

**BEFORE THE GREATER WELLINGTON REGIONAL COUNCIL AND HUTT
CITY COUNCIL
EASTERN BAYS SHARED PATH PROJECT**

Under the Resource Management Act 1991

In the matter of applications for resource consents by Hutt
City Council under section 88 of the Act, to
carry out the Eastern Bays Shared Path Project

**STATEMENT OF EVIDENCE OF DR JOHN FENTON COCKREM (AVIFAUNA
(KORORĀ / LITTLE PENGUINS AND SHOREBIRDS)) ON BEHALF OF THE
APPLICANT**

30 November 2020

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QUALIFICATIONS AND EXPERIENCE

1. My full name is **Dr John Fenton Cockrem**. I am the Director of Kororā Ornithology.
2. My evidence is given on behalf of Hutt City Council ("**HCC**") in relation to its applications under section 88 of the Resource Management Act 1991 ("**RMA**") for resource consents for the Eastern Bays Shard Path Project ("**Project**").
3. I have the following qualifications and experience relevant to the evidence I shall give:
 - (a) I have BSc (Hons) from Massey University and a PhD from the University of Bristol (United Kingdom).
 - (b) I am an ornithologist with more than 35 years of professional experience in ornithology.
 - (c) I have observed birds on the Eastbourne coastline since participating in Ornithological Society of New Zealand Te Whanganui a Tara / Wellington Harbour bird surveys when I surveyed birds from Point Howard to Pencarrow Head in the 1980s.
 - (d) My work as a penguin biologist began more than 30 years ago and I have worked with kororā / little penguins, hoiho / yellow-eyed penguins, Adelie penguins and emperor penguins.
 - (e) In the last 18 months I have established a new nestbox colony of kororā on Mana Island, with more than 50% of the nestboxes used in the first breeding season after all 100 boxes were installed. I have also installed nestboxes on Kapiti Island.
 - (f) I have conducted kororā surveys with a colleague and her penguin dog on Mana and Kapiti Islands, on the south Wellington coast and at two ports.
 - (g) My other kororā work in the Wellington region has included working with a community group to conduct a survey of Kapiti Coast residents, and visits to kororā colonies and nesting areas on Matiu Somes Island, around Te Whanganui a Tara / Wellington Harbour and along the south coast of Wellington city.
 - (h) Napier Port has a large project to build a new wharf at the Port. Construction of the wharf involves removal of a long revetment wall that contained kororā. I have designed and built a new kororā nestbox colony on port land previously used for the storage of logs. I was involved in preparation of the Avian Management Plan for the wharf project. That plan is focussed on kororā. This year I have been

working at Napier Port to implement the plan with an adaptive management approach. This has involved continuous revision of our procedures based on our experience during the work. The work includes repeated dog surveys and the relocation of penguins from the revetment wall.

- (i) This year I have planned and overseen the establishment of a new study colony of kororā in nestboxes at Port Tarakohe in Golden Bay. Nestboxes built to a new design that I developed last year have been installed and more than 80% of the boxes have been used in the current breeding season.
 - (j) I have worked for several months at the Oamaru Blue Penguin Colony which is the kororā nestbox colony with the longest history of large-scale data collection in New Zealand.
 - (k) I have visited all the large kororā nestbox colonies in New Zealand and have visited many locations with natural kororā nest sites around the coastlines of the North and South Islands.
 - (l) I am also a Professor of Comparative Endocrinology at Massey University. However, to be clear, this brief of evidence is not given in relation to my role at Massey University. The opinions I express in this brief of evidence are my own and should not be taken as representing Massey University.
4. I am a member of a number of relevant associations including the Ornithological Society of New Zealand.
5. I confirm that I have read the 'Code of Conduct' for expert witnesses contained in the Environment Court Practice Note 2014. My evidence has been prepared in compliance with that Code. In particular, unless I state otherwise, this evidence is within my sphere of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

BACKGROUND AND ROLE

6. In preparing my evidence I have:
- (a) conducted site visits along the Eastbourne shoreline in 2018, 2019 and 2020;
 - (b) conducted a survey of birds along the length of the Shared Path Project in November 2020;
 - (c) reviewed published information about kororā / little penguins and about variable oystercatchers that is relevant to the Project;

- (d) met with and held discussions with local residents and with Wellington region ornithologists;
- (e) participated in meetings and a site visit organised by HCC with people interested in Eastbourne kororā / little penguins;
- (f) met and held discussions with Dr Roger Uys from Greater Wellington Regional Council ("**GWRC**");
- (g) provided information about kororā / little penguins and comments on a draft of the report written by Dr Fred Overmars titled *An assessment of ecological effects of the proposed Eastern Bays Shared Path Project on coastal vegetation and avifauna* (Appendix C-1 to the Assessment of Effects on the Environment ("**AEE**"). I refer to this report as *Vegetation and Fauna AEE* in this brief of evidence; and
- (h) written a report titled *Report on response to questions from the Greater Wellington Regional Council regarding the application to conduct works associated with the construction of a 4.4 km shared path along Marine Drive in Hutt City's Eastern Bays. 28 July 2019*. I refer to this report as *Avifauna and penguins July 2019 report* in this brief of evidence.

SCOPE OF EVIDENCE

- 7. The purpose of my evidence is to outline the potential effects the construction and ongoing operation of the Project would have on avifauna, the measures proposed to address those potential issues, and to assess the overall effects of the Project on avifauna with those measures in place.
- 8. My evidence addresses:
 - (a) the methodology followed in identifying the avifauna values of the Project area and the effects the Project could potentially have on those values;
 - (b) an overview of the existing avifauna values of the Project area;
 - (c) potential effects of the Project on avifauna;
 - (d) my assessment of the effects of the Project on avifauna, including by reference to the Little Penguin Management Plan ("**LPMP**") and other provisions set out in the proposed conditions appended to the evidence of **Ms van Halderen**; and
 - (e) responses to submissions and the section 42A report.

EXECUTIVE SUMMARY

- 9. The "**Project Bird Area**" is defined as the length of coastline from Point Howard to the north end of Rona Bay beach along which the Project's

proposed new shared path ("**Shared Path**") will be constructed (not including Days Bay) extending 100 metres seaward from the base of current seawalls, rock walls and concrete edges of the road.

