

Before the Fast-track Panel

Under: The Fast-track Approvals Act 2024
In the matter of: FTAA-2605-1238 Barrytown Minerals Project

Statement of advice

Dr Elizabeth Parlato

Avifauna

Independent consultant – Senior Ecologist, The Catalyst
Group

10 September 2026



Department of
Conservation
Te Papa Atawhai

**Te Kāwanatanga
o Aotearoa**
New Zealand Government

Executive Summary

1. Tāiko Critical Minerals Limited are seeking resource consents under Schedule 5 of the Fast-track Approvals Act 2024 to undertake mineral sand mining at the Barrytown Flats using a floating dredge. The project area is approximately 408 ha. Mining activity is expected to occur across 280 ha and up to 72 ha of additional earthworks may be undertaken for the purposes of site recontouring and rehabilitation.
2. This advice covers matters relating to the wildlife approvals sought for avifauna.
3. My key concerns are:
 - i. The proposed mining activities have the potential to affect a wider range of protected avifauna than currently identified in the Avian Management Plan.
 - ii. Management of effects on breeding birds relies heavily on deterrence to prevent nesting within the area to be mined over the breeding season; the effectiveness of which is uncertain.
 - iii. There is no protection proposed for nests of Threatened or At Risk species located where the mining activity will reach before the chicks fledge. There is also no protection proposed for nests of Not Threatened native species discovered within the area to be mined over the breeding season. Accordingly, there is risk of protected species mortality associated with the mining activities.
 - iv. There is no targeted searching for grounded Westland petrel proposed for nights where equipment repairs are required or there are other unforeseen events requiring light at night.
 - v. There is likely to be a temporary loss of wetland habitat for avifauna.
 - vi. Department of Conservation input/consultation is not required as part of development and review of avifauna management plans. This is important for providing greater certainty that any changes/amendments needed to improve avifauna management and protection at the site are identified.
 - vii. The authorised activities listed in Schedule 1 of the proposed Wildlife Approval conditions do not cover the full suite of activities requiring approvals, including handling of uninjured kororā and killing of protected bird species.

Introduction

4. My full name is Dr Elizabeth Helen Parlato.
5. I am currently employed as a Senior Ecologist at The Catalyst Group. I have been in this position since October 2022. I am also the Principal Investigator on a Marsden Fast-Start research project and am employed as a Research Officer in the Zoology and Ecology Group at Massey University. I have held this position since April 2023. Prior to these positions, I was a postdoctoral fellow in the Zoology and Ecology Group at Massey University (2018–2022).

Instruction

6. I have been requested to provide expert advice relating to avifauna on behalf of the Department of Conservation (DOC) on the Barrytown Minerals Project – Fast-track application.
7. I was brought onto the project team on 25 August 2026. The initial scope of my requested involvement was to provide DOC with avifauna expertise, excluding Westland petrels¹. On 8 September 2026, DOC requested that I extend my advice to include Westland petrels. My role in this project to date has included the review of application documents as relevant, discussions with the project team, and preparation of this statement of advice.

Qualification and Experience

8. I hold a PhD in Ecology from Massey University (2015). I have published 21 peer-reviewed scientific papers and two book chapters. I have been responsible for, or contributed to, the preparation of avifauna technical reports, specialist reports on threatened bird species, structured decision-making to support species recovery, wildlife management plans, restoration plans, and ecological effects assessments.
9. I have over 15 years of experience in research, analysis and advice relating to the management of threatened New Zealand bird populations. As a consultant ecologist, I have also undertaken ecological investigations and environmental effects assessments for a range of projects, including infrastructure (roading, electricity generation, flood and erosion protection, public amenity), water

¹ A Department of Conservation staff member was to be responsible for providing expert advice on Westland petrels.

abstraction, wastewater discharge and gravel extraction. I have also been involved in a Regional Council Plan Change.

10. I am a member of the New Zealand Ecological Society, the Department of Conservation Black Robin Advisory Group and Hihi Recovery Group.

