

APPENDIX 9C

DRAFT AVIFAUNA MANAGEMENT PLAN (AMP)



BlueGreen



Northland Shipyard & Drydock Project

FINAL DRAFT Avifauna Management Plan

Prepared for Ministry of Business, Innovation and Employment
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Cover photograph: Beach an intertidal zone to the west of Northport

Contents

1.0	Introduction	1
2.0	Shorebird Management	4
2.1.1	Shorebird surveys	5
2.1.2	Exclusion fencing/demarcation & signage around active nests	5
2.1.3	Protocols if nesting shorebirds are incidentally discovered during works	6
2.1.4	Injury or death of shorebirds	6
3.0	Kororā Management	8
3.1	Rock movement	9
3.2	Kororā monitoring	12
3.2.1	Pre-work survey	12
3.2.2	Active burrows	13
3.3	Exclusion zones around active burrows	13
3.4	Capture, handling and relocation	14
3.5	Kororā relocation records	14
3.6	Protocols if kororā are incidentally discovered	15
3.7	Injury and / or death of kororā	15
3.8	Site fencing	16
3.9	Site protocols & daily inspections	17
3.10	Underwater noise management	17
4.0	Cryptic Marshbirds	17
4.1.1	Cryptic marshbird surveys	18
4.1.2	Exclusion zones around active nests	19
5.0	HPAI / Bird Flu	21
6.0	References	21

1.0 Introduction

The Ministry of Business, Innovation and Employment (MBIE) is seeking consents to construct and operate the proposed shipyard and dry dock facility ("Project") abutting the western side of the existing Northport port facility at Marsden Point, Whangārei Harbour. The Project, listed in Schedule 2 of the Fast-track Approvals Act 2024 (FTAA), includes a reclamation, vessel haul-out system, and associated wharf structures, dredging, and supporting infrastructure. The location of the facility has been carefully selected for functional and operational requirements, including the need for deep water access, sheltered harbour conditions, proximity to existing port services, sea and land transport links, and integration with established and proposed marine and land based industrial infrastructure.

As outlined in the Coastal Avifauna Assessment of Effects for the Project (BlueGreen Ecology, 2026), the mobile nature of most avifauna species means that the potential for injuries and/or mortalities (direct effects) associated with construction activities are likely to be confined to birds that may be nesting or with young chicks. To date, pied stilt, northern New Zealand dotterel and variable oystercatcher have been recorded nesting on the Northport site, at the top of revetments and along the coast (refer to Map 1, Photo 1 and Photo 2). Little penguin/kororā have not been recorded breeding at the Project site, however the rock revetments around Northport provide potential habitat for this species (Photo 3) which are known to breed nearby on High and Calliope islands. We note here that a separate Kororā Management Plan has been prepared as part of the Wildlife Act approval.

In addition to direct effects, noise generated from construction-related activities can also have an indirect effect on nesting birds, potentially resulting in reduced breeding productivity, including nest abandonment. *Threatened* and *At Risk* cryptic marshbirds¹ have been recorded in Blacksmiths Creek estuary, and Northland Regional Council have identified a Significant Bird Area – Critical Bird Habitat for Australasian bittern (refer to Map 1). Thus, if cryptic marshbirds do breed in Blacksmiths Creek estuary, they may be exposed to construction-related disturbance.

This Avifauna Management Plan outlines the measures that will be implemented to avoid direct and indirect construction effects on avifauna for the species that have been identified as breeding or potentially breeding within and adjacent to the Project site. Table 1 below outlines the NZ threat classification (Robertson et al., 2021) for each of these species, as well as their nesting habitat.

Table 1: Avifauna species threat classification and nesting habitat

AVIFAUNA GROUP	SPECIES	NZ THREAT CLASSIFICATION ²	NESTING HABITAT
Shorebirds	Northern NZ dotterel / Tūturiwhatu (<i>Anarhynchus obscurus</i>)	<i>At Risk – Recovering</i>	Nests are simple scrapes in the substrate, sometimes sparsely lined or decorated, often with a marker of driftwood or vegetation
	Variable oystercatcher / Tōrea pango (<i>Haematopus unicolor</i>)	<i>At Risk – Recovering</i>	Nests are normally simple scrapes in the sand, often with a marker of driftwood, vegetation, or flotsam

¹ A group of New Zealand birds which are elusive, rarely seen species hidden within dense wetlands, often identified by their calls rather than sightings.

² Robertson et al. (2021)

AVIFAUNA GROUP	SPECIES	NZ THREAT CLASSIFICATION ²	NESTING HABITAT
	Pied stilt / Poaka (<i>Himantopus himantopus</i>)	<i>Not Threatened</i>	Nests range from shallow, unlined scrapes on dry shingle to substantial mounds of mud, twigs, and vegetation in swampy areas
Penguin	Little penguin / Kororā (<i>Eudyptula minor</i>)	<i>At Risk - Declining</i>	Nest type varies considerably and includes crevices within rock revetments
Cryptic marshbirds	Australasian bittern / Matuku-hūrepo (<i>Botaurus poiciloptilus</i>)	<i>Threatened – Nationally Critical</i>	Nest is a platform of reeds built among dense wetland vegetation, usually 20-30 cm above the water
	Banded rail / Moho pererū (<i>Hypotaenidia philippensis</i>)	<i>At Risk - Declining</i>	Nest is a rough platform of rush and reed fragments, usually in jointed rush thickets between 10 and 50 cm above ground or water
	Spotless crane / Pūweto (<i>Zapornia tabuensis</i>)	<i>At Risk - Declining</i>	Nests in wetlands comprise woven grass and broken sedge leaves built 30–70 cm above water level, often in a clump of <i>Carex</i> sedge.
	Fernbird / Mātātā (<i>Poodytes punctatus</i>)	<i>At Risk - Declining</i>	Nest is a deep, woven, feather-lined cup of fine grass or sedge leaves in dense vegetation, usually less than 1 m above ground or water



Photo 1: Variable oystercatcher nesting habitat at the top of Northport's western boundary rip-rip



Photo 2: Shorebird nesting habitat on the beach between Northport and Blacksmiths Creek.



