11 August 2025

Appendix D: Wildlife approval report

Section 51(2)(c) wildlife approval report for –
FT-0063 Waihi North Project

Department of Conservation
Te Papa Atawhai

Te Kāwanatanga o Aotearoa
New Zealand Government

Contents

Introduction

1. On 2 May 2025, the Environmental Protection Authority (EPA) determined that the Oceana Gold (New Zealand) Limited ("OGNZL") substantive application for the Waihi North Project was complete and complied with the requirements of section 46(2) of the Fast-track Approvals Act 2024 (the Act/FTAA).

2. As part of the application, OGNZL is seeking wildlife approval for the capture and handling of native frogs and lizards for relocation and monitoring purposes. OGNZL has confirmed post-lodgement that it is now also seeking approval for killing/harm to wildlife that could arise from any of its other activities.

3. On 27 May 2025, the Panel Convener directed the EPA to obtain a report prepared by the Director-General of Conservation, in accordance with section 51(2)(c) of the Act. This report is due to the EPA on 11 August 2025.

4. This report provides information relating to proposed activities for which the applicant is seeking a wildlife approval.

Purpose of the report

5. This report has been prepared by the Department of Conservation (DOC) on behalf of the Director-General of Conservation. This report provides commentary on information provided by the applicant to support the Panel's assessment of the application for a wildlife approval. The content of this report has been informed by DOC's technical experts and information from DOC's Treaty partners.

6. In accordance with clause 3 of Schedule 7, this report must address the following matters:

    - The purpose of the Wildlife Act 1953 and the effects of the Project on the protected wildlife that is to be covered by the approval.
    - Information and requirements relating to the protected wildlife that is to be covered by the approval (including the New Zealand Threat Classification System or any relevant international conservation agreement).
    - Any conditions that should be imposed to manage the effects of the activity on protected wildlife.
    - Any conditions that recognise or protect a relevant Treaty settlement and any obligations arising under the Marine and Coastal Area (Takutai Moana) Act 2011 or the Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019.

Overview of DOC's report

7. This report is divided into four key components of the application – lizard salvage, frog salvage, frog monitoring, and incidental harm or killing of wildlife.

8. The proposed frog salvage has risks that have not been adequately addressed in the current proposal. Frog salvage as a mitigation tool has been known to have low success in the past.

OGNZL's proposal is made on the premise that process improvements, such as predator control and use of release pens, will lead to better outcomes. However, DOC has been unable to assess the proposed use of release pens as the Native Frog Salvage Release Plan containing the detail has not yet been provided.

9. DOC generally supports the proposal to salvage lizards. DOC suggests some changes to methods in the management plans to enable better protection of lizards at the individual and population level.

10. The proposed monitoring of frogs is a critical component of the Project to understand actual effects on frogs and to measure translocation success. While the proposed Monitoring Plan largely aligns with current best practice, DOC recommends several improvements to the study design to ensure the methods are rigorous and the knowledge gained is statistically useful. Review of the plan by a qualified statistician is required.

11. Incidental harm or killing of wildlife is not described in the substantive application Part A documents, nor is it well described or defined in the wider application documents. DOC is therefore only able to provide high-level comments. OGNZL has indicated that further discussion with DOC is needed on this aspect, which DOC agrees with. Without a clear understanding of what other activities could affect wildlife (in addition to vegetation clearance on OGNZL land and corresponding salvage, and monitoring of frogs in the Forest Park), and the potential effects of those activities on that wildlife, it is not possible to appropriately regulate the effects of any such activities on protected wildlife through conditions in accordance with clause 6 of Schedule 7. For example, the updated proposed condition at Schedule 1, clause 1A(e): "*Any accidental / unintentional harm to wildlife that could arise from any of the activities undertaken in relation to the Waihi North Project*" is so broad that it is not possible to understand what activities may harm wildlife, how any such activities could harm wildlife, how wildlife would be affected, and where, what methods would be used to minimise any effects, etc.

12. Overall, the application in its current state contains substantial gaps. To achieve consistency with the purpose of the Wildlife Act and to adequately protect wildlife, DOC considers that further information and changes to management plans and conditions are required.

Sources

13. This report draws on information from the substantive application. Application documents specifically referenced in this report include:

- A.05. Part A – Substantive Application Report: Section 2 – Project Description.
- A.07. Part A – Substantive Application Report: Section 4 – Approvals Required.
- A.09. Part A – Substantive Application Report: Section 6 – Effects Assessment.
- A.10. Part A – Substantive Application Report: Effects Mitigation and Management.
- A.11. Part A – Substantive Application Report: Section 8 – Fast-track Approvals Act 2024 Requirements.

- B.36. Part B – Technical Reports: Bioresearches – Terrestrial Ecological Impact Assessment (Waihi Area) (Bioresearches 2025a).
- B.37. Part B – Technical Reports: Boffa Miskell – Terrestrial Ecology Values and Effects of the WUG (Boffa Miskell 2025a).
- B.58. Part B – Technical Reports: Lloyd's Ecological Consulting – A Plan for Monitoring Potential Effects of the Proposed Wharekirauponga Underground Mine Project on Native Frogs (Lloyd 2025c).
- D.10 – Wildlife Act Authority Proposed Conditions.
- H.01. Part H – Management Plans: Wharekirauponga Underground Mine Ecology and Landscape Management Plan. ("ELMP-WUG").
- H.02. Part H – Management Plans: Waihi Area Ecology and Landscape Management Plan. ("ELMP-Waihi").

14. In addition, DOC and OGNZL have engaged post-lodgement to discuss issues as encouraged by the Panel Convener. This has resulted in a revised condition set provided to DOC on 25 July 2025 that DOC understands has also been provided to the Panel. DOC has reviewed the wildlife conditions and attached a version as Appendix 1 to this report with further tracked changes and comments.

15. DOC also understands OGNZL intends to include a Native Frog Salvage Release Plan in the ELMP-WUG. DOC has not yet received or viewed this document.

16. The assessment in this report is informed by advice from DOC fauna experts, whose expertise can be viewed in DOC's Covering Report.

Context and background

Project overview

17. The Waihi North Project ("the Project") is a proposed mining initiative in Waihi, aiming to extend existing operations through the development of new underground and open-pit mining areas.

18. Current mining operations at Waihi include an open pit mine, a series of underground mines, ancillary facilities such as the Waihi Surface Facilities Area, an ore processing plant, a water treatment plant, three stockpiles, two tailings storage facilities (TSFs), and a conveyer.

19. A key component of the Project is the proposed Wharekirauponga Underground Mine ("WUG"), located beneath Coromandel Forest Park and accessed via a tunnel from OGNZL-owned farmland on Willows Road. Although the mine is underground, associated drill and vent sites within the Forest Park are proposed within habitat for native frogs and other wildlife. OGNZL propose to establish up to 20 investigation and exploration drill sites, four ventilation shaft sites, and 50 piezometer / portable drill rig sites. Wildlife approval is sought to manage potential impacts of these activities on native frogs and lizards.

20. Outside the Coromandel Forest Park, within the “Waihi Area”, the Project includes the Gladstone Open Pit (“GOP”) being a new open pit mine, Northern Rock Stack (“NRS”) being a waste rock stockpile, and Tailings Storage Facility 3 (“TSF3”) being a facility to store mining tailings. A new Surface Facilities Area (“Willows SFA”) will also be established at the Willows Road Farm to support WUG operations, including a temporary waste rock stockpile, the Willows Rock Stack (“WRS”). Vegetation removal in these areas may impact protected lizard species, and wildlife approval is sought to manage these effects.

21. The application seeks various approvals under the Fast-track legislation. This report relates to the application for wildlife approval.

Summary of wildlife approval sought

22. OGNZL’s substantive application report states that wildlife approval is sought for the following activities as part of the Project:

- “*To undertake monitoring of leiopelmatid frogs within the vibration impact area, Wharekirauponga Pest Management Area and a control area, all of which are located within the Coromandel Forest Park;*
- *To undertake monitoring of leiopelmatid frogs in waterways within and outside the area potentially affected by the dewatering of the WUG, all of which are located within the Coromandel Forest Park;*
- *To handle, salvage and relocate leiopelmatid frogs and lizards in order to enable vegetation clearance at TSF3, NRS, GOP and Willows SFA, all of which are located on OceanaGold owned land; and*
- *To handle, salvage and relocate leiopelmatid frogs and lizards in order to enable vegetation clearance for drill sites and pumping test / ventilation shaft sites located within the Coromandel Forest Park*” (A.07 and A.11).

23. DOC and OGNZL have engaged collaboratively following lodgement of the substantive application, in line with the Panel Convener’s recommendation to work together on resolving issues and conditions.

24. Through this process, DOC queried the inclusion of additional activities in the wildlife conditions set (D.10) of *“to take or destroy the eggs of wildlife when unavoidable (any taxa)”* and *“to kill wildlife when unavoidable (any taxa)”*. OGNZL has clarified that, in addition to the activities listed above in 6.2.2, it is seeking wildlife approval “*to authorise harm to wildlife that could arise from any of its other activities”,* and that this is not limited to frogs and lizards. This component of the application is discussed in this report at paragraph 176 onwards.

25. This report is broken into four key components of the application – lizard salvage, frog salvage, frog monitoring, and incidental harm/killing. Further detail relating to the application is discussed in the relevant sections of this report.

