BEFORE A HEARING PANEL

APPOINTED BY THE TASMAN DISTRICT COUNCIL

IN THE MATTER	of the Resource Management Act 1991
AND	
IN THE MATTER	of resource consent applications by the Mapua Community Boat Ramp Trust

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STATEMENT OF EVIDENCE OF DAVID STUART MELVILLE

Dated 14 November 2024

INTRODUCTION

1. My full name is David Stuart Melville.

2. I graduated from the University of Ulster with an Upper Second Class Honours Degree in Biology in 1972. For the past 52 years I have worked as an ornithologist and ecologist, with much of my work being in the shorebird migration system known as the East Asian-Australasian Flyway, of which New Zealand is part. I moved to New Zealand on a permanent basis in November 1999, since when I have worked as an independent ecologist.

3. I am a member of the Ornithological Society of New Zealand (Birds New Zealand) and was awarded its Robert Falla Memorial Award in 2018 in recognition of my contribution to ornithology and the work of the Society. I am a member (and former Vice-Chair) of the Technical Subcommittee of the East Asian-Australasian Flyway Partnership, and a board member of the Global Flyway Network (a foundation under Dutch law).

4. I have published over 200 papers and notes including many relating to waterbirds and coastal ecology and management.

5. I have been studying Variable Oystercatchers in Tasman Bay for over 20 years. I am familiar with the Mapua area including the subject site.

CODE OF CONDUCT

6. While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained within the Environment Court's Practice Note 2023. I have complied with it when preparing my written statement of evidence and the opinions expressed in my evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

7. My evidence relates to coastal birds, in particular the "At Risk" Variable Oystercatcher *Haematopus unicolor*, and is presented on behalf of the Ornithological Society of New Zealand (popularly known as Birds New Zealand). The Society is an organisation dedicated to the study of birdlife and the dissemination of this knowledge. The Objects of the Society include, *inter alia*, 'To assist the conservation and management of birds by providing information, from which sound management decisions can be derived'.

VARIABLE OYSTERCATCHER

8. The Variable Oystercatcher, endemic to New Zealand, 'is probably the second-rarest oystercatcher globally at species level'[1], and is currently listed as 'At Risk – Recovering' by the Department of Conservation[2].

[1] Dowding, J.E. 2014. Conservation assessment of the Variable Oystercatcher *Haematopus unicolor*. *International Wader Studies* 20: 182-190.
[2] Robertson, H.L. *et al.* 2021. Conservation status of birds in Aotearoa New Zealand, 2021. *New Zealand Threat Classification Series 36.* Department of Conservation, Wellington.

9. The world population of Variable Oystercatcher was estimated to be 4,500 individuals in 2012[3]. The most recent assessment by the Department of Conservation suggests a population of 5,000 – 20,000 mature individuals[4] - but this is a standard size range category, and Dowding (2022)[5] suggests the total population to be 5,000-6,000.

10. Rolfe *et al.* (2022)[6] state: 'The number of mature individuals is defined as the number of individuals that are known, estimated or inferred to be capable of reproduction'. The use of the term 'mature individuals' for Variable Oystercatcher is complicated by the fact that although age at first breeding is typically 5-6 years[7], they can occasionally breed when younger[8], while others delay until 7 years[9] or older[10]. For the purposes of the current review I consider it appropriate to accept a conservative population estimate of 6,000 individuals. Thus 1% of the population of Variable Oystercatchers is 60 birds. The threshold of 1% of a population is adopted under Criterion 6[11] for the identification of wetlands of international importance under the Ramsar Convention on Wetlands of International Importance, to which New Zealand is a Contracting Party.

11. Tasman Bay is the most important site globally for Variable Oystercatchers[12,13,14]. Tasman Bay also appears to act as a 'nursery' area for young Variable Oystercatchers from as far away as Kaikōura[15] and possibly further[16].

12. The 'Kite Park' at Mapua, which is proposed to be used as a vehicle and boat-trailer parking area as part of the Mapua boat ramp project, is a site that is used by significant numbers of Variable Oystercatchers. especially during/following rain, when birds forage for earthworms.