Photo 3: Potential kororā habitat within the riprap revetment along Northport western boundary



Photo 4: Potential cryptic marshbird habitat in Blacksmiths Creek Reserve and within 100m of Project footprint

2.0 Shorebird Management

While there is some variability between and within a species (refer to Figure 1), the shorebird breeding season in New Zealand is generally considered to occur between September to February (inclusive).

Figure 1: Indicative breeding seasons (green shaded cells). Red diagonal lines represent months during which egg laying may occur.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Northern NZ dotterel												
Variable oystercatcher												
Pied stilt												

Variable oystercatcher, northern New Zealand dotterel and pied stilt all have similar nesting habits, being shorebirds with simple surface nests (refer to Table 1 above). The potential nesting habitat for these species are located along the top of Northport's western revetment, and along the western beach above mean high water spring (MHWS) (refer to Map 1). As such, the same management techniques are applied to all three shorebird species.

The process for managing shorebirds during enabling and construction works is outlined in Figure 3 below and involves:

- If works are to occur during the breeding season (September to February inclusive) and within 20 m of identified shorebird nesting habitat (refer to Map 1), a Suitably Qualified Ecologist (SQE) will survey the area 24 hours prior to the commencement of works to check for the presence or absence of breeding birds (as per the method outlined in Section 2.1.1 below).
- If works are outside the breeding season, >20m away from shorebird nesting habitat, or no breeding shorebirds are detected, works can commence.
- If non-nesting birds are within a works area, they will be quietly and passively shooed from the area. Enabling or construction works will not commence until the bird/s is/are at least 20 m away from the works area.
- If an active nest³ is discovered within 20 m of the work site(s), works within this 20 m buffer will be delayed and no person or machinery shall enter the buffer area until nesting is complete (as determined by the SQE). Exclusion fencing will be installed as outlined in Section 2.1.2 below. To determine when nesting is complete and works can commence, the breeding site will be re-surveyed as per the methodology outlined in Section 2.1.1 below.

2.1.1 Shorebird surveys

Surveys for shorebird breeding activity will involve a SQE undertaking observational surveys of birds in areas identified as providing potential shorebird nesting habitat (refer to Map 1). For each survey:

- The SQE will be positioned at a location that avoids disturbing the birds as much as possible.
- The duration of each survey will be a minimum of 30 minutes.
- Recorded data will include shorebird numbers, behaviours and any signs/observations of nesting activity (e.g. courtship behaviours, incubating birds, nest contents, chicks etc).

Note that if active nests³ are identified through the pre-work surveys in locations where works are proposed, subsequent management actions will be implemented (as outlined in Figure 3 and Section 2.1.2).

No works will occur within established exclusion zones (Section 2.1.2) until it has been determined by the SQE that the nest is no longer active; this will be done through fortnightly surveys by a SQE using the methodology outlined above.

2.1.2 Exclusion fencing/demarcation & signage around active nests

Following the detection of an active shorebird nest³, the SQE will immediately work with the construction team to install exclusion fencing to ensure that works do not occur within 20 m of the nest.

The SQE will advise on the most appropriate materials and location to construct the exclusion fencing/demarcation but may include the use of cinder blocks or waratahs with coloured

³ An active shorebird nest is defined as incubating adult, eggs or chicks.

markers on top, or coloured stakes (refer to Figure 2 for examples). The objectives of this fencing are to:

- Ensure people and machinery do not enter the exclusion zone;
- Be constructed from materials that will not make the nest more conspicuous to avian predators, or move in the wind; and
- Not obstruct the ability for birds or chicks to access the beach and water to forage.

Movement of signage on the fencing could cause the nesting birds some distress. As such, signage alerting people to the presence of the active nest³ will be located away from the exclusion fencing or attached in such a manner that it does not move.

At no time will shorebird nest contents be handled or relocated.

2.1.3 Protocols if nesting shorebirds are incidentally discovered during works

While highly unlikely, it is possible that nesting shorebirds may be incidentally discovered during enabling and construction works. In all such cases, a SQE will be contacted immediately. While waiting for the arrival of the SQE, all machinery and personnel must remain at least 50 m from the nest. Once on site, the SQE will supervise the installation of exclusion fencing and signage as outlined in Section 2.1.2 above. No works will occur within established exclusion zones (Section 2.1.2) until it has been determined by the SQE that the nest is no longer active³; this will be done through fortnightly surveys by a SQE using the methodology outlined in Section 2.1.1 above.

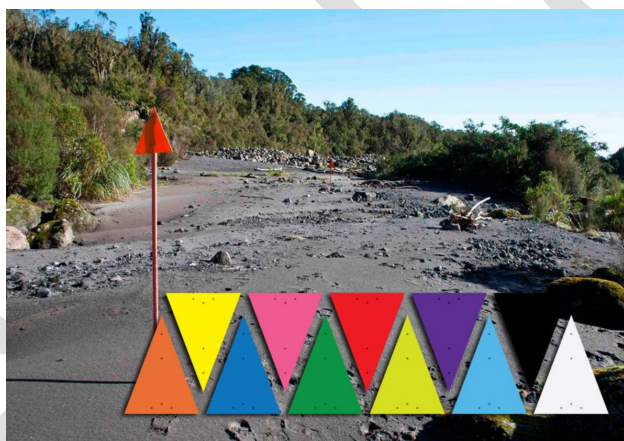


Figure 2: Examples of possible markers for demarcation

(Source: <https://www.advancelandscape.co.nz/shop/Field+Track++Site/Track+Markers+Small+Pack20.html>)

2.1.4 Injury or death of shorebirds

In the case of an injury or death of a shorebird associated with the Project works, the SQE must be contacted immediately to provide the necessary guidance in consultation with DOC.