10. Kororā / little penguins breed and can be present on land all year round in the Project Bird Area. Results from a penguin dog survey have been used to estimate the breeding population of kororā in the Project Bird Area in 2017 to have been approximately 25 pairs and the total kororā population in the Project Bird Area to have been approximately 60 to 70 kororā / little penguins. A penguin dog survey conducted before construction begins will determine the number of kororā / little penguins in the area at that time.
11. One pair of variable oystercatchers breed within the Project Bird Area. Other variable oystercatchers feed and roost along the shoreline of the area, with larger numbers of oystercatchers present during the autumn and winter than in the breeding season.
12. Little shags and red-billed gulls roost on rocks and the gulls may feed in the Project Bird Area. Several other species of shags, black-backed gulls and several other coastal bird species roost on rocks in the area. There are occasional reports of reef herons in the area.
13. Potential effects of the Project on kororā / little penguins within the Project Bird Area could include physical disturbance of roost or breeding sites, direct effects on adults, eggs or chicks and noise from construction activities. Long-term effects on kororā / little penguins include the loss of two breeding sites and possible long-term effects from the presence of people and potentially dogs on the Shared Path.
14. Variable oystercatchers could be affected by disturbance or displacement from feeding and roosting areas during the construction phase, and in the long-term could be affected by the presence of people and potentially dogs on the Shared Path. Other birds that roost and, in some cases, can feed along the foreshore might also be affected. The Shared Path and associated structures will extend on to the foreshore. The actual loss of feeding opportunities for oystercatchers due to this encroachment will be less than the estimated area of lost potential shorebird foraging habitat because some of the mapped potential shorebird foraging habitat is bare rock with no food for shorebirds.
15. The Project has been refined significantly since the AEE was lodged and incorporates substantial improvements in measures to address potential adverse effects on kororā / little penguins and shorebirds. A new protection area for variable oystercatchers has been added and there is now a total of four protection areas for oystercatchers, other shorebirds and kororā / penguins. The areas are the Sorrento Bay oystercatcher protection area

(approximately 200 m²), Whiorau Reserve protection area¹ (approximately 1,950 m²), north of Bishops Park protection area (approximately 7,750 m²), and west of HW Shortt Park protection area (approximately 12,200 m²). The total area of the new protection areas is approximately 22,100 m². The protection areas will provide significant nesting and roosting opportunities that are not currently available to the birds. The areas will be fenced so that birds in these areas will be safe from predation and disturbance by dogs.

16. The Project also includes new protection for oystercatchers at Sorrento Bay and along the Rona Bay beach adjacent to the protection area to the north of Bishops Park. Dogs are currently prohibited from these areas from 9.00 am to 8.00 pm during daylight saving time. The applicant proposes a condition whereby it would initiate the statutory processes for extending those prohibitions so that dogs are not permitted at any time throughout the year. That would enable variable oystercatchers, both adults and chicks, together with other shorebirds to forage safely on the Rona Bay beach and on the Sorrento Bay foreshore all year round without disturbance or predation by dogs.
17. Measures to address effects on kororā / little penguins will include an LPMP, a Habitat Enhancement Plan ("**HEP**") and associated conditions.² Those plans will ensure that potential effects during the construction phase of the Project, and any potential ongoing effects, are appropriately managed. The measures will include the establishment of the new protection areas, pest management within these areas, the initiation of processes to extend current prohibition of dogs from areas of the Rona Bay beach and the Sorrento Bay foreshore, and the installation of information signs about kororā / little penguins.
18. At least 100 permanent nesting opportunities, for kororā / little penguins will be provided in the Whiorau Reserve, Bishops Park and HW Shortt Park protection areas.
19. Measures to address effects on variable oystercatchers will include the HEP and associated conditions (**EM.7 – EM.9**). The conditions include surveys to determine the presence of shoreline forager nests (**EM.1C**) and measures to limit (as appropriate) construction work within 100 m of any nest (**EM.1C**). There are special provisions to ensure the safety of the variable oystercatcher nest at Sorrento Bay (**EM.1C**).
20. A new oystercatcher protection area at Sorrento Bay will provide a safe place for oystercatcher adults and chicks to roost during storms. This new protection area, and installation of signs will together make Sorrento Bay safer than at present for the variable oystercatchers that breed there (and a

¹ Designed for kororā / little penguins

² See the evidence of **Ms van Halderen**.

new year-round dog exclusion from the foreshore, should that outcome be realised, would make this an even safer place).

21. Red-billed gulls roost on rocks along the route of the Shared Path. They can also feed in this area so can be classified as shoreline foragers. The measures described above to manage effects on oystercatchers will also apply to red-billed gulls.
22. In my view, when all the potential effects, measures to address potential effects and benefits to birds are considered, the overall effects of the Project on kororā / little penguins, variable oystercatchers and other bird species are likely to be less than minor.

METHODOLOGY

23. Information on the avifauna of the Project Bird Area has been assembled from:
 - (a) site visits I undertook in 2018, 2019 and 2020 to observe birds and look at the Project Footprint along the Eastbourne shoreline;
 - (b) a survey of birds along the length of the Shared Path Project I conducted on 12 November 2020;
 - (c) searches of eBird³ which is the Ornithological Society of New Zealand site where observations of birds throughout New Zealand are recorded for a national project to create a New Zealand Bird Atlas;
 - (d) the *Vegetation and Fauna AEE* (Appendix C-1) written by Dr Overmars;
 - (e) searches of ornithological publications and online records of birds at Eastbourne and in Te Whanganui a Tara / Wellington Harbour; and
 - (f) meetings and discussions with Eastbourne residents and with Wellington region ornithologists.
24. Potential effects of the Project on avifauna were assessed by consideration of the details of the Project design, on-site assessments of how the structures to be built in the Project area⁴ could affect feeding opportunities for shoreline foraging birds and roosting and breeding opportunities for kororā / little penguins, incorporation of information on the avifauna of the Project Bird Area, and incorporation of my knowledge and experience of kororā / little penguins and shoreline foraging birds in relation to habitat requirements, the

³ <https://ebird.org/newzealand/home>

⁴ As set out in **Mr Povall's** transport and safety evidence, that is defined as from Point Howard to Sunshine Bay and including Windy Point.

provision of nesting opportunities, and measures to reduce disturbance by people and by dogs.