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[3] Wetlands International 2012. Waterbird population estimates WPE5. https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdownloads.wpp.wetlands.org%2FWPE5.xls&wdOrigin=BROWSELINK

[4] NZTCS 2021. New Zealand Threat Classification System. Haematopus unicolor. https://nztcs.org.nz/assessments/118867

[5] Dowding, J.E. 2013 [updated 2022]. Variable oystercatcher | tōrea pango. In Miskelly, C.M. (ed.) New Zealand Birds Online. www.nzbirdsonline.org.nz

[6] Rolfe, J. *et al.* 2022. New Zealand Threat Classification System manual 2022. Part 1. Department of Conservation, Wellington. 45 p.

[7] Dowding, J.E. 2013 [updated 2022]. Variable oystercatcher | tōrea pango. In Miskelly, C.M. (ed.) New Zealand Birds Online. www.nzbirdsonline.org.nz

[8] Cook, W.A. et al. Incestuous breeding by sibling variable oystercatchers (*Haematopus unicolor*). *Notornis* 54: 48.

[9] Dowding, J.E; Moore, S.J. 2006. Habitat networks of indigenous shorebirds in New Zealand. Science for Conservation 261. Department of Conservation, Wellington.

[10] D.S. Melville, unpublished.

[11] https://www.ramsar.org/sites/default/files/documents/library/ramsarsites_criteria_eng.pdf

[12] Dowding, J.E; Moore, S.J. 2006. Habitat networks of indigenous shorebirds in New Zealand. *Science for Conservation 261*. Department of Conservation, Wellington.

[13] Riegen, A.C.; Sagar, P.M. 2020. Distribution and numbers of waders in New Zealand, 2005-2019. *Notornis* 67: 591-634.

[14] McArthur, N. *et al*. 2022. A baseline survey of the indigenous bird values of the Tasman District coastline. Client report prepared for Tasman District Council, Richmond,

[15] Rowe, L. 2019. The movements of juvenile and immature variable oystercatchers (*Haematopus unicolor*) from the Kaikōura Peninsula, South Island, New Zealand. *Notornis* 66: 23-30.

[16] Melville, D.S. *et al*. 2020. Long distance movements of 'adult' variable oystercatchers (*Haematopus unicolor*) in New Zealand. *Notornis* 67: 697-699.

13. As an example, **Annexure 1** details sightings of one marked bird, "LM", that has been recorded at the Kite Park between 23 February 2012 and, most recently, 26 October 2024. It is noteworthy that on seven occasions the total number of Variable Oystercatchers present at the Kite Park on days when "LM" has been recorded as present exceeded 1% of the estimated global population; on two occasions (16 January 2013 and 1 February 2018) the highest ever counts (144 birds, equivalent to >2% of the global population) were recorded at the site.

14. Marchant and Higgins (1993)[17] report Variable Oystercatchers foraging in 'wet pastures', while Dowding (2014)[18] notes that 'Feeding sometimes also occurs on pasture, grassed areas (such as parks, golf courses and playing fields) and bare ground (such as ploughed fields) near the coast, particularly after rain when earthworms are readily available'.

15. Dr Robertson [s45] asserts that 'Inland sites, such as Kite Park, are likely used as temporary refuges during severe weather when access to coastal feeding grounds is limited". He then refers to his Annexure 4 "which summarises findings from sources including New Zealand Birds Online, Department of Conservation, and Heather & Robertson (2015)". Dr Robertson appears to have included some of his own interpretation to the material in his Annexure 4, in particular with regard to the section on Inland Habitat Use, which reads: "While primarily associated with coastal environments, tōrea pango / variable oystercatchers have been observed using inland habitats under certain conditions, *particularly during adverse weather when coastal feeding grounds become temporarily inaccessible.* During these times, they *may seek refuge* in inland areas such as parks and open grasslands, where they forage for earthworms and other soil invertebrates. However, *such inland use is generally infrequent and short-term, as the species' primary ecological needs are best met in coastal habitats*." [italics added]. On consulting the references quoted by Dr Robertson I have been unable to find material supporting his statements in italics (above).