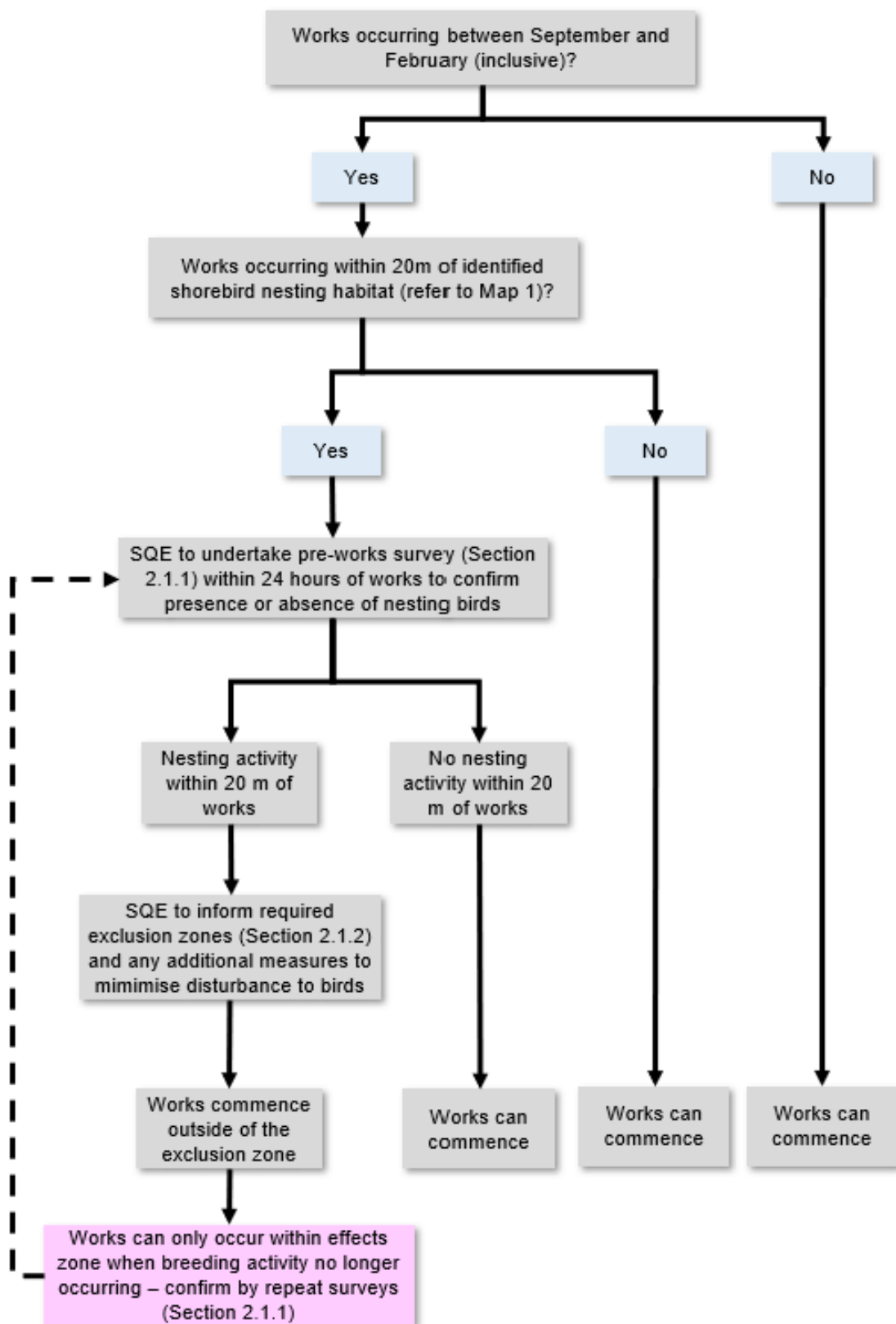


Figure 3: Process for managing shorebirds for enabling and construction works

3.0 Kororā Management

Kororā are classified as nationally At Risk – Declining (Robertson et al., 2021) and are protected under the Wildlife Act 1953. They breed in loose colonies around much of New Zealand’s coastline.

Kororā are nocturnal, typically coming ashore after dusk and leaving before dawn. **Adults are present at colonies throughout the year including during the day** (Figure 4), though numbers are lowest between completion of moult and start of breeding (Marchant et al., 1990). Though variable, for most colonies in New Zealand the breeding season begins around August and continues until January when chicks fledge. Kororā are asynchronous breeders, meaning that individual pairs lay at variable times throughout the season – not all birds will commence breeding (or moulting) at the same time. The kororā breeding cycle is the shortest (17.25 weeks) of all penguins comprising a 4 week pre-egg stage, then 5.5 weeks of incubation and a 7.75 week chick period (Richdale, 1957). During the incubation and chick period (approximately 3.5 months), birds (either adults or chicks) will be present in the burrow throughout that time, both day and night.

Figure 4: Indicative breeding cycle of kororā.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Burrow occupation												
Pair bond / nest building												
Egg laying												
Chick rearing / fledging												
Moult												

Kororā form loose colonies, with burrows located several metres apart (Braidwood, 2009; Bull, 2000a; Bullen, 1997; Marker, 2016). Burrows are generally situated close to the sea in burrows excavated by the birds or other species, or in caves, rock crevices (including rip-rap revetments), under logs or in or under a variety of man-made structures including nest boxes, pipes, stacks of wood or timber, and buildings. Along the coast, kororā burrows are located above mean high water springs (MHWS) to ensure that waves do not inundate the burrow and its contents. Several studies have shown the ability for kororā to adapt their nesting behaviour to urban environments; in response to the lack of “natural” habitats, birds successfully nest in rock crevices and human-made structures, such as breakwaters, that offer protection from the weather, tidal action, predators and human disturbance (Bourne & Klomp, 2003; Gilling et al., 2008).

Kororā exhibit high levels of site fidelity, generally returning to the same landing site and nest each breeding season (Bull, 2000b; Pledger & Bullen, 1998). Birds often use the same burrow to breed and moult. However, since non-breeding birds also moult, often moulting birds are found in burrows that weren’t occupied during the breeding season.

Figure 5 below presents the potential kororā habitat identified within the proposed shipyard and drydock facility project site along the western edge of the existing Northport facility.

