



279 Hobsonville Point Road

Dotterel Management Plan

Final

Prepared for Ministry of Education by Morphum Environmental Ltd



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1. Introduction

1.1 Background

The northern New Zealand dotterel (*Charadrius obscurus aquilonius*, tuturiwhatu, herein dotterel) is an endemic species of shorebird. It is classified as 'At Risk – Recovering' (Robertson et al. 2016), with the main threats to its survival being predation and increasing impacts from human-based disturbance, habitat loss and degradation caused by development (Dowding and Davis, 2007).

Increased development, and reduced natural beach habitat, means dotterels are breeding and raising chicks in areas such as earthworks sites, stockpiles, and maintained grassed areas such as parks. Dotterels set up breeding sites before Auckland earthworks season begins (being 1 October in any given year) and with the increasing prevalence of dotterel nesting in less traditional areas, are more frequently being encountered in construction sites.

Dotterel are protected under the Wildlife Act 1953; therefore, it is an offence to disturb dotterel. Morphum, understand that the Ministry of Education is currently in the process of preparing to lodge a Notice of Requirement (NoR) in relation to a new primary school at Lot 5, 279 Hobsonville Point Road (herein, the site). Information has been received from Panuku, suggesting that a pair of dotterels are nesting on the site. The Ministry of Education have requested Morphum:

- Undertake a site visit to determine the presence of a dotterel nesting site.
- Outlines potential management actions to avoid adverse effects of the construction and use of the site for educational purposes on dotterel.



Figure 1 Northern New Zealand Dotterel in breeding plumage (source: New Zealand Birds Online)

2. Dotterel General Characteristics

Dotterel are found on or near the coast around much of the North Island. Dotterel breed primarily on sandy beaches, sandspits, in sheltered harbours and beaches. In urban areas dotterel are known to breed a short distance inland, on flat sites with no vegetation coverage – short grasses that allow the birds to maintain a visual field to scan for predators.

Dotterel breed in monogamous pairs and defend territories against other birds. The nests are simple scrapes in the substrate, sometimes sparsely lined or decorated, often close to visual markers such as driftwood or vegetation, that can be used by the birds to orientate themselves relative to the nest. The breeding behaviour of dotterel is summarised in Table 1 below. Importantly, for the purposes of this assessment, Table 1 provides a window from mid-March (once chicks have fledged) through to July (when breeding territories are established) during which the site could be altered without directly effecting dotterel.

Table 1: Dotterel Breeding Behaviour (nzbirdsonline, 2021)

Activity	Start Date	End Date
Establish breeding territory	End of July	-
Core breeding period	September	January
Auckland Council earthwork season	1 October	30 April
Incubation period (27 - 34 days)	October	February
Fledging period (35 – 50 days)	Mid-November	Mid-March
Timeframe for site interventions	Mid-March	July

Table 1 references Auckland Council's earthworks season. Auckland Council's guideline document 2016/005 Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region (GD05), an industry best practice document for erosion and sediment control, identifies that erosion is likely to be more significant during higher rainfall months (May - September). It is common for Auckland Council to include on regional earthworks consents a seasonal restriction that limits bulk earthworks in the wetter, winter months. Thus, earthworks of the type that would be required to facilitate construction activities, generally begin 1 October of any given year.

3. Site Characteristics

3.1 Ecological Context

The subject site is within the Tāmaki Ecological District. The Tāmaki Ecological District is highly modified, with only 6.9% of indigenous cover remaining in the district and all ecosystems, with the exception of kauri forest, depleted to <5% of original extent (Lindsay *et al.* 2009). Historically, the district was dominated by lowland and coastal forest which has been largely cleared for urban development, now the dominant land use type.

The subject site is likely to have historically supported an ecosystem of WF7 forest type: Pūriri forest. WF7 has a Regional IUCN threat status of Critically Endangered (Singers *et al.* 2017). The site and surrounding area are now primarily urban; The Land Cover Database (LCDB) v5.0 (Landcare Research, 2020) describes the land cover as predominantly Built-up Area (settlement). Built up areas are considered as commercial, industrial or residential sheds, including associated infrastructure and amenities which is considered an accurate description of the site. The surrounding area is primarily urban, primarily high density residential with interspersed public parks; substantial residential construction was underway at the time of the site visit.

Hobsonville is located in the upper Waitemata Harbour, the estuarine environment is described as Mangrove forest and scrub (Singers *et al.* 2017). The immediate estuarine environment contains wide intertidal mudflats and mangrove shrublands.

3.2 Site Description

The site is located at 279 Hobsonville Point Road, Hobsonville. The site is an irregular shape bordered by Hobsonville Point Road (north/west), Wallace Road (east) and Waka Moana Drive (south). Waka Moana Drive is the longest boundary at approximately 230 m. On all boundaries, the site is separated from the road by a footpath, recent amenity street trees and a chain-link security fence. A representative photograph of the site is provided in Figure 2 below.

The site itself is approximately 2.4 ha, predominantly flat, and contains no trees/or shrubs. Vegetative cover was comprised of recently mown rank grass; mowing clippings had been left on site. The area would appear to have been recently earthworked or disturbed as tracking from machinery was evident in the topsoil. In numerous areas across the site surface water had pooled.

The site would be considered consistent with in-land breeding sites for dotterel, as the lack of vegetation cover and flat topography allow for a line of site to be maintained across the site.

This assessment is supported by observations recorded in the citizen science platform Inaturalist (2020). Inaturalist contains multiple observations of dotterel within the immediate area, including one on the southern side of Waka Moana drive (from September 2020). A literature review also found multiple records of dotterel nesting on similar sites elsewhere in Hobsonville (Stuff, 2015).



Figure 2: Representative Site Photo (view from the site, facing east towards Wallace Road)

3.3 Site visit

Key information from the site visit is summarised in Table 2 below. Three site visits were undertaken at 08:30, 09:40 and 14:30 on 12/08/2021.

Table 2: Site Visit Summary	
Activity	Comment
Date	12/08/2021
Time	08:30
	09:40
	14:30
Tide (Westhaven)	High: 10:02
	Low: 15:54
Weather Conditions	High Tide: Calm, sunny
	Low Tide: Light showers, overcast, light breeze

The site visit was timed to cover both High and Low tides. The site visit was undertaken initially from the intersection of Hobsonville Point Road, and Waka Moana Drive. Walking around the site's boundary on the footpath in clockwise direction all birds observed or heard were recorded.

At approximately the location of the site access from Wallace Road, a dotterel call was heard. Visual observation revealed the presence of at first the male northern dotterel with breeding plumage, and subsequently the female. Both birds were mobile, moving around an area of pooled surface water approximately 25 m inside the security fence directly in front of the accessway. The birds did not appear to be incubating eggs, as both adults were observed moving. Given both birds were clearly mobile, it was considered unnecessary, and best practice to avoid disturbance the birds, to approach the birds. top-soil and gravels in this location would be suitable for a scrape-type nest.

Other birds observed were consistent with a grassed site in an urban area in close proximity to the coast. Native species observed included: sacred kingfisher (*Todiramphus sanctus*) and masked lap-wing (*Vanellus miles*). No other threatened or At Risk species were identified.

On that same day, the site was revisited two more times. At approximately at 0930, the male was heard and observed in the south-east corner of the site. After a period of minutes, the male flew to the female who had remained near the surface water off the Wallace Road site access. Later, at 1430, both male and female were observed near the surface water off the Wallace Road site access.

The presence of both birds at 1430 is considered notable as this is proximate to low tide, when wading birds, such as dotterel, would be expected to be foraging on the nearby mudflats. That both birds remained onsite, close to the timing of low tides, at this time of year, may indicates that they may have set up a breeding territory, alternatively they may also be feed on terrestrial invertebrates.

Dotterel observations are recorded in the site map provided as Appendix 1 to this report.

No other dotterel were recorded either from the site or the immediate area. This includes the land parcels to the east of Wallace Road, on both the north and south sides of Waka Moana Drive, which had been previously earthworks. North of Waka Moana, the land parcel had been re-seeded and allowed to grow rank. South of Waka Moana, away from the active construction area, the land parcel featured several large earth stockpiles, silt fences and dirty water diversion bunds.

4. Dotterel Management Options

The presence of dotterel on site is confirmed, and the probability of their nesting onsite is considered possible. This section outlines potential management actions, to avoid adverse effects of the construction and use of the site for educational purposes on dotterel. The management options below are aimed to minimise the potential for either direct or indirect disturbance to the birds.

It is considered important to note that this report has been prepared for the purposes of informing the Assessment of Environmental Effects to support the NoR to designate the land for educational purposes; as such, it outlines general methodologies. It is envisioned that the actual method(s) employed would be based on best practice at the time of planning for construction.

Once the site is operational for educational purposes it is considered unlikely that the site would be considered suitable for prospecting dotterel due to the presence of anthropogenic disturbance.

4.1 Deterrence

The best practicable methods are considered to be deterring prospecting dotterel from nesting on the site. A series of commonly applied measure to deter nesting birds are identified in Table 3 below which focus on altering the site to make it less favourable for dotterel prior to nesting.

Table 3: Deterrence Options (adapted from NZTA, 2012)

Method	Likelihood of success	Comment
Human activity	Low	Introducing on-site activity through activities such as walking of a dog, the use and regular movement of construction machinery, and the use of reflective tape can deter dotterel.
Site activity	Low	
False hawk / Reflective tape	Low	
Long Grass	Moderate	Dotterel prefer a line of site to visually monitor for predators, measures that break up the line of sight would make an are less attractive for nesting.
Silt Fences	Moderate	
Constructing impervious surfaces	High	Dotterel nest, by creating scrapes in loose sandy material. Without a suitable substrate dotterel are unlikely to nest.

The likelihood of success metric used in Table 3 has been informed based on known dotterel behaviour. Dotterel are known to become habituated to repetitive activity, measures such as false hawks and reflective tape are likely to be effective for a period of days before they lose effectiveness (NZTA, 2012). Measures that alter the site to make it less attractive as a nesting site are considered to be more effective over longer time periods. As such, measures that disrupt the line of site could be effective, and may currently be employed on adjacent land parcels east of Wallace Road, dotterel are considered less likely to establish a nest under such conditions. The only measure considered to have a High likelihood of success is to prevent the establishment of scrape-type nests through the removal of the aggregates and top-soil or otherwise replacing it with a non-mobile surface such as concrete or hotmix.

4.2 Contingency Measures

There are contingency measures available should deterrence measures be unsuccessful or be unable to be implemented and dotterel are found to be nesting on-site prior to construction.

Works should avoid any disturbance to dotterel, this includes moving or otherwise disturbing features near the nest that could be being used by dotterel as visual markers. It is recommended that in such an exclusion area, a minimum of 20 m, be defined around the nest, until the chicks have fledged (approximately 6 – 7 weeks from when they hatched).

It would require a specific permit under the Wildlife Act from the Department of Conservation (Doc), but, moving the nest a short distance may be feasible. This is the least preferable course of action, previous consultation with Doc has indicated that Doc view an application to disturb native avifauna nests unfavourably, unless there is an imminent and direct threat to the birds or nest (not as a result of a given construction project) and that all other measures, including avoidance, should be exhausted before relocation is considered.

5. Conclusions and Recommendations

The presence of dotterel at the site has been confirmed with a site visit, it is considered likely that two individuals observed have established a breeding territory, although not yet a nest.

Dotterel are protected under the Wildlife Act 1953; therefore, it is an offence to disturb dotterel.

Whilst the designation of the site for educational purposes would not disturb dotterel themselves, future construction activity could. The best practicable methods are considered to be deterring prospecting dotterel from nesting on the site. A series of commonly applied measure to deter nesting birds have been identified that could be employed, dependent on the timing of birds prospecting for nesting sites/breeding territories and the commencement of construction activity.

Should deterrence measures be unsuccessful or unable to be implemented and dotterel are found to be nesting on-site prior to construction, contingency measures are available. Given the area of the site, it would be possible to avoid any disturbance to dotterel by physically excluding works from a setback area of at least 20 m, until the chicks have fledged.

A specific permit under the Wildlife Act from the Department of Conservation would be possible, but, is not recommended.

Regardless of the outcome of the Notice of Requirement, the provisions of the Wildlife Act will remain in effect. Dotterel are protected under the Wildlife Act, a series of commonly applied deterrence measures can be implemented and applied to deter dotterel from nesting on the site. Once the site is operational for educational purposes it is considered unlikely that the site would be considered suitable for prospecting dotterel due to the presence of anthropogenic disturbance. As such, it is not considered necessary to recommend that any condition be imposed on the Designation in relation to dotterel.

6. References

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Appendix 1 Site Map

TUTURIWHATU, NORTHERN NEW ZEALAND DOTTEREL OBSERVATIONS AT HOBSONVILLE POINT ROAD



● Observation of Tuturiwhatu, Northern New Zealand Dotterel (*Charadrius obscurus aquilonius*)

Land Designations

- Balance Land
- Educational Purposes - Primary School and Early Childhood Education

Client **MINISTRY FOR EDUCATION**
Project **HOBSONVILLE POINT ROAD**



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Date **13 Aug 2021**

Drawn **DD**
Approved **CU**

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