AVIFAUNA IN THE PROJECT BIRD AREA

25. As above, I have defined the "Project Bird Area" as the length of coastline from Point Howard to the north end of Rona Bay beach along which the Shared Path will be constructed (not including Days Bay) extending 100 metres seaward from the base of current seawalls, rock walls and concrete edges of the road. This area is thus the foreshore and the immediately adjacent coastal waters along the route of the Shared Path. The route of the Shared Path is shown in Figure 1 below.

26. In the *Vegetation and Fauna AEE* (Appendix C-1) Dr Overmars included in his discussion records from Te Whanganui a Tara / Wellington Harbour bird surveys conducted by the Ornithological Society of New Zealand. These surveys include sightings of birds in harbour waters outside of the Project Bird Area, so Dr Overmars' discussion contains more bird species than those considered in this evidence and for the purposes of the Project.

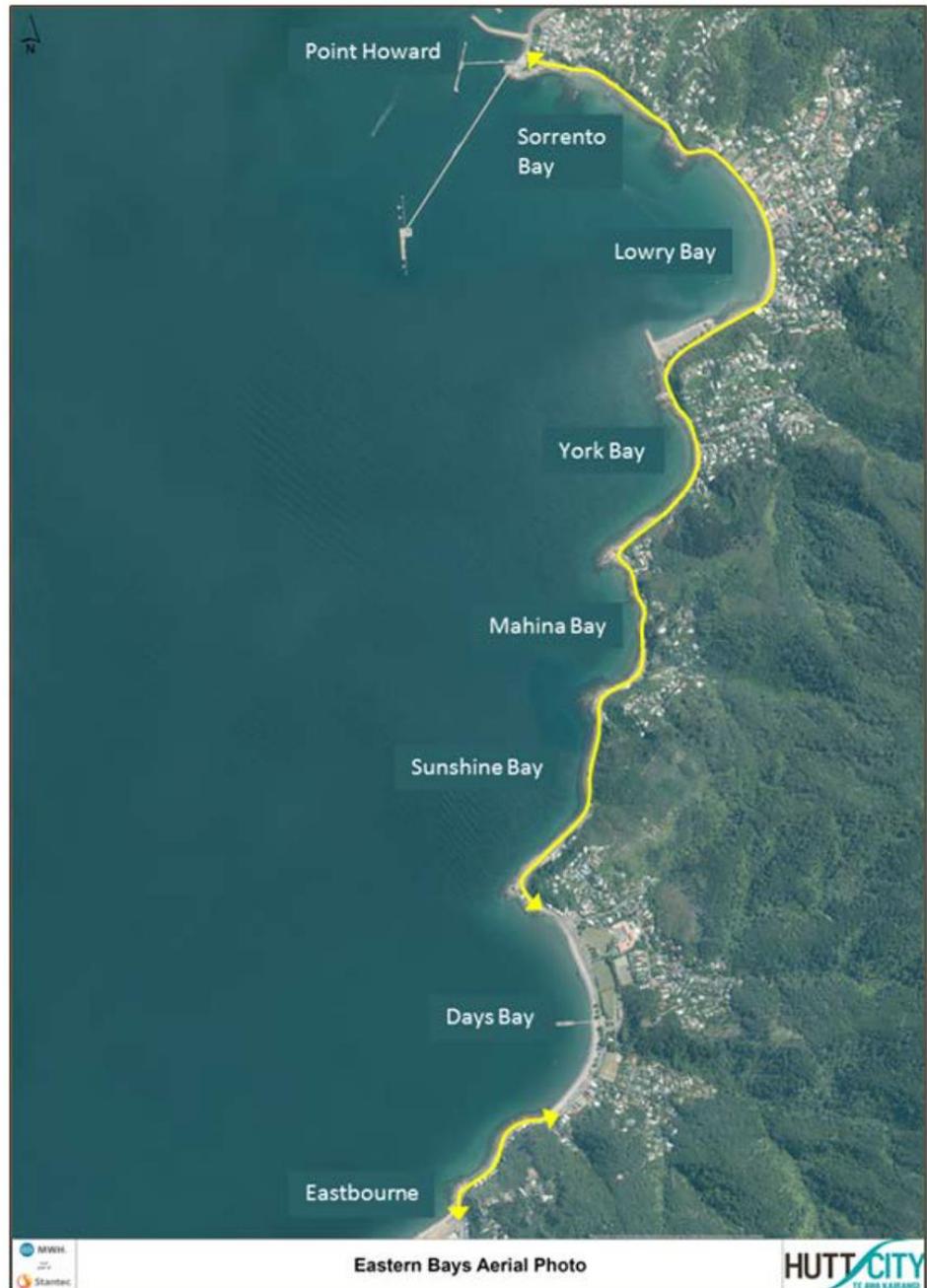


Figure 1: Route of the Shared Path along the Eastbourne coastline. The Shared Path is shown in yellow. Note: This is Figure ES-2 in the "Eastern bays shared path resource consent applications and assessment of effects on the environment. Prepared for: Hutt City Council, April 2019. Stantec".

Kororā / little penguins

27. Kororā / little penguins (*Eudyptula minor*) come ashore to roost during the day throughout the year and to breed from late winter until early summer. The conservation status of the kororā / little penguins is At Risk (declining). Kororā / little penguins breed in the Project Bird Area.
28. Estimates of the kororā / little penguin population at Eastbourne were provided by Dr Overmars in the *Vegetation and Fauna AEE* (Appendix C-1)

and were based on the results of surveys by a penguin dog in 2016 and 2017. Results of these surveys were recorded as locations on a map and were described as sites, locations with adult penguins, or nests with eggs or chicks. A site is a location where a dog has detected penguin scent, but a penguin cannot be seen. In preparing this evidence, I used a map showing records of the survey conducted in October 2017 to summarise the results of this survey as follows:

- (a) two nests, one adult location and three sites were found at Sorrento Bay on the seaward side of the proposed Shared Path and one nest was found in a hole above ground level in a rock beside the road (note: this nest has not been used in the current breeding season);
 - (b) one site was found on the landward side of the road in Lowry Bay;
 - (c) three nests, three adult locations and three sites were found at Whiorau Reserve;
 - (d) one nest and three sites were found in Mahina Bay on the seaward side of the proposed Shared Path and one adult location and two sites were found on the landward side of the road in Mahina Bay;
 - (e) one adult location and five sites were found on the seaward side of the proposed Shared Path at Sunshine Bay; and
 - (f) one nest and five sites were found on the seaward side of the proposed Shared Path from the south end of Days Bay to the south end of the proposed Shared Path.
29. The total number of locations where kororā / little penguins were found in the Project Bird Area during the dog survey in 2017 was 34. Approximately two thirds of a kororā / little penguin population are breeding birds and one third are nonbreeding birds, so approximately 23 of the locations can be considered to represent locations with breeding pairs and approximately 11 of the locations can be considered to represent individual nonbreeding birds. A dog survey, whilst thorough, cannot provide a definitive total of the number of breeding pairs and the number of non-breeding kororā / little penguins in an area. The results can be used to estimate the breeding population of kororā / little penguins in the Project Bird Area to be approximately 25 pairs and the total kororā / little penguin population in the Project Bird Area to be approximately 60 to 70 penguins in October 2017.
30. Four kororā / little penguin locations were found on the landward side of the road during the dog survey in October 2017. The number of kororā / little penguins on the landward side of the road will have been somewhat greater

than this as only a portion of the available kororā / little penguin habitat was searched by the dog.

Variable oystercatchers

31. Variable oystercatchers (*Haematopus unicolor*) forage along coastlines, in estuaries and on grassland near the coast. The conservation status of the variable oystercatcher is At Risk (recovering). Variable oystercatchers breed in the Project Bird Area.
32. I learnt from discussions in November 2020 with local residents and with Wellington area ornithologists that a pair of variable oystercatchers nests each year on an islet just offshore from the point at the south end of Sorrento Bay. Chicks hatch in this nest and swim to the mainland where they forage with their parents along the shoreline of Sorrento Bay until they are able to fly. I was told by Sarah Bagnall (SEE MY COMMENT) that at least one chick survives to fly each year, and some chicks disappear after storms which bring waves against the seawall along Sorrento Bay.
33. I conducted a survey of the Project Bird Area on the afternoon of 12 November 2020. November is the incubation period for the first clutches of eggs laid by variable oystercatchers in the Wellington region. I saw a variable oystercatcher sitting on the nest at Sorrento Bay and two oystercatchers on the shoreline at Mahina Bay. Six oystercatchers were foraging on the Rona Bay beach to the south of the Project Bird Area.
34. Ornithologists report that variable oystercatchers breed on the islands in Te Whanganui a Tara / Wellington Harbour and that birds that breed on these islands come to the Eastbourne shoreline outside of the breeding season. It is my understanding from my observations and from reports from local residents and ornithologists that the nest at Sorrento Bay is the only variable oystercatcher nest in the Project Bird Area. This indicates that there is one variable oystercatcher breeding territory in the Project Bird Area.

Other birds

35. Species of birds that are found in the Project Bird Area but do not breed in this area are described below.
36. Little shags (*Phalacrocorax melanoleucos*) are the most common species of shag found in the Project Bird Area. Little shags regularly roost on rocks along the shoreline and nest in trees in Williams Park at Days Bay. Little black shags (*Phalacrocorax sulcirostris*) roost on rocks and forage offshore. Pied shags (*Phalacrocorax varius*), spotted shags (*Stictocarbo punctatus*)

and black shags (*Phalacrocorax carbo*) can also be seen from time to time roosting on rocks along the shoreline.

37. Reef herons (*Egretta sacra*) are Nationally Endangered and are occasionally seen on the shoreline, especially at Sorrento Bay. There are five records in eBird of reef herons in the Project Bird Area in the last five years.
38. Red-billed gulls (*Larus novaehollandiae*) and southern black-backed gulls (*Larus dominicanus*) regularly roost on rocks and may forage along the shoreline.
39. White-fronted terns (*Sterna striata*) occasionally roost on rocks and sacred kingfishers (*Todiramphus sanctus*) are occasionally seen on the shoreline.

POTENTIAL EFFECTS OF THE PROJECT ON AVIFAUNA

40. Dr Overmars considered potential effects on birds in sections 7.2, 7.3, 9.2 and 9.3 of the *Vegetation and Fauna AEE* (Appendix C-1). Potential effects of the Project on kororā / little penguins, variable oystercatchers and other birds are discussed below.
41. Construction phase effects on kororā / little penguins could include physical disturbance of roost or breeding sites, direct effects on adults, eggs or chicks, and noise from construction activities. During the day when construction work will occur kororā / little penguins are either at sea feeding or are present on land at roosting or breeding sites. Kororā / little penguins will roost and nest under buildings and walkways in close proximity to people. On a recent penguin dog survey on the Wellington south coast we found a kororā / little penguin nest with chicks under dense vegetation beside a road. The chicks were less than half a metre from the kerb and within one metre of the wheels of passing vehicles. Long-term effects on kororā / little penguins include the loss of two breeding sites and possible long-term effects from the presence of people and dogs on the Shared Path.
42. Variable oystercatchers, and other birds that use the foreshore, could be affected by disturbance or displacement from feeding and roosting areas during the construction phase, and in the long-term could be affected by the presence of people and dogs on the Shared Path. Variable oystercatchers are very tolerant of human presence in areas such as Eastbourne where they are accustomed to the presence of people. Proximity of the Shared Path might affect oystercatcher feeding behaviour as a result of the presence of people and dogs on the Shared Path. An assessment of whether or not oystercatcher feeding behaviour was affected by proximity of the Shared Path could be undertaken by conducting a study of habitat use and feeding behaviour of variable oystercatchers along the route of the Shared Path before the Shared Path is constructed and then repeating the survey after the Shared Path was completed and in use. This would be a valuable and worthwhile study. A condition providing for an oystercatcher study has now

been included in the version appended to **Ms van Halderen's** evidence (**EM.1D**).