Code of conduct

11. Whilst it is acknowledged this is not an Environment Court Proceeding; I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in the preparation of this advice. Unless I state otherwise, this assessment is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

Scope of advice and expert opinion

12. My expert advice provides an independent technical review of the information supporting the proposed Wildlife Act approval for avifauna associated with the Barrytown Minerals Project Fast-track application.
13. My advice addresses the following matters:
- i. Summary of wildlife approval sought for avifauna
 - ii. Avifauna presence and habitat
 - iii. Effects of the proposed activity on avifauna
 - iv. General assessment of the Avian Management Plan
 - v. Conditions

Sources

14. In preparing this advice I have reviewed the following documents:
- i. Appendix L4: Ecological Effects Assessment
 - ii. Appendix L4A: Statement of Evidence Dr Bramley Terrestrial Ecology
 - iii. Appendix L12: Wildlife Act Authorisation Technical Report
 - iv. Appendix M2: Avian Management Plan
 - v. Appendix M6: Rehabilitation Management Plan

- vi. Appendix M9: Landscape Mitigation Package
- vii. Appendix P2: Wildlife Act Approval Conditions Redacted 92a.

Discussion

Summary of wildlife approval sought for avifauna

15. Tāiko Critical Minerals Limited are seeking resource consents under Schedule 5 of the Fast-track Approvals Act 2024 to undertake mineral sand mining at the Barrytown Flats using a floating dredge. The project area is approximately 408 ha. Mining activity is expected to occur across 280 ha and up to 72 ha of additional earthworks may be undertaken for the purposes of site recontouring and rehabilitation.
16. Avifauna wildlife approvals are sought for “Activities relating to birds that include disturbance (including applying deterrents and managing nests) and handling (including of grounded seabirds and kororā accidentally discovered as set out in the Avian Management Plan”.²
17. The term of the Wildlife Act Authorisations being sought is 35 years (consistent with the relevant resource consent approvals), with review every 10 years.

Avifauna presence and habitat

18. There is avifauna habitat within the site, including pasture, indigenous coastal shrubland, flaxland and wetlands.
19. The Ecological Effects Assessment (**EEA**) reports 104 avifauna taxa have been recorded within 10 km of the site prior to December 2024, based on eBird database records. This desktop assessment has been supplemented by two acoustic recorder surveys (July 2024 (13 recorders) and October 2024 (14 recorders)) within the Southern Block application area and 5-minute bird counts at 22 locations within the site. The time of year the 5-minute bird counts were undertaken is not reported. The site surveys recorded 33 bird species (including 20 native species, four of which are ‘Threatened’ or ‘At Risk’).
20. The EEA identifies 14 Threatened or At Risk species as likely to use the Southern Block. The assessment does not identify how many Not Threatened species are likely to use the site.

² Page 5, Wildlife Act Authorisation Technical Report.

21. I consider there is potential for more Threatened or At Risk species to be present at the site than the 14 species identified. For example, there are eBird records within 10 km of Australasian bittern (*Botaurus poiciloptilus*; Threatened – Nationally Critical) and marsh (Baillon's) crake (*Zapornia pusilla*; At Risk – Declining), which may use the wetland habitat within the Southern Block.
22. Bittern are a cryptic species that are difficult to detect³. They are also highly mobile, often moving between neighbouring wetlands to forage and occasionally undertaking long-distance flights (>100 km). As a result, they rely on a landscape-scale network of wetlands. Although bittern may only occupy certain wetlands for a few hours or days before moving on, these sites can still provide important habitat. Given their highly mobile nature, I consider there is potential for bittern to use the wetlands in the Southern Block, although use may be intermittent. Marsh crake are cryptic and secretive birds that are also difficult to detect. Consequently, even where species such as bittern and marsh crake have not previously been recorded, this does not necessarily indicate absence.
23. The limited surveying at the site, and the cryptic nature of species known to be present in the nearby vicinity, means it is likely more protected and high value species are present than are identified within the application.

