# A review of significant coastal and freshwater habitats for indigenous birds in the Wellington region

June 2020



**Author:** 

NIKKI MCARTHUR

A review of significant coastal and freshwater habitats for indigenous birds in the Wellington region
Nikki McArthur
17A Ida Street
Redwoodtown
Blenheim 7201
nikki.mcarthur.101@gmail.com
This report was prepared for Greater Wellington Regional Council in fulfilment of the Contract for
Services dated 23 <sup>rd</sup> March 2020
30 <sup>th</sup> June 2020.
Citation:
This report should be cited as:
McArthur, N. 2020. A review of significant coastal and freshwater habitats for indigenous birds in the Wellington region. Client report prepared for Greater Wellington Regional Council, Wellington.
All photographs in this report are copyright © N. McArthur unless otherwise credited, in which case
the person or organization credited is the copyright holder.

Cover Image: Shingle beach and coastal lagoon at the mouth of the Wainuiomata River, Baring

Head/Ōrua-pouanui.

#### **Executive Summary**

The Resource Management Act (1991) identifies the protection of significant habitats of indigenous fauna as a matter of national importance. Policy 23 of Wellington's Regional Policy Statement provides a set of criteria for identifying habitats of significance for indigenous birds, for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan.

A review of available bird occurrence data carried out in 2015 identified 51 significant habitats for indigenous birds in the beds of rivers, lakes and in the coastal marine areas in the Wellington region, and these 51 habitats were subsequently listed in Schedule F2(c) of Wellington's Proposed Natural Resources Plan. Since then, a substantial amount of additional data describing the distribution and abundance of indigenous birds in the Wellington region has been collected by Greater Wellington Regional Council and partner agencies, and by local citizen scientists.

This report describes the results of a new review designed to update the existing list of significant habitats for indigenous birds in Wellington's Proposed Natural Resources Plan. This review applied a set of Policy 23 translation criteria to bird occurrence data collected since 2015, and identified a total of 83 significant habitats for indigenous birds in the beds of rivers, lakes and in the coastal marine area in the Wellington region, including all 51 habitats identified during the 2015 review, along with an additional 32 habitats for which bird occurrence data is now available.

This report contains a list of these 83 significant indigenous bird habitats, together with summary information describing their locations, bird values and critical periods. It is recommended that Schedule F2(c) of Wellington's Proposed Natural Resources Plan be updated with the information contained in this report, and that this network of significant indigenous bird habitats continues to be reviewed on a five year cycle, with the next review scheduled for June 2025.

Keywords: Coastal Marine Area, indigenous birds, lakes, Policy 23, Proposed Natural Resources Plan, rivers, Resource Management Act (1991), Schedule F2(c), significant habitats, Wellington region

#### 1. Introduction

The Resource Management Act (1991) (hereafter referred to as the RMA) requires each regional council in New Zealand to prepare a Regional Policy Statement to guide the sustainable management of each region's natural and physical resources. Section 6(c) of the RMA identifies "the protection of...significant habitats of indigenous fauna" as a matter of national importance.

Section 6(c) of the RMA has been expressed in the Wellington region's Regional Policy Statement in Policy 23, which directs regional and district plans to "identify ecosystems and habitats with significant indigenous biodiversity values that meet one or more of the following criteria:

- (a) **Representativeness**: The ecosystem or habitats that are typical and characteristic examples of the full range of the original or current natural diversity of ecosystem and habitat types in a district or region, and:
  - (i) Are no longer commonplace (less than about 30% remaining); or
  - (ii) Are poorly represented in existing protected areas (less than about 20% legally protected)
- (b) **Rarity**: The ecosystem or habitat has biological or physical features that are scarce or threatened in a local, regional or national context. This can include individual species, rare and distinctive biological communities and physical features that are unusual or rare.
- (c) **Diversity**: The ecosystem or habitat has a natural diversity of ecological units, ecosystems, species and physical features within an area.
- (d) **Ecological context of an area**: The ecosystem or habitat:
  - (i) Enhances connectivity or otherwise buffers representative, rare or diverse indigenous ecosystems or habitats; or
  - (ii) Provides seasonal or core habitat for protected or threatened indigenous species
- (e) **Tangata whenua values**: The ecosystem or habitat contains characteristics of special spiritual, historical or cultural significance to tangata whenua, identified in accordance with tikanga Māori" (GWRC, 2013).

To contribute towards the delivery of Policy 23 of the Wellington region's Regional Policy Statement, in 2014 Greater Wellington Regional Council (hereafter referred to as GWRC) carried out a desktop review of existing data describing the distribution and abundance of Nationally Threatened or At Risk indigenous birds in the Wellington region. These data were then applied to the Policy 23 criteria to identify significant habitats for indigenous bird species within the coastal marine area (hereafter referred to as the CMA), freshwater wetlands and the beds of rivers and lakes, for inclusion in the region's Proposed Natural Resources Plan (McArthur & Lawson, 2014). This review identified a total of 166 sites that met Policy 23 criteria based on available bird data, which included the majority of sites for which bird data were available.

This result was peer-reviewed by staff from GWRC's Environmental Policy and Environmental Science Departments, and it was agreed that because the majority of sites for which bird data were available had met one or more Policy 23 criteria, this indicated that the existing criteria were too inclusive when applied to data describing indigenous bird values. Recognising that the intent of these Policy 23 criteria is to identify sites that support nationally or regionally-significant populations of Nationally Threatened or At Risk bird species, or a relatively high diversity of indigenous bird species, it was agreed that the McArthur & Lawson review had not fully succeeded in distinguishing these sites from those with lesser indigenous bird values.

To solve this issue, an expert panel of Wellington-based ornithologists was convened, and was given the task of devising a means by which these Policy 23 criteria could be translated in order to be fit-for-purpose when applied to data describing indigenous bird values. The expert panel then applied these translation criteria to the indigenous bird values data summarised for the 166 candidate sites identified by McArthur & Lawson (2014) and created a final list of 51 significant coastal and freshwater habitats for indigenous birds, for inclusion in the Wellington region's Proposed Natural Resources Plan (McArthur et al, 2015). This expert panel further recommended that GWRC establishes a process to regularly review and update this list of significant coastal and freshwater habitats, in recognition that additional bird survey data will become available in the future, and that the New Zealand Threat Classification System rankings used in this process will be reviewed and updated every five years (McArthur et al, 2015).

Since this review was carried out, several new datasets describing the distribution and abundance of indigenous birds in coastal and freshwater habitats have been collected in the Wellington region. Notable among these are a series of river bird surveys carried out between 2017 and 2019, as part of GWRC's Flood Protection Environmental Monitoring Plan, including a survey of 211 km of braided river habitats carried out in the Wairarapa in January 2017 (McArthur & Burgin, 2017; McArthur et al, 2019a). Between 2016 and 2017, a comprehensive bird survey along the entire 450 km of the greater Wellington region coastline was also carried out, creating the opportunity to map spatial patterns in the distribution and abundance of indigenous bird species along the entire Wellington region coastline for the very first time (McArthur et al, 2019b). Furthermore, in 2017 the Department of Conservation published an updated list of New Zealand Threat Classification System rankings for New Zealand birds (Robertson et al, 2017), which included a number of changes to the rankings used in the reviews carried out by McArthur & Lawson (2014) and McArthur et al, (2015).

Given the substantial amount of new information that has now been collected since the 2015 review of significant coastal and freshwater habitats for indigenous birds, GWRC has commissioned a new review, with the aim of updating the existing list of 51 significant indigenous bird habitats currently included in Schedule F2(c) of Wellington's Proposed Natural Resources Plan (GWRC, 2015), using the new information collected since 2015. This report provides a summary of the methodology and results of this review, provides an updated list of significant coastal and freshwater habitats for indigenous birds in the Wellington region, and provides recommendations for future work required to keep this list up to date.