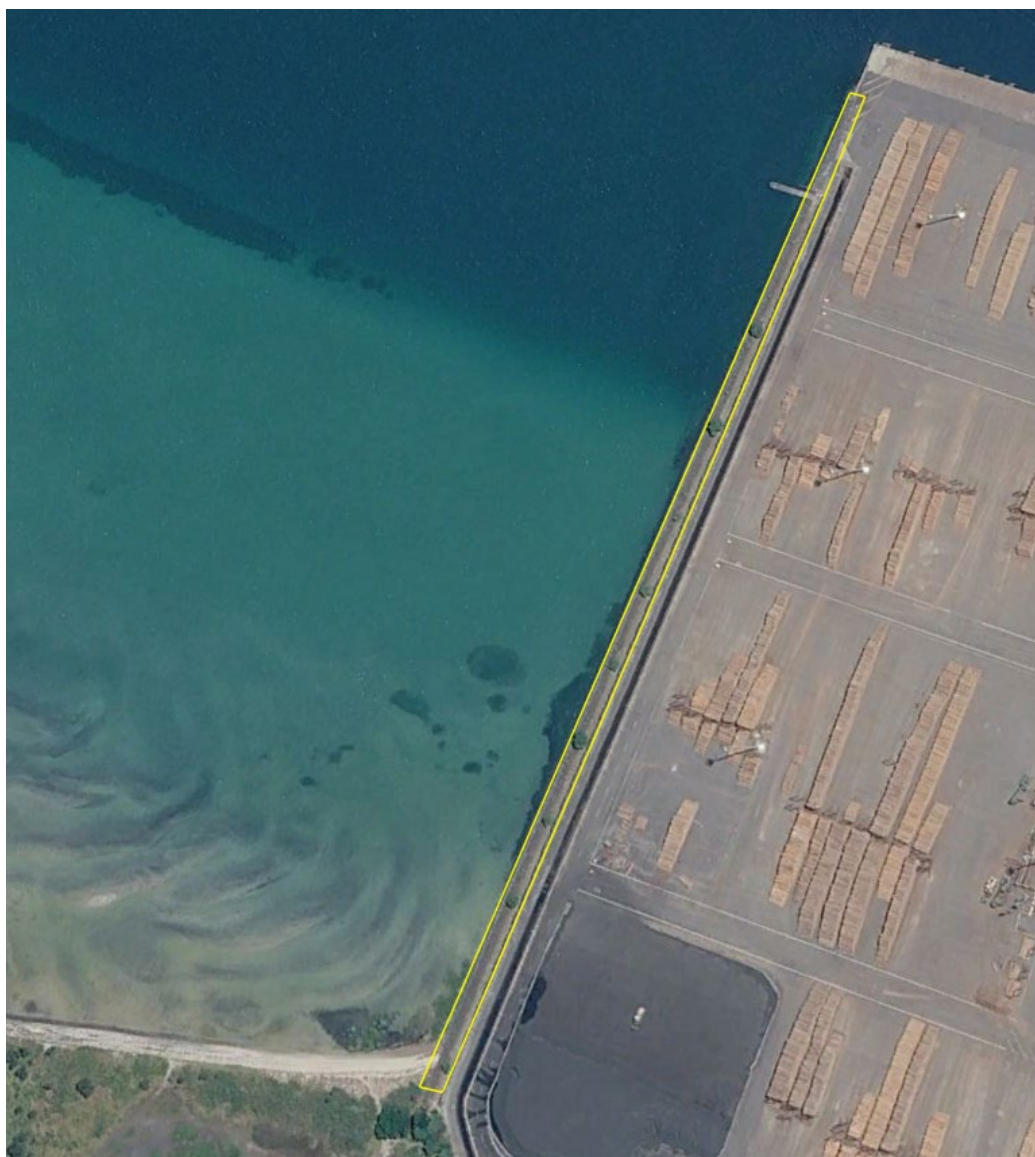


Figure 5: Potential Kororā habitat (yellow polygon) within the Project site

3.1 Rock movement

The process for managing kororā to enable the movement (removal or placement) of rocks is outlined in Figure 6 (page 11).

On the first morning of rock movement within the area identified in Figure 5 as potential kororā habitat, prior to any works occurring, a pre-work survey (as outlined in Section 3.2.1 below) using a DOC-certified conservation dog will be undertaken along the entire area of potential habitat.

If during the first pre-work survey there are no positive detections by the DOC-certified conservation dog, and the SQE confirms there are no signs of kororā having inhabited the revetement, rock removal can occur and no further pre-work surveys are required. Furthermore, the SQE will not be required to oversee the rock movement works, nor will site fencing (Section 3.8) or daily inspections (Section 3.9) be required.

However, if during the first pre-work survey a positive dog detection is made, or the SQE confirms signs that kororā have inhabited the revetement, then the works must progress according to the sequence of events outlined in Figure 6 (page 11). In all cases, additional pre-work surveys will be required. In general:

- If non-nesting and/or non-moulting kororā are detected outside the proposed area of rock removal or the adjacent 10 m, then rock removal can occur under the guidance of the SQE.
- If non-nesting and/or non-moulting kororā are detected within the proposed area of rock removal or the adjacent 10 m, rock movement will not occur until the kororā have been captured⁴ and relocated to the release site approved by a Wildlife Act Authorisation obtained for the Project. Records will be kept of all relocated kororā (refer to Section 3.5 below).
- If nesting or moulting activity is detected, an exclusion zone will be established around the active burrow (as per Section 3.3 below) and the rock movement works will not occur within 10 m of the active burrow until nesting or moulting activities are completed (as determined by the SQE through subsequent surveys as per Section 3.2.1 below). Rock removal works greater than 10 m away from the active burrow can occur under the supervision of the SQE.

In all instances, the SQE will decide when areas are clear of kororā or active burrows, and therefore when the works can commence.

Under no circumstances will breeding⁵ or moulting birds be handled or relocated for the purpose of enabling construction works.

All revetment rock that is moved will be placed in a location that does not create a workplace hazard. Temporary fencing will be erected around the rock storage area (refer to Section 3.8 below for fencing specifications) to ensure that kororā do not inhabit the stored rocks.

At all locations where kororā are removed, or if movement of rocks extends over multiple (more than one) days, birds will be discouraged from being able to access the site overnight (i.e. placement of bidum cloth or temporary fencing). An additional effort, if considered by the SQE to be necessary, may include moving as much rock as possible so that a bare ground surface is exposed thereby leaving no crevices for kororā to occupy.