16. I agree with Dr Robertson, that birds may be forced to use inland sites at times of severe weather. For example, the maximum count of 144 Variable Oystercatchers (>2% of the world population) at the Kite Park on 1 February 2018 was associated with the passage of ex-topical cyclone Fehi which coincided with a king tide. However, the fact that Variable Oystercatchers are frequently observed foraging for earthworms at the Mapua Kite Park in wet, but not stormy, conditions and even during high neap tide when areas of intertidal habitat in Waimea Inlet remain exposed as potential foraging and roosting areas [as on 26 October 2024 when birds were present 16:25-17:00h – predicted high tide 3.2m at 18:26h[19]], suggest that consumption of earthworms is more than just 'filling a gap' resulting from unavailability of intertidal habitats.

17. My observations of flocks of Variable Oystercatchers reveal that they can frequently be found foraging for earthworms (and possibly other terrestrial invertebrates) during/following rain

[17] Marchant, S.; Higgins, P.J. (eds.). 1993. Handbook of Australian, New Zealand and Antarctic birds. Vol. 2. Oxford University Press, Melbourne. Pp. 748-756.
[18] Dowding, J.E. 2014. Conservation assessment of the Variable Oystercatcher *Haematopus unicolor*. *International Wader Studies* 20: 182-190.
[19] Land Information New Zealand. New Zealand Hydrographic Authority tide predictions Nelson October 2024. http://www.linz.govt.nz

at a number of sites around Tasman Bay where there is short grass. In addition to the Mapua Kite Park, other sites regularly used include sports fields at Jubilee Park, Richmond and Neale Park, Nelson, while the Nelson A & P Association Showground at Richmond is also used when grass is short, but not when it is long. Observations of individually marked birds indicate that there is little, if any, overlap in site use by individual birds (other than Jubilee Park and the A&P Showground).

18. It is my opinion that the Mapua Kite Park is used as a foraging and roosting site by internationally important numbers of Variable Oystercatchers (1% or more of the global population) periodically throughout the course of a year. A lack of studies precludes a more detailed assessment of site use. This contrasts with Dr Robertson's view that '…the likelihood that significant numbers of indigenous bird species actually utilise the Site is low based on the existing disturbances and the quality and quantity of existing habitat.' [20]

VEHICLE AND BOAT-TRAILER PARK

19. The proposed use of the Kite Park for vehicle and boat trailer parking will effectively prevent birds from using the area for foraging and roosting when more than a few vehicles are present. If the area remains as open grass, then potentially birds might continue to use it when vehicles are absent. In view of the fact that most Variable Oystercatchers are usually present in periods of wet weather when the number of vehicles and trailers is expected to be few, use as a carpark and use by birds might potentially co-exist. However, regular vehicle movements would compact the soil and could be expected to reduce invertebrate populations, including earthworms, which are the most frequently taken prey by Variable Oystercatchers at this site[21].

20. However, the design of the vehicle and boat trailer park is still the subject of discussion and it is currently unknown what the surface of the parking area will be.

21. Council's Draft Condition 23:
Prior to the commencement of the activity the Consent Holder shall form the car and trailer carpark on the westernside of Tahi Street, as identified in Plan C RM230253 to an ***all weather surface*** [emphasis added].

22. However, Mr Morris [s11] states[22]: "62 Trailer car parks on a grassed area with sports field marking to delineate parks and routes for trailers waiting to use ramp".

23. Mr Morris further states [s71] that "we do not see the need for all the trailer parking area to be formed to an "all weather surface" which I assume is a metalled surface. This matter is dealt with in Gary Clark's evidence, who provides an alternative condition for a reduced all weather surface".

[20] Robertson, B. 2023. Proposed Mapua boat ramp. Coastal ecological impact assessment for Mapua Boat Ramp Trust. p16.
[21] Unpublished observations D.S. Melville
[22] Statement of evidence of Mark David Morris - planning. 4 November 2024.

24. Mr Clark [s102] states[23]: "Draft Condition 23 is accepted but the area needed for an all-weather surface but should only designed [sic] to meet winter demands". Mr Clark provides no details as to what surface area would be needed to meet winter demands.