#### 2. Methods

#### 2.1 Bird occurrence datasets and threat rankings used for this review

Several new bird occurrence datasets describing the distribution and abundance of indigenous birds in coastal and freshwater habitats in the Wellington region have been created since 2015. These include:

- A Wellington region river bird survey dataset compiled by GWRC between 2017 and 2019, describing the distribution and abundance of indigenous birds present within individual 1 km sections of the beds of major braided rivers in the Wellington region, including the Hutt, Waikanae, Ōtaki, Ruamāhanga, Waingawa, Waiohine, Tauherenikau, Huangarua, Turanganui, Pahaoa, Awhea, Opouawe and Whawanui Rivers (McArthur & Burgin, 2017; McArthur et al, 2019a).
- A Wellington region coastal bird survey dataset compiled by GWRC between 2016 and 2017, describing the distribution and abundance of indigenous birds present within individual 1 km sections of the Wellington region coastline, between the Waikawa and Owahanga River mouths, and including the coastlines of Kāpiti, Mana, Matiu/Somes and Taputeranga Islands (McArthur et al, 2019b).
- Lake Wairarapa eastern shoreline wader survey data describing the presence and abundance of shorebirds and waterfowl along the eastern shoreline of Lake Wairarapa in February, June and November each year, compiled by staff and volunteers from GWRC, the Department of Conservation and Birds New Zealand.
- Citizen science data collected by both professional and amateur ornithologists and submitted to the New Zealand eBird database.

Each of these datasets was sourced either directly from GWRC, or from the New Zealand eBird database. Data describing the presence of rare, Nationally Threatened or At Risk bird species were extracted from these datasets and summarised on a site-by-site basis using Microsoft Excel. The species threat rankings used in this review are those listed in Robertson et al (2017).

#### 2.2 Reviewing and identifying significant habitats for indigenous birds

This review utilised the Policy 23 translation criteria developed by McArthur et al (2015), and these are reproduced in Table 2.2.1 below. A full description of the methodology used to develop these criteria can be found in McArthur et al (2015).

Table 2.2.1: Policy 23 translation criteria used to assess candidate coastal and freshwater habitats of significance for indigenous birds in the Wellington region (reproduced from McArthur et al, 2015).

Policy 23 Criteria	(b) Rarity	(c) Diversity	(dii) Ecological Context	
(Meets the ≥10% of the regional population of a RPS Policy 23 Nationally Critical species; or ≥15% of the regional population of a Nationally Endangered species; or ≥20% of the regional population of a Nationally Vulnerable		Seven or more Nationally Threatened or At Risk species are known to be resident at or regularly using the site	The site provides seasonal or core habitat for ≥67% of the regional population of a protected (but not Nationally Threatened or At Risk) species	
Category 2 site (Meets the RPS Policy 23 criteria)	The site provides habitat for 5- 25% of the regional population of a Nationally Threatened or At Risk species	Between four and six Nationally Threatened or At Risk species are known to be resident at or regularly using the site	The site provides seasonal or core habitat for 33-66% of the regional population of a protected (but not Nationally Threatened or At Risk) species	
Category 3 site (Does not meet the RPS Policy 23 criteria)	The site provides habitat for <5% of the regional population of a Nationally Threatened or At Risk species	Less than four Nationally Threatened or At Risk species known to be resident at or regularly using the site	The site provides seasonal or core habitat for <33% of the regional population of a protected (but not Nationally Threatened or At Risk) species	

#### Notes:

- 1. The threat rankings for bird species mentioned in this review are those listed in Robertson et al, (2017).
- 2. The term 'protected' refers to any species granted absolute protection under the Wildlife Act (1953).
- 3. Species were considered 'resident or regularly using' a site if they have been or are likely to be encountered during 50% or more of bird surveys carried out in the appropriate season.
- 4. Translation criteria categories for Policy 23 criterion (b): Rarity are hierarchical, so that if a site meets the criterion for category one, that takes precedence over category two, and so on. For example, a site that supports 20% of the regional population of a Nationally Endangered species would be placed in category one, but a site supporting 12% of a Nationally Endangered species would be placed in category two.

In this review, two separate analyses were carried out using these Policy 23 translation criteria. In the first analysis, bird occurrence data sourced from the datasets described above were used to update the bird values descriptions for the 51 significant habitats for indigenous birds currently listed in Schedule F2(c) of Wellington's Proposed Natural Resources Plan (GWRC, 2015), then the Policy 23 translation criteria were re-applied to these updated bird values descriptions and new category scores were assigned to each site, for each translation criterion. Any site assigned a category score of one or two for any one of the translation criteria was retained in the list of recommended significant coastal or freshwater habitats for indigenous birds contained in the appendices of this report, and any site that was assigned a category score of three for all of the translation criteria was omitted from the list of recommended significant coastal or freshwater habitats.

In the second analysis, bird occurrence data sourced from the datasets described above were summarised for all sites not currently listed in Schedule F2(c) of Wellington's Proposed Natural Resources Plan (GWRC, 2015), then the Policy 23 translation criteria were applied to these site-specific data summaries to identify new sites that meet the threshold for inclusion in Schedule F2(c). Category scores were assigned to each site, for each translation criterion, and any site assigned a category score of one or two for any one of the translation criteria was added to the list of recommended significant coastal or freshwater habitats for indigenous birds contained in the appendices of this report. Any site that was assigned a category score of three for all of the translation criteria was omitted from the list of recommended significant coastal or freshwater habitats.

### 2.3 Preparation of appendices and shapefiles

Summary information for each habitat identified in this review and recommended for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan is provided in Appendices 1-3 of this report. This summary information includes:

- Site Name (identical names are used both in the appendices of this report and in the associated shapefiles delimiting the boundaries of each habitat).
- The location of each site (expressed as latitude/longitude coordinates for the centroid (geographic centre) of each site).
- A description of the relevant indigenous bird values for each site that have achieved Policy 23 translation criteria scores of either one or two.
- The Policy 23 translation criteria scores for each site, for each of the three Policy 23 criteria considered (Rarity, Diversity and Ecological context of an area).
- A summary of the critical times of year during which relevant indigenous birds present at each site are breeding, and so are particularly susceptible to the disturbance, damage or destruction of these habitats.

Each of the habitats recommended for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan and listed in the appendices of this report has also been mapped using ArcMap 10.7.1, and shapefiles containing polygons delimiting the extent and boundaries of each habitat has been provided to GWRC's Environmental Science Department.

The geographical boundaries of these habitats were defined using either the boundaries of the bird surveys from which the relevant bird data were sourced, or by manually digitising either natural or artificial habitat boundaries between adjacent habitat types, identified using aerial or satellite photographs. For example, the true left and true right boundaries of significant habitats in rivers were typically defined as the boundary between terrestrial woody or herbaceous riparian vegetation (typically willows *Salix* spp. or pasture) and the dry gravels or flowing water of the active riverbed. In the case of significant habitats in the coastal marine area, Mean High Water Springs (hereafter referred to as MHWS) was used as the default inland boundary, although this was frequently relaxed to include any habitats above MHWS utilised by any bird species included in the bird values description for that site (e.g. high tide roosts or nesting areas situated above MHWS that are likely being used by indigenous birds using adjacent coastal habitats situated below MHWS).

#### 3. Results

This review has identified a total of 83 habitats that meet one or more of the Policy 23 translation criteria developed by McArthur et al (2015) (Appendices 1-3), and are therefore recommended for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan (GWRC, 2015). Nine of these habitats are situated in the beds of rivers, two habitats in the beds of lakes, and 72 habitats are situated in the Coastal Marine Area.

The 83 habitats identified in this review include all 51 significant coastal and freshwater habitats for indigenous birds currently listed in Schedule F2(c) of Wellington's Proposed Natural Resources Plan, along with 32 additional habitats that now meet Policy 23 translation criteria. These new sites include two new sites situated in the beds of rivers, and 30 new sites situated in the CMA (Appendices 1-3; GWRC, 2015).

