

Memorandum

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Attention: John and Andrea Sturgess

Company: Lucklaw Farms

Date: 04/11/2022

From: Dr Lee Shapiro, Dr Sarah Flynn, Tanya Cook and Matt Turner

Message Ref: Puheke Beach Ecological Values

Project No: BM220341A

Background

John and Andrea Sturgess own Lucklaw Farm, located between Rangiputa township and Puheke Beach on Karikari Peninsula. John and Andrea Sturgess engaged Boffa Miskell Limited (BML) to undertake ecological surveys (one in June 2002 and the second in November 2022) to better understand the ecological values within their property and the adjoining Puheke Beach and the potential impact on these values resulting from continued access of vehicles to Puheke Beach.

This memo provides an overview of the ecological values at Puheke Beach identified during field surveys, and a comparison of the ecological values present with the principles that Northland Regional Council (NRC) used to guide the identification of Vehicle Exclusion Zones (VEZ) in their recently published Vehicle exclusion zone – mapping and methodology report (henceforth VEZ report, NRC 2022), which lists Puheke Beach as a “possible future inclusion”.

Vehicle exclusion zone – mapping and methodology report

The VEZ report (NRC 2022) sets out the relevant national and regional policy direction regarding vehicle use on beaches. Key points are as follows:

- Policy 20 of the New Zealand Coastal Policy Statement 2010 (NZCPS 2010) directs control of the use of vehicles on beaches, the foreshore, the seabed and adjacent public land where there is a risk of harm to particular values in the coastal environment.
- The relevant provisions of the Regional Policy Statement and Regional Plan for Northland adopt a similar approach to the NZCPS in the context of vehicle use on beaches. They encourage public access, use and development in the coastal environment while requiring that environmental imperatives in relation to the biodiversity, natural character and historic heritage are met.

As stated in the VEZ report (NRC 2022), this study was focused on implementing the direction of Policy 20 of the NZCPS, alongside the Regional Plan for Northland and methods outside the resource management system. The mapping project was intended to “*identify and delineate locations where vehicle use on the foreshore or seabed is likely to have undue adverse effects on the environment*”.

The principles guiding the identification of Vehicle Exclusion Zones (VEZ) by NRC and conventions around how they are mapped are included in Appendix 1, and primarily focus on Significant Ecological Areas (SEAs), and on significant habitat as per policy 11A NZCPS (NZCPS 2010), which requires that adverse

effects on threatened or at-risk species are avoided. The VEZ report (NRC 2022) placed emphasis on evidence of threatened bird species regularly using the areas and/or being present in relatively high numbers (NRC 2022).

The VEZ report (NRC 2022) states that Puheke Beach “may be a possible future inclusion” to the VEZs and that shorebirds are present and the Marae are keen for this inclusion. It also states that existing public vehicle access is unknown.

Puheke Beach site visits

Ecologists from BML undertook two site visits to Puheke Beach. The first site visit was a single day visit on 8 June 2022 and the second visit was three days from 2 to 4 November 2022.

Site visit June 2022

During the visit to Puheke Beach on 8 June 2022 it was noted that there is a vehicle access point onto Puheke Beach from the carpark at the eastern end of the Beach. During the site visit numerous species of native shorebirds were observed (Table 1). Shorebirds were generally observed roosting at the stream mouth halfway along Puheke Beach and this included five northern New Zealand dotterel, three caspian terns, two Variable oystercatchers and a flock of approx. 25 white fronted terns and 15 red-billed gulls. The remaining species listed in Table 1 were observed either roosting, feeding or in flight along Puheke Beach.

Site visit November 2022

Shorebirds

During the visit to Puheke Beach on 2 to 4 November 2022 the same shorebird species were observed. This site visit was during the main breeding season for many of these species and provided an opportunity to observe whether any of these species are nesting on Puheke Beach. It was also noted that there was still a vehicle access point onto Puheke Beach from the carpark at the eastern end of the Beach.

Two pairs of northern New Zealand dotterel were observed during shorebird surveys along the western end of the beach (Photo 1) and around the river mouth (Photo 2). Both pairs were observed displaying defensive behaviours typical of dotterels defending breeding territories. A scrape (dotterel nest) containing three eggs was located in the duneland on the western end of the beach, approximately 80 m from the high tide mark (Photo 3 and 4 and Map 1) and notably this nest is immediately adjacent to an area where motorbike tracks were visible (Photo 3). The pair of New Zealand dotterel were observed in close proximity to the nest and one of the pair was later observed at the nest incubating the eggs.