Effects of the proposed activity on avifauna

24. Impacts on avifauna associated with the proposed activities include:
- Habitat clearance.
 - Disturbance due to mining operations (e.g., lighting and machinery) and measures implemented to deter birds from the mining area, including disruption of movements and nesting activity.
 - Injury or mortality (including nest mortality) due to vegetation clearance, dredging or vehicle movements.
25. The Wildlife Authorisation Technical Report (**WATR**) identifies six Threatened and At Risk birds considered to be at risk of negative effects of from mining operations. These include:
- Banded dotterel (*Charadrius b. bicinctus*; At Risk – Declining)

³ Williams EM 2024. Conservation management of the critically endangered matuku-hūrepo / Australasian bittern: A review of threats and preliminary management techniques. Science for Conservation 341, Department of Conservation, Wellington. 64p

- Red-billed gull (*Chroicocephalus novaehollandiae*; At Risk – Declining)
 - South Island pied oystercatcher (*Haematopus finschi*; At Risk – Declining)
 - Variable Oystercatcher (*Haematopus unicolor*; At Risk – Recovering)
 - Kororā | little blue penguin (*Eudyptula minor*; At Risk – Declining)
 - Westland petrel (*Procellaria westlandica*; At Risk – Naturally Uncommon)
26. The number of Threatened or At Risk species that are at risk of negative effects from mining operations is likely to be greater than the six species identified. For example, the WATR identifies sixteen high value species that are likely to use the site. In addition to these sixteen species, other species known to utilise habitat types found within the site have been recorded nearby. As noted above, this includes wetland species such as bittern and marsh crake but also includes other species, such as pipit (*Anthus novaeseelandiae*; At Risk – Declining) which have been recorded within 10 km and utilise open habitats for nesting, including pasture.
27. In addition, a number of protected Not Threatened native species have been recorded at the site. The EEA recognises that some of these species are likely to be nesting within the proposed mining area.
28. It is therefore important that the Avian Management Plan (**AMP**) and wildlife approvals appropriately address effects on all protected bird species potentially affected by the proposed activities.

General assessment of the Avian Management Plan

29. The AMP contains some of the components expected to address the effects of the proposed activities and has been based on an earlier version prepared for the neighbouring Central Block for which there are existing consents.
30. However, I do not consider that the AMP sufficiently addresses effects on native bird species. A key issue is uncertainty around whether deterrent measures will be sufficient to deter nesting within the habitat to be lost over the breeding season, with limited protection for nests and/or nesting individuals within that habitat should deterrents be ineffective. There is a consequential risk of injury or mortality associated with mining activities in the breeding season, but the AMP does not specifically address this, nor are wildlife approvals sought for killing of birds. The killing of wildlife without lawful authority is an offence under the Wildlife Act.
31. In addition, while the AMP proposes avoiding mining near important avifauna habitats such as indigenous coastal shrubland and flaxland during the breeding season, it is unclear whether this also applies to wetland habitat. The progressive

rehabilitation to replace and create wetland habitat is a key remediation measure, but there is uncertainty around the timing of habitat loss and habitat reinstatement. As such, it is unclear whether existing wetland habitat will be lost in advance of wetland habitat remediation.