Only two habitats, Lake Wairarapa and Wellington Harbour inland waters, achieved a category score of one for all three Policy 23 translation criteria, highlighting the regional importance of these two sites as habitats for indigenous birds (Table 3.1). Lake Wairarapa and its associated wetland forms the largest wetland complex in the southern North Island, and is widely recognised to have internationally, nationally and regionally significant fauna values (Gunn, 2014; GWRC, 2015; Forest & Bird, 2016). Over 100 bird species have been recorded at Lake Wairarapa, including nationally significant populations of Australasian bittern (*Botaurus poiciloptilus*), banded dotterel (*Charadrius bicinctus*) and regionally significant populations of black-billed gull (*Larus bulleri*), black-fronted dotterel (*Elseyornis melanops*), Caspian tern (*Hydroprogne caspia*), New Zealand dabchick (*Poliocephalus rufopectus*) and pied stilt (*Himantopus himantopus*). Wellington Harbour is the largest natural harbour in the lower north island and supports regionally significant populations of fluttering shearwater (*Puffinus gavia*) little penguin (*Eudyptula minor*) and spotted shag (*Stictocarbo punctatus*).

One further habitat, the Matiu/Somes Island foreshore, achieved category scores of one or two or for all three Policy 23 translation criteria (Table 3.1). The Matiu/Somes Island foreshore provides habitat for a relatively high diversity of Nationally Threatened and At Risk bird species, as well as providing habitat for the majority of spotted shags breeding in the Wellington region and one of the largest breeding colonies of little penguins present in the Wellington region.

Four further sites achieved category scores of one for two out of three Policy 23 translation criteria (Table 3.1). All four sites supported a relativley high diversity of Nationally Threatened and At Risk bird species, in addition to supporting regionally-significant populations of one or more indigenous bird species. The Kapiti Island foreshore provides breeding habitat for >20% of the region's breeding population of red-billed gulls (*Larus novaehollandiae*), 47% of the region's breeding population of white-fronted terns (*Sterna striata*) and 7% of the region's breeding population of reef herons (*Egretta sacra*). Ōnoke Spit provides breeding habitat for the entire regional breeding population of Caspian terns and 7% of the regional breeding population of banded dotterels. Riversdale Beach and the Motuwaireka River mouth provides breeding habitat for 29% of the regional breeding population of New Zealand dotterels (*Charadrius obscurus*), and the Pauatahanui Arm of Te Awarua-o-Porirua Harbour provides breeding habitat for at least 25% of the regional breeding population of fernbirds (*Bowdleria punctata*).

Table 3.1: List of 83 significant coastal and freshwater habitats for indigenous birds identified in this review, ranked according to their category scores for each of the Policy 23 translation criteria used in this review. Sites listed in bold text are those that are not currently included in Schedule F2(c) of Wellington's Proposed Natural Resources Plan.

Habitat Type	Habitat	Rarity	Diversity	Ecological Context
Lake	Lake Wairarapa	1	1	1
CMA	Wellington Harbour inland waters	1	1	1
CMA	Kāpiti Island foreshore	1	1	3
CMA	Ōnoke Spit	1	1	3
CMA	Riversdale Beach	1	1	3
CMA	Te Awarua-o-Porirua, Pauatahanui Arm	1	1	3
River	Opouawe River	1	2	3
River	Ruamāhanga River (Rathkeale to Te Ore Ore)	1	2	3
CMA	Castlepoint reef	1	2	3
River	Ōtaki River	2	1	3
CMA	Baring Head/Ōrua-pouanui	2	1	3
CMA	Honeycomb Rock	2	1	3
CMA	Owahanga coastline south	2	1	3
CMA	Pahaoa Estuary	2	1	3
CMA	Pencarrow Head foreshore	2	1	3
CMA	Pukerua Bay	2	1	3
CMA	Waikanae Estuary	2	1	3
CMA	Wellington south coast	2	1	3
CMA	Whakataki River mouth	2	1	3
CMA	Matiu/Somes Island foreshore	2	2	1
River	Awhea River	2	2	3
River	Mid-Ruamāhanga and Waingawa Rivers	2	2	3
CMA	Glendhu coast	2	2	3
CMA	Green Point	2	2	3
CMA	Makara Estuary	2	2	3
CMA	Makaro/Ward Island foreshore	2	2	3
CMA	Mana Island foreshore	2	2	3
CMA	Mataikona River mouth	2	2	3
CMA	Mokopuna Island foreshore	2	2	3
CMA	Ngakauau Stream mouth	2	2	3
CMA	Stony Bay	2	2	3
CMA	Taputeranga Island foreshore	2	2	3
CMA	Waimimi coastline	2	2	3
CMA	Wgtn Harbour, Worser Bay to Point Dorset	2	2	3
CMA	Wgtn Harbour, Te Raekaihau to Owhiro Bay	2	2	3
River	Pahaoa River	2	3	3
CMA	Cape Palliser	2	3	3
CMA	Lake Ōnoke	3	1	3
Lake	Parangarahu Lakes	3	1	3

Habitat Type	Habitat	Rarity	Diversity	Ecological Context
CMA	Ōtaki River mouth	3	1	3
CMA	Te Awarua-o-Porirua, Onepoto Arm	3	1	3
CMA	Tora coast	3	1	3
CMA	Wgtn Harbour, Pencarrow to Burdan's Gate	3	1	3
CMA	Wgtn Harbour, Day's Bay to Point Howard	3	1	3
CMA	White Rock to Te Kaukau Point	3	1	3
River	Hutt River (lower)	3	2	3
River	Ruamāhanga (Waiohine to Pukio)	3	2	3
River	Waiohine River	3	2	3
CMA	Flat Point	3	2	3
CMA	Glenburn coast	3	2	3
CMA	Honeycomb Rock north	3	2	3
CMA	Manurewa Point	3	2	3
CMA	Mataikona coastline north	3	2	3
CMA	Mukamuka Stream mouth	3	2	3
СМА	Ngawi foreshore north	3	2	3
CMA	Ocean Beach	3	2	3
CMA	Open Bay	3	2	3
CMA	Paraparaumu Beach	3	2	3
CMA	Pekapeka Beach	3	2	3
CMA	Pipinui Point	3	2	3
CMA	Rock Point	3	2	3
CMA	Sinclair Head	3	2	3
CMA	Tahoramaurea Island foreshore	3	2	3
CMA	Te Awaiti foreshore	3	2	3
CMA	Te Horo Beach south	3	2	3
CMA	Te Kawakawa Point	3	2	3
CMA	Tokomapuna Island foreshore	3	2	3
CMA	Tokorakau Reef north	3	2	3
CMA	Tongue Point	3	2	3
CMA	Turakirae Head	3	2	3
CMA	Uruti Point	3	2	3
CMA	Waikawa Beach south	3	2	3
CMA	Waikekino Stream mouth	3	2	3
CMA	Waitohu Stream mouth	3	2	3
CMA	Wgtn Harbour, Point Howard to Hutt Estuary	3	2	3
CMA	Wgtn Harbour, Hutt Estuary and Petone beach	3	2	3
CMA	Wgtn Harbour, Petone Beach to Ngauranga	3	2	3
CMA	Wgtn Harbour, Ngauranga to Interislander terminal	3	2	3
CMA	Wgtn Harbour, Pt Jerningham to Pt Halswell	3	2	3
CMA	Wgtn Harbour, Pt Halswell to Worser Bay	3	2	3
CMA	Wgtn Harbour, Palmer Head to Lyall Bay	3	2	3

Habitat Type	Habitat		Diversity	Ecological Context
CMA	Whareama River coastline south	3	2	3
CMA	Whareama River mouth	3	2	3

#### 4. Discussion and recommendations

Appendices one, two and three of this report contain tables listing all 83 significant indigenous bird habitats identified by this review, including details of the locations, relevant bird values and critical periods for each site, as well as a summary of the Policy 23 translation criteria scores for each site. It is recommended that Schedule F2(c) of Wellington's Proposed Natural Resources Plan be updated with the information contained in these appendices. Specifically, we recommend that the 32 sites that have not previously been identified as significant habitats for indigenous birds be added to Schedule F2(c), and that the bird values descriptions and critical periods for the additional 51 sites already listed in Schedule F2(c) be updated with the new information provided in these appendices.