Where the area of rock removal and/or rock storage is covered or fenced, it is imperative that the material or fencing is securely fastened to minimise the chances of kororā entering the area through a gap. Just prior to the movement of stored rocks, the stored rock pile will be inspected by a DOC-certified penguin detector dog for the presence of kororā.

⁴ Only by those persons listed on a Wildlife Act Authorisation for the Project

⁵ Includes nesting adults and nest contents (i.e. eggs and / or chicks).

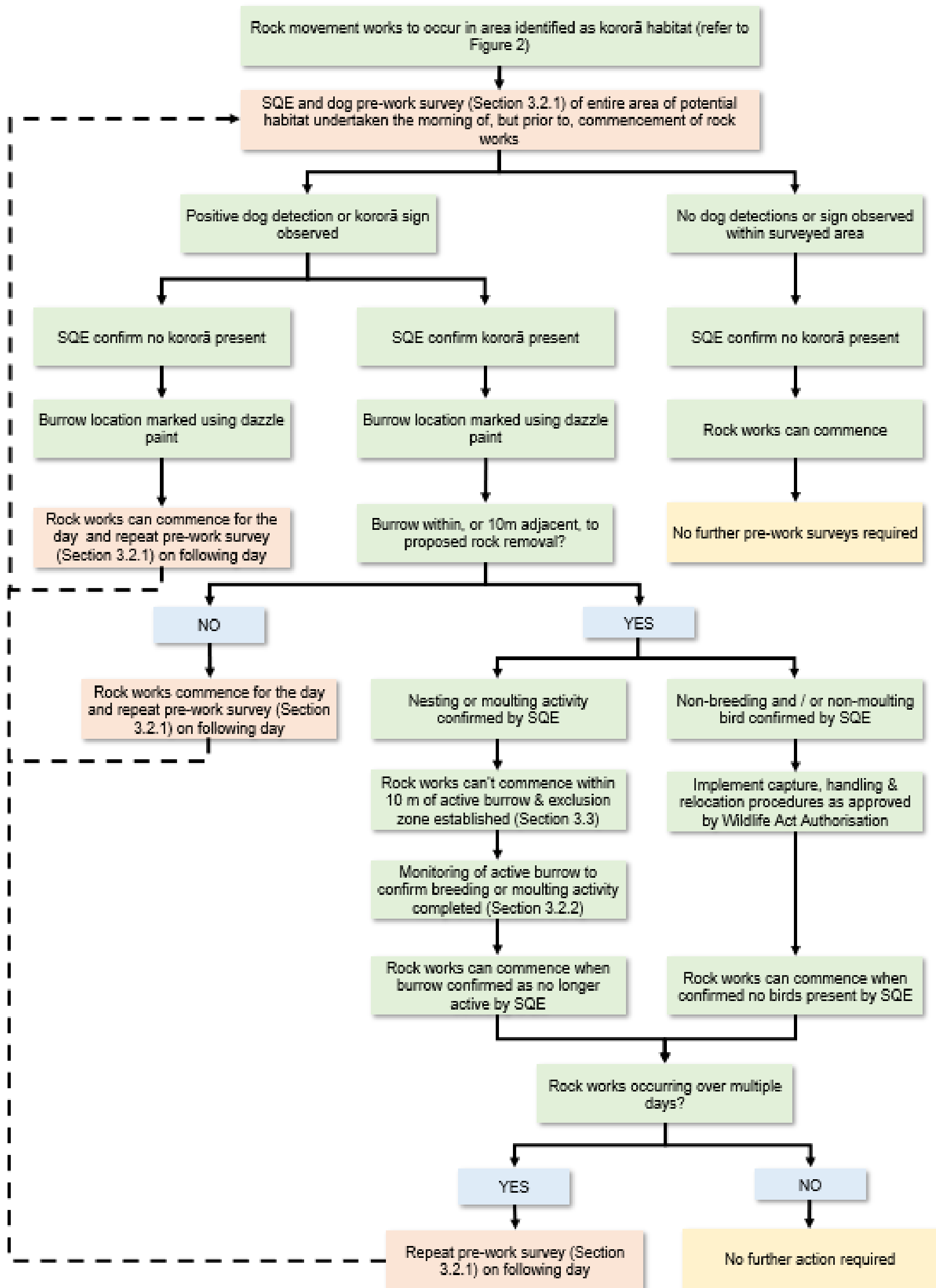


Figure 6: Process for managing kororā associated with rock movement works

3.2 Kororā monitoring

3.2.1 Pre-work survey

A pre-work kororā survey will be conducted by a DOC-certified conservation dog and handler in conjunction with a SQE on the first morning of rock removal anywhere within the area of kororā habitat that is identified in Figure 5. The need for additional pre-work surveys will be dependent on the results of this first survey, as outlined in Figure 6 above.

If a detection is made, a burrowscope or camera will be used to assist with identifying the burrow contents. If a detection is made, the following information will be recorded:

- Date and time of detection;
- Location of dog detection/s;
- Whether the detection/s were made by a dog or person;
- Presence of any sign such as guano (Photo 5, Photo 6) or feathers (Photo 10);
- Presence and number of any birds moulting (Photo 9) or non-moulting (Photo 7);
- Presence and number of any eggs and/or chicks (Photo 8).

The location of each detection will be assigned a number which will serve as an individual identifier to enable burrows to be monitored over time. The rock at the entrance to each burrow will be marked with dazzle paint (or an effective alternative). The location/s will also be recorded with a GPS (and added to a habitat map), a photograph will be taken, and a description of the location/s will be noted.

If active kororā burrows are identified through the pre-work survey in locations where works are proposed, subsequent management actions will be implemented as outlined in Figure 6 and Sections 3.3.

No works will occur within established exclusions zones (Section 3.3) until it has been determined by the SQE that the burrow is no longer active, as determined by a SQE using the methodology outlined in Section 3.2.2 below.