43. In the meantime, whilst proximity of the Shared Path may affect oystercatcher feeding and roosting behaviour, we are not able to assess in advance what these effects might be. That said, it is important to consider the current situation – this is a highly urbanised environment, with vehicles, and beach users (including with dogs) already in this area.
44. The Shared Path and associated structures will in places extend onto the foreshore. The original AEE indicated that approximately 5000 m² of shorebird foraging habitat would be lost due to this encroachment. Following further refinement to the Project design and further calculations, now it is only approximately 3786 m² of potential shorebird foraging habitat that would be lost. The actual loss of feeding opportunities for shorebirds, in particular oystercatchers, will be less than this estimate which has been made from calculations of areas on aerial photographs. This is because some of the mapped potential shorebird foraging habitat is bare rock with no food for shorebirds. I do not currently have sufficient information on the use of the Project area by oystercatchers to be able to estimate any reduction in food resources available to oystercatchers that might occur due to the Project, so I am not able to speculate on what this reduction might be.

MEASURES TO ADDRESS POTENTIAL EFFECTS AND ASSESSMENT OF OVERALL EFFECTS OF THE PROJECT ON AVIFAUNA

45. Recommendations for measures to address potential effects of the Project were made by Dr Overmars in sections 7.4 and 9.4 of the *Vegetation and Fauna AEE* (Appendix C-1). The memorandum that was provided to GWRC by Stantec, on behalf of HCC, on 22 October 2020 ("**Memorandum 6**") describes a number of measures proposed as part of the Project to avoid effects on avifauna. Since Memorandum 6 was prepared, those measures have been refined and added to, as discussed below and as set out in the conditions appended to **Ms van Halderen's** evidence.
46. The refinements incorporate substantial improvements in measures to address potential adverse effects on shorebirds and kororā / little penguins.

Protection areas

47. A new protection area for variable oystercatchers has been added and there are now four protection areas for oystercatchers, other shorebirds and kororā / little penguins. The protection areas will provide significant nesting and roosting opportunities that are not currently available to the birds. The areas

will be fenced so that birds in these areas will be safe from predation and disturbance by dogs.

48. The four bird protection areas are shown in Figures 2 to 5. The areas are the Sorrento Bay oystercatcher protection area (approximately 200 m²), Whiorau Reserve kororā protection area⁵ (approximately 1,950 m²), north of Bishops Park protection area (approximately 7,750 m²), and west of HW Shortt Park protection area (approximately 12,200 m²). The total area of the new protection areas is approximately 22,100 m².
49. I have been told that skinks are present in the new Bishops Park protection area. Habitat enhancement to provide permanent nesting opportunities for penguins will also provide new habitat for skinks. The enhanced habitat along with expanded predator control along the Eastbourne coastline will bring benefits to skinks as well as to birds.
50. The Project includes new protection for oystercatchers, kororā / little penguins and other birds on the foreshore at Sorrento Bay and along the Rona Bay beach adjacent to the bird protection area to the north of Bishops Park. Dogs are currently excluded from these areas from 9.00 am to 8.00 pm during daylight saving time. The applicant is proposing a condition whereby the statutory processes will be initiated for the prohibition of dogs in these areas at all times throughout the year.
51. The measures proposed by the applicant will enable variable oystercatchers, both adults and chicks, together with other shorebirds, are able to forage safely at Sorrento Bay and Rona Bay beach all year round without disturbance or predation by dogs. Kororā / little penguins will be able to cross the foreshore at night when walking to and from their nest sites without the threat of being attacked by dogs.
52. If we consider the situation on the Eastbourne coastline in 100 years, it is apparent that kororā / little penguin nest sites and variable oystercatcher roosting and feeding areas in the Project Bird Area will have been lost due to sea level rise.⁶ The provision of new permanent nesting opportunities for kororā / little penguins and new roosting and breeding areas for oystercatchers means that construction of the Shared Path will lead to more

⁵ Designed for kororā / little penguins.

⁶ **Michael Allis** discusses sea level rise in his evidence.

nest sites and roosting areas being available in the long-term than if the Shared Path had not been constructed.

53. Measures to address potential effects and assessments of overall effects of the Project are provided below for kororā / little penguins, variable oystercatchers and other species of birds.

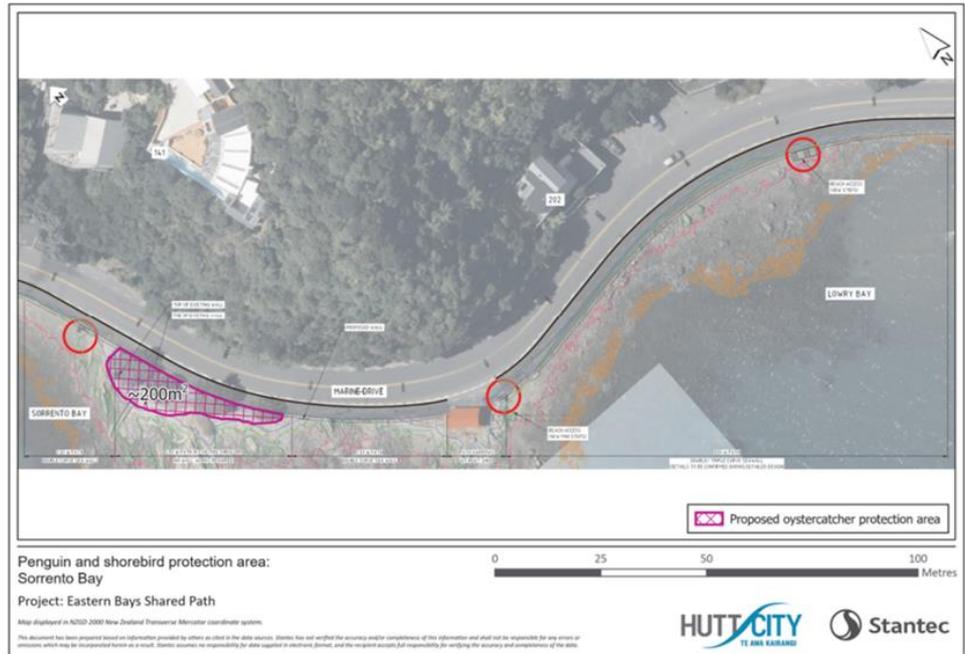


Figure 2: Sorrento Bay oystercatcher protection area.