The inclusion of all 83 of these significant indigenous bird habitats in Schedule F2(c) of Wellington's Proposed Natural Resources plan will represent a major step forward in Greater Wellington Regional Council's efforts to sustainably manage the Wellington region coastline, rivers and lakes, and to protect the natural values of these habitats from being adversely impacted by human activities. This network of sites includes all, or the majority of the breeding habitat of several species currently ranked as Regionally Critical under the New Zealand Threat Classification System, including Caspian tern, reef heron and New Zealand dotterel, and protects the majority of the nesting colonies of colonially-breeding coastal bird species such as white-fronted tern (Regionally Endangered) and red-billed gull (Regionally Vulnerable). This network also includes all coastal sites that support a relatively high diversity of Nationally Threatened or At Risk coastal bird species, such as the Waikanae Estuary, Onoke Spit and Riversdale Beach.

The identification of 32 additional significant habitats for indigenous birds as a result of this review highlights the value of periodically reviewing the list of sites contained in Schedule F2(c) of the Proposed Natural Resources Plan, to incorporate both new bird occurrence data and any recent changes to New Zealand Threat Classification System rankings. Both regional and national Threat Classification System rankings are reviewed and updated on a five-year cycle, and GWRC's State of the Environment, coastal bird survey and Flood Protection river bird surveys are similarly carried out on cycles of 5-6 years. This being the case, we recommended that this review of significant habitats for indigenous birds listed in Schedule F2(c) of Wellington's Proposed Natural Resources Plan also be repeated on a five-year cycle, and that the next review be scheduled for June 2025.

# Acknowledgements

This review was instigated by Roger Uys, Senior Environmental Scientist at Greater Wellington Regional Council. James Allen, Mike Bell, Daniel Burgin, Tansy Bliss, Patrick Crowe, George Hobson, Justin McCarthy, Joanna McVeagh, Grant Nalder, Barrett Pistoll, Samantha Ray, Colin Shore, Brent Tandy, John Tattersall, Roger Uys and Dave Wrightson all assisted with river and coastal bird surveys carried out in the Wellington region between 2017 and 2019. Thank you to Kerry Shaw and Mike Rumble for providing additional data describing the distribution and abundance of little penguins in the Wellington region. Many thanks also to Roger Uys, Annette Harvey and Rebecca Lunt for providing useful comments on earlier drafts of this report.

## References

Forest & Bird, 2016. New Zealand Seabirds: Sites on Land, Rivers, estuaries, coastal lagoons & harbours. The Royal Forest & Bird Protection Society of New Zealand, Wellington, New Zealand.

Greater Wellington Regional Council. 2013. *Regional Policy Statement for the Wellington region*. Publication No. GW/EP-G-13/21, Greater Wellington Regional Council, Wellington.

Greater Wellington Regional Council. 2015. *Proposed Natural Resources Plan for the Wellington Region – Te Tikanga Taiao o Te Upoko o Te Ika a Maui*. Greater Wellington Regional Council, Publication No. GW/EP-G-15/44.

Gunn, I. (Ed.) 2014. Ramsar application for Lake Wairarapa and its associated wetlands (Wairarapa Moana). Unpublished Report, Greater Wellington Regional Council, Masterton.

McArthur, N. and Burgin, D. 2017. Wairarapa river bird surveys project – Regional summary report. Client report prepared for Greater Wellington Regional Council, Wildlife Management International Ltd, Blenheim.

McArthur N and Lawson J. 2014. *Coastal and freshwater sites of significance for rare and threatened birds in the Wellington region*. Publication No. GW/ESCI-T-14/67, Greater Wellington Regional Council, Wellington.

McArthur, N.; Ray, S. and Burgin, D. 2019a. *Trends in the abundance and distribution of riverbed-nesting shorebirds in the Wairarapa*. Client report prepared for Greater Wellington Regional Council, Wildlife Management International Ltd, Blenheim.

McArthur, N.; Ray, S.; Crowe, P. and Bell, M. 2019b. A baseline survey of the indigenous bird values of the Wellington region coastline. Client report prepared for Greater Wellington Regional Council, Wildlife Management International Ltd, Blenheim.

McArthur N, Robertson H, Adams L and Small D. 2015. *A review of coastal and freshwater habitats of significance for indigenous birds in the Wellington Region*. Publication No. GW/ESCI-T-14/68, Greater Wellington Regional Council, Wellington.

Robertson, H.A.; Baird, K.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; McArthur, N.; O'Donnell, C.J.F.; Sagar, P.M.; Scofield, R.P. and Taylor, G.A. 2017. *Conservation status of New Zealand birds, 2016.* New Zealand Threat Classification Series 19, Department of Conservation, Wellington.

# Appendix One: List of significant habitats for indigenous birds in rivers

This appendix contains an updated list of significant habitats for indigenous birds in the beds of rivers recommended for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan. Habitats currently listed in the Proposed Natural Resources Plan are highlighted in green, and recommended updates to the bird values descriptions and critical periods for these habitats are shown in italics. Changes to the Policy 23 criteria scores for these pre-existing sites are represented by red numbers, whereas unchanged criteria scores are represented by black numbers. New habitats recommended for inclusion in Schedule F2(c) of the Proposed Natural Resources Plan are highlighted in blue.

It should be noted that the bird values described in the table below only include those species that trigger the Policy 23 translation criteria used in this review. This table does not provide a complete description of all the indigenous bird values present at these sites.

	Latitude and	Policy 23 translation criteria category scores	translation criteria			
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Awhea River (Tuturumuri to River mouth)	41°27′09″S 175°31′16″E	This site provides breeding habitat for 12% of the regional breeding population of blackfronted dotterels  Five Nationally Threatened or At Risk species are resident or regular visitors to this site: Black-fronted dotterel, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	2	2	3	1 August – 1 February  (Black-fronted dotterel breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Opouawe River	41°29′43″S 175°25′35″E	This site provides breeding habitat for 23% of the regional breeding population of banded dotterels  This site provides breeding habitat for 6% of the regional breeding population of blackfronted dotterels  Four Nationally Threatened or At Risk species are resident or regular visitors to this site:  Banded dotterel, black-fronted dotterel, black shag and New Zealand pipit	1	2	3	1 August – 1 February (Banded dotterel and black- fronted dotterel breeding seasons)
Ōtaki River (River mouth to downstream end of Ōtaki Gorge)	40°47'34"S 175°10'38"E	This site provides breeding habitat for 7% of the regional breeding population of banded dotterels  Eight Nationally Threatened or At Risk species are resident or regular visitors to this site: Banded dotterel, black-fronted dotterel, black shag, Caspian tern, New Zealand pipit, pied shag, red-billed gull and white-fronted tern	2	1	3	1 August – 1 February (Banded dotterel and black-fronted dotterel breeding seasons)
Pahaoa River (Ngakonui Bridge to Glendhu Bridge)	41°21′20″S 175°41′50″E	This site provides breeding habitat for 19% of the regional breeding population of black- fronted dotterels	2	3	3	1 August — 1 February (Black-fronted dotterel breeding season)

	Latitude and	Bird values that trigger Policy	trans	Policy 23 translation criteria category scores		
Site name	Longitude (NZGD2000)	23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Ruamāhanga River (upper) (Rathkeale College to Te Ore Ore Bridge)	40°55′16″S 175°41′53″E	This site provides breeding habitat for the entire regional breeding population of blackbilled gulls  Five Nationally Threatened or At Risk species are resident or regular visitors to this site:  Banded dotterel, black-fronted dotterel, black-billed gull, black shag and New Zealand pipit	1	2	3	1 August — 1 February  (Banded dotterel and black-fronted dotterel breeding seasons)  1 October — 1 February  (Black-billed gull breeding season)
Ruamāhanga River (Wardell's Bridge to Gladstone Bridge) and Waingawa River (Totara Park Drive to Ruamāhanga confluence)	41°02′22″S 175°38′58″E	This site provides breeding habitat for 16% of the regional breeding population of banded dotterels  This site provides breeding habitat for 11% of the regional breeding population of blackfronted dotterels  Five Nationally Threatened or At Risk species are resident or regular visitors to this site: Banded dotterel, black-billed gull, black-fronted dotterel, black shag and New Zealand pipit	2	2	3	1 August – 1 February  (Banded dotterel and black- fronted dotterel breeding seasons)