The second pair of northern New Zealand dotterel were observed near the river mouth and a potential scrape/nest was observed close by which consisted of a depression in the sand with northern New Zealand dotterel footprints leading to the center of the scrape (Photo 5). Additionally, a dotterel eggshell fragment was found between the western end of the beach and the river mouth (Photo 6).

Three Caspian terns (Photo 7) and a flock of approximately 30 White-fronted tern (Photo 8) were observed roosting around the river mouth. Additionally, white-fronted terns were often seen flying along the western stretch of Puheke Beach in groups of up to five individuals. New Zealand pipit, variable oystercatchers, red-billed gull and black-backed gull were frequently observed both in flight, feeding and roosting along the length of the beach. New Zealand pipits were primarily observed along the edges and within the dunelands (Photo 9). Red-billed and black-backed gulls were the most abundant of all shorebird species, commonly observed roosting and feeding around the tidal zones and river mouth in groups of approx. 15 individuals. Five variable oystercatchers (two pairs and an individual) were observed foraging along the length of Puheke beach (Photo 10).

Multiple Australasian harriers and pied shag were observed flying between the dune lakes / farmland and the coastal waters. A single Australasian gannet was spotted flying parallel to the beach over open water.



Photo 1: Northern New Zealand dotterel pair observed foraging along the western end of the beach below the nest site.



Photo 2: One of the northern New Zealand dotterel pair observed by the river mouth.



Photo 3: Northern New Zealand dotterel nest located on the ridgeline at the center of the photograph and motorbike tracks immediately adjacent to the nest.



Photo 4: Three northern New Zealand dotterel eggs located in a nest.



Photo 5: Potential northern New Zealand dotterel nest with dip in sand where a bird has been sat and surrounding footprints leading to the center of the nest.



Photo 6: Northern New Zealand dotterel egg shell fragment.



Photo 7: Caspian tern taking of after being startled from roosting location by river mouth.



Photo 8: Group of white-fronted tern roosting by rivermouth.



Photo 9: Pipit along the duneland margin.



Photo 10: Variable oystercatcher foraging in the tidal zone.

Table 1: Shorebird species observed on Puheke beach.

Species Name	Common Name	Threat Classification (Robertson et al., 2021)
<i>Hydroprogne caspia</i>	Caspian tern	Threatened – Nationally Vulnerable
<i>Charadrius obscurus aquilonius</i>	Northern New Zealand dotterel	Threatened – Nationally Increasing
<i>Larus novaehollandiae scopulinus</i>	Red-billed gull	At Risk - Declining
<i>Sterna striata striata</i>	White-fronted tern	At Risk - Declining
<i>Anthus novaeseelandiae novaeseelandiae</i>	Pipit	At Risk - Declining
<i>Haematopus unicolor</i>	Variable oystercatcher	At Risk - Recovering
<i>Phalacrocorax varius varius</i>	Pied shag	At Risk - Recovering
<i>Circus approximans</i>	Australasian harrier	Not Threatened
<i>Larus dominicanus</i>	Black-backed gull	Not Threatened
<i>Morus serrator</i>	Australasian gannet	Not Threatened

Native lizards

Three shore skinks (*Oligosoma smithi*), classified as At Risk – Declining (Hitchmough et al. 2021), were observed sheltering under driftwood at three separate locations along the Puheke Beach (Map 1). Notably, one of the shore skinks was located under a piece of driftwood that was immediately adjacent to the existing vehicle entrance to Puheke Beach at the western end of the beach below the carpark (Map 1).

Native vegetation

A range of native dune plant species, classified as either At Risk – Declining or At Risk – Naturally Uncommon (de Lange et al. 2017), were observed within the dune system along the length Puheke Beach (Map 1). These plant species included pingao (*Ficinia spiralis*), sand daphne (*Pimelea villosa*), sand coprosma (*Coprosma acerosa*) and manuka (*Leptospermum scoparium*) – all classified as At Risk – Declining and native spinach (*Tetragonia tetragonoides*) – classified as At Risk – Naturally Uncommon.

The foredune along Puheke Beach is dominated by Spinifex (*Spinifex sericeus*), with a mix of the above At-Risk species as well as a few other native species e.g., small-leaved pōhuehue (*Muehlenbeckia complexa* var. *complexa*) and shore bindweed (*Calystegia soldanella*).

The dune slack has areas of knobby club rush (*Ficinia nodosa*) and oioi (*Apodasmia similis*) surrounded by sand daphne, sand coprosma, tauhinu (*Ozothamnus leptophyllus*), spinifex, pingao and toetoe. The back of the rear dune is dominated by pōhuehue and bracken, with flax, pohutukawa, native spinach, manuka, toetoe, knobby club rush and sand coprosma.