Photo 5: White kororā guano on rocks outside burrow



Photo 6: Green kororā guano



Photo 7: Adult kororā in burrow



Photo 8: Young kororā chick and egg



Photo 9: Moulting kororā



Photo 10: Moults feathers in burrow

3.2.2 Active burrows

If an active burrow is detected, fortnightly visual monitoring (using a burrowscope or phone camera) will be undertaken by the SQE and the following will be recorded:

- Presence of any sign such as guano or feathers;
- Presence and number of any breeding or moulting birds moulting;
- Presence and number of any eggs and/or chicks.

The SQE will use this monitoring data to determine when a burrow is no longer active. In all instances when a burrow cannot be visually monitored, a survey using a DOC-certified conservation dog will be undertaken to assist the SQE to determine if a burrow is no longer active.

3.3 Exclusion zones around active burrows

An exclusion zone will be established/demarcated around any active burrow that is detected. The exclusion zone distance around the active burrow will be 10 m from rock/debris removal or placement or ground disturbance. In all cases, at no time will the exclusion zone and its demarcation impede access for kororā between the active burrow and the ocean. The following will also not occur within the exclusion zone:

- Construction work activities;

- Storage or laydown of material or plant;
- Access to people, other than the SQE.

No works will occur within established exclusions zones until it has been determined by the SQE that the burrow is no longer active, as determined by a SQE using the methodology outlined in Section 3.2.2 above.

The exclusion zone demarcation will be removed once it has been determined by the SQE that the burrow is no longer active (as outlined in Section 3.2.2 above).

3.4 Capture, handling and relocation

Capture, handling and/or relocation procedures will only occur once a DOC Wildlife Act Authority (WAA) has been obtained for this Project. If obtained, only those personnel listed in the WAA will be authorised to manage (capture, handle and relocate) kororā⁶; anyone not listed in the permit Schedule will not be permitted to capture or handle kororā.

Breeding⁵ or moulting birds will not be handled or relocated for the purpose of enabling construction works.

Before a kororā is caught, the DOC-permitted person will put on a pair of gloves⁷ and get a ventilated and sturdy pet carrier box⁸ that is lined with a towel in preparation for transporting the penguin. Generally, one kororā per box, however, if two birds are found in a burrow together, they will be transported in the same box and released into the same nest box.

To minimise stress to the penguin, the maximum amount of time a penguin will be kept in a carrier box is two hours (immediate relocation and release will be prioritised) and the box will be kept in the shade. The carrier box will be securely closed, and the box will be handled carefully, ensuring that it remains upright at all times, especially if the penguin is transported by vehicle to the release site; if so, the carrier box will be propped up so that it cannot topple.

Kororā will be translocated to a release site that is approved as part of the DOC Wildlife Act Authorisation process.

3.5 Kororā relocation records

The following information will be recorded for every kororā that is relocated as a result of the Project works:

- Date and time penguin found;
- GPS location of release site;
- If the bird is banded (if so, the band number will be recorded);
- Name of the kororā handler;
- Relocation site the penguin is released into; and
- The time of release.

⁶ Those listed will include people who fulfil the definition of a SQE.

⁷ Gloves must be worn as the oil on a person's hands can interfere with the waterproofing of penguin feathers).

⁸ Approximate dimensions: 40 cm length, 30 cm width, 35 cm height.

This information will be entered into an Excel spreadsheet, the results of which will be reported to DOC in accordance with any WAA conditions.

3.6 Protocols if kororā are incidentally discovered

Despite the implementation of pre-work kororā surveys, it is possible that kororā may be incidentally discovered during enabling and construction works. In all such cases, a SQE will be contacted immediately. While waiting for the arrival of the SQE, the kororā will not be handled or disturbed further, and all efforts will be made to ensure an unobstructed path is available for the bird to the ocean. At all times a distance of 10 m should be maintained from any bird. Kororā can only be handled by persons named on a DOC Wildlife Act Authority (WAA) for the Project.

Once on site, the SQE will decide which of the following approaches is/are most appropriate to manage the situation:

- If non-breeding or non-moulting kororā are incidentally discovered during enabling or construction works in habitat that will be directly impacted by works, then the capture, handling and relocation procedures in accordance with those approved by the Wildlife Act Authorisation will be implemented.
- If non-breeding and / or non-moulting kororā are incidentally discovered during enabling or construction works in habitat that will only be indirectly impacted by works, then capture, handling and relocation will not occur; this is because non-breeding and non-moulting kororā are not confined to land and will be able to move of their own accord if indirectly impacted by works (providing an unobstructed path to the ocean is available to them). If such a path does not exist, then the capture, handling and relocation procedures in accordance with those approved by the Wildlife Act Authorisation obtained for the Project will be implemented.
- If breeding or moulting kororā (active burrow/s) are incidentally discovered during enabling or construction works, an exclusion zone will be established (outlined in Section 3.3, page 13) and adaptive management will be implemented to minimise effects on the kororā and to finish up the works within the effects zone (make it safe, close the site and remove construction equipment). Adaptive management appropriate to the situation will be developed and implemented immediately (or as soon as possible but within 24 hours) by a suitably qualified and experienced person and the construction team to minimise immediate risk to the kororā.
- If an injured or dead penguin is incidentally discovered during enabling or construction works, the SQE will follow the requirements as outlined in Section 3.7 below.

3.7 Injury and / or death of kororā

In the case of an injury or death of a kororā associated with the Project works, the SQE and Mana Whenua representative must be contacted immediately to provide the necessary guidance.

In the case of an injured bird, the SQE or other appointed person will immediately transport the bird to a wildlife vet for treatment.

If a dead kororā is found within the project footprint, the bird will be photographed and notes taken on the date found, location found and any observations of note (e.g. chick / adult, blood on feathers, missing part of flipper, etc). The local DOC area office will be contacted to establish whether they wish for a necropsy to be performed to establish the cause of death. If so, the carcass will be sent to Massey University's Wildlife Postmortem Service⁹. The cost of transporting the bird and the necropsy will be covered by the WAA Holder.

Note that dead kororā should be wrapped in tinfoil (dull side towards animal) and kept in the fridge. Ideally, they should not be frozen as this damages the tissues that may need to be investigated for the cause of death (if requested by DOC).