	Latitude and		Policy 23 translation criteria category scores			_
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Ruamāhanga River (Waiohine confluence to Pukio) and Huangarua River (White Rock Road Bridge to Ruamāhanga confluence)	41°11′54″S 175°27′38″E	This site provides breeding habitat for 22% of the regional breeding population of blackfronted dotterels  Four Nationally Threatened or At Risk species are resident or regular visitors to this site:  Banded dotterel, black-fronted dotterel, black shag and New Zealand pipit	2	2	3	1 August – 1 February (Banded dotterel and black- fronted dotterel breeding seasons)
Te Awa Kairangi/Hutt River (River mouth to 1.3 km upstream)	41°14'01"S 174°53'59"E	Five Nationally Threatened or At Risk species are resident or regular visitors to this site: Black shag, little black shag, red-billed gull, royal spoonbill and variable oystercatcher	3	2	3	None
Waiohine River (Railway Bridge to SH2 Bridge)	41°03′40″S 175°27′02″E	Five Nationally Threatened or At Risk species are resident or regular visitors to this site: Banded dotterel, black-billed gull, black-fronted dotterel, black shag and New Zealand pipit	3	2	3	1 August — 1 February (Banded dotterel and black- fronted dotterel breeding seasons)

# Appendix Two: List of significant habitats for indigenous birds in lakes

This appendix contains an updated list of significant habitats for indigenous birds in the beds of lakes recommended for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan. Habitats currently listed in the Proposed Natural Resources Plan are highlighted in green, and recommended updates to the bird values descriptions and critical periods of these sites are shown in italics. Changes to the Policy 23 criteria scores for these pre-existing sites are represented by red numbers, whereas unchanged criteria scores are represented by black numbers.

It should be noted that the bird values described in the table below only include those species that trigger the Policy 23 translation criteria used in this review. This table does not provide a complete description of all the indigenous bird values present at these sites.

	Latitude and		Policy 23 translation criteria category scores		criteria	_
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Lake Wairarapa	41°13′06″S 175°14′14″E	This site provides breeding, foraging and roosting habitat for almost 100% of the regional breeding populations of black-billed gulls  This site provides non-breeding habitat for almost 100% of the regional population of Arctic-breeding migrant shorebirds, including bar-tailed godwits, Pacific golden plovers, sharptailed and pectoral sandpipers  This site provides non-breeding foraging and roosting habitat for >50% of the regional breeding population of banded dotterels  This site provides non-breeding foraging and roosting habitat for >33% of the regional breeding population of pied stilts  This site provides foraging and roosting habitat for >25% of the regional breeding	1	1	1	All year around  (Important summer site habitat for Arctic-breeding shorebirds; important winter habitat for NZ- breeding shorebirds; important year-round moulting and feeding site for indigenous wildfowl and important year- round habitat for breeding Australasian bittern)

	Latitude and	Died volvos that twisses Dalias	trans	Policy lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
		population of Caspian terns				
Lake						
Wairarapa		This site provides non-breeding				
(Contd.)		foraging and roosting habitat				
		for >10% of the regional				
		breeding population of black- fronted dotterels				
		This site provides breeding				
		habitat for >5% of the regional population of Australasian				
		bitterns				
		This site provides moulting,				
		foraging and roosting habitat for nationally				
		significant populations of				
		indigenous waterfowl species				
		including black swans, paradise				
		shelducks, grey teal and				
		Australasian shoveler				
		Fourteen Nationally Threatened				
		or At Risk species are resident				
		or regular visitors to this site:				
		Australasian bittern, banded				
		dotterel, bar-tailed godwit, black-billed gull, black-fronted				
		dotterel, black-fronted tern,				
		black shag, Caspian tern, little				
		black shag, New Zealand				
		dabchick, royal spoonbill, South				
		Island pied oystercatcher,				
		variable oystercatcher and				
		white heron				

	Latitude and	Bird values that trigger Policy	translation criter category scores		translation criteria category scores	criteria	
Site name	Longitude (NZGD2000)		Rarity	Diversity	Ecological Context	Critical periods	
Parangarahu Lakes	41°21′38″S 174°52′08″E	Seven Nationally Threatened or At Risk species are resident or regular visitors to this site: Banded dotterel, black shag, little black shag, New Zealand dabchick, New Zealand pipit, pied shag and spotless crake	3	1	3	1 August — 1 February  (Banded dotterel breeding season)  All year around  (Black shag breeding season)  1 August — 1 April  (New Zealand dabchick breeding season)  1 August to 1 February  (Spotless crake breeding season)	

# Appendix Three: List of significant habitats for indigenous birds in the coastal marine area

This appendix contains an updated list of significant habitats for indigenous birds in the coastal marine area recommended for inclusion in Schedule F2(c) of Wellington's Proposed Natural Resources Plan. Habitats currently listed in the Proposed Natural Resources Plan are highlighted in green, and recommended updates to the bird values descriptions and critical periods to these sitesare shown in italics. Changes to the Policy 23 criteria scores for these pre-existing sites are represented by red numbers, whereas unchanged criteria scores are represented by black numbers. New habitats recommended for inclusion in Schedule F2(c) of the Proposed Natural Resources Plan are highlighted in blue.

It should be noted that the bird values described in the table below only include those species that trigger the Policy 23 translation criteria used in this review. This table does not provide a complete description of all the indigenous bird values present at these sites.

	Longitude		trans	Policy : lation egory s	criteria	-
Site name		Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Baring Head/ Ōrua-pouanui coastline, including the Wainuiomata River mouth	41°24'29"S 174°52'38"E	This site provides breeding habitat for 5% of the regional breeding population of banded dotterels  Eight Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Banded dotterel, black shag, Caspian tern, New Zealand pipit, pied shag, redbilled gull, variable oystercatcher and white-fronted tern	2	1	3	1 August – 1 February  (Banded dotterel breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)
Cape Palliser	41°36'31"S 175°16'09"E	This site provides breeding habitat for 5% of the regional breeding population of redbilled gulls	2	3	3	1 August – 1 March (Red-billed gull breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Castlepoint reef	40°54'14"S 176°13'37"E	This site provides breeding habitat for 45% of the regional breeding population of redbilled gulls  This site provides breeding habitat for 50% of the regional breeding population of whitefronted terns  Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	1	2	3	1 August – 1 March  (Red-billed gull breeding season)  1 October – 1 March  (White-fronted tern breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)
Flat Point coastline, including the Arawhata Stream mouth	41°15'14"S 175°55'46"E	Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Banded dotterel, black shag, New Zealand pipit, variable oystercatcher and white-fronted tern	3	2	3	1 August — 1 February  (Banded dotterel breeding season)  1 September — 1 April  (Variable oystercatcher breeding season)
Glenburn coast	41°19'37"S 175°50'44"E	Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, red-billed gull, variable oystercatcher and white- fronted tern	3	2	3	1 September – 1 April (Variable oystercatcher breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Glendhu coast	41°22'17"S 175°46'19"E	This site provides habitat for 7% of the regional breeding population of reef heron  Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, red-billed gull, reef heron and variable oystercatcher	2	2	3	1 September – 1 April (Variable oystercatcher breeding season)
Green Point	41°06'54"S 174°48'20"E	This site provides habitat for 7% of the regional breeding population of reef heron  Six Nationally Threatened or At Risk species are known to occur at this site: Caspian tern, pied shag, red-billed gull, reef heron, variable oystercatcher and white-fronted tern	2	2	3	1 September – 1 April (Variable oystercatcher breeding season)
Honeycomb Rock and the Waihingaia River mouth	41°21'44"S 175°48'17"E	This site provides breeding habitat for 12% of the regional breeding population of New Zealand dotterels  This site provides breeding habitat for 12% of the regional breeding population of white-fronted terns  Seven Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, New Zealand dotterel, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	2	1	3	1 August – 1 February  (Banded dotterel and New Zealand dotterel breeding seasons)  1 September – 1 April  (Variable oystercatcher breeding season)  1 October – 1 March  (White-fronted tern breeding season)