In the areas of dunes where vehicles have not been driving, the native vegetation communities are relatively intact (Photo 11), however, the negative impacts from vehicles driving through areas of the dunes was apparent with areas of flattened and dead plants observed (Photos 12 and 13).



Photo 11. Intact native vegetation community in an area not currently accessed by vehicles on Puheke Beach.

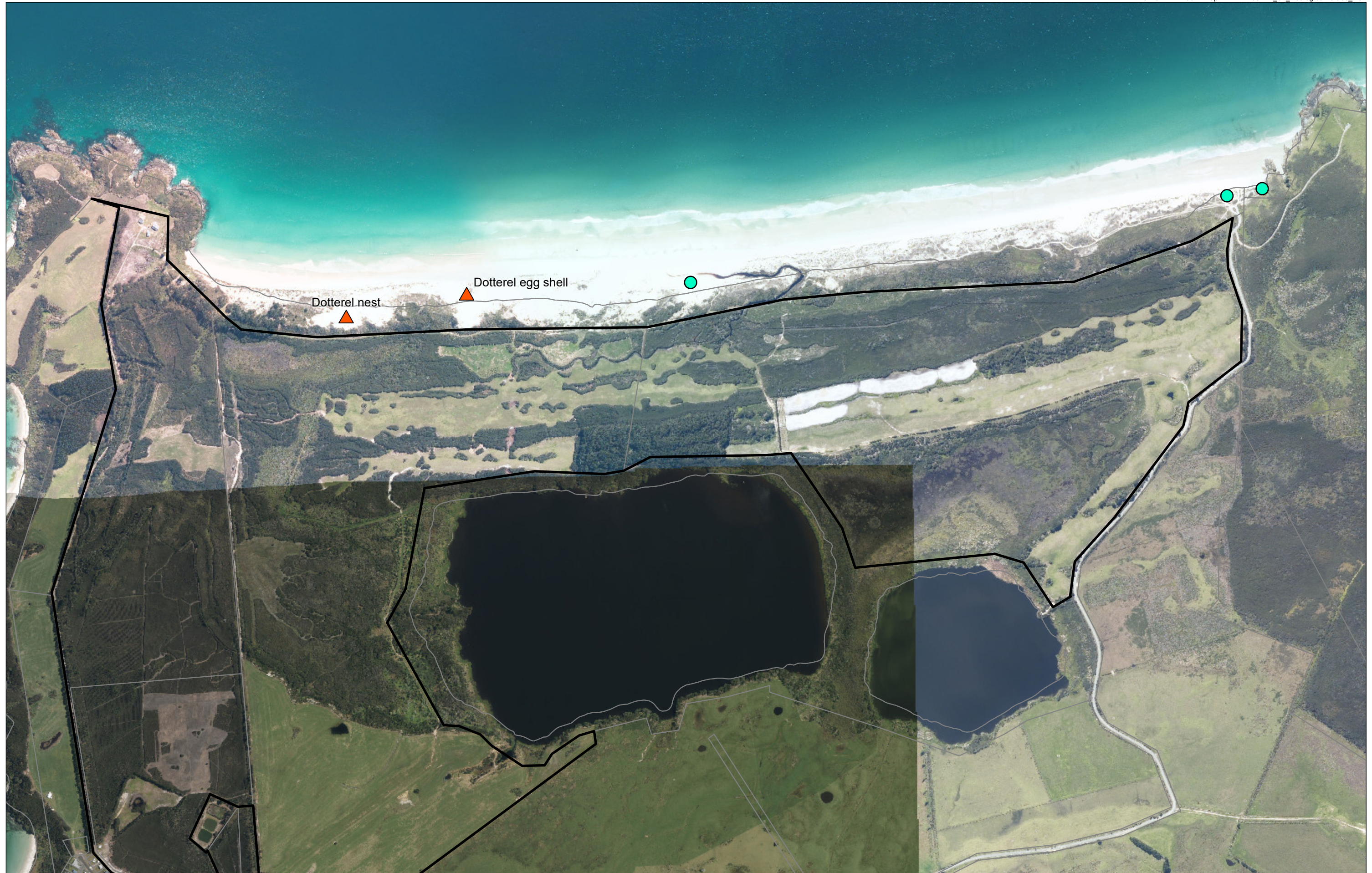




Photo 12. Damaged native vegetation typical of areas currently accessed by vehicles on Puheke Beach.



Photo 13. Typical disturbance of native vegetation and fauna breeding areas currently accessed by vehicles on Puheke Beach.