25. I have been unable to find a description of 'all weather surface' used by the Tasman District Council, however, the Nelson Tasman Land Development Manual (2020)[24] defines an all weather surface as: 'construction of a carriageway with adequate drainage, a sound subgrade, dust free and compacted graded aggregates that results in a carriageway that is usable by vehicles in all weather conditions'. The Nelson Resource Management Plan[25] defines an all weather surface as: 'a minimum of a layer of basecourse gravel generally all passing a 40mm sieve and compacted with a mechanical roller to a thickness above the subgrade of 150mm when compacted'[26].

26. In the event that such a compacted gravel surface is placed in the Kite Park vehicle-trailer park area, it will be impossible for Variable Oystercatchers to forage. Thus, an area that currently is used, albeit intermittently, for foraging by >1% of the global population of Variable Oystercatcher will no longer be available to the birds.

27. It can be reasonably expected that the loss of the existing grassed Kite Park could result in some adverse effects on Variable Oystercatchers. Currently it is not possible to assess this in detail due to a lack of ecological understanding regarding the role of earthworm consumption by Variable Oystercatchers; a behaviour that appears to be more frequent around Tasman Bay than previously recorded elsewhere in New Zealand.

28. Dr Robertson [s47] asserts that[27] "Given the availability of similar inland areas that may serve as temporary refuges during adverse weather conditions, any displacement effect from the Project would likely to be minor". However, he does not identify any such "similar inland areas" that "may serve as temporary refuges", and he does not address the use of the current use of the Kite Park by foraging birds during wet (but not stormy) weather.

29. My own observations suggest that there are no comparable sites within the vicinity of Mapua other than Mapua Domain playing fields which seem to be little used by Variable Oystercatchers – the reason(s) for this are unknown, but may relate to the relatively enclosed nature of the area.

NEW ZEALAND COASTAL POLICY STATEMENT

30. Since Variable Oystercatcher is listed as "At Risk" (see above), Policy 11 of the New Zealand Coastal Policy Statement (2010) is relevant:

    Policy 11 Indigenous biological diversity (biodiversity)
    To protect indigenous biological diversity in the coastal environment:

[23] Statement of evidence of Gary Paul Clark – Traffic. 4 November 2024.
[24] Nelson Tasman land development manual. September 2020. Revision 1. Nelson City Council and Tasman District Council.
[25] Nelson City Resource Management Plan 2012. Appendix 10 Standards and terms for parking and loading.
[26] Nelson City Council. 2012. Nelson Resource Management Plan. Appendix 10. Standards and terms for parking and loading.
[27] Statement of evidence of Ben Peter Robertson – Ecology. Dated 4 November 2024

(a) avoid adverse effects of activities on:

(i) indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists;

31. The loss of the grassed area of the Kite Park to vehicle/trailer parking will result in the displacement of up to 1%, or more, of the world population of Variable Oystercatchers. No sites near Mapua have been identified where the birds may be expected to relocate to. If the birds have to move further afield this would increase energetic costs, the consequences of which would depend largely on the distance to be flown and the impact on food intake.

NATIONAL POLICY STATEMENT FOR INDIGENOUS BIODIVERSITY

32. Variable Oystercatcher is listed as 'specified highly mobile fauna' under the National Policy Statement for Indigenous Biodiversity (NPSIB)[28]. As such, policies 8 and 15 of the NPSIB are relevant, recognising that the Mapua area is not identified as a SNA:

> **Policy 8**: The importance of maintaining indigenous biodiversity outside SNAs is recognised and provided for.
>
> **Policy 15**: Areas outside SNAs that support specified highly mobile fauna are identified and managed to maintain their populations across their natural range, and information and awareness of highly mobile fauna is improved.

33. Furthermore, NPSIB adopts a precautionary approach with

> **Policy 3**: A precautionary approach is adopted when considering adverse effects on indigenous biodiversity.

34. This being further highlighted in the implementation of NPSIB:

3.7 Precautionary approach

(1) Local authorities must adopt a precautionary approach toward proposed activities where:

(a) the effects on indigenous biodiversity are uncertain, unknown, or little understood; but

(b) those effects could cause significant or irreversible damage to indigenous biodiversity.

35. The loss of the grassed area of the Mapua Kite Park through conversion to vehicle and boat-trailer parking will result in the displacement of up to 1%, or more, of the world population of Variable Oystercatcher. However, current ecological understanding of use of the Mapua Kite Park by foraging Variable Oystercatceres is very limited and thus the severity of the impact of the loss of this site is uncertain, but certainly will not be positive.