	Latitude and		trans	Policy lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Honeycomb Rock north	41°21'04"S 175°49'12"E	Four Nationally Threatened or At Risk species are known to occur at this site: New Zealand pipit, red-billed gull, variable oystercatcher and white- fronted tern	3	2	3	1 September – 1 April (Variable oystercatcher breeding season)
Kāpiti Island foreshore	40°51'23"S 174°54'09"E	This site provides breeding habitat for 21% of the regional breeding population of redbilled gulls  This site provides breeding habitat for 47% of the regional breeding population of whitefronted terns  This site provides habitat for 7% of the regional breeding population of reef heron  Eight Nationally Threatened or At Risk species are known to occur at this site: Black shag, Caspian tern, little penguin, pied shag, red-billed gull, reef heron, variable oystercatcher and white-fronted tern	1	1	3	1 July to 1 March (Little penguin breeding season)  1 August — 1 March (Red-billed gull breeding season)  1 October — 1 March (White-fronted tern breeding season)  1 September — 1 April (Variable oystercatcher breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	_
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Lake Ōnoke	41°22′45″S 175°07′50″E	Fourteen Nationally Threatened or At Risk species are resident or regular visitors to this site: Australasian bittern, banded dotterel, bar-tailed godwit, black shag, black-billed gull, black-fronted dotterel, black-fronted tern, Caspian tern, little black shag, New Zealand dabchick, pied shag, red-billed gull, royal spoonbill and white-fronted tern	3	1	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 February  (Caspian tern breeding season)
Makara Estuary	41°13'17"S 174°42'53"E	This site provides breeding habitat for 10% of the regional breeding population of pied shags  Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, pied shag, red-billed gull, variable oystercatcher and white-fronted tern	2	2	3	All year around  (Pied shag breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)
Makaro/Ward Island foreshore	41°17'38"S 174°52'17"E	This site provides breeding habitat for >5% of the regional breeding population of little penguins  This site provides breeding habitat for 17% of the regional breeding population of white-fronted terns  Four Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Little penguin, redbilled gull, variable oystercatcher and white-fronted tern	2	2	3	1 July to 1 March  (Little penguin breeding season)  1 October – 1 March  (White-fronted tern breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)

	Latitude and	Bird values that trigger Policy	Policy 23 translation criteria category scores			-	
Site name	Longitude (NZGD2000)		Rarity	Diversity	Ecological Context	Critical periods	
Mana Island foreshore	41°05'12"S 174°46'53"E	This site provides breeding habitat for >5% of the regional breeding population of little penguins  This site provides breeding	2	2	3	1 July to 1 March (Little penguin breeding season) 1 August –	
		habitat for 19% of the regional breeding population of red-billed gulls				1 March  (Red-billed gull breeding season)	
		This site provides breeding habitat for 23% of the regional breeding population of white-fronted terns				1 October – 1 March	
		This site provides breeding habitat for 14% of the regional breeding population of reef				(White-fronted tern breeding season)	
		heron				1 September to 1 February	
		Six Nationally Threatened or At Risk species are known to occur at this site: Little penguin, pied shag, red-billed gull, reef heron,				(Reef heron breeding season)	
		variable oystercatcher and white-fronted tern				1 September – 1 April	
						(Variable oystercatcher breeding season)	
Manurewa Point	41°30'06"S 175°31'50"E	Four Nationally Threatened or At Risk species are known to occur at this site: Banded	3	2	3	1 August – 1 February	
		dotterel, black shag, red-billed gull and white-fronted tern				(Banded dotterel breeding season)	
Mataikona coastline north	40°45'09"S 176°17'21"E	Four Nationally Threatened or At Risk species are known to occur at this site: Black shag,	3	2	3	1 September – 1 April	
	Caspian tern, red-billed gull and variable oystercatcher				(Variable oystercatcher breeding season)		

	Latitude and		trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Mataikona River mouth	40°46'54"S 176°16'03"E	This site provides breeding habitat for 12% of the regional breeding population of New Zealand dotterels  Six Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, New Zealand dotterel, red-billed gull, variable oystercatcher and white-fronted tern	2	2	3	1 August – 1 February  (Banded dotterel and New Zealand dotterel breeding seasons)  1 September – 1 April  (Variable oystercatcher breeding season)
Matiu/Somes Island foreshore	41°15'29"S 174°51'51"E	This site provides breeding habitat for >5% of the regional breeding population of little penguins  This site provides breeding habitat for 14% of the regional breeding population of reef herons  This site provides breeding habitat for >67% of the regional breeding population spotted shags  Six Nationally Threatened or At Risk species are known to occur at this site: Black shag, little penguin, red-billed gull, reef heron, variable oystercatcher and white-fronted tern	2	2	1	1 July to 1 March  (Little penguin breeding season)  1 September to 1 February  (Reef heron breeding season)  All year around  (Spotted shag breeding season)  1 September — 1 April  (Variable oystercatcher breeding season)  1 October — 1 March  (White-fronted tern breeding season)

	Latitude and	<b>2.</b> 1. 1	trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Mokopuna Island foreshore	41°15'04"S 174°51'53"E	This site provides breeding habitat for >5% of the regional breeding population of little penguins  Four Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Little Penguin, redbilled gull, variable oystercatcher and white-fronted tern	2	2	3	1 July to 1 March  (Little penguin breeding season)  1 September – 1 April  (Variable oystercatcher Breeding season)
Mukamuka Stream mouth	41°23'20"S 175°00'44"E	Four Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, pied shag, variable oystercatcher and white- fronted tern	3	2	3	1 August – 1 February  (Banded dotterel breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)
Ngakauau Stream mouth	40°55'31"S 176°11'22"E	This site provides breeding habitat for 12% of the regional breeding population of New Zealand dotterels  Six Nationally Threatened and At Risk species are known to occur at this site: Black shag, Caspian tern, New Zealand dotterel, red-billed gull, royal spoonbill and variable oystercatcher	2	2	3	1 August – 1 February  (New Zealand dotterel breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)

	Latitude and	Bird values that trigger Policy 23 translation criteria	trans	Policy a lation egory s	criteria	
Site name	Longitude (NZGD2000)		Rarity	Diversity	Ecological Context	Critical periods
Ngawi foreshore north	41°34'22"S 175°13'24"E	Four Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, Caspian tern and variable oystercatcher	3	2	3	1 August – 1 February  (Banded dotterel breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)
Ocean Beach	41°22'49"S 175°04'31"E	Four Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black-fronted dotterel, red-billed gull and white-fronted tern	3	2	3	1 August – 1 February  (Banded dotterel breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	-	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods	
Ōnoke Spit	41°23'19"S 175°07'01"E	This site provides breeding habitat for 100% of the regional breeding population of Caspian terns  This site provides breeding habitat for 7% of the regional breeding population of banded dotterels  Twelve Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black-billed gull, blackfronted tern, black shag, Caspian tern, little black shag, New Zealand pipit, pied shag, red-billed gull, royal spoonbill, variable oystercatcher and white-fronted tern	1	1	3	1 September to 1 February  (Caspian tern breeding season)  1 August to 1 February  (Banded dotterel breeding season)  1 October to 1 April  (Royal spoonbill breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)	
Open Bay	41°07'15"S 174°48'05"E	Four Nationally Threatened or At Risk species are known to occur at this site: New Zealand pipit, pied shag, red-billed gull and variable oystercatcher	3	2	3	1 September – 1 April (Variable oystercatcher breeding season)	
Ōtaki River mouth	40°45'31"S 175°06'14"E	Seven Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, pied shag, red-billed gull, royal spoonbill, variable oystercatcher and white-fronted tern	3	1	3	1 August — 1 February  (Banded dotterel breeding season)  1 September — 1 April  (Variable oystercatcher breeding season)	

	Latitude and	Bird values that trigger Policy 23 translation criteria	Policy 23 translation criteria category scores			-	
Site name	Longitude (NZGD2000)		Rarity	Diversity	Ecological Context	Critical periods	
Pahaoa estuary and Pahaoa Scientific Reserve	40°43'18"S 176°18'31"E 41°23'45"S 175°43'17"E	This site provides habitat for 7% of the regional breeding population of reef herons  Seven Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, Caspian tern, red-billed gull, reef heron, variable oystercatcher and white-fronted tern  This site provides breeding habitat for 18% of the regional breeding population of New Zealand dotterels  Eight Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black-fronted dotterel, black shag, New Zealand dotterel, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	2	1	3	1 August – 1 February  (Banded dotterel breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)  1 August – 1 February  (Banded dotterel, black-fronted dotterel and New Zealand dotterel breeding seasons)  1 August – 1 March  (Red-billed gull breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)	
Paraparaumu Beach	40°53'12"S 174°58'58"E	Four Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Caspian tern, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 September – 1 April (Variable oystercatcher breeding season)	