3.8 Site fencing

If a positive dog detection is made, or the SQE confirms signs that kororā have inhabited the revetement during the first pre-work survey, fencing will be installed around site compounds and stock-pile areas to exclude kororā from these areas (refer to Figure 7 for examples). To ensure its effectiveness for such purposes, an effective barrier must be installed that goes all the way to the ground, leaving no gaps through which kororā could access. The fence must be made of a penguin-proof material, securely fastened down and of a sufficient height (at least 50 cm) to ensure penguins cannot jump over the fence or crawl under it.

Input and guidance from an SQE will be important to ensure the effectiveness of the barrier. Furthermore, once established, it is critical that the integrity of the fencing as a barrier (all the way to the ground) be regularly checked and maintained by the Contractor.



Figure 7: Examples of fencing to exclude kororā from work areas

⁹ <https://www.massey.ac.nz/about/clinics-and-services-for-the-public/wildbase/wildbase-pathology/how-to-submit-a-specimen-to-wildbase-pathology/#Wheretosendspecimens>

3.9 Site protocols & daily inspections

Kororā come onto land overnight and seek shelter, usually within their burrows. Therefore, if a positive dog detection is made, or the SQE confirms signs that kororā have inhabited the revetement during the first pre-work survey, in addition to the establishment and maintenance of site fencing (Section 3.8 above) it will be important to keep the site tidy and minimise the opportunities for birds to shelter on the works site. Shelter under any material that may leave a void for kororā to access, or within pipes and hoses, is to be prevented.

Furthermore, at the commencement of each workday the following inspections will be undertaken:

- **Fencing:** Checking that there no breaches in penguin fencing (as outlined in Section 3.8 above). Any breaches that are found must be fixed immediately to ensure kororā do not access the site.
- **Construction work site:** Scan the site to check for the presence of any kororā, or sign that birds have been there (e.g. guano).
- **Site compounds:** Scan the compounds to check for the presence of any kororā.
- **Plant / machinery:** Prior to starting machinery for the first time each day, check for the presence of kororā under the tyres or attachments that may have been resting on the ground overnight.
- **Construction materials, pump hoses and pipes:** Check that kororā are not roosting within or under any of these.

In the event a kororā (or sign) is discovered during any of the above inspections, the SQE will be contacted immediately to provide further instructions (refer to Section 3.6 above). At all times a distance of 10 m should be maintained from any bird. Kororā can only be handled those persons named on a DOC Wildlife Act Authority (WAA) for the Project.

In addition to the above, any exclusion zones established for the purpose of protecting nesting or moulting birds should be checked daily to ensure they are still in place. Exclusion zone demarcation can only be removed once it has been determined by the SQE that the burrow is empty, and it is safe for works to proceed.

3.10 Underwater noise management

Underwater noise generated from piling works will be managed through use of a bubble curtain, as well as a combination of vibro and impact hammers. Other measures such as the use of a non-metallic 'dolly' or 'cushion cap' that will be placed between the impact piling hammer and the driving helmet (e.g. plastic or plywood) may also be investigated.

4.0 Cryptic Marshbirds

While there is some variability between and within a species (refer to Figure 8), cryptic marshbird breeding season in New Zealand is generally considered to occur between September and February (inclusive), with the peak activity occurring October to December.

Figure 8: Indicative breeding seasons (green shaded cells). Red diagonal lines represent months during which egg laying may occur.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Australasian bittern												
Banded rail												
Spotless crane												
NI fernbird												

The process for managing cryptic marshbirds during construction works is outlined in Figure 9 below and involves:

- If works occur during the breeding season (September to February inclusive) and within 100 m of the cryptic marshbird disturbance zone identified in Map 1, a SQE will survey the area once a month during the breeding season to check for the presence or absence of breeding birds (as per the method outlined in Section 4.1.1 below).
- If works are outside the breeding season, or no cryptic marshbirds are detected, works can occur within 100 m of the of the cryptic marshbird disturbance zone identified in Map 1.
- If a cryptic marshbird active nest¹⁰ is discovered within the disturbance zone identified in Map 1, the SQE will advise on the placement of a 100 m exclusion zone around that nest (as outlined in Section 4.1.2 below), with no works occurring within that exclusion zone. To determine when nesting is complete and works can commence within the exclusion zone, cryptic marshbird surveys will be undertaken during each month throughout the breeding seasons as per the methodology outlined in Section 4.1.1 below.

4.1.1 Cryptic marshbird surveys

Cryptic marshbird surveys will be undertaken each month during the breeding season when constructure works occur within 100 m of cryptic marshbird disturbance zone shown on Map 1. During each such month, the survey will involve:

- Dusks and dawn playbacks as follows:
 - The SQE will be situated in the centre of the cryptic marshbird disturbance zone shown on Map 1.
 - One dusk and one day survey per month;
 - Each survey will comprise playback calls broadcasted for each of the species listed in Table 1 using the following intervals: Listen (L) 2 min + play (P) 30 sec + L 30 sec + P 30 sec + L 2 min.
 - Make a record of any cryptic marshbird responses to the playback calls, noting the species and location of any response.
- Visual search survey as follows:
 - Conducted after the dawn survey each month.

¹⁰ An active cryptic marshbird nest is defined as incubating adult, eggs or chicks.

- The SQE will walk slowly through the disturbance zone shown on Map 1, listening and watching for any cryptic marshbird activity.
- Make a record of any cryptic marshbird activity, noting the species and location of any response.

If cryptic marshbird activity is detected within the disturbance zone identified in Map 1 by either of the above survey methods, the SQE will undertake observations to determine if an active nest is present. If a nest is confirmed, the following information will be recorded:

- Date and time of observation;
- GPS location of the nest;
- Any nest contents that can be passively observed.

4.1.2 Exclusion zones around active nests

If an active cryptic marshbird nest is recorded within the disturbance zone identified in Map 1, the SQE will use the GPS location of the nest to apply a 100 m exclusion zone around it. The outer boundary of this exclusion zone will be communicated with the contractor, noting no construction activities can occur within that zone until it has been determined by the SQE that the cryptic marshbird nest is no longer active.