Matters considered in relation to the criteria for a wildlife approval – general

Statutory context

26. Clause 1 of Schedule 7 of the Act defines "wildlife approval" as “a lawful authority for an act or omission that would otherwise be an offence under any of sections 58(1), 63(1), 63A, 64, 65(1)(f), 70G(1), 70P, and 70T(2) of the Wildlife Act 1953.”

27. The incidental killing of wildlife,[1] without lawful authority, is an offence under s 63. Relevantly, s 63 of the Wildlife Act provides that no person may “hunt or kill” (including the extended definitions of those terms)[2] protected wildlife without lawful authority, and that doing so is a strict liability offence.[3] The defence provided in s 68AB will apply to accidental killing (killing that is not foreseeable, nor intended) where a person has taken all reasonable steps to avoid the killing of wildlife.

28. The activities proposed of capturing and killing can be considered for wildlife approval under the Fast-track Act. A wildlife approval granted under the Act is treated as if it were granted under the Wildlife Act (Schedule 7, clause 7(1)).

Purpose of the Wildlife Act

29. The relevant purpose of the Wildlife Act is to protect wildlife.

30. The Wildlife Act creates a tiered system, with different levels of protection required for different species. Most wildlife is absolutely protected – meaning that it cannot be lawfully hunted, killed, harassed or possessed without specific authorisation. The Wildlife Act also identifies wildlife that is not protected.

31. OGNZL is seeking wildlife approval in relation to absolutely protected species. In this report, the application and the effects of the project are considered against the purpose of the Wildlife Act.

The role of species management plans

32. Applications to catch and kill wildlife are typically considered under s 53 of the Wildlife Act. Authorisations under s 53 cover the incidental killing of wildlife. Compliance with a management plan that is made as a condition of resource consent is sometimes included as a condition of Wildlife Act authorisations. Where a management plan needs to be amended, a variation to the Wildlife Act

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[1] Incidental killing is killing that is not directly intended but is unavoidable and foreseeable as a consequence of carrying out the lawful activity: Wildlife Act 1953, s 53A(2).

[2] “Hunt or kill” includes “the hunting, killing, taking, trapping, or capturing of any wildlife by any means; and also includes pursuing, disturbing, or molesting any wildlife, taking or using a firearm, dog, or like method to hunt or kill wildlife, whether this results in killing or capturing or not; and also includes every attempt to hunt or kill wildlife and every act of assistance of any other person to hunt or kill wildlife”: Wildlife Act 1953, s 2.

[3] Section 68AB(3) provides a defence.

authorisation is usually made, so that the relevant condition of the Wildlife Act authorisation is amended to refer to an updated version of the management plan.

33. In its application, OGNZL has produced overarching draft management plans that span various approvals, including those under conservation legislation and the Resource Management Act. OGNZL is seeking to have the plans certified by the Panel as part of the Fast-track process and has set out processes in proposed conditions to provide for amendments. DOC has raised concerns with OGNZL about its proposed approach to management plans. Issues are outlined in this report and in DOC's Covering Report for the Panel.

Matters considered in relation to the criteria for a wildlife approval – lizard salvage

Application

34. OGNZL has identified that several species of native lizards are, or are likely to be, present across the Project area, based on lizard surveys and previous records. To mitigate effects of vegetation clearance on lizards, OGNZL has sought wildlife approval to salvage (capture and relocate) and incidentally kill lizards.

35. OGNZL is applying for wildlife approval in relation to the species of lizard listed in Table 1.

Table 1. Lizard species that OGNZL is seeking wildlife approval for. This list is based on the draft conditions provided with the application.

Common name	Scientific name	Threat status (New Zealand Threat Classification System)
Northern striped gecko	*Toropuku inexpectatus*	Threatened - Nationally Endangered
Elegant gecko	*Naultinus elegans*	At Risk - Declining
Forest gecko	*Mokopirirakau granulatus*	At Risk - Declining
Striped skink	*Oligosoma striatum*	At Risk - Declining
Ornate skink	*Oligosoma ornatum*	At Risk - Declining
Copper skink	*Oligosoma aeneum*	At Risk - Declining
Moko skink	*Oligosoma moco*	At Risk - Relict
Raukawa gecko / Common gecko*	*Woodworthia maculata*	Not threatened
Pacific gecko	*Dactylocnemis pacificus*	Not Threatened
Common skink / northern grass skink	*Oligosoma polychroma*	Not threatened

**This species has been removed from the most recent condition set, although DOC presumes that was an error since the advice DOC provided was to remove common skink (Oligosoma polychroma) which is not present in Thames Valley/Coromandel Peninsula.*

36. Assessments of lizard presence and habitat, and the potential impacts of the Project on lizards, are provided in B.36 (Bioresearches 2025a) and B.37 (Boffa Miskell 2025a). Management plans are provided in the ELMP-WUG and ELMP-Waihi. Effect assessments and proposed actions are summarised here, by area.

Waihi Area

37. Confirmed and potential habitats for copper and moko skinks exist across the Waihi area, including rough grasses, native plantings, pine areas, and rocky outcrops. Ten copper skinks were detected at GOP. No lizards were found during surveys at NRS and TSF3, though restoration areas may support future habitat. Moko skinks are known to be present 400 – 500 m from NRS and Significant Natural Area (SNA) 166.

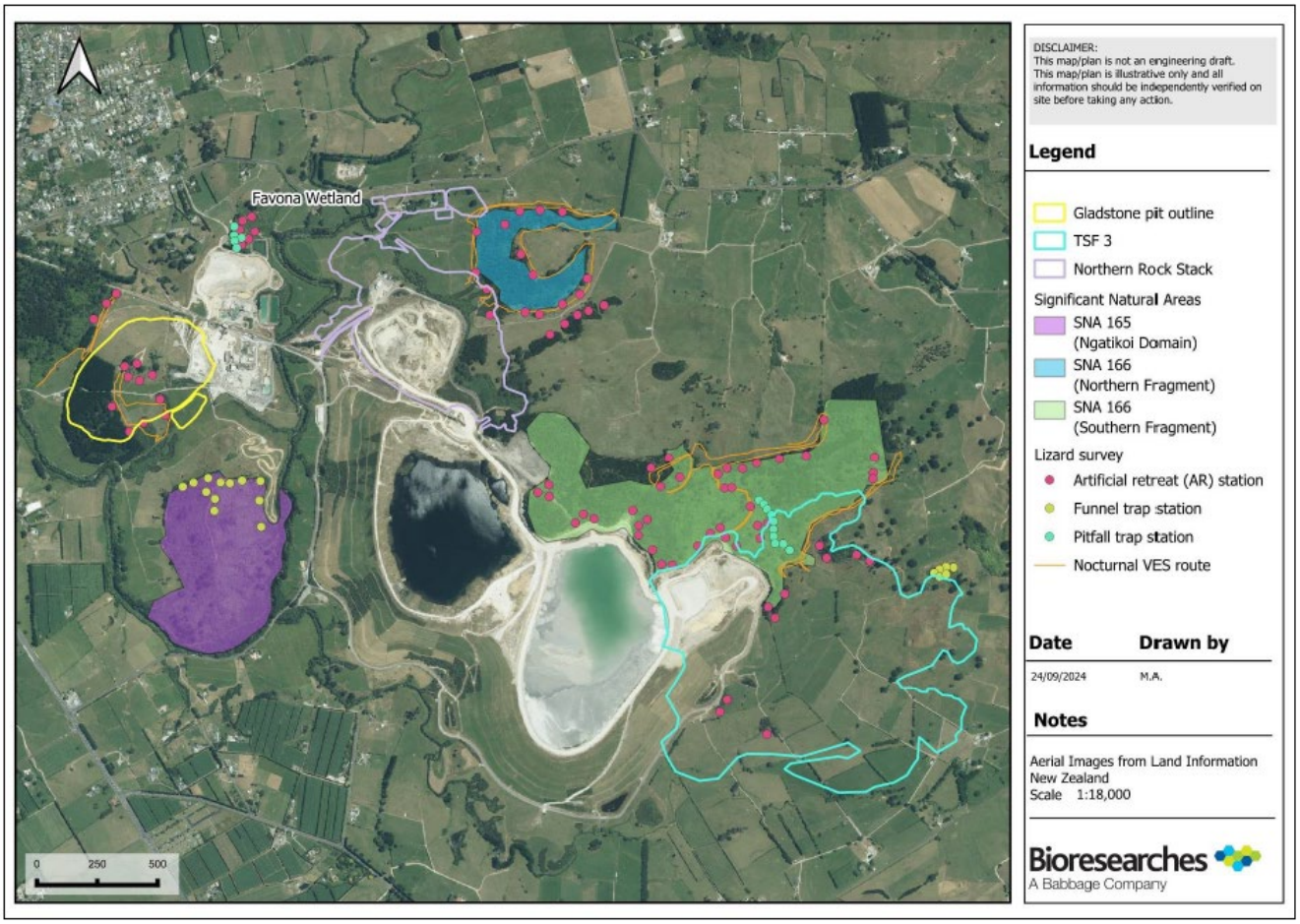

Figure 1. Map of Waihi North Area showing proposed works areas and lizard survey coverage. Copy of Figure 4, Bioresearches 2025a.

38. Vegetation removal and earthworks will directly impact lizard habitats, causing potential mortality, habitat loss, displacement and disturbance. Habitat loss estimates are 6.9 ha for GOP, 9.1 ha for NRS, and 10.1 ha for TSF3. The applicant does not estimate the number of lizards to be killed, but numbers are expected to be low other than at GOP where ten copper skinks were detected.