Figure 3: Whiorau Reserve kororā / little penguin protection area.



Figure 4: North of Bishops Park penguin and shorebird protection area.



Fig. 5. West of HW Shortt Park penguin and shorebird protection area.

Kororā / little penguins

54. Measures to manage effects on kororā / little penguins are contained within conditions **EM.1** and **EM.1A** to **EM.1C** (Little Penguins and Shoreline

Foragers), **EM.2** to **EM.6** (Little Penguin Management Plan) and **EM.7** to **EM.9** (Habitat Enhancement Plan).

55. The LPMP and associated conditions will include the avoidance of construction works near kororā / little penguin nest sites during the breeding period, surveys to determine the presence of kororā / little penguins within construction areas, measures to minimise adverse effects on kororā / little penguins during construction, the establishment of new bird protection areas, pest management within these areas, and the initiation of statutory processes to exclude dogs from areas of the Rona Bay beach and the Sorrento Bay foreshore.
56. The plan will include the installation of information signs about kororā / little penguins along the Shared Path and adjacent to the protection areas. The signs can describe the biology of kororā / little penguins, provide information about the kororā / little penguins that live at Eastbourne, explain how the protection areas will help kororā / little penguins and tell people how they can help to protect the kororā / little penguins at Eastbourne, for example, by keeping dogs on leads. It would be valuable for the signs to be linked to a programme to provide community education about the kororā / little penguins, oystercatchers and other shorebirds at Eastbourne.
57. The three new protection areas for kororā / little penguins will be the Whiorau Reserve kororā / little penguin protection area, north of Bishops Park shorebird and penguin protection area, and the west of HW Shortt Park penguin and shorebird protection area. The HEP and associated conditions for these areas will include fencing of the areas to exclude dogs, pest management measures, signs to provide information about the areas and their birds, the provision of nesting opportunities, and plans for planting in the areas.
58. The preferred nesting locations for kororā / little penguins are cavities in rocks or under trees and burrows in the ground, with a canopy of vegetation above the locations. It is envisaged that rock mounds will be built in the protection areas to provide permanent nesting opportunities that will still be present in 100 years. Planting adjacent to the mounds will provide cover for the kororā / little penguins. Whilst some nestboxes could be placed within

the rocks, nestboxes are subject to deterioration and loss due to weather and are not permanent.

Overall effects on kororā / little penguins

59. When all the potential effects, measures to address potential effects and benefits to birds are considered then the overall adverse effects of the Project on kororā / little penguins are likely to be less than minor.

Variable oystercatchers

60. Measures to manage effects on variable oystercatchers are contained within conditions **EM.1**, **EM.1B** and **EM.1C** (Little Penguins and Shoreline Foragers), and **EM.7** to **EM.9** (HEP).
61. The conditions include surveys to determine the presence of shoreline forager nests and measures to limit construction work within 100 m of any nest. There are special provisions to ensure the safety of the variable oystercatcher nest at Sorrento Bay. The conditions also include the establishment of a new oystercatcher protection area and three other new bird protection areas, pest management within these areas, and the initiation of processes for the year-round exclusion of dogs from some of the Rona Bay beach and from Sorrento Bay foreshore.
62. The protection areas for oystercatchers will be the Sorrento Bay oystercatcher protection area, north of Bishops Park shorebird and penguin protection area, and the west of HW Shortt Park penguin and shorebird protection area.
63. Variable oystercatcher chicks forage with their parents for approximately six weeks before they are able to fly. Oystercatcher chicks at Sorrento Bay currently may not be able to find safe places to roost when storms bring waves against the seawall. The new oystercatcher protection area will be a small area at road level between the seaward edge of the Shared Path and the seawall. A small access way for oystercatcher chicks will be created from the foreshore up to the protection area and there will be a fence within vegetation and screening at the edge of the Shared Path. This protection area will become a safe place for chicks and adult oystercatchers to roost during storms.
64. The shorebird and penguin protection areas north of Bishops Park and west of HW Shortt Park will provide new nesting and roosting opportunities for oystercatchers. Each area will be fenced to exclude dogs so that oystercatchers and especially oystercatcher chicks will be safe from disturbance and predation. Oystercatchers and other shorebirds that might use these areas require open spaces with good visibility. Oystercatchers typically make their nest bowl close to a log or to some low vegetation. The

protection areas will be designed with areas that will meet the nesting and roosting habitat requirements of oystercatchers.

65. The extension of the time when dogs are excluded from the Rona Bay beach adjacent to the bird protection area from daytime during daylight saving to year-round will enable variable oystercatchers to forage safely on this beach all year round without disturbance or predation by dogs. This will be especially important if variable oystercatchers breed within the protection area. The oystercatcher chicks will make their way down to the beach and will be able to safely forage on the beach until they are able to fly. The safe area for oystercatchers will extend for approximately 230 metres along the beach. The area of newly designated foraging habitat safe from dogs will vary from at least 1,500 m² at high tide to more than 4,000 m² at low tide.
66. Oystercatchers at Sorrento Bay will also benefit from extension of the current period when dogs are excluded from the foreshore. Oystercatcher chicks from the nest at Sorrento Bay will be safe from the threat of predation by dogs whilst they are growing until the time when they can fly. Dogs are currently excluded from this foreshore from 9.00 am to 8.00 pm during daylight saving time, so at the moment oystercatcher chicks on this foreshore are vulnerable to predation by dogs in the morning and evening.
67. The installation of information signs along the Shared Path and adjacent to the protection areas is included in the HEP. There can be signs to provide information about the oystercatchers that forage and roost along the foreshore. The signs can indicate how people can help to ensure that the birds can continue to live along foreshore without disturbance from people on the path. Oystercatcher signs can explain how the foreshore is the home of the oystercatchers and how the oystercatchers need to be able to feed undisturbed.
68. Signs at Sorrento Bay can provide extra information about how this bay is the most important area along the Eastbourne coast for oystercatchers and has the only nest along this coast. The signs can introduce the oystercatcher family, describe the annual cycle of the birds and explain that the parents lay eggs at the same site each year. Information and explanations about dog exclusion all year round from the foreshore of this Bay can be provided so that people become aware that the chicks feed along the foreshore for more than one month before they can fly and they have nowhere else to go. It would be valuable to provide current information during the year about the birds and the nests, especially in November, December and January when the parents are sitting on eggs and then the chicks are foraging along the shoreline.
69. I suggest that an oystercatcher information sign be placed at the point at the south end of Sorrento Bay where there is a boat shed. The oystercatcher nest is on a small islet just offshore from the boat shed. When the nest is

occupied there could be a special sign that asked people to stay off the rocks between the boat shed and the water's edge during November and December so that the parents can incubate and hatch the eggs without being disturbed.