	Latitude and	Bird values that trigger Policy		Policy : slation egory s	criteria	
Site name	Longitude (NZGD2000)	23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Pekapeka Beach	40°49'35"S 175°03'29"E	Five Nationally Threatened or At Risk species are known to occur at this site: Black-billed gull, pied shag, red-billed gull, South Island pied oystercatcher and variable oystercatcher	3	2	3	1 September – 1 April (Variable oystercatcher breeding season)
Pencarrow Head foreshore	41°22'10"S 174°51'33"E	This site provides breeding habitat for 5% of the regional breeding population of banded dotterels  Seven Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, New Zealand pipit, pied shag, redbilled gull, variable oystercatcher and white-fronted tern	2	1	3	1 August to 1 February  (Banded dotterel breeding season)  All year around  (Pied shag breeding season)  1 September — 1 April  (Variable oystercatcher breeding season)
Pipinui Point	41°11'30"S 174°43'40"E	This site provides habitat for 7% of the regional breeding population of reef herons  Four Nationally Threatened or At Risk species are known to occur at this site: Pied shag, red-billed gull, reef heron and variable oystercatcher	3	2	3	1 September – 1 April  (Variable oystercatcher breeding season)

	Latitude and Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Policy 23 translation criteria category scores			
Site name			Rarity	Diversity	Ecological Context	Critical periods
Pukerua Bay	41°05'07"S 176°04'43"E	This site provides habitat for 7% of the regional breeding population of reef herons  Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, New Zealand pipit, pied shag, redbilled gull, reef heron, variable oystercatcher and white-fronted tern	2	1	3	1 September – 1 April (Variable oystercatcher breeding season)
Riversdale Beach & Motuwaireka Stream mouth	41°05'07"S 176°04'43"E	This site provides breeding habitat for 29% of the regional breeding population New Zealand dotterels  Nine Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, bar-tailed godwit, black-billed gull, black shag, Caspian tern, New Zealand dotterel, red-billed gull, variable oystercatcher and white-fronted tern	1	1	3	1 August to 1 February  (Banded dotterel and New Zealand dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Rock Point	41°07'35"S 174°47'42"E	Four Nationally Threatened or At Risk species are known to occur at this site: New Zealand pipit, pied shag, red-billed gull and variable oystercatcher	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Sinclair Head	41°20'44"S 174°41'09"E	Four Nationally Threatened or At Risk species are known to occur at this site: New Zealand pipit, pied shag, red-billed gull and variable oystercatcher	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)

	Latitude and	a. I. I	trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Stony Bay	41°29'45"S 175°32'37"E	This site provides breeding habitat for 22% of the regional breeding population of white-fronted terns  This site provides breeding habitat for 7% of the regional breeding population of redbilled gulls  Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, red-billed gull, variable oystercatcher and white-fronted tern	2	2	3	1 October – 1 March  (White-fronted tern breeding season)  1 August – 1 March  (Red-billed gull breeding season)
Tahoramaurea Island foreshore	40°53'22"S 174°54'08"E	Four Nationally Threatened or At Risk species are known to occur at this site: Pied shag, red-billed gull, variable oystercatcher and white- fronted tern	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Taputeranga Island foreshore	41°20'59"S 174°46'22"E	This site provides breeding habitat for 14% of the regional breeding population of reef herons  Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Little penguin, redbilled gull, reef heron, variable oystercatcher and white-fronted tern	2	2	3	1 September to 1 February  (Reef heron breeding season)  1 July to 1 March  (Little penguin breeding season)  1 September – 1 April  (Variable oystercatcher breeding season)

	Latitude and		Policy 23 translation criteria category scores		criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Te Awaiti foreshore; Hapukura and Okoropunga Stream mouths	41°26'38"S 175°38'40"E	Six Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black-fronted dotterel, black shag, New Zealand pipit, red- billed gull and variable oystercatcher	3	2	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Te Awarua-o- Porirua Harbour – Onepoto Arm	41°06'58"S 174°51'03"E	This site is one of only a few relatively large estuaries in the Wellington region and is therefore a regionally important stop-over site for several migrant shorebird species including South Island pied oystercatcher and bar-tailed godwit  Nine Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, bar-tailed godwit, black shag, Caspian tern, pied shag, red-billed gull, royal spoonbill, SI pied oystercatcher and variable oystercatcher	3	1	3	All year around  (Important summer site for Arctic-breeding shorebirds such as bar-tailed godwit; important winter site for NZ- breeding shorebirds such as South Island pied oystercatcher)

	Latitude and	Bird values that trigger Policy	trans	Policy a lation egory s	criteria	
Site name	Longitude (NZGD2000)	23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Te Awarua-o- Porirua Harbour – Pauatahanui Arm	41°05'52"S 174°53'34"E	This site provides breeding habitat for >25% of the regional breeding population of fernbird  This site is one of only a few relatively large estuaries in the Wellington region, and is therefore a regionally important stop-over site for several migrant shorebird species including South Island pied oystercatcher and bar-tailed godwit  Twelve Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Banded dotterel, bartailed godwit, black shag, Caspian tern, fernbird, little black shag, pied shag, red-billed gull, royal spoonbill, South Island pied oystercatcher, spotless crake and variable oystercatcher	1	1	3	1 November to 1 March  (Fernbird breeding season)  All year around  (Pied shag breeding season)  1 August to 1 February  (Spotless crake breeding season)  All year around  (Important summer site for Arctic-breeding shorebirds such as bar-tailed godwit; important winter site for NZ- breeding shorebirds such as South Island pied oystercatcher)
Te Horo beach south	40°48'09"S 175°04'29"E	Four Nationally Threatened or At Risk species are known to occur at this site: Pied shag, red-billed gull, South Island pied oystercatcher and variable oystercatcher	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	-
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Te Kawakawa Point	41°36'15"S 175°14'19"E	Six Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, pied shag, red-billed gull and variable oystercatcher and white-fronted tern	3	2	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Tokomapuna Island foreshore	40°52'51"S 174°55'37"E	This site provides breeding habitat for >5% of the regional breeding population of little penguins  Six Nationally Threatened or At Risk species are known to occur at this site: Black shag, little penguin, pied shag, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 July to 1 March (Little penguin breeding season)  1 September to 1 April (Variable oystercatcher breeding season)
Tokorakau Reef north	41°24'37"S 175°41'22"E	Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, New Zealand pipit, red-billed gull and variable oystercatcher	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Tongue Point	41°20'19"S 174°39'28"E	Four Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, pied shag and variable oystercatcher	3	2	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)

	Latitude and	Bird values that trigger Policy 23 translation criteria	trans	Policy lation egory s	criteria	-
Site name	Longitude (NZGD2000)		Rarity	Diversity	Ecological Context	Critical periods
Tora coast	41°32'50"S 175°28'13"E	Seven Nationally Threatened or At Risk species are known to occur at this site: Black shag, Caspian tern, New Zealand pipit, pied shag, red-billed gull, variable oystercatcher and white-fronted tern	3	1	3	1 September to 1 April (Variable oystercatcher breeding season)
Turakirae Head	41°25'47"S 174°55'17"E	Five Nationally Threatened or At Risk species are known to occur at this site: Black shag, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Uruti Point	41°07'36"S 176°03'56"E	Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, Caspian tern, red-billed gull and variable oystercatcher	3	2	3	1 September to 1 April  (Variable oystercatcher breeding season)