39. Lizard mitigation actions are outlined in the Lizard Management Plan in section 8 of the ELMP-Waihi.

40. Early design adjustments removed the Northern Rock Stack footprint out of a low-lying area south of the northern fragment of SNA 166, which has avoided potential impact on moko skinks (At Risk – Relict) confirmed to be present at that site.

41. At sites that will be cleared, lizards are proposed to be caught using baited traps, artificial retreats, hand searches and spotlighting. Destructive searches will occur during vegetation removal with excavator support, and tree felling will be supervised by a herpetologist. In situ mulching will be avoided in lizard habitats. Salvage will run for a minimum of five days in suitable weather, extending if lizards are still found until no lizards are caught over a 24-hour period. The ELMP proposes that if the herpetologist considers that the site will no longer support lizards, then habitat destruction can commence.

42. Salvaged lizards will be released into a 4.04 ha enhanced habitat within and adjacent to SNA 166, which supports moko skinks and likely copper skinks (although copper skinks were not detected, these species are often sympatric and have similar habitat requirements). The area includes 1.7 ha of new native planting and 2.34 ha of existing habitat.

43. Lizard habitat at the site will be enhanced via supplementary refuges (logs, rocks, debris), native revegetation planting with appropriate species, stock-proof fencing, and pest control. Pest control targeting rodents, hedgehogs, mustelids, possums and feral cats will be maintained until mine closure.

44. To address significant residual adverse effects on copper skinks expected following mitigation at GOP, OGNZL is proposing a minimum 11.2 ha of compensation planting at GOP (detailed in a Residual Effects Offset Plan within the ELMP-Waihi), where it would be contiguous with retained existing habitats. Through this compensation planting and proposed pest control, OGNZL expects a net positive outcome for copper skinks.[4]

45. If any lizards with a threat status higher than At Risk are captured, it is proposed that such animals will be held temporarily and DOC consulted on actions to take.

46. Annual monitoring of lizard populations, habitat condition and pest control effectiveness is proposed for the first five years, then every five years until mine closure.

WUG Area – Coromandel Forest Park

[4] B.36 (Bioresearches 2025a). Section 8.1.

47. Baseline ecological surveys at the WUG area within Coromandel Forest Park detected a single forest gecko (At Risk – Declining), although nine records of elegant geckos (At Risk – Declining) exist for the area. Copper skink and moko skink have been recorded nearby, and northern striped gecko (Threatened – Nationally Vulnerable) 80 km away. The area contains extensive high-quality lizard habitat but also high predator presence. Despite low detection, "presence throughout the catchment is considered likely".[5]

48. Vegetation clearance proposed within Coromandel Forest Park is up to 0.66 ha in total, across the following:

    a. Twenty drill sites (including exploration, geotechnical and hydrogeological), requiring vegetation clearance of up to 150 m^2 per site;

    b. Four ventilation shaft sites, requiring vegetation clearance of up to 900 m^2 per site;

    c. Fifty portable rig sites, requiring "*minimal disturbance e.g. canopy trimming and moving ground cover*" over an area up to 32 m^2 per site (based on Table 2-2 of A.05 and access arrangement conditions).

49. Vegetation clearance has the potential to cause lizard injury or mortality, in addition to the obvious loss of habitat.

50. Lizard mitigation actions are outlined in the Terrestrial Ecological Management Plan in section 4.3 of the ELMP-WUG.

51. A multi-criteria assessment ("MCA") is proposed to guide site selection, with the objective of choosing sites that have lower ecological values. The MCA is provided in Appendix 4A of the ELMP-WUG, although a revised site selection protocol (annexed to access arrangement conditions) has been provided to DOC on 25 July 2025. While lizards were included in the initial MCA, they are not included in the revised site selection protocol.

52. OGNZL has provided conditions in its resource consent and access arrangement applications that seek to choose drill sites that do not have northern striped gecko present (Threatened – Nationally Endangered).

53. The ELMP-WUG states that clearance of selected drill and vent sites will follow the fauna salvage and translocation processes in figures 5 and 6 of the ELMP-WUG, which requires fauna salvage over two nights. For drill sites, the applicant's proposed conditions in the most recent access arrangement conditions set go further, requiring pre-clearance surveys at least three times at night and three days for lizards. If five or more At Risk or Threatened lizards are found immediately prior to or during vegetation clearance, then operations will cease at that site and an alternative site "may" be selected. At the vent shafts and portable drill rig sites, less intensive pre-clearance surveys will be undertaken.

[5] B.37 (Boffa Miskell 2025a). Section 5.1.3.

54. The ELMP-WUG states that "*given the low density of lizards detected within the Wharekirauponga catchment, lizard salvage will be limited to capture during site clearance, comprising:*

- *Careful searching of the forest floor and all available habitats, removing forest duff sequentially;*
- *Careful searching of felled trees for any lizards that may be present.*
- *Moving felled material (particularly tree canopies where lizards may not be detected during searches) outside of the fenced site so that lizards can disperse if they are not captured."*[6]

55. The ELMP-WUG states that preference will be given to sites where trees can be trimmed or tied back in such a way as to minimise felling. Tree felling involves checking trees for fauna before and after cutting. Large trees are only felled if necessary, while smaller ones are bent or squashed. Branches are placed in small piles outside the site to provide refugia, and canopies are distributed in the surrounding forest to decompose naturally.

56. Sites will be rehabilitated on completion of operations in accordance with the Vegetation Remediation Plan in ELMP-WUG.

57. Any lizards captured are proposed to be released to a prepared release site that is within the Wharekirauponga Animal Pest Management Area (WAPMA). The Plan states that the release site must be more than 200 m from the edge of the WAPMA so that animals are buffered from rodent reinvasion, outside of the 2 mm/s vibration footprint, and within 2 hours walking distance from the clearance sites.

58. The Plan states that the release site will have predator control in place prior to translocation and "*pest abundance must meet monitoring target*s". Lizards will be released into ground or arboreal artificial cover objects and "*should be released into suitable habitat depending on the species*".

59. Monitoring is not proposed "*because it is unlikely that any translocated lizards would be in high enough density to undertake monitoring".*

Willows Surface Facilities Area (Willows SFA)

60. Lizard habitat at Willows Road Farm is low quality due to grazing and fragmentation, though copper and ornate skinks may be present in ungrazed areas. Arboreal habitats are small and fragmented, so the applicant considers that they are very unlikely to host geckos – although gecko surveys and contingency actions are proposed.

61. Approximately 0.25 ha of mixed native / exotic vegetation will be cleared. Potential effects on lizards from unmanaged habitat clearance include injury / death during construction, habitat loss and displacement, and habitat degradation.

62. Lizard mitigation actions are outlined in section 4.3 of the ELMP-WUG.

[6] ELMP-WUG. Section 4.2.10.2.

63. Pre-works surveys are to be led by a project herpetologist over five days, with the effort and techniques at each site dependent on size and habitat complexity. Survey methods will include hand searching (including destructive hand searching of plants scheduled for removal that provide good lizard habitat), pitfall traps and funnel traps.

64. If skinks are detected during surveys, they will be captured for relocation using artificial cover objects (ACOs), pitfall traps, funnel traps and hand-searching. Skink salvage will continue daily for a minimum of five days, until no skinks are caught after three consecutive days of searching. If five or more skinks are detected in weedy scrub/grassland areas, the herpetologist will be present for grass scrape-back to attempt to salvage any additional skinks.

65. A nearby 1.15 ha site near remnant forest is designated for release. The area will be fenced from stock and maintained as a grassland area. The habitat is proposed to be enhanced with planting of low-growing grass species and flax, providing refugia. Predator control is proposed in the release area and surrounding area as a buffer, targeting rodents, mustelids and hedgehogs, although the duration of predator control is not specified.

66. In the case that a gecko is detected, the salvage would be paused and survey and salvage methods updated to incorporate geckos, and a release site selected and prepared. In the case that a high density of lizards is detected (50+), the management of the release site will be reviewed to ensure enough refuges are provided and, if required, an expanded release site will be prepared. The ELMP-WUG states that in both instances *"HDC will be notified of any changes in an updated LMP".*

67. Post-release monitoring will be triggered if more than 20 individuals of an 'At Risk' species are salvaged and population persistence and breeding will be determined for three years following release.

Information and requirements relating to protected wildlife

68. The threat status of species applied for are provided in Table 1. The species primarily affected is copper skink (At Risk – Declining). This species is generally widespread, particularly in the upper North Island, and has a large national population. The only relevant threatened species, northern striped gecko, is unlikely to be encountered and OGNZL is proposing to avoid sites where it is detected, where possible.

69. Habitat requirements at release sites will vary by species. In general, release sites should be protected from development, have predators controlled, and have adequate refugia and lizard-friendly habitat that is suitable for the affected species.

70. Indigenous lizards are considered taonga by some Māori. It is not uncommon for mana whenua to request to be involved in lizard-related work to ensure appropriate tikanga is followed.

Purpose of the Wildlife Act

71. The purpose of the Wildlife Act is to protect wildlife as per paragraph 29 of this report.

72. Where removal of lizard habitat is an unavoidable consequence of the Project, lizard salvage will protect, to some extent, lizards that would otherwise be adversely affected by works (e.g. vegetation clearance) associated with the Project.

73. However, salvage is a mitigation tool that comes with risks. Salvage only protects those animals salvaged from direct harm which, despite best practice methods, is not likely to capture all affected animals, and successful establishment at the release site is not guaranteed (evidence indicates that only about 13-32% of lizard translocations result in stable or growing populations long-term[7]). Additional actions are often required as part of a lizard management plan to offer overall protection to wildlife.