Techniques and equipment

Bird surveys and monitoring

32. Seasonal surveys involving five-minute bird counts and acoustic monitoring at 31 locations across the site in varying habitats are proposed to be undertaken in spring, summer, autumn and winter each year until 12 months after mining completion. I consider this seasonal surveying will be valuable for improving knowledge of bird species that use the site. However, these acoustic survey techniques may not detect all species present. For example, male bittern call (boom) during the breeding season so if the site is used for breeding, then acoustic survey techniques in spring could detect males present. However, if the site's wetlands are intermittently used for foraging, then the proposed techniques are unlikely to detect bittern presence. Trail cameras (such as those proposed for kororā and Westland petrel) could be used to monitor whether the site is intermittently used by bittern (and may also assist with detection of other species).
33. To detect potentially breeding birds, pre-breeding season fortnightly detection surveys are proposed between 10 July and the onset of breeding or 14 September (whichever is earliest). Weekly detection surveys are proposed between the start of breeding and 31 January. These surveys will involve observers walking over the area to be mined over the breeding season, as well as adjoining areas within 50 m. The purpose of these surveys is to identify birds to be deterred from nesting and to detect any nesting attempts. All nest attempts will be recorded, including location, date and time of observations, stage of breeding and nest outcome where known. I consider that the fortnightly pre-breeding surveys are appropriate but weekly surveys/walk-overs during the breeding season may not be sufficiently frequent to detect birds preparing to nest and deter them in advance of nesting. Given the effectiveness of measures during the breeding season is reliant on preventing nesting within the mining pathway, there is likely to be benefit in more frequent surveys/walk-overs (e.g., every 3 days or bi-weekly) between the start of breeding (or 14 September, whichever is earliest) and 31 January.
34. The AMP recognises there is limited information currently available on the presence of kororā at the site. Accordingly, pre-mining monitoring is proposed to be conducted for a minimum of two years prior to mining activity commencing, and annually for the duration of mining. This monitoring includes conservation dog

surveying (with a contingency to use other methods if a certified dog is not available), fortnightly beach walks during the kororā breeding season, the use of wildlife cameras along the coastal fringe of the mining area (to improve understanding of where kororā are coming ashore) and investigation of all potential burrows to determine kororā use. I consider the survey methods proposed are mostly suitable for detecting kororā presence at the site. However, I do not support the contingency of using human surveys or increased camera monitoring if a certified dog is unavailable. The use of a certified dog should be a requirement, as this is the most effective technique for detecting kororā burrows and presence.

35. There is currently no targeted searching for grounded Westland petrel proposed in the AMP. While activities are proposed to be undertaken in daylight hours, the application recognises that lighting may be used at night if equipment repairs are required, or there are other unforeseen events requiring light at night. I therefore consider targeted ground searches for grounded Westland petrel in areas subject to lighting, and their surrounds, should be required on nights where artificial lighting is used. These searches should be carried out during the hours of darkness, ideally within 1 hour of artificial lights being turned off.

Discouraging nesting

36. In addition to the regular walk-overs, measures proposed to discourage nesting involve livestock grazing, installing streamers/tapes, machinery parking and the use of acoustic deterrents. These techniques may temporarily work to deter nesting but—as acknowledged in the AMP—birds habituate to these approaches relatively quickly and as such, they are unlikely to maintain their effectiveness.

37. I consider these measures may minimise, but will not eliminate, the risk of nest disturbance, injury and mortality associated with the mining activities.

Protection of nest sites

38. If a nest of a Threatened or At Risk species is discovered within the area to be mined and the nest is located far enough in advance of mining that the nest could successfully fledge chicks, the AMP proposes measures to protect the nest; including establishment of a 20 m buffer/no go zone around the nest using tape/markers until the chicks have fledged and twice weekly nest monitoring from outside the buffer.

39. The AMP offers no level of protection to nests of Threatened or At Risk species located where the mining activity will reach before the chicks fledge.

40. While investigation, including the use of a burrowscope, is proposed to determine kororā use of burrows, no protective measures are explicitly proposed to protect any kororā nests or nesting kororā discovered.
41. The AMP also does not set out any measures to protect nests of Not Threatened native species discovered within the area to be mined over the breeding season.
42. Accordingly, I do not consider the measures in the AMP are sufficient to adequately protect nests of species that are protected under the Wildlife Act.