	Latitude and		trans	Policy : lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Waikanae Estuary	40°52'30"S 175°00'16"E	This site provides breeding habitat for >5% of the regional breeding population of fernbirds  This site provides breeding habitat for 13% of the regional breeding population of pied shags  This site is one of only a few relatively large estuaries in the Wellington region and is therefore a regionally important stop-over site for several migrant shorebird species including South Island pied oystercatcher and bar-tailed godwit  Thirteen Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, bar-tailed godwit, black shag, brown teal, Caspian tern, fernbird, New Zealand dotterel, pied shag, red-billed gull, South Island pied oystercatcher, variable oystercatcher and white-fronted tern	2	1	3	1 November to 1 March  (Fernbird breeding season)  All year around  (Pied shag breeding season)  All year around  (Important summer site for Arctic-breeding shorebirds such as bar-tailed godwit; important winter site for NZ- breeding shorebirds such as South Island pied oystercatcher)
Waikawa Beach south	40°42'11"S 175°08'02"E	Five Nationally Threatened or At Risk species are known to occur at this site: Black-billed gull, pied shag, red-billed gull, South Island pied oystercatcher and variable oystercatcher	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Waikekino Stream mouth	41°17'28"S 175°52'06"E	Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, red-billed gull, variable oystercatcher and white- fronted tern	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)

	Latitude and	Bird values that trigger Policy 23 translation criteria	trans	Policy lation	criteria	_
Site name	Longitude (NZGD2000)		Rarity	Diversity	Ecological Context	Critical periods
Waimimi coastline	40°58'52"S 176°07'59"E	This site provides habitat for 7% of the regional breeding population of reef herons  Five Nationally Threatened or At Risk species are known to occur at this site: Black shag, Caspian tern, red-billed gull, reef heron and variable oystercatcher	2	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Waitohu Stream mouth	40°43'39"S 175°07'19"E	Six Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black-billed gull, Caspian tern, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Wellington Harbour (Port Nicholson) foreshore; Pencarrow sewer outfall to Burdan's Gate	41°20'20"S 174°51'38"E	Nine Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, Caspian tern, little black shag, New Zealand pipit, pied shag, redbilled gull, variable oystercatcher and white-fronted tern	3	1	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)

	Latitude and Longitude (NZGD2000)		trans	Policy a lation egory s	criteria	_	
Site name		Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods	
Wellington Harbour (Port Nicholson) foreshore; northern end of Day's Bay to Point Howard	41°15'47"S 174°54'26"E	Seven Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, little black shag, pied shag, red-billed gull, variable oystercatcher and white-fronted tern	3	1	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)	
Wellington Harbour (Port Nicholson) foreshore; Point Howard to eastern shore of Hutt River mouth	41°14'57"S 174°54'09"E	Five Nationally Threatened or At Risk species are known to occur at this site: Black shag, pied shag, red-billed gull, royal spoonbill and variable oystercatcher	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)	
Wellington Harbour (Port Nicholson) foreshore; western shore of Hutt River mouth to Petone Beach rowing club	41°13'44"S 174°52'35"E	Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, red-billed gull, South Island pied oystercatcher, variable oystercatcher and white-fronted tern	3	2	3	None	
Wellington Harbour (Port Nicholson) foreshore; Petone Beach rowing club to Ngauranga railway station	41°14'07"S 174°50'05"E	Six Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, little black shag, pied shag, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	None	

	Latitude and		trans	Policy a lation egory s	criteria	
Site name	Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Wellington Harbour (Port Nicholson) foreshore; Ngauranga railway station to Interislander ferry terminal	41°15'25"S 174°47'56"E	Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, little penguin, pied shag, red-billed gull and variable oystercatcher	3	2	3	1 July to 1 March (Little penguin breeding season)
Wellington Harbour (Port Nicholson) foreshore; Point Jerningham to Point Halswell	41°18'07"S 174°48'39"E	Six Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Little black shag, little penguin, pied shag, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 July to 1 March  (Little penguin breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Wellington Harbour (Port Nicholson) foreshore; Point Halswell to Worser Bay boat club	41°17'56"S 174°49'56"E	Five Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Little black shag, little penguin, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 July to 1 March  (Little penguin breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)

	Latitude and	Bird values that trigger Policy	trans	Policy a lation egory s	criteria	
Site name	Longitude (NZGD2000)	23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Wellington Harbour (Port Nicholson) foreshore; Worser Bay boat club to Point Dorset	41°19'21"S 174°50'02"E	This site provides breeding habitat for 9% of the regional breeding population of white-fronted terns  Six Nationally Threatened or At Risk species are known to occur at this site: Little black shag, little penguin, pied shag, redbilled gull, variable oystercatcher and white-fronted tern	2	2	3	1 October – 1 March  (White-fronted tern breeding season)  1 July to 1 March  (Little penguin breeding season)  1 August – 1 March  (Red-billed gull breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Wellington Harbour (Port Nicholson) foreshore; Palmer Head to Lyall Bay	41°20'22"S 174°48'08"E	Six Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, little penguin, pied shag, redbilled gull, variable oystercatcher and white-fronted tern	3	2	3	1 August to 1 February  (Banded dotterel breeding season)  1 July to 1 March  (Little penguin breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)

	Latitude and	Bird values that trigger Policy	trans	Policy lation	criteria	-
Site name	Longitude (NZGD2000)	23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Wellington Harbour (Port Nicholson) foreshore; Te Raekaihau Point to Owhiro Bay road end	41°20'49"S 174°46'13"E	This site provides habitat for 7% of the regional breeding population of reef herons  Six Nationally Threatened or At Risk species are known to occur at this site: Black shag, little penguin, red-billed gull, reef heron, variable oystercatcher and white-fronted tern	2	2	3	1 July to 1 March (Little penguin breeding season) 1 September to 1 April (Variable oystercatcher breeding season)
Wellington Harbour (Port Nicholson) inland waters	41°16'53"S 174°50'59"E	This site provides foraging habitat for almost 100% of the regional breeding population of spotted shags  This site provides foraging habitat for >25% of the regional breeding population of little penguins  This site provides winter foraging and roosting habitat for large numbers (up to several thousand) fluttering shearwaters. These birds comprise a large, but unknown proportion of the Cook Strait breeding population of this species, including a large number of birds breeding in islands of the Marlborough Sounds  Ten Nationally Threatened or At Risk species are known to be resident or regular visitors to this site: Black shag, Caspian tern, fluttering shearwater, little black shag, little penguin, pied shag, red-billed gull, reef heron, variable oystercatcher, white-fronted tern	1	1	1	All year around (Year-round foraging habitat for spotted shags)  Winter (Important winter habitat for fluttering shearwaters)  1 July to 1 March (Little penguin nesting period)

	Latitude and	Bird values that trigger Policy	transl	Policy ation gory s	criteria	
Site name	Longitude (NZGD2000)	23 translation criteria	Rarity	Diversity	Ecological Context	Critical periods
Wellington south coast (Sinclair Head to Owhiro Bay)	41°21'18"S 174°43'41"E	This site provides habitat for 7% of the regional breeding population of reef herons  Eight Nationally Threatened or At Risk species are known to occur at this site: Black shag, little penguin, New Zealand pipit, pied shag, red-billed gull, reef heron, variable oystercatcher and white-fronted tern	2	1	3	1 July to 1 March  (Little penguin breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Whakataki River mouth	40°52'15"S 176°13'41"E	This site provides breeding habitat for 12% of the regional breeding population of New Zealand dotterels  Six Nationally Threatened or At Risk species are known to occur at this site: Black shag, Caspian tern, NZ dotterel, red-billed gull, variable oystercatcher and white-fronted tern	2	1	3	1 August to 1 February  New Zealand dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)
Whareama River coastline south	41°02'33"S 176°05'52"E	Four Nationally Threatened or At Risk species are known to occur at this site: Black shag, red-billed gull, variable oystercatcher and white- fronted tern	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)
Whareama River mouth	41°00'49"S 176°06'08"E	Six Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black shag, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	3	2	3	1 September to 1 April (Variable oystercatcher breeding season)

Site name	Latitude and Longitude (NZGD2000)	Bird values that trigger Policy 23 translation criteria	Policy 23 translation criteria category scores			
			Rarity	Diversity	Ecological Context	Critical periods
White Rock to Te Kaukau Point including White Rock beach and Opouawe River mouth	41°34'06"S 175°24'42"E	Eight Nationally Threatened or At Risk species are known to occur at this site: Banded dotterel, black-fronted dotterel, black shag, Caspian tern, New Zealand pipit, red-billed gull, variable oystercatcher and white-fronted tern	3	1	3	1 August to 1 February  (Banded dotterel breeding season)  1 September to 1 April  (Variable oystercatcher breeding season)