74. DOC's key principles for lizard salvage and transfer in New Zealand are relevant to assessing whether a lizard salvage proposal will adequately protect lizards.[8] The key principles, discussed in this report where applicable, include:

- Lizard species' values and site significance must be assessed at both the impact (development) and receiving sites.
- Actual and potential development-related effects and their significance must be assessed.
- Alternatives to moving lizards must be considered.
- Threatened lizard species require more careful consideration than less-threatened species.
- Lizard salvage, transfer and release must use the best available methodology.
- Receiving sites and their carrying capacities must be suitable in the long term.
- Monitoring is required to evaluate the salvage operation.
- Reporting is required to communicate outcomes of salvage operations and facilitate process improvements.
- Contingency actions are required when lizard salvage and transfer activities fail.

75. OGNZL has assessed the proposed activity and its impacts against the purpose of the Wildlife Act and notes the following: *"As set out throughout this report, OGNZL is proposing to translocate native fauna from sites affected by vegetation / habitat clearance and relocate them to areas outside the WNP footprint. In addition, OGNZL is proposing to significantly improve the habitat values of those areas to be utilised as host locations for those animals that are relocated. Given these measures it is considered that the required translocation of fauna is consistent with the intent of the Wildlife Act*".[9]

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[7] https://www.conservationevidencejournal.com/actions/3719

[8] https://www.doc.govt.nz/globalassets/documents/about-doc/concessions-and-permits/wildlife-research-permits/lizard-salvage-and-transfer-nz.pdf

[9] A.11. Part A – Substantive Application Report: Section 8 – Fast-track Approvals Act 2024 Requirements.

Avoidance and site selection

76. As relocating lizards comes with risks, avoidance is preferred where possible. DOC supports the decision to avoid known moko skink habitat in the Waihi Area, and the proposed conditions (within the resource consent and access arrangement conditions) to avoid choosing drill sites within Coromandel Forest Park that have northern striped geckos (Threatened – Nationally Endangered) present.

77. However, DOC has concerns about the site selection criteria within the WUG area. In the revised condition set[10] OGNZL provided to DOC on 25 July, MCA site selection criteria are no longer provided relating to lizards. DOC recommends that lizards are reinstated in the site selection conditions. There are also no exclusion criteria provided – even sites with identified high value habitat and high likelihood of significant impact at those sites (red category sites) can still be selected, so the tool has limited effectiveness to avoid impacts on wildlife.

Best practice methods and salvage effort

78. DOC considers the methodology for capture and transfer is generally appropriate. DOC has recommended best practice capture and handling conditions to OGNZL, and OGNZL has incorporated them into its condition sets, e.g. seasonal timeframes (to ensure lizards aren't handled during months they are dormant and are less likely to be found and salvaged), and best practice methods for live traps, handling, transport and hygiene.

79. When woody vegetation is felled, the applicant has proposed to search it thoroughly for any presence of herpetofauna. While this is valid, a better method recently developed (especially for geckos) is to carefully heap felled vegetation into piles, ensuring vegetation is moved a minimum distance, and then search the piles carefully for lizards that emerge for at least three weeks. Searches should be undertaken both during daylight hours and with headtorches at night, to detect different lizard species that have different emergent behaviours. DOC's technical advice is that there should be at least two inspections each week for three weeks (and for four weeks at WUG vent shaft sites – see below) in good lizard activity conditions (temperature >12 degrees Celsius, light winds for both day- and night-time searches, and sunny for daylight searches), and there should be at least three consecutive inspections with no lizards found on any pile before that pile can be moved, deconstructed or mulched (mulching is the least preferred option and should be avoided if at all possible). The preference is to move the vegetation a small distance to a site where it can be permanently left in place, to naturally decompose following the above searches.

80. The Gladstone Open Pit (GOP), Northern Rock Stack (NRS), Tailings Storage Facility 3 (TSF3) and Willows (SFA) are likely to contain lizard species of relatively low threat status. Due to its habitat quality, complexity and contiguous positioning with the rest of Coromandel Forest Park, DOC considers the Wharekirauponga Under Ground (WUG) area is more likely to contain more threatened lizards, so greater care should be taken at these sites. DOC's technical advice is that it may be

[10] Refer to Site Selection Protocol Proposed Conditions set, appended to the s 51 Access Arrangement report.

appropriate to undertake up to four weeks of survey (with at least 2 surveys – both nocturnal and diurnal – per week) for emerging geckos on felled vegetation and other herpetofauna at the WUG sites.

81. For the Waihi area, DOC agrees that a minimum of five days trapping should occur. Traps should be no more than five metres apart, and a two-metre separation should be considered, particularly in higher quality habitat areas, or where there are hotspots of higher numbers of lizards being caught. DOC does not agree with section 8.6.3(a) of the ELMP-WUG that would give the herpetologist autonomy to determine whether "the habitat is no longer suitable to support lizards". All sites should be trapped for a minimum of five days and there should be three consecutive days of no lizards captured in an entire block of traps before it can be reasonably assumed lizards are in sufficiently low densities that destructive searches can commence. This is relevant to Phase 2 (destructive searching for herpetofauna) but not Phase 1 (trapping for herpetofauna).

Competencies

82. The personnel OGNZL has proposed as experts to undertake activities in respect of the wildlife under the wildlife approval have been assessed by DOC's technical advisors as being suitably qualified and experienced to undertake lizard capture and handling following best practice methods.

Species list

83. Common skink, *Oligosoma polychroma,* is not present in the Coromandel. This has been raised with OGNZL. The revised condition set provided by OGNZL has been amended to exclude common gecko, *Woodworthia maculata* – DOC assumes this was an error, and that the intention was to remove common skink *Oligosoma polychroma.* DOC recommends that common gecko is included in the condition set, and common skink removed.

84. OGNZL is seeking wildlife approval in relation to several species that were not detected on site during lizard surveys, including Pacific gecko, forest gecko, northern striped gecko, ornate skink, and Raukawa gecko. Although the chance of encountering many of these species is low, the management proposed should protect them if found in small numbers.

Release sites

85. To maximise the likelihood of lizard establishment and persistence, a lizard release site should be ecologically appropriate and have long-term security, be suitable for the salvaged species, provide protection from predators, and be protected from future human disturbance (principle 6 of DOC's key principles for lizard salvage and transfer in New Zealand).

86. The proposed release of lizards salvaged from the Waihi Area into enhanced habitats within and around the protected SNA 166 is appropriate. In some cases, the release site is up 5 km from potential salvage sites – DOC considers this to be acceptable if there is suitable habitat (quality and

extent) to support the released lizard(s) plus any resident population. The site has long-term protection and animal pest management and appears suitable for copper skinks.

87. Lizards salvaged from the Coromandel Forest Park are proposed to be released into an area within the Wharekirauponga Animal Pest Management Area. The draft ELMP-WUG states that lizards will be released into ground or arboreal artificial cover objects and "*should be released into suitable habitat depending on the species*". This appears to be appropriate, especially considering the low level of lizards detected in the WUG area, although DOC considers that greater management effort should occur if any species with a higher threat status than At Risk are found. Monitoring is not proposed based on the low numbers of lizards expected – DOC recommends that triggers to require monitoring be included in the case that higher numbers than expected are found.

88. Lizards salvaged from the Willows SFA will be released into a 1.15 ha site near remnant forest. The site will be fenced from stock and maintained as a grassland area, enhanced with low-growing grass species and flax to provide refugia. Contingency actions are proposed whereby release sites will be reviewed if a gecko is detected or a high density of lizards (50+) is detected. In the case that actions proposed in the Lizard Management Plan change, it is essential that such a change is reviewed and approved by DOC and not only the relevant Council, as stated in the conditions. This is a wider issue which relates to the variation of management plans generally and is addressed in DOC's Covering Report. Predator control is proposed, although it is unclear to DOC how long this would occur for. It is also unclear whether this site has long-term legal protection from human disturbance.

Addressing residual effects

89. Significant residual adverse effects on copper skink are expected following mitigation at GOP. To address this, OGNZL is proposing a minimum 11.2 ha of compensation planting at GOP (detailed in a Residual Effects Offset Plan within the ELMP-Waihi), where it would be contiguous with existing habitats that will be retained. Through this compensation planting and pest control, the applicant expects a net positive outcome for copper skinks.[11] DOC has no concerns with this approach.

Incidental deaths and overall protection of wildlife

90. Although incidental killing of lizards is not explicitly stated in the application, DOC understands that OGNZL is seeking approval for harm to wildlife that could arise from any of the activities associated with the Project. This could include incidental death of lizards that, despite best efforts, are not successfully salvaged.

91. In general, the proposed lizard management actions are aligned with the purpose of wildlife (lizard) protection. Despite some incidental deaths that may occur, there may be a net benefit offered to lizard species, via habitat creation and enhancement. However, DOC requests that lizards be

[11] B.36. Part B – Technical Reports: Bioresearches – Terrestrial Ecological Impact Assessment (Waihi Area) (Bioresearches 2025a). Section 8.1.

reinstated into the MCA, and considers that the above improvements to trapping and destructive searching techniques could minimise the chances of harm to individual lizards.

Conditions to manage effects on protected wildlife

92. See Appendix 1 for the condition set with comments and tracked changes.

93. DOC has general concerns about the proposed use of management plans, i.e. the conditions setting up the management plans do not contain detailed objectives with defined outcomes, and DOC's role in relation to amendments to management plans is unclear. This issue is addressed generally in the Covering Report.

94. DOC recommends that the reference to lizards is reinstated in the MCA conditions. The improvements to destructive searching etc would be more appropriate as changes to the management plan.

95. Although the Wildlife Act does not provide limits on the length of time an authorisation may be for, DOC notes that the proposed term of 30 years is longer than would typically be approved for this type of activity. A shorter (ten-year) term would offer the Department an opportunity to review outcomes and update conditions to allow for newly developed best practice to be implemented, when appropriate.

Matters considered in relation to the criteria for a wildlife approval – frog salvage

Application

96. Native frogs are known to be present in the Coromandel Forest Park. To mitigate effects of vegetation clearance on frogs, wildlife approval is sought to salvage (capture and relocate) and incidentally kill frogs. The proposed actions are in the Terrestrial Ecological Management Plan, section 4 of the ELMP-WUG.

97. Two species of native frogs occur in Coromandel Forest Park above the proposed Wharekirauponga Underground Mine: Archey's frog (*Leiopelma archeyi*) and Hochstetter's frog (*L. hochstetteri*). Archey's frog is a terrestrial species living in forest, while Hochstetter's frog is semi-aquatic living close to forest streams. The conservation status of both species is At Risk – Declining.

Common name	Species name	New Zealand Threat Classification System
Archey's frog	*Leiopelma archeyi*	At Risk – Declining
Hochstetter's frog	*Leiopelma hochstetteri*	At Risk – Declining

98. Capture and relocation of frogs is proposed to prevent injury and / or mortality to them associated with the aboveground activities in Coromandel Forest Park of clearing of drill sites, vent shafts and portable rig sites.

99. The application describes additional impacts on frogs such as potential air quality effects from ventilation evasé, potential habitat modification if groundwater drawdown leads to surface water effects, and vibration from underground blasting activities. The application does not propose capturing and relocating frogs away from these impacts, although OGNZL has confirmed that it is seeking approval for killing/harm to wildlife that could arise from *any* of its activities.

100. Vegetation clearance will be undertaken across 20 drill sites, four vent shafts, and 50 portable rig sites, totalling 0.66 ha as per paragraph .

101. The applicant anticipates that approximately 40 frogs may be salvaged in total across all sites. Archey's frogs are more likely to be impacted than Hochstetter's frogs. The ELMP-WUG states that "*drill and vent sites are unlikely to be located in habitats associated with Hochstetter's frogs because of the practicality of managing water inflows and sediment*" (H.01 section 4.2.9.1). Approval is, however, sought in relation to both species.

102. The applicant proposes an approach to site selection that reduces the chance of establishing drill sites in locations where the density of frogs is high, following a multi-criteria assessment that includes frog habitat criteria.

103. The following details on site selection are taken from the revised access arrangement conditions.

- For the twenty drill sites (150 m^2), frog surveys will be undertaken over 3 nights before vegetation clearance. A 3 m buffer from identified frogs will be imposed.
- For the four vent shaft / pumping test sites (900 m^2), an ecological survey will be undertaken to provide a description of the wildlife and vegetation present.
- For the fifty portable drill rig and water pumping sites (32 m^2), an ecological survey will be undertaken to provide a description of the wildlife and vegetation present – the survey effort for frogs will be one night. A 3 m buffer from identified frogs will be imposed.

104. Any frogs undetected during surveys that are found during site clearance are proposed to be salvaged.

Salvage methods

105. According to the ELMP-WUG: *"frog salvage prior to and during site clearance will be carried out in a staged way and will comprise:*

- *Systematic nocturnal searches within the works footprint over two nights in suitable conditions (warm and moist – e.g. after rain when the vegetation and ground is still moist and temperatures are a minimum 12°C);*
- *Careful searching of the forest floor and all available habitats, removing forest duff sequentially;*

- *Careful searching of felled trees for any frogs that may be present".*[12]

106. However, based on condition sets provided by OGNZL (access arrangement and concession conditions), DOC understands that systematic searches over multiple nights are proposed only for the twenty drill sites. Salvage of frogs at the vent shaft / pumping test sites, and portable drill rig sites is proposed to occur during site clearance.

107. The ELMP-WUG proposes that vegetation clearance must be undertaken from March – May, when Archey's frogs are not brooding but are still active. However, this restriction was removed from the most recent condition set by OGNZL.

108. OGNZL has incorporated some frog handling conditions recommended by DOC, such as that the handlers are suitably experienced and hygiene practices are followed.

Transportation

109. The revised wildlife conditions state that frogs will be translocated to a prepared release site within 12 hours of capture. Frogs will be transported individually with organic material from their point of capture. Ponga logs are also proposed to be taken to the release site to provide additional habitat.

Release site

110. The ELMP proposes that frogs captured are released to one of two prepared release sites within the Wharekirauponga Animal Pest Management Area (WAPMA). The Plan states that the release site must be more than 200 m from the edge of the WAPMA so that animals are buffered from rodent reinvasion, within two hours walking distance from the clearance sites, and outside of the 2 mm/s vibration footprint. The release site will have predator control in place prior to translocation and "pest abundance must meet monitoring targets".

111. The ELMP states that the release areas should have the following characteristics:

- *A minimum of 5 ha in size with no stream or rivers through the site.*
- *Has ≥ 50% cover of species favoured by frogs in Wharekirauponga, favouring kiekie, fern, gahnia and leaf litter (Figure 8).*
- *The surveyed resident frog population will have a surveyed density of between 5 and 10 frogs / 100 m^2 (i.e. 20-40 frogs in 400m^2 plot).*
- *The release site will have predator control in place prior to translocation and pest abundance must meet monitoring targets. Frogs must be released within one of six soft release pens, which will be 0.04ha in size and enhanced by including habitat features recovered from the capture site".*[13] (H.01 4.2.4.6).

[12] ELMP-WUG. Section 4.2.9.2.
[13] ELMP-WUG. Section 4.2.4.6.

112. DOC has requested from OGNZL a detailed frog salvage release plan that includes further detail such as the use of soft release pens, the maximum number of frogs to be relocated to each soft release pen, and where frogs will be released in relation to resident frogs. This has not been provided at the time of writing, although its requirement has been added to the draft wildlife conditions.

Habitat enhancement

113. The site will be subject to pest management proposed to benefit resident and translocated frogs.

Monitoring

114. Release site monitoring will include both frog monitoring and pest monitoring as detailed in the Frog Monitoring Plan (Lloyd, 2025).

Information and requirements relating to protected wildlife

115. As described in the application supporting documents, *Leiopelma* species are evolutionarily distinct, long-lived (i.e. longer than 30 years), cryptic, nocturnal, and with very small home ranges and high site fidelity. Both species have experienced dramatic declines over the past millennium, leading to fragmented and relict distributions.

116. Both species found at this site are classified as At Risk – Declining under the NZ Threat Classification System. In the most recent version of the International Union for Conservation of Nature (IUCN) Red List status of species, Archey's frog is listed as "critically endangered (stable)".

117. Archey's frogs inhabit cool, moist native forests, where dense leaf litter, moss and understory vegetation provide shelter and humidity. They are terrestrial and nocturnal, often hiding under rocks and logs during the day. Their survival depends on stable microclimates with high humidity and minimal disturbance. Threats include introduced predators like rats and stoats, as well as habitat degradation from browsing animals. Although the species would have had a much greater distribution prior to colonisation of New Zealand by humans, populations are now only present in the Coromandel Forest and Whareorino Forest, as well as one translocated population in Pureora Forest.

118. Hochstetter's frogs are semi-aquatic, typically found in small forested catchments or near stream banks, where they shelter under stones or in wet crevices during the day. They prefer cool, shaded stream environments but can inhabit a range of habitats including mature native forests, regenerating scrubland and even exotic pine plantations, provided there is access to damp microhabitats like cobble beds, seepages and decaying logs. Hochstetter's frogs show a degree of adaptability to modified environments, though habitat degradation and pine harvesting still pose significant threats. Their reliance on moist, stable microhabitats makes them vulnerable to changes in forest structure and hydrology. Hochstetter's frogs occur in discrete, genetically distinct populations in the North Island, although would have previously been more widespread.

119. Both species are understood to be highly significant to Hauraki iwi.

Purpose of the Wildlife Act

120. As noted above, the purpose of the Wildlife Act is to protect wildlife.

121. Where removal of frog habitat is an unavoidable consequence of the Project, frog salvage may be appropriate as a mitigation tool. However, native frog salvage is not well-tested and has risks. Any translocation of frogs must be carefully managed to ensure overall wildlife protection.

Low success of frog salvage as a mitigation tool

122. Salvage translocation is not standard practice for *Leiopelma* frogs like it is for lizards. Current evidence is largely based on conservation translocations, which are carefully planned and designed to achieve conservation outcomes (outcomes are mixed – some have been successful, some have not). There is no evidence salvage translocations will benefit or even have a neutral outcome for frogs. Salvage translocations are therefore not recommended unless there is evidence of individual survival – we have no such evidence.

123. Due to the very limited success of frog salvages to date (of which there are very few), DOC's preference from a species conservation outcome is avoidance. The opportunity to avoid impacts on frogs could be improved. At drill sites and man portable rig sites, OGNZL is proposing that sites are selected that are 3 m from identified frogs. This is a reduction (more lenient) from what is in OGNZL's current access arrangement. DOC's view is that a 3 m buffer is insufficient as frogs can move 4-12 metres away from their main refuge site during feeding. DOC recommends the 6 m buffer in the current access arrangement conditions is retained. If a 6 m buffer is not adopted, then OGNZL should identify the night retreat of the frog and ensure that the buffer includes the night retreat, and undertake annual surveys to ensure they continue to maintain a territory or home range at the site. The MCA also has been revised in the most recent condition set to a habitat-based criteria rather than based on frog presence – this is considered a step back in terms of frog outcomes because frogs will be impacted even in the "lower effects" category.

124. OGNZL acknowledges the low success rate of previous translocations but argues that the proposed translocation will be successful due to a number of process improvements. *"Leiopelma frog translocations undertaken to date have had low success, particularly salvage translocations which are often rushed and insufficiently funded in the long term. This document sets out a number of process improvements so that there is sufficient time and resources made available to plan, prepare, carry out and monitor translocations, of frogs (and lizards if required)".*[14] The process improvements referenced relate to the predator control at the release site, the use of release pens and post-release monitoring.

[14] ELMP-WUG. Section 4.2.4.1.

125. The proposed pest management will likely provide some benefit for the translocated and resident frog population. However, the degree of benefit is uncertain due to the experimental nature of the plan, unproven tools, insufficient control area and a lack of reliable monitoring and site-specific studies. DOC's views on the Pest Management Plan will be provided in more detail in DOC's s53 comments.

126. The information provided by the applicant on the use of release pens is limited. The use of release pens does not give DOC any improved confidence in success, as the information necessary to assess their effectiveness has not been provided. DOC recommends that the Panel requests the Native Frog Salvage Release Plan and that DOC has an opportunity to review and assess it against wildlife protection before a decision is made on the substantive application.

127. Compensation may be warranted to account for the risks posed to frogs from translocating them (in addition to the pest control which is primarily provided to address the effect of vibrations on frogs[15]).

Release site carrying capacity and disease risks

128. Moving of salvaged individuals into a location with an existing population comes with risks, including detrimental impacts on the resident population e.g. disease, lack of space to establish territories and higher competition for resources.

129. OGNZL has indicated that it anticipates some 40 frogs will need to be translocated. However, it could be more, for example if vent shafts are located in areas of moderate to high frog density. The plan should include contingency planning if more frogs than anticipated are salvaged.

130. DOC notes that salvage translocations to the sites within the pest control area would be undertaken in the wider context of pest management occurring across the entire area. Translocating frogs to these sites will have no benefit for the population over and above what would already be occurring as a result of the overall project pest management, as it is expected that carrying capacity could be reached at the release site, and frogs could die because of the salvage translocation. An alternative for Archey's frogs that DOC has raised but has not been explored in detail, could be a conservation translocation where frogs are translocated to a new site to establish a population of Archey's frogs at a predator-free/fenced site, in line with the Frog Recovery Group's goals. This would require significant planning and engagement, so DOC acknowledges is unlikely to be feasible to explore at this stage in this process.

Release site suitability for both species

131. The release site characteristics described in the ELMP-WUG make the site suitable for Archey's frogs. Suitable habitat does not appear to be provided for Hochstetter's frogs, i.e. "*no stream or rivers*

[15] A.10, p547.

through the site". Although Hochstetter's frogs do use terrestrial habitat, stream-side habitat is recommended since we do not have a good understanding of terrestrial habitat preferences/needs.

132. Monitoring is also apparently only proposed for translocated Archey's frogs. DOC has queried this with OGNZL but has not received a response at the time of writing.

133. Further information is required but DOC's assessment of the current application is that the translocation of Hochstetter's frogs is not consistent with the purpose of the Wildlife Act as it is not clearly demonstrated that Hochstetter's frogs would be released into suitable habitat and no monitoring of translocation success is proposed for Hochstetter's frogs.

Will all frogs be released to the proposed release site?

134. Although the ELMP-WUG states that "*all lizards, frogs and At Risk invertebrates captured during site clearance will be translocated to a prepared release area"* (4.2.4.6), this is not consistent across all condition sets. That is, the access arrangement conditions state that frogs salvaged from the vent shaft / pump test sites and portable drill rig / water pump sites will be released into "*suitable habitat at least 100m*" from the site. All salvaged frogs should be released to the prepared release site in accordance with the Native Frog Salvage Release Plan.

Competency of handlers

135. The draft conditions list a number of handlers. In relation to frog competencies, DOC makes the following assessment based on CVs provided by OGNZL. It is recommended that, other than those listed as competent below, any person undertaking frog handling has direct supervision and training by Katherine Muchna.

<u>Competent:</u>

- Katherine Muchna
- Liam Ireland
- Jenna Powell
- Mathew Turner
- Dylan van Winkle (CV provided but not named by OGNZL in the draft conditions)

<u>Supervision and training needed:</u>

- Amanda Healy (CV provided but not named by OGNZL in the draft conditions)
- Bella Burgess
- Michaela Scarrott

<u>Relevant experience but limited, some supervision recommended:</u>

- Brittany Pearce

<u>Requires assessment – no CV provided:</u>

- Cassie McArthur

Monitoring salvage translocation success

136. A statistically robust monitoring plan to assess salvage translocation success is vital to assess translocation success and enable adaptive management if the monitoring shows it is needed.

137. Post-release monitoring is proposed but not detailed well in the application. The information on post-release monitoring is limited to that on page 8 of the Frog Monitoring Plan and relates only to Archey's frogs despite the application also being to salvage Hochstetter's frogs. More information is needed in this regard.

138. DOC notes that capture-recapture monitoring of salvaged frogs proposed by OGNZL would be difficult. *Leiopelma* frogs have limited capacity to increase their numbers due to their life-history traits of limited individual ranges, comparatively low fecundity, few eggs and progeny, slow development, slow post-metamorphosis growth rates, and high longevity (Archey's frogs are known to live to 39 years and Hochstetter's frogs to 18 years). These characteristics mean it takes many years to follow the success of any mitigation-related translocation and monitoring requires specialist expertise and long-term commitment to document outcomes.

139. The Frog Monitoring Plan states that "*ongoing monitoring of the success of the translocation will be an important component of the translocation process to measure the success of Archey's frog translocation as a mitigation method and inform adaptive management to improve translocation outcomes*". What constitutes "success" or failure is not defined. It is unclear what adaptive management would look like, or what would trigger it.

140. DOC considers that the Frog Monitoring Plan (and/or the Native Frog Salvage Release Plan) needs to (a) define the objectives of the salvage translocation including a definition of success that is consistent with international translocation best practice as defined by the IUCN; and (b) define how progress will be measured (including relevant metrics, e.g. survival, reproduction, movement) toward achieving objectives, and how success or failure will be demonstrated (in a statistically robust manner). The design of salvage translocation monitoring must be undertaken by a statistician agreed to by DOC who is experienced in the design and analysis of frog monitoring programmes.

141. Further comments on the Frog Monitoring Plan are provided in this report at paragraph 165 onwards.

Lack of contingency plan

142. The application does not identify contingency actions, e.g. a conservation translocation, in the case that monitoring shows that the salvage translocation is not successful. This is essential, especially considering the use of experimental release pens and lack of evidence generally in support for salvage translocations as an effective mitigation tool.

Best practice methods

143. Based on DOC's advice, OGNZL has incorporated some conditions regarding the safe capture and handling of frogs, i.e. that handlers are suitably qualified, that DOC's current herpetofauna conditions are followed, the NZ frog Hygiene for Handling and other Protocols are followed, and that practicable steps to minimise trampling and disturbance to frogs be taken.

144. However, DOC's advice to include more specific conditions regarding handling and temporary holding for translocations has not been taken on, e.g. best practice methods of transporting frogs in rigid bodied plastic containers with adequate aeration, cool temperatures and a wet paper towel. An image in the ELMP-WUG shows a frog held in a snap-lock bag, which is not best practice for frog translocation. Of note, holding frogs individually in snap-lock bags is standard practice for monitoring where frogs are released back to the same location they were captured from. The omitted conditions have been added as tracked changes to the conditions document to ensure harm to individual frogs is minimised and good practice animal welfare is upheld.

Effects of habitat loss and vegetation clearance

145. As the sites would be remediated, at least some flora values providing frog habitat would return over time and the delay in forest regeneration of the impacted 6,600 m2 could be considered not significant in the context of the much larger surrounding forest area. However, the ecological values of the vegetation and the herpetofauna they support in the impacted area is considered very high, and the level of effect from vegetation and habitat loss without management would be very high for fauna habitats and communities (Table 10, Boffa Miskell (B.37)). DOC is not satisfied that the proposed management adequately addresses the effects. The proposed mitigation measures in relation to the selection of sites and the actions to mitigate the impacts on *Leiopelma* frogs require amendment to ensure the very high ecological values are maintained.

Incidental deaths and overall protection of wildlife

146. Although incidental killing of frogs is not explicitly stated in the application, it is understood that OGNZL is seeking approval for harm to wildlife that could arise from any of the activities associated with the Project. This could include incidental death of frogs that, despite best efforts, are not successfully salvaged.

147. Based on the issues described, the current proposal does not give DOC confidence that frog salvage would offer protection of wildlife (frogs) overall.

Conditions to manage effects on protected wildlife

148. See Appendix 1 for the condition set with comments and tracked changes.

149. DOC has general concerns about the proposed use of management plans. In particular, the conditions setting up the ELMPs do not contain detailed objectives with defined outcomes, and

DOC's role in amendments to management plans is unclear. It is especially important that DOC maintains a regulatory role in assessing and approving any changes to the Native Frog Salvage Release Plan and Frog Monitoring Plan. Further discussion on management plans is provided in DOC's Covering Report for the Panel.

150. DOC recommends that any conditions setting out requirements for the Native Frog Salvage Release Plan include the following:

- contingency planning if more than 40 frogs require salvage
- contingency planning if monitoring shows the translocation is unsuccessful
- a better description of where within pens salvaged frogs are proposed to be released in relation to resident frogs
- an assessment of carrying capacity of the release pens, and how disease risks will be managed
- a description of how monitoring outcomes will be evaluated to determine if the salvage translocation is a success or failure.

151. As DOC has not been provided with the Native Frog Salvage Release Plan at the time of writing, more specific conditions cannot be recommended at this stage, however we expect additional conditions will be required.

152. DOC recommends that further conditions are added to the condition set relating to safe handling and transport, and adherence to current protocols relating to frog hygiene, frog searching and swabbing for chytrid fungus.

153. The wildlife conditions proposed by OGNZL provide that the different conditions within access arrangements and concessions apply to their respective areas. DOC recommends that the access arrangement conditions are amended so that all salvaged frogs are translocated to the release pens, rather than being released 100 m from the site of capture (conditions 2.55, 2.65, and 2.83 of OGNZL's most recent Wharekirauponga Access Arrangement condition set).

154. As per paragraph 95, a shorter term may be more appropriate.

Matters considered in relation to the criteria for a wildlife approval – frog monitoring

Application

155. Approval is sought to catch and release frogs for monitoring:

- *"To undertake monitoring of leiopelmatid frogs within the vibration impact area, Wharekirauponga Pest Management Area and a control area, all of which are located within the Coromandel Forest Park;*

- *To undertake monitoring of leiopelmatid frogs in waterways within and outside the area potentially affected by the dewatering of the WUG, all of which are located within the Coromandel Forest Park".*

156. Post-release monitoring of salvage translocated frogs is also proposed.

Aims

157. The draft conditions propose that monitoring will follow the study design and sampling methods detailed in the Frog Monitoring Plan (Lloyd 2025, attached to the application as B.58). The plan is designed to monitor potential effects of the Wharekirauponga Underground Mine project and the proposed pest animal management mitigation package on local populations of Archey's and Hochstetter's frogs. The stated objective of the plan is to monitor potential effects of the proposed Wharekirauponga Underground Mine project and the proposed pest animal management mitigation package on local frog populations, stating the potential effects on frog populations to be monitored include:
    - *"surface vibrations from underground blasting undertaken for the mine project on Archey's frogs,*
    - *reductions in stream flow and wetted width as a result of mine dewatering on Hochstetter's frogs,*
    - *pest control on both species of frogs within and outside areas likely to be affected by vibration or dewatering caused by the proposed mine project, and*
    - *translocating Archey's frog from areas of habitat cleared for mine infrastructure"* (p 4).

158. The monitoring of salvage translocated Archey's frogs is proposed to "*measure the success of Archey's frog translocation as a mitigation method and inform adaptive management to improve translocation outcomes*" (p 3).

Methods proposed by OGNZL

159. The monitoring of vibration and pest control effects on Archey's frogs will follow Before-After-Control Impact (BACI) designs. To separate effects from mining activities and pest control, monitoring will be undertaken in three areas: vibration and pest control, pest control only, and a non-treatment control area (Figure 2). Characteristics of the three areas will be as similar as possible. Monitoring will begin before the effects of mining and pest control begin and continue throughout the mine's life.

160. Monitoring of Archey's frogs will involve hand-searching of frogs within a 30 m x 30 m permanent monitoring plot in each of the three monitoring areas, over 5-nights annually. Spatially explicit analyses will be used to obtain demographic estimates where possible.

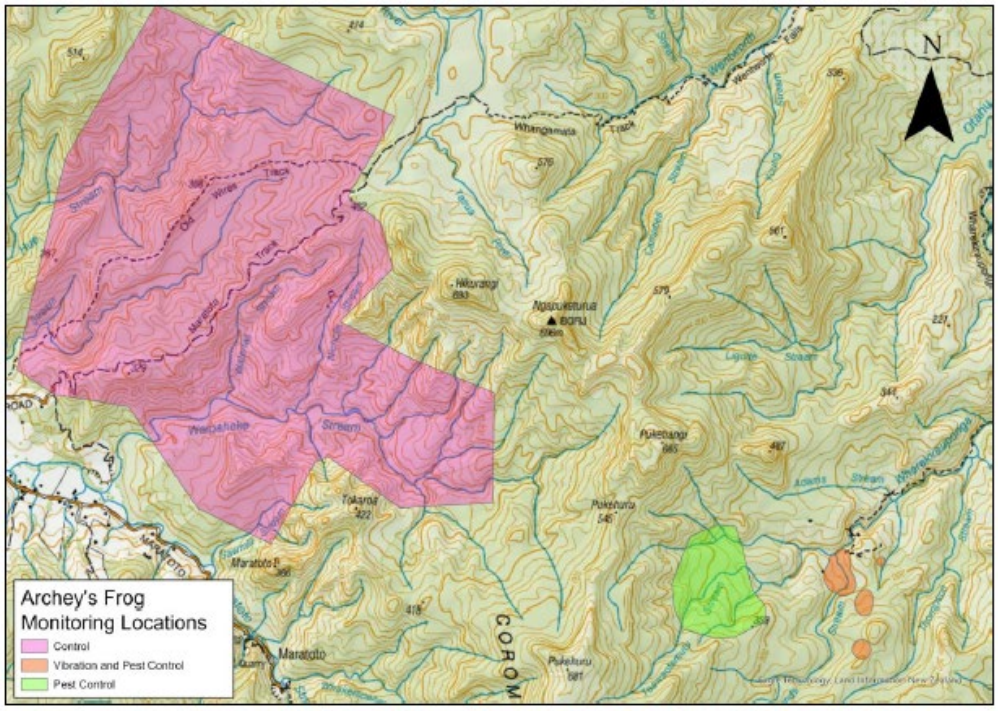


Figure 2. Proposed Archey's frog monitoring location envelopes. Figure 2-28 of A.05.

161. Monitoring the effects of dewatering on Hochstetter's frog populations will follow replicate searches for frogs in their daytime refuges along 20 m long stream transects within two streams, one in the area potentially affected by dewatering and one with similar characteristics outside the dewatering area.

162. General Linear Mixed Effect Models will be used to compare frog counts on transects in different areas and different surveys. N-mixture modelling will be used to estimate frog abundance on transects. 45 transects in each of the three treatment and non-treatment areas are proposed and six replicate searches of each transect during annual surveys.

163. Monitoring of salvage translocated Archey's frogs will follow capture-recapture surveys, undertaken annually in each of the release site enclosures. When fences are removed, larger permanently marked plots will be established around the original release sites.

164. Frogs will be weighed and have snout-vent-length measured. They will be identified by photographs of unique distinctive patterns on their skin markings and by buccal swabbing for DNA profiling. "*Although DNA profiling of Archey's frogs from buccal swabs is an untested method, if successful it will provide crucial information on the breeding success of translocated frogs, which is not provided by the photographic identification method*" (p 8, Lloyd, 2025).

Information and requirements relating to protected wildlife

165. Refer to section paragraphs 115 to 119 of this report.

Purpose of the Wildlife Act

The purpose of the Wildlife Act is to protect wildlife

166. The need for quality monitoring is critical to understand the impacts of the Project on frogs, and to assess salvage translocation success. Key considerations when considering the proposal against the purpose of the Wildlife Act is whether the knowledge gained from the monitoring outweighs the potential risks to frogs from repeated handling, and whether handling follows best practice methods to minimise harm.

Study design

167. While the plan aligns largely with current practices, such as repeat transect surveys for Hochstetter's frog and mark-recapture for Archey's frog, DOC has identified several critical gaps. These include a lack of clarity around statistical assumptions, missing population parameters, and the absence of power analyses or simulations to validate the proposed design. There is a critical need for pilot studies, additional design detail (e.g. for salvage translocation monitoring) and peer review of all frog monitoring programmes by a statistician who is experienced in the design and analysis of frog monitoring programmes to ensure the monitoring design can meet the stated objectives. In some cases, monitoring objectives still require further clarification, e.g. what constitutes a successful or failed salvage translocation.

168. For Archey's frog, DOC is concerned about the proposed design, particularly the limited replication and the decision not to model temporary emigration, which could lead to biased population estimates. The shift from consecutive night monitoring to a spread-out schedule with gaps also requires statistical review. DOC recommends maintaining the established practice of four to five consecutive nights of monitoring and suggests increasing the frequency of monitoring in the initial years to strengthen data reliability. DOC notes that capture-recapture monitoring of frogs can be difficult, as per paragraph 138.

169. Regarding Hochstetter's frog, DOC recommends 50 m transects rather than 20 m transects, following recent comparisons of Hochstetter's abundance estimate. The use of two observers starting 10 meters apart would introduce observer bias. A time gap (30 minutes to 1 hour) between surveys is recommended to allow frogs that have moved away from disturbance to settle into a site where they may be more obvious. Nocturnal surveys of Hochstetter's frogs are discouraged due to trampling risks.

170. DOC notes that the current plan does not include post-release monitoring of salvaged Hochstetter's frogs, only Archey's frogs. Monitoring of salvage translocated frogs is essential to understand whether establishment has been successful, and to adapt and learn from outcomes.

Handling and welfare

171. In terms of frog handling and welfare, the plan's proposal to use both photo ID and buccal swabbing for individual identification is considered excessive and potentially harmful. DOC recommends using only proven methods for individual frog identification and ensuring all procedures are carried out by trained and approved handlers. Hygiene protocols must be updated to the latest version and disease screening should be considered as part of the monitoring process.

172. DOC advises including comprehensive tables in the monitoring plan to summarise key design elements for each species. These should detail sampling units, selection criteria, monitoring frequency, data collection parameters and how success will be evaluated.

Overall protection of wildlife

173. DOC supports the aims of the proposed monitoring and agrees it is an important component of the Project. However, the plan in its current state requires improvements to ensure the methods are rigorous and the knowledge gained is statistically robust and provides useful knowledge to evaluate outcomes and aid in informing future protection of frogs.

Conditions to manage effects on protected wildlife

174. See Appendix 1 for the condition set with DOC comments and tracked changes.

175. Conditions are recommended in relation to best practice protocols and reporting requirements.

176. DOC has general concerns about the management plans, i.e. the conditions setting up the ELMPs do not contain detailed objectives with defined outcomes, and DOC's role in relation to amendments to management plans is unclear. As an example, reference is made in the HDC conditions that the Monitoring Plan must also be certified by DOC but this is not stated in the wildlife conditions and the requirements for certification are not set out. It is especially important that DOC maintains a regulatory role in assessing and approving any changes to the Native Frog Salvage Release Plan and Frog Monitoring Plan. Further discussion on monitoring plans is provided in DOC's Covering Report for the Panel.

Matters considered in relation to the criteria for a wildlife approval – incidental harm and killing

Application

177. As noted above, the substantive application documents (Part A of the application) describe the wildlife approvals being sought as relating to the handling and salvage of lizards and frogs to protect that wildlife from the potential harm of vegetation clearance, and frog monitoring.

178. However, the proposed wildlife conditions provided with the application included mention of other activities – *"to take or destroy the eggs of wildlife when unavoidable (any taxa)"* and *"to kill wildlife when unavoidable (any taxa)"*. DOC has queried the scope of this with OGNZL, and OGNZL has subsequently confirmed that wildlife approval is sought to "*to authorise harm to wildlife that could arise from any of its other activities"* and that this is not limited to incidental harm from unsuccessful salvage, or limited to frogs and lizards in general.

179. DOC has attempted to clarify what activities this might cover to better understand whether OGNZL is seeking approval for potential harm caused by vibrations, dewatering, unsuccessful salvage, by-kill from pest control operations etc. OGNZL has not yet provided this detail.

DOC commentary

180. DOC considers that OGNZL needs to clarify what activities are sought to be included under the approval and the associated effects.

181. DOC's consideration of whether the substantive application was complete was made on the basis that the activities sought to be covered by the approval were lizard salvage, frog salvage and frog monitoring. Since that time, OGNZL has clarified that the scope of its application is broader than this.

182. DOC is not opposed to the approval of foreseeable harm incidental to activities associated with the Project, provided that effects on wildlife are carefully regulated and wildlife protection is provided overall. DOC's concern is that the extent of activities affecting wildlife is unspecified and not addressed by proposed conditions. For example, Schedule 1, clause 1A(c) and (d) do not specify when the taking or killing may occur. The updated proposed condition at Schedule 1, clause 1A(e): "*Any accidental / unintentional harm to wildlife that could arise from any of the activities undertaken in relation to the Waihi North Project*" is so broad that it is not possible to understand what activities may harm wildlife, how any such activities could harm wildlife, how wildlife would be affected, and where, what methods would be used to minimise any effects, etc.

183. While OGNZL's draft conditions only state *accidental* harm, i.e., harm that is unforeseeable and invertedly occurs, DOC understands from its workshopping with OGNZL that OGNZL seeks authorisation to *incidentally* harm or kill wildlife (being harm or killing of wildlife that is not directly

intended but is unavoidable and foreseeable as a consequence of carrying out authorised activities). DOC understands that OGNZL seeks approval to incidentally harm wildlife, such as where it can be foreseen that some wildlife will inevitably be killed when habitat is removed, for example, and that it would not just be authorised to harm wildlife that occurs purely by accident (i.e. harm *not* foreseeable).

184. The extent of incidental harm and killing in relation to the application for wildlife approval is unclear. DOC understands that in addition to the direct physical impacts on frogs caused by vegetation clearance, frogs will also be impacted by noise and vibration caused by the operation of the drill sites, pumps and the extended use of helicopters during construction of the various sites and transport of equipment. This may impact upon behaviour. Noise associated with exploration drilling is much louder than ambient levels in close proximity to the site. Lighting effects on frogs include temporal and spatial disorientation; and behaviour changes including reduced emergence/foraging activity, freezing and avoidance. These effects could include reduced body mass and increased/altered hormone levels. Increased predation by nocturnal predators such as rats and ruru is likely in highly lit areas. It is unclear whether OGNZL is seeking wildlife approval in relation to these effects.

Information and requirements relating to protected wildlife

185. A tentative list of species is provided in OGNZL's revised conditions. Of the species listed (excluding frogs and lizards), the following have a threat status higher than Not Threatened:

- Kākāriki/ yellow-crowned parakeet *(Cyanoramphus auriceps):* At Risk – Declining
- Kākā *(Nestor meridionalis):* At Risk – Recovering
- Stag beetle *(Geodorcus auriculatus):* At Risk – Relict.

Purpose of the Wildlife Act

186. The purpose of the Wildlife Act is, relevantly, wildlife protection. Harm to wildlife is ostensibly inconsistent with that purpose.

187. In relation to frogs and lizards, if the improvements recommended by DOC are adopted, including protective measures designed to avoid and mitigate impacts to those animals, and the benefits that may be provided by the proposed pest control operations, the project will be more consistent with the protective purpose of the Wildlife Act, despite the inevitable level of harm.

188. For bats and birds, the management plans in the ELMP-WUG lay out methods to avoid direct impacts. DOC raises no concerns with the plans for bats and birds.

189. A species of protected invertebrate, stag beetle, is listed in the preliminary list of wildlife that may be harmed/killed in OGNZL's condition set. The ELMP-WUG states that "*notable invertebrate fauna, including, but not limited to wētā, paua slugs and peripatus will be salvaged prior to or during any vegetation clearance if detected*". It is unclear whether stag beetles are included within the ELMP's definition of "notable invertebrates". Given the stag beetle is absolutely protected under the Wildlife

Act, if there is no intention to salvage or otherwise avoid effects on them, it may be difficult to achieve consistency with the purpose of the Wildlife Act (noting that harming/killing/salvage would require authorisation).

190. Overall, the information provided by OGNZL is not sufficient to enable DOC to undertake a robust analysis of the activities and whether they are consistent with the purpose of the Wildlife Act. Further information from OGNZL is required.

Conditions to manage effects on protected wildlife

191. As the activity is not fully described or understood, DOC is only able to offer high-level comments on conditions. While OGNZL has provided detailed technical reports on the potential effects of its activities on wildlife, its application is not clear about what activities the approval is intended to cover. DOC is therefore not able to comment at this stage on the extent to which the effects of the project on protected wildlife that is to be covered by the approval would be consistent with the purpose of the Wildlife Act.

Additional information

International Conservation Agreements

192. The table below outlines the international agreements that relate to the protected wildlife that is to be covered by the approval.

Table 2: International Conservation Agreements

Relevant Agreement	Signatory date
United Nations Convention on Biological Diversity	1992
International Union for Conservation of Nature (IUCN) – Membership and Contributions for Nature Platform	New Zealand became a member in 1948

The United National Convention on Biological Diversity (CBD)

193. The United Nations Convention on Biological Diversity (CBD) is an international agreement that promotes the development of global targets, national strategies and action plans by countries for the protection, restoration and sustainable use of biodiversity.

194. As a party to the CBD, New Zealand is required to have a national biodiversity strategy and action plan. Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy 2020 sets out New Zealand's national contribution to reversing the loss of biodiversity worldwide.

195. Key objective of the strategy that are relevant to this application include:

- *biodiversity protection is at the heart of economic activity*
- *natural resources are managed sustainably*
- *management ensures that biological threats and pressures are reduced through management*
- *ecosystems and species are protected, restored, resilient, and connected from mountain tops to ocean depths.*

196. The application from OGNZL seeks to access natural resources in a way that biodiversity and ecosystem impacts are minimised or mitigated. Potential residual effects are proposed to be offset, including by a pest management project and biodiversity plan. However, as outlined in the previous sections, a number of outstanding issues remain to ensure protection of biodiversity.

International Union for Conservation of Nature (IUCN)

197. The IUCN is a globally recognised conservation body and New Zealand's membership reflects its commitment to biodiversity and ecosystem protection. While the IUCN is not a treaty-level agreement, New Zealand's contributions to the IUCN's Contributions for Nature platform and its alignment with global biodiversity targets (e.g. the Kunming-Montreal Global Biodiversity Framework) reflect a strong public commitment to species recovery and habitat protection.

198. The IUCN Red List status of species named in the application is provided in Table 3.

199. Translocation and incidental harm to Critically Endangered species like Archey's frogs could attract international scrutiny if outcomes are uncertain or ecological risks are not adequately mitigated.

Table 3. IUCN Red List status of species named