Lighting management

43. Kororā and Westland petrel can become disoriented by artificial lighting associated with the mining operations. Methods proposed for minimising the effects of lighting include limiting mining operations to daylight hours and only using lighting at night if equipment repairs are required, or there are other unforeseen events requiring light at night. If lighting is required for these reasons, lighting will be directed and shielded and of the lowest intensity practical. In addition, vehicles must have their headlights dipped at all times and must not exceed 15 km/hour. In the event of a vehicle collision, the AMP will be reviewed to avoid further mortality.
44. I consider that the methods described for managing the effects of lighting on kororā are acceptable, particularly in combination with the proposed exclusion fencing.
45. Westland petrel can become grounded due to disorientation associated with artificial lighting. While it is proposed that a lighting audit is undertaken if a grounded seabird is discovered, there is currently no timeframe stipulated for this audit to be completed. I recommend that this audit (and associated review of the AMP) be undertaken within a reasonably short timeframe (e.g., within 20 working days of a grounding event), in consultation with DOC. If more than one grounding is detected within a three-month period, I consider all activities involving artificial lighting should cease (except for internal lighting that is blocked from outside visibility) until a further review is undertaken in consultation with DOC to determine possible causes and additional mitigation measures to avoid further interactions with Westland petrel.

Fencing

46. To deter kororā from entering the mining area, and guide them to inland nesting areas, the AMP proposes to construct fencing along the coastline, extending inland around each active mining section. The fencing equipment, specifications and required certification set out in the AMP are considered appropriate for deterring kororā movement through the mine site.

47. While it is set out in the AMP that all kororā fencing must be removed at the completion of mining activity, there is no clear requirement that the fencing must remain in place until mining and remediation within the fenced section is complete. I consider this should be specified to provide greater certainty the fencing will remain in place for the duration needed to protect kororā from project activities.
48. The fencing plan includes fencing on the northern and southern side of Cargill Road, which potentially increases the risk of kororā vehicle strike, as their movement may be directed up Cargill Road. As such, I recommend the fencing on the northern side of Cargill Road be removed following completion of works in Section 2 and prior to fencing (and works commencing) for Section 3. This will reduce the risk of vehicle strike associated with the directed movement of kororā up Cargill Road.

Handling

49. No handling of birds other than kororā or Westland petrel is proposed. If an uninjured kororā is found on site, gentle shepherding is proposed to encourage them to move to safe areas. If relocating the kororā to safety requires physical contact, this is only to be done by DOC-permitted handlers named on the Wildlife Authority. Injured or sick kororā will be placed in a warm dark place and transferred to the local DOC office. Advice from the DOC hotline will also be sought immediately. I consider these proposed techniques for handling kororā to be mostly appropriate. However, the captured kororā should be placed in a cool/moderate temperature, draft-free location rather than a warm place, unless otherwise advised by the DOC hotline. It should also be protected from noise, vibration and light to minimise stress. The AMP notes that injured or sick kororā will be transferred to the Greymouth DOC office, but these birds should instead be transferred to the Punakaiki office. While the application does not explicitly identify equipment to be used, gloves should be worn by the handler and the kororā should be placed in a suitable (sturdy, well ventilated), lined box during transport.
50. As previously noted, no explicit protection is proposed for kororā nests discovered. Any kororā that is at a nest containing eggs or chicks should not be captured, handled, or relocated until the nest no longer contains viable eggs or live chicks, or the breeding attempt has been abandoned.
51. If a live grounded Westland petrel is discovered within the site, it is proposed that a person with the appropriate qualifications and permits will catch the bird, place it in a suitable enclosure in a warm dark place, and call the DOC hotline (0800 DOC HOT, (0800 362 468)). The petrel should be transferred as soon as possible to the Punakaiki DOC office (the appropriate DOC office is Punakaiki, rather than the

Greymouth office identified in the AMP). I consider the proposed techniques for handling Westland petrel to be mostly appropriate. However, as for kororā, the captured bird should be placed in a cool/moderate temperature, draft-free location rather than a warm place, unless otherwise advised by the DOC hotline. It should also be protected from noise, vibration and light to minimise stress.