CONCLUSION

36. The Mapua Kite Park is used by significant numbers (at times 1% or more of the world population) of Variable Oystercatchers for foraging and roosting periodically throughout the year.

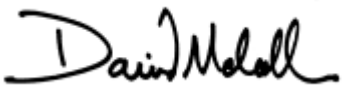
[28] Ministry for the Environment. 2023. *National Policy Statement for indigenous biodiversity*. Appendix 2.

37. The development of vehicle and boat-trailer parking at the Kite Park, as currently planned, will make the site unsuitable for use by foraging Variable Oystercatchers.

38. Tasman Bay is the most important site globally for Variable Oystercatchers[29,30]. Tasman Bay also appears to act as a 'nursery' area for young Variable Oystercatchers from as far away as Kaikōura[31] and possibly further[32]. Thus, should there be any adverse effects resulting from the proposed project these may not be restricted to the Mapua area. Furthermore, Variable Oystercatchers are generally long-lived[33] and thus population-level effects may be difficult to determine in the short-term.

39. Recognising that Variable Oystercatcher is listed as 'At Risk', effects resulting from the loss of the Kite Park may be inconsistent with the requirements of Policy 11 of the NZCPS.

40. Recognising that Variable Oystercatcher is designated as 'specified highly mobile fauna' it would seem appropriate to consider adopting a precautionary approach as indicated by Policy 3 of the NPSIB.



D.S. Melville
for the Ornithological Society of New Zealand
14 November 2024

[29] Dowding, J.E; Moore, S.J. 2006. Habitat networks of indigenous shorebirds in New Zealand. *Science for Conservation 261*. Department of Conservation, Wellington.
[30] Riegen, A.C.; Sagar, P.M. 2020. Distribution and numbers of waders in New Zealand, 2005-2019. *Notornis* 67: 591-634.
[31] Rowe, L. 2019. The movements of juvenile and immature variable oystercatchers (*Haematopus unicolor*) from the Kaikōura Peninsula, South Island, New Zealand. *Notornis* 66: 23-30.
[32] Melville, D.S. *et al*. 2020. Long distance movements of 'adult' variable oystercatchers (*Haematopus unicolor*) in New Zealand. *Notornis* 67: 697-699.
[33] Roberts, E.C.; Dowding, J.E. 2019. Long-lived variable oystercatchers (*Haematopus unicolor*). *Notornis* 66: 210-212.

Annexure 1

Variable Oystercatcher “LM”

Banded when a chick on 17 January 2011 at No-Man Island, Grossi Point, Mapua.

“LM” foraging for earthworms at Mapua Kite Park 26 October 2024. Photograph taken at 16:31h whilst it was raining – note water spots on the back of the bird. [Photo. D.S. Melville]

Re-sightings* of LM since original marking

Date	Location	Flock size
23 Feb 2012	***Kite Park***	-
1 Aug 2012	***Kite Park***	88
2 Aug 2012	***Kite Park***	67
16 Jan 2013	***Kite Park***	144
20 Jun 2015	***Kite Park***	39
1 Aug 2015	Ruby Bay	-
17 Aug 2015	Ruby Bay	-
1 Feb 2018	***Kite Park***	144
20 Feb 2018	***Kite Park***	35

25 Jul 2019	Grossi Point	-
29 Jun 2020	***Kite Park***	31
26 Jun 2021	***Kite Park***	27
18 Jul 2021	***Kite Park***	46
11 Feb 2022	Grossi Point	-
31 May 2022	***Kite Park***	69
8 May 2023	***Kite Park***	80
10 May 2023	***Kite Park***	99
8 August 2024	***Kite Park***	50
26 October 2024	***Kite Park***	29

*These re-sighting records result from opportunistic field work, not from a structured survey and thus an absence of records should not be taken to infer an absence of birds.

[L] General view of part of a group of foraging Variable Oystercatchers, of which “LM” was part, at Mapua Kite Park at 16:59h on 26 October 2024. [Photo. D.S. Melville] [R] Approximate location (red star) from where photographs were taken. [Google Earth]