70. The new oystercatcher protection area and installation of signs, and the intended new year-round dog exclusion from the foreshore will together make Sorrento Bay safer than at present for the variable oystercatchers that breed there. It is anticipated that the Project will thus be of net benefit to the oystercatchers of Sorrento Bay.

Overall effects on variable oystercatchers

71. When all the potential effects, measures to address potential effects and benefits to birds are considered then the overall adverse effects of the Project on variable oystercatchers are likely to be less than minor.

Other birds

72. Red-billed gulls roost on rocks along the route of the shared path. They also feed in this area so can be classified as shoreline foragers. The measures described above to manage effects on oystercatchers will also apply to red-billed gulls.
73. The new shorebird and penguin protection areas north of Bishops Park and west of HW Shortt Park will provide new nesting and roosting opportunities for red-billed gulls. It is also possible that banded dotterels, which nest on the beach towards the south end of Eastbourne, could nest in the safe nesting habitat that will be created in these two protection areas. Red-billed gulls and other birds that use the Eastbourne shoreline will also benefit from the new year-round dog exclusion areas on the Rona Bay Beach and at Sorrento Bay.

Overall effects on other birds

74. When all the potential effects, measures to address potential effects and benefits to birds are considered then the overall adverse effects of the Project on bird species other than kororā / little penguins and variable oystercatchers are likely to be less than minor.

RESPONSE TO SUBMISSIONS

75. 19 submissions that mentioned birds support the application and three submissions that mention birds were neutral. I wish to comment on three submissions that opposed the application.

Michael Rumble

76. Mr Rumble noted that his opposition to the Project related to a limited offering of alternative and better habitats for kororā / little penguins. He was

concerned that there was no reference to establishing nesting areas for kororā / little penguins outside the Project area and also suggested that nestboxes could be incorporated into new seawalls.

77. Three protection areas for kororā / little penguins and shorebirds are now included as part of the Project. Each area will include permanent nesting habitat for kororā / little penguins. Two of these areas were added following a meeting with Mr Rumble and other individuals and organisations interested in kororā / little penguins at Eastbourne. These new protection areas for kororā / little penguins are outside the Project area. Nestboxes in concrete walls were discussed at the meeting of the Penguin Interest Group and have been considered by the Project engineers. These nestboxes have not been included in the Project due to the likelihood of inundation during storms and to engineering constraints.

Department of Conservation

78. The submission by the Director-General of Conservation noted that measures to ensure that potential adverse effects on foraging habitat for shorebirds and nesting habitat for kororā / little penguins were adequately avoided, remedied, mitigated or offset should be required as conditions of the resource consents. The submission considered the proposal to be contrary to policies in the Proposed Greater Wellington Natural Resources Plan ("PNRP") and the New Zealand Coastal Policy Statement ("NZCPS").
79. The original application indicated that approximately 5000 m² of shorebird foraging habitat would be lost. Revisions to the Project and further calculations have led to an estimate of approximately 3800 m² of potential shorebird foraging habitat that would be lost. The actual loss of feeding opportunities for shorebirds, in particular variable oystercatchers, will be rather less than this estimate from calculations of areas based on aerial photographs. This is because much of the mapped potential shorebird foraging habitat is bare rock with no food for shorebirds.
80. The revised Project incorporates substantial measures to minimise potential adverse effects in comparison with the original application. New protection areas for shorebirds and kororā / little penguins have been added to provide safe nesting opportunities for kororā / little penguins and safe roosting and breeding opportunities for shorebirds, as discussed above in my evidence. Provision of these areas will markedly increase nesting opportunities for kororā / little penguins at Eastbourne and will provide new safe breeding habitat for variable oystercatchers and other shorebirds. In addition, as above, the applicant proposes to initiate statutory processes for prohibiting dogs from Rona Bay Beach and Sorrento Bay.
81. The submission mentioned access of kororā / little penguins to the road. A range of measures that might limit access of kororā / little penguins to the

Shared Path and then to the road have been considered in the Project design process. A variety of practical and engineering and aesthetic constraints and perspectives together make it difficult to limit kororā / little penguin access to the path within the multiple constraints of this situation. The net effect of the path may be that access of penguins to the road is reduced.

82. A response to the Department of Conservation submission on matters relating to policies in the PNRPand in the NZCPS is provided in the evidence of **Ms van Halderen**.

Royal Forest and Bird Protection Society

83. The submission from the Royal Forest and Bird Protection Society asks for improvement in the Project design to avoid adverse effects and for the provision of appropriate mitigation and remediation of any adverse effects on kororā / little penguins. The comments that have been made in the response to the Department of Conservation submission apply equally to the Royal Forest and Bird Protection Society submission.

RESPONSE TO GWRC COUNCIL OFFICER'S SECTION 42A REPORT

Section 12.1.1 Effects on shoreline foragers

84. The report notes that the number of affected oystercatchers within the Project footprint has not been identified and an assessment of how the proximity of the Shared Path may affect oystercatcher feeding behaviour has not been undertaken.
85. In my evidence above I describe making observations and gathering information about oystercatchers at Eastbourne, especially in relation to oystercatcher breeding on the Eastbourne coastline. One nest at Sorrento Bay is the only variable oystercatcher nest along the route of the Shared Path and hence there is one variable oystercatcher breeding territory in the Project Bird Area that could be affected by the Project.
86. The Ornithological Society of New Zealand has for several decades conducted surveys of numbers of birds around the shore of Te Whanganui a Tara / Wellington Harbour. Counts of birds are made monthly for two years. My understanding is that these surveys are conducted at intervals of approximately 10 years and that a survey is underway at the moment. I have enquired about oystercatcher data from this survey and was told that the data are not currently available. Whilst we, do not have recent data about the numbers of variable oystercatchers that are present along the Eastbourne

coastline throughout the year, as above we have identified only one oystercatcher breeding territory in the Project Bird Area.