52. The AMP also notes that a sturdy net, leather gloves for handling birds and a suitable enclosure (lined box, crate or cage) will be held on site. I recommend birds are captured by hand rather than by net where possible to minimise handling and stress for the individual. I also consider that a sturdy (e.g., strong plastic or wood) ventilated lined box should be used rather than a cage. Cages can elicit more sensory stress for the bird and cause feather and beak damage. The box should be of sufficient size to comfortably fit a Westland petrel (i.e. large enough for the bird to turn around without touching the sides).

Mitigation measures

53. As outlined above, I consider some of the measures proposed are appropriate for mitigating effects on avifauna. However, I believe additional measures are required to appropriately mitigate effects on protected avifauna species.
54. The management of effects on protected bird species relies strongly on effective discouragement of nesting within the mining pathway. However, there remains a risk that birds will nest within the area to be mined over the breeding season. The AMP only proposes protection for nests of Threatened or At Risk species where the nest is far enough in advance of mining that the nest could successfully fledge chicks. I recommend that all nests of protected species (including kororā nests in burrows) discovered within the area to be mined/disturbed over the breeding season be protected.
55. The project's effects management is also reliant on construction of the new wetland and associated indigenous planting (~53 ha). This wetland reconstruction will occur in Years 1 and 2 in the northern section of the Southern block and in Years 10 and 11 in the middle section. The EEA estimates that a basic level of ecological function will be achieved after 5 years. As such, there is likely to be a time-lag between the loss of existing wetland habitat and the provision of wetland habitat associated with the constructed wetland. The net amount of temporary wetland extent loss is unclear, as no assessment has been provided on the anticipated functioning wetland area over the course of the project. To avoid the loss of wetland habitat for avifauna, I recommend existing wetlands within the section to be mined be protected or maintained until at least the same area of the constructed wetland has

reached its functioning state. If the current wetland extent cannot be maintained, then an appropriate effects management response is required.

56. Acknowledging this potential habitat loss, and the lack of formal assessment to confirm no net loss in the long-term, I consider the proposed remediation is likely to provide suitable and improved quality of habitat for avifauna following completion. The completed wetland will cover an area of >50 ha, with a range of ecological features that will provide habitat for avifauna, including:

- At least 5.3 ha of shallow marsh with an average depth of 0.4 m
- At least 2.8 ha of mid-depth water with an average depth of 1 m
- At least 4.8 ha of deep open water with an average depth of 2 m
- At least 16.8 ha of flaxland and dry edge indigenous vegetation
- At least 5.9 ha of *Carex* rushlands
- At least 14.3 ha of raupo
- At least 3.2 ha of raised islands
- Riparian planting of 3-5m in width either side of channel

57. However, it is crucial for the wetland remediation be subject to long-term protection to ensure it maintains these habitat outcomes.

Reporting and management plan review/development

58. The proposed reporting requirements are mostly appropriate. However, I consider the commencement of weekly reporting on any interactions with wildlife should be 14 September (to align with the more regular breeding season surveys) rather than 1 November. I also recommend the ongoing/regular reporting requirements be extended to include any management interventions implemented (e.g., nest protection or bird handling/relocation) and any observed outcomes of those interventions.

59. I recommend DOC be provided the opportunity to review the annual report, in addition to the suitably qualified and experienced ecologist/ornithologist. I also recommend that DOC be consulted on any amendments to the AMP (and Penguin Management Plan, if required). This will provide greater certainty that any changes/amendments needed to improve bird management at the site are identified.

60. If kororā are detected within the site, there is a requirement for a Penguin Management Plan to be developed by a suitably qualified and experienced ecologist in consultation with the West Coast Penguin Trust. I consider that

consultation with DOC should also be included as a requirement in the development of the Penguin Management Plan.

Release location

61. It is proposed that any uninjured kororā requiring relocation be placed into an unoccupied burrow along the fenced coastal edge. This enables the kororā to remain within the local population and I consider this is an appropriate release location.
62. Westland petrel should not be released by the authority holder – rather, grounded petrel are to be transported to the local (Punakaiki) DOC office for assessment (and will be subsequently released by DOC if health criteria are met).