Ecological values of Puheke Beach and inclusion within the VEZ mapping

The site surveys of Puheke Beach by BML have confirmed the Very High ecological values present. Puheke Beach provides habitat that supports a range of indigenous taxa that are listed as Threatened or At Risk in the New Zealand Classification system lists (Robertson et al. 2021; Hitchmough et al. 2021), namely feeding and roosting habitat for At- Risk and Threatened shorebird species and breeding habitat for at least one Threatened species of shorebird, northern New Zealand dotterel, as well as habitat for shore skink which are classified as At Risk – Declining (Hitchmough et al. 2021) and at least five species of native plants classified as either At Risk – Declining or At -Risk Naturally Uncommon (de Lange et al. 2021).

The NZCPS Policy 11A (2010) focuses on the protection of indigenous biological diversity in the coastal environment, the relevant sections of Policy 11A relevant to Puheke Beach are as follows:

- a. avoid adverse effects of activities on:
 - i. indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists.
 - iii. indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare.

The principles that guided the identification of VEZs (NRC 2022) included assessing areas outside of SEAs with a focus on the NZCPS Policy 11A (2010) as outlined above. Puheke Beach contains dune systems which are in good condition relative to other coastal habitats, however, these dunes systems are a sensitive environment and continued vehicle access will easily degrade these values and the habitat value they provide to the At Risk and Threatened indigenous flora and fauna recorded at Puheke Beach.

Based on the Very High ecological values present at Puheke Beach and the current vehicle access that threatens these values, it is our opinion that Puheke Beach should be added to the VEZ being proposed by NRC (2022) to ensure that the adverse effects on these ecological values resulting from current vehicle access are avoided as instructed by the NZCPS (2010).

References

de Lange, P.J.; Rolfe, J.R.; Champion, P.D.; Courtney, S.P.; Heenan, P.B.; Barkla, J.W.; Cameron, E.K.; Norton, D.A.; Hitchmough, R.A. 2013: Conservation status of New Zealand indigenous vascular plants, 2012. *New Zealand Threat Classification Series 3*. Department of Conservation, Wellington. 70 p.

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Hitchmough, R.A.; Barr, B.; Knox, C.; Lettink, M.; Monks, J.M.; Patterson, G.B.; Reardon, J.T.; van Winkel, D.; Rolfe, J.; Michel, P. 2021: Conservation status of New Zealand reptiles, 2021. *New Zealand Threat Classification Series 35*. Department of Conservation, Wellington. 15 p.

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Principles for identifying Vehicle Exclusion Zones (NRC 2022)

- This mapping only applies to of the strip from mean high-water springs to 50m seaward of MHWS. The power to regulate vehicles comes from section 12, RMA which is limited to the coastal marine area (seaward of MHWS).
- Only map Vehicle Exclusion Zones where significant values are at risk of harm by vehicle use.
- Significant Ecological Areas (SEAs) mapped in the Proposed Regional Plan will be incorporated as Vehicle Exclusion Zones, where the values of the Significant Ecological Area could be impacted by vehicle use. Significant Ecological Areas include:
 - a) indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System⁶; and
 - b) areas of indigenous vegetation and habitats of indigenous fauna, that are significant using the assessment criteria in Appendix 5 of the Regional Policy Statement for Northland; and
 - c) areas set aside for full or partial protection of indigenous biodiversity under other legislation.
- Outside Significant Ecological Areas there was a focus on significant habitat of 11A NZCPS which directs those adverse effects on threatened or at-risk species are avoided.
- Mapping outside the SEAs largely focused on shorebirds and wading birds. Table A below lists threatened NZ bird species that use the coastal areas referred to in the VEZ Assessment methodology.
- Place holder for SBA critical habitat if council and the parties agree on its inclusion in this methodology.
- The assessment focuses on where there is evidence of threatened bird species regularly using the areas and/or are in relatively high numbers, for example, the nationally critical NZ fairy tern habitat is included, as are NZ dotterel, variable oystercatcher and bar-tailed godwit (Whangārei Harbour and Ruakaka Estuary) where there are records detailing bird numbers and their breeding. In contrast, threatened species such as pied shag, which may roost on the shoreline, but aren't breeding or feeding extensively in vehicle access areas, were not assessed in detail.
- Some of the sites included for the shorebirds, such as NZ dotterel and variable oystercatcher would also cover other shorebirds present, as well as habitat covered by the Regional Plan SBA – critical habitat rules. It is also of note that many sites were covered by SEA provisions (as per VEZ Mapping principles).
- Outside Significant Ecological Areas important shellfish beds have been considered where there is evidence.