87. The section of my evidence that considers potential effects of the Project on avifauna includes discussion of how proximity of the Shared Path might affect oystercatcher feeding behaviour as a result of the presence of people and potentially dogs on the path. The discussion notes that we are not able to assess in advance what if any these effects might be.

Section 12.1.2 Effects on kororā / little penguins

88. Numbers of kororā / little penguin nesting sites identified in Memorandum 6 are discussed in this section of GWRC's section 42A report. In my evidence I explain that the identification of a kororā / little penguin site by a penguin dog does not in itself indicate that the location is a nesting site, and use the results of a 2017 penguin dog survey to calculate estimates of the number of breeding pairs and the number of non-breeding kororā / little penguins in the project area. I agree that the total number of kororā / little penguins affected by the proposal will not be known until a detector dog survey is undertaken prior to construction.

Section 12.1.3 Effects during construction activities

89. The report discusses effects on kororā / little penguins and shoreline foragers during construction activities and concludes that these effects can be appropriately managed. I agree with this conclusion.

Section 12.1.4 Avoidance of permanent effects on kororā / littlepenguins and shoreline foragers

90. A concern that ongoing effects of the use of the path have not been recognised is expressed in this section of the section 42A report. Potential ongoing effects are identified and discussed above in my evidence.

Section 12.1.5 Management of long-term effects on kororā / little penguins and shoreline foragers

91. New shorebird and protection areas, an HEP, the LPMP, pest control and dog control are considered in this section of the section 42A report. It is noted that Dr Uys considers the applicant needs to demonstrate how ongoing effects along the length of the Shared Path will be managed and that management of ongoing effects of the path should endure for the life of the Shared Path.
92. As discussed above, the applicant proposes four new protection areas, educational signage, and to initiate statutory processes for the full-time exclusion of dogs from Sorrento Bay and Rona Bay beaches. These will provide enduring benefits for avifauna. The applicant also proposes to

provide \$60,000 for pest management to apply to the Project area (Condition **EM.1B**), which will generate additional benefits for avifauna.

93. Until the Shared Path is constructed, it will not be possible to precisely identify the effects of the use of the path on avifauna behaviour. However, it is important to take into account the current environment. The Project area is an urbanised environment, with vehicles and beach users already in close proximity to birds along the shoreline. The applicant has agreed to conduct a post-construction study of avifauna in and adjacent to the Project area.
94. Overall, in my view the measures proposed appropriately provide for the management of ongoing effects of the use of the Shared Path.

Section 12.1.6 Overall assessment

Kororā / little penguins and shoreline foragers (excluding oystercatchers)

95. I agree that effects on *kororā* / little penguins can be appropriately managed and that effects on shags and gulls are likely to be less than minor.

Oystercatchers

96. In the section 42A report it records Dr Uys' statement that "*Habitat enhancement will not mitigate the effects of the project on oystercatchers as they will not congregate in improved habitat*". Variable oystercatcher territories are defended by breeding pairs during the breeding season. My observations of variable oystercatchers at Eastbourne, on Petone beach and at other locations, together with reading of the ornithological literature indicate that variable oystercatchers that are not engaged in breeding activities will feed and roost communally. Variable oystercatchers can form flocks during autumn and winter; for example, I have a photo of a flock of more than 60 variable oystercatchers roosting on a wharf. The new bird protection areas adjacent to Bishops Park and to HW Shortt Park will provide breeding habitat and roosting areas for oystercatchers that will be safe from dogs and not subject to inundation during storms. Furthermore, the intended exclusion of dogs from the Rona Bay beach next to the Bishops Park protection area will enable oystercatchers to forage on the beach throughout the year without the threat of disturbance by dogs. It is considered that new bird protection areas and the provision of a new safe foraging area will mitigate adverse effects of the project on oystercatchers.
97. Dr Uys comments on a reduction in food resources currently available to oystercatchers and considers that effects on oystercatcher territories could lead to a decline in the population of oystercatchers. In my evidence I make a distinction between the calculated loss of potential shorebird foraging habitat and the actual loss of feeding opportunities which will be rather less than the calculated area. We do not currently have sufficient information on

the use by oystercatchers of the area of ground that will be covered by the Shared Path and associated works to be able to estimate the reduction in food resources available to oystercatchers that might occur due to the Project, so I am not able to speculate on what this reduction might be. There is one oystercatcher breeding territory within the Project Bird Area. It can be noted that the outcome each year of breeding attempts within this territory does not have a significant effect on the total population of oystercatchers that use the Eastbourne foreshore. The nest site is on a rock offshore from the shoreline. A new oystercatcher protection area in Sorrento Bay will provide a safe roosting location for the pair of oystercatchers in this breeding territory and for their chicks. Chicks that in previous years might have been washed away during storms will be able to shelter away from the waves. Whilst we cannot define in advance the net effect of the Project on the oystercatcher territory, it is likely that the territory will be maintained.

98. It is concluded by Dr Uys that adverse effects of the Project on oystercatchers, after measures to manage the effects of loss of habitat are taken into account, are more than minor. The extent of these measures has been expanded beyond those that had been proposed when Dr Uys reached this conclusion. In particular, an oystercatcher protection area has been added at Sorrento Bay, the proposed exclusion of dogs from the beach adjacent to the Bishops Park protection area has been extended to be year-round, and it is proposed that the current exclusion of dogs from the foreshore at Sorrento Bay during daylight hours during daylight saving time will be extended to year-round exclusion. In my view the net adverse effects of the Project on oystercatchers, when all of the measures to manage effects of loss of habitat are taken into account, are likely to be less than minor.

Appendix E

99. This appendix contains comments from Dr Uys. These comments, together with recommendations, have been incorporated into the section 42A report and are covered in my response to the report.

John Fenton Cockrem

30 November 2020