Avifauna numbers likely to be impacted

63. As previously noted, there is potential for more avifauna species to be affected by the project than are identified in the AMP.
64. In addition, the application does not include any estimates of the number of birds impacted by the project. Accordingly, the impacts of the mining and associated activities on avifauna are highly uncertain.

Personnel

65. There are four ecologists named for birds in the WATR. The skills and experience of the personnel who will be responsible for the handling of kororā and Westland petrel is not stated. As such, it is difficult to assess whether the proposed staff are suitably experienced. It is important that the permitted handlers have demonstrable experience in handling seabirds.
66. The proposed conditions within the AMP identify that all avifauna monitoring (which includes the seasonal, pre-breeding and breeding season surveys) will be undertaken by a suitably qualified expert(s)⁴. It is important that the skills and experience of the personnel undertaking the surveys is appropriate for ensuring accurate identification of species present and breeding behaviour (including nest detection).

Overall avifauna protection

67. Catching, liberating, killing and disturbing the nests of protected bird species without lawful authority are all offences under the Wildlife Act.

⁴ Condition 13.10

68. While approvals are sought for capture/handling and release of kororā, capture/handling of Westland petrels, and for disturbance of birds including for the purposes of nest management, the applicant hasn't explicitly sought approval for killing protected birds.
69. No nest protection is proposed for nests of Threatened or At Risk species located where the mining activity will reach before the chicks fledge, nor for nests of Not Threatened species discovered within the area to be mined over the breeding season. Accordingly, there is a clear potential risk of mortality associated with the proposed activities.
70. As such, the proposed activities require approval for the killing of protected bird species under the Wildlife Act.

Term

71. The Applicant is seeking a term of 35 years, with review every 10 years
72. Wildlife Act Authorisations will be required for the full term of the consent, as there will be potential effects on avifauna for the duration of the project activities. However, a shorter term (for example, 10 years) is likely to be more suitable as it will enable the staged works to proceed but retains an important statutory review point before any further avifauna relocation, disturbance or mortality occurs beyond that timeframe. While a review after 10 years is proposed by the Applicant, the 35-year authorisation term reduces certainty that the authorisation can be adapted over time to appropriately protect affected avifauna.

Conditions

73. I recommend the conditions be amended to provide improved protection for avifauna within the project area, as follows:
- i. Protection provided for all Threatened or At Risk species nests detected within the area to be mined over the breeding season. Protection to remain in place until the chicks have fledged or the nest is abandoned.
 - ii. The annual penguin surveys must be undertaken using a certified conservation/penguin detection dog.
 - iii. Requirement to maintain penguin fencing until works within the fenced section are completed.
 - iv. Interactions with wildlife should be reported on a weekly basis from 14 September to 31 January (rather than from 1 November).

- v. Requirement for DOC to be consulted in development and review of Avian Management Plan and Penguin Management Plan.
- vi. Protection of existing wetland habitat to ensure no temporary loss of wetland extent over the project timeframe. Requirement for long-term protection and maintenance of constructed wetland habitat.
- vii. Requirement for targeted searching for grounded petrel on nights where artificial lighting is required.

74. I also note that Appendix P2 – Wildlife Approval Conditions Schedule 1 includes handling of grounded or injured birds but does not specifically include capture, handling and relocation of uninjured kororā, whereas this activity is proposed in the AMP.

Conclusion

75. While the AMP includes a range of mitigation measures, I consider further measures are required to strengthen avifauna protection, including more frequent breeding season walk-overs to detect breeding activity and deter protected avifauna from establishing nests within the mining pathway, protection of those nests if they are established, targeted searching for grounded Westland petrel, and greater involvement of DOC in management plan development and review to ensure effects on avifauna are being appropriately managed over the project timeframe. I consider the proposed methods for handling kororā and Westland petrel are mostly appropriate, with some changes to handling procedures and equipment recommended.