comprehensive suite of ecological assessment reports, which included terrestrial, wetland, freshwater stream and coastal marine habitat assessments. Desktop and field investigations were also undertaken to characterise the ecological values within the Site. Field surveys included:

- Terrestrial, wetland, freshwater stream and coastal marine habitat assessments and mapping to characterise habitat types² and their extent and condition, including:
 - Wetland Delineation Protocols (MfE 2020, 2022) to determine ‘natural inland’ and ‘constructed’ freshwater wetlands’ in accordance with the NPS-FM.³
 - A stream classification assessment⁴ to classify watercourses and the stream ecological valuation (SEV) method to assess stream ecological function and value.
 - ‘Intertidal and subtidal biota and habitats of the central Waitematā Harbour⁵’ to classify and determine the extent of coastal habitats.
- Fauna and vegetation surveys to determine the presence or likely presence of nationally ‘Threatened’, ‘At Risk’ or otherwise notable species. These included:
 - Assessments of habitat suitability for threatened plants; long-tailed bats; forest, wetland and coastal birds; lizards; and terrestrial invertebrates.
 - Coastal bird surveys using binoculars and spotting scopes across different tides.
 - Wetland bird observations included callback surveys and automatic recording devices.
 - Fish surveys using electric fishing and eDNA techniques, and macroinvertebrate sampling.
 - Benthic infauna, epifauna and sediment quality surveys at mid and low tide sites in the marine receiving environment adjoining the site.

² Singers, N., Osborne, B., Lovegrove, T., Jamieson, A., Boow, J., Sawyer, J., Hill, K., Andrews, J., Hill, S., Webb, C. (2017). Indigenous terrestrial and wetland ecosystems of Auckland. Auckland Council.

³ Wetlands were re-assessed in accordance with the revised definition of ‘natural inland wetland’ and the Wetland Delineation Protocols published in December 2022 and incorporated into the NPS-FM in 2023 by reference. The assessment was undertaken during particularly dry and wet years (2021 and 2023 respectively).

⁴ In accordance with the Auckland Unitary Plan Practice and Guidance note on River/Stream Classification

⁵ Hayward, B.W., Morley, M.S., Stephenson, A.B., Blom, W.M., Grenfell, H.R., Prasad, R., Rogan, D., Thompson, F., Cheetham, J. and Webb, M., 1999. Intertidal and subtidal biota and habitats of the central Waitemata Harbour. Auckland Regional Council Technical Publication, 127, p.40.

The ecological effects assessment was undertaken in accordance with the Ecological Impact Assessment Guidelines (EclAG)⁶, adapted for their application to coastal marine and freshwater ecology.

The assessment identified:

- effects associated with the land use change and activities required to enable land use change,
- measures to manage effects through avoidance or minimisation, and
- assessment of residual adverse effects requiring offsetting or compensation.

This assessment was applied to the 'Live Zone' of the precinct, being the 160 ha Formosa Golf Course in the northern part of the PC88 area, the Future Urban Zone (FUZ) in the remainder of the PC88 land (which includes the adjoining properties fronting Whitford Maraetai Road and the adjacent coastal marine area (**Figure 1**).

For the residual adverse effects associated with the proposed land use change that could not be avoided, remedied or mitigated, compensation requirements were determined in accordance with the National Policy Statement for Indigenous Biodiversity (NPSIB) and National Policy Statement for Freshwater Management (NPSFM). Specifically:

- Biodiversity Compensation Models (BCMs) were applied for terrestrial and wetland values to help determine the scale of habitat enhancement and restoration activities needed to outweigh potential residual adverse effects.⁷
- For stream values, the SEV and Environmental Compensation Ratio (ECR) method was used to estimate offset requirements to address residual effects. Residual stream effects are proposed to be addressed offsite and will therefore be further assessed as part of the resource consent process.

Ecological values of the existing environment

Most of the Site is highly modified and currently comprises a golf course resort, farmland and lifestyle blocks. The Site is dominated by exotic grassland and scrub, with some areas of wetland and indigenous forest, including areas identified in the AUP as Significant Ecological Areas (SEAs) (**Figure 1 and Figure 2**). These forest, grassland and wetland habitats support native fauna, including bats, birds and lizards.

Many of these species are legally protected under the Wildlife Act 1953 and / or classified as nationally 'Threatened' or 'At Risk'.^{8,9}

Specifically, the Site is likely or known to contain potential habitat for:

- Threatened or At Risk plant species confirmed to be present including pōhutukawa, kānuka, akatea, mānuka and *Olearia angulata* (planted).
- The Threatened (nationally critical) long-tailed bat (not detected).

⁶ Roper-Lindsay, J., Fuller S.A., Hooson, S., Sanders, M.D., Ussher, G.T. (2018). Ecological impact assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

⁷ Baber, M., Dickson, J., Quinn, J., Markham, J., Ussher, G., Heggie-Gracie, S. and Jackson, S. (2021). A Biodiversity Compensation Model for New Zealand – A User Guide (Version 1). Prepared by Tonkin & Taylor Limited. Project number 1017287.0000P.

⁸ Department of Conservation.

⁹ Many of the bird species and bats known or assumed to be present at the Site are also listed as 'specified highly mobile fauna' under the NPS-IB.

- Three Threatened/At Risk forest or grassland bird species: koekoeā /long-tailed cuckoo (Threatened, nationally vulnerable), pīhoihoi/New Zealand pipit (At Risk, declining) and kākā (At Risk, recovering).
- Four 'At Risk – Declining' lizard species: the ornate skink, elegant gecko, forest gecko and copper skink.

Stream catchments within and adjacent to the Site include high quality stream habitat associated with the terrestrial SEAs through to highly modified stream environments on the Live Zone (golf course). Streams support a range of native fauna, including fish species listed as nationally 'At Risk'.

The adjacent coastal marine habitat contains marine SEAs and provides rich feeding grounds and important mid-tide roosts for a wide variety of coastal birds, many of which are 'Threatened' or 'At Risk'. The Waikopua shellbanks provide nesting and high-tide roosting habitat for the 'Threatened' northern New Zealand dotterel and 'At Risk' variable oystercatcher. Nationally 'Threatened' coastal bird species include:

- the Threatened nationally critical tūturuatu (shore plover);
- the Threatened nationally endangered matuku moana (reef heron);
- the Threatened nationally vulnerable taranui (Caspian tern);
- the Threatened nationally increasing tūturiwhatu (Northern NZ dotterel);
- the Threatened nationally increasing ngutu pare (wrybill).

Assessment of Ecological Effects

Potential ecological effects of the project

The proposal has the potential to result in the following adverse effects on ecological values within the Live Zone and surrounding coastal marine receiving environment:

- Terrestrial, wetland and stream habitat loss, fragmentation and degradation through earthworks and vegetation clearance.
- Direct mortality or injury to species that may be harmed during vegetation clearance or earthworks activities.
- Construction and operations related noise, vibrations, dust, or lighting effects.
- Ongoing disturbance effects, particularly on habitat margins/edges, through noise, dust and lighting associated with infrastructure and housing and the increased presence of people and introduced species in previously less accessible areas.
- Degradation of the aquatic (freshwater stream and coastal marine) receiving environment through sedimentation or stormwater or wastewater discharges that affect water quality.

These ecological effects were identified in the development of PC88 provisions in accordance with the EclAG.

Proposed measures to reduce the severity of effects

Measures to avoid, remedy or mitigate potential adverse ecological effects have been addressed through the PC88 provisions. Any subsequent resource consent applications will need to address the ecological provisions (including the rules, standards and information requirements) embedded in PC88. This will result in the positive ecological outcomes

identified in the ecological assessments, being achieved. It is expected that these outcomes will be required through subsequent conditions on any future resource consents, and include:

- Protection and enhancement of existing and potential high value habitat types within the 88.7 ha EPAN (precinct provision IXXX.6.6) (**Figure 1 below**). (Note: the full 88.7 ha area of EPAN will be protected through this application, including the approximately two thirds of the EPAN that is within the Future Urban zone and are not subject to this application).
- Corresponding standards establishing ecological setbacks and restricting earthworks, development or vegetation removal in the EPAN.
- Inclusion of a minimum 10 m native vegetation buffer around all high value terrestrial habitats, and wetlands within the EPAN. The 10m vegetation buffer lies within the EPAN boundary and will minimise potential effects associated with the proposed landuse change within the Live Zone (**Figure 1 below**).
- Requirement to plant a 10m riparian margin from any permanent or intermittent stream, including those identified on Precinct Plan 2 in PC88 (precinct provision IXXX.6.5).
- Seasonal constraints on earthworks or vegetation clearance activities to avoid or minimise effects on eggs or chicks during peak bird breeding season (managed in future consents through AUP provisions).
- Salvage and relocation of lizards and fish and habitat features (e.g. downed logs) from the development area into suitable habitats within the EPAN. A Lizard and Bat Management Plan is required for bulk earthworks applications to specify measures to salvage and relocate lizards, bats and associated habitat features to appropriate habitats within the EPAN (precinct provision IXXX.9(5)).
- Sediment and erosion protection and stormwater and wastewater treatment to minimise adverse effects on water quality into the freshwater and coastal marine aquatic receiving environment (precinct provisions IXXX6.4, IXXX6.7, IXXX6.11 and AUP provisions).
- Provision of the indicative coastal walkway to avoid adverse effects on the marine significant ecological areas (precinct provisions IXXX.3).

In summary:

- Based on biodiversity modelling, Net positive outcomes are expected for terrestrial and wetland biodiversity values within 20 years of commencement. That is, in accordance with the NPSIB, potential residual effects will be addressed by positive effects to indigenous biodiversity that outweigh the adverse effects.
- Based on preliminary offset modelling, a Net Gain outcome for stream ecological values and function is also expected. Further measures to minimise or mitigate adverse effects on stream habitat and fauna will be addressed through conditions on any future resource consents, including erosion and sediment controls, monitoring and adaptive management, fish salvage and relocation, fish friendly culvert design and best practice stormwater and wastewater management.
- Adverse effects on marine and coastal values can be adequately addressed through the effects management measures outlined in the Marine Ecological Effects Assessment, as guided by the Auckland-wide and PC88 provisions.

Authorisations are also required under the Wildlife Act 1953 for any salvage and relocation of protected species prior to vegetation removal. For example, copper skink, lizards (mokomoko) and any threatened invertebrate species identified in assessments of environmental effects.

I record for completeness that the positive ecological outcomes that are described above and are required through the PC88 precinct provisions could be achieved through conditions of consent in the absence of PC88.

Conclusion

Through the provisions of PC88 and subsequent conditions on any future resource consents and associated management plans, Net Positive outcomes are expected within 20 years of commencement of these measures. These positive ecological outcomes will be enabled at the commencement date of an application for subdivision in the precinct involving the Ecological Protected Area Network (EPAN) as identified on Precinct Plan 2.

In summary, the potential adverse ecological effects associated with land use changes within the Live Zone (and more broadly the wider plan change area) can be adequately addressed.

Kind regards,

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