At no time will cryptic marshbird nest contents be handled or relocated.

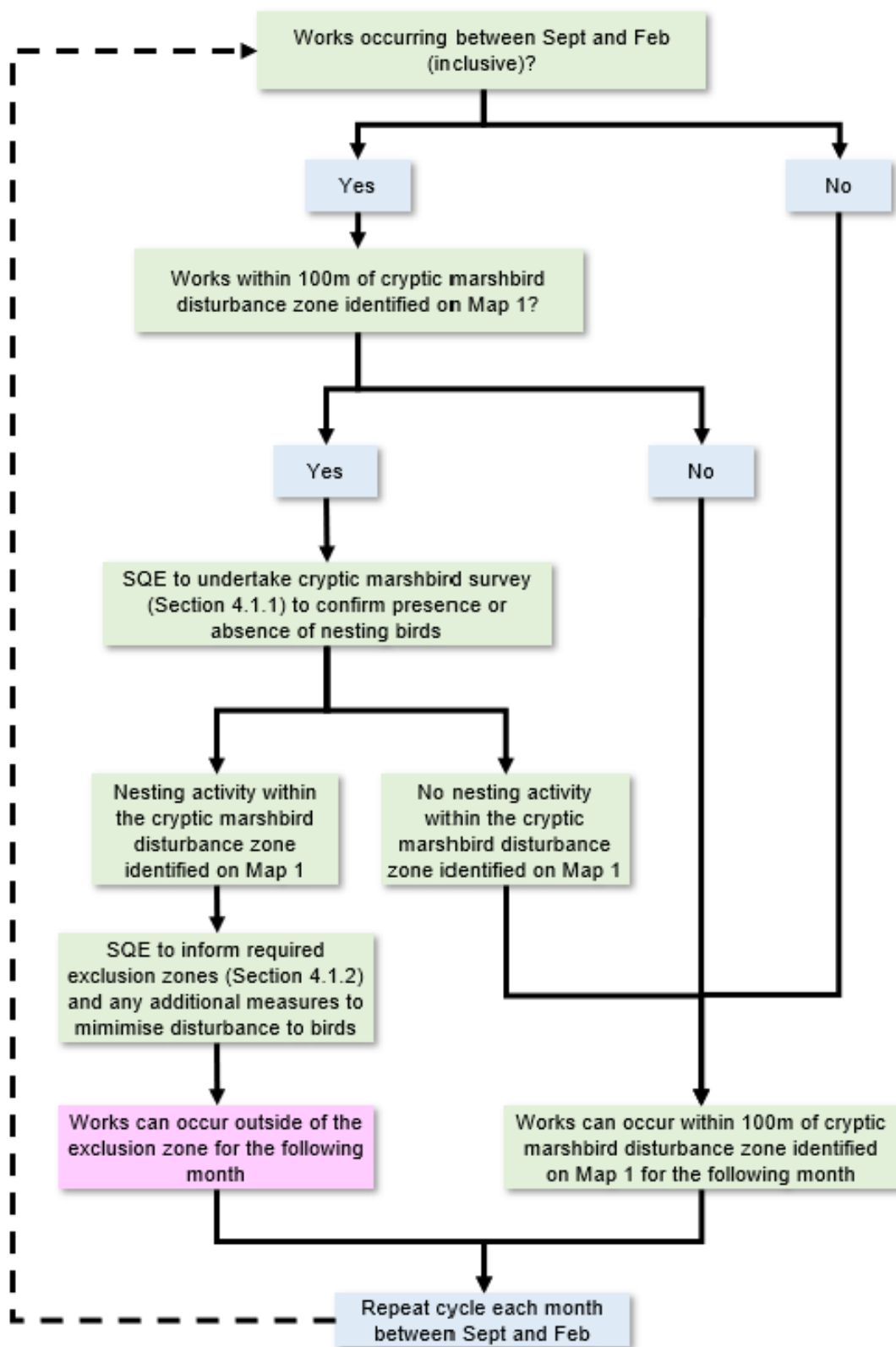


Figure 9: Process for managing cryptic marshbird during construction works

5.0 HPAI / Bird Flu

Avian influenza is a contagious viral disease that affects both domestic and wild birds and is caused by avian influenza (AI) viruses. In 2020, a new H5N1 strain of the HPAI virus emerged in both domesticated and wild birds across the northern hemisphere. This H5N1 strain differs significantly from other HPAI strains because it spreads more easily between wild birds. Currently New Zealand, Australia and the Pacific are free of the H5N1 strain of HPAI. The most obvious sign of HPAI is sudden death in several wild birds. Other signs can include weakness, tremors, paralysis, difficulty breathing, lack of co-ordination, blindness, trembling, and diarrhoea.

The Ministry for Primary Industry (MPI) and DOC have issued the following guidance that will be applied to the current project:

- If you see three or more sick or dead wild birds in a group, report it immediately to the exotic pest and disease hotline on 0800 80 99 66 so can be investigated.
- Provide as much detail as possible, including:
 - a GPS reading or other precise location information
 - photographs and videos of sick and dead birds
 - species name and estimate of the numbers affected
 - how many are sick or freshly dead, and the total number of birds present.
- Do not handle or move the birds unless instructed by MPI or DOC.

6.0 References

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final draft



Avifauna Nesting Habitat

NORTHLAND SHIPYARD & DRYDOCK AVIFAUNA MANAGEMENT PLAN

Plan prepared by MapHouse | 08 June 2026

BlueGreen

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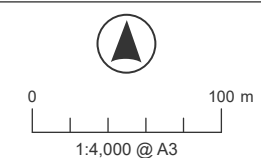
- Western shipyard footprint
- Proposed high tide roost
- Potential kororā habitat
- Shorebird nesting habitat

- Cryptic marshbird disturbance zone
- Significant Bird Area - Critical Bird Habitat

- Recorded nesting species**
- ✕ Northern NZ dotterel
 - ✕ Variable oystercatcher
 - ✕ Pied stilt

Data Sources: BlueGreen Ecology, 4Sight Consulting, Eagle Technology, LINZ

Projection: NZGD 2000 New Zealand Transverse Mercator



Map 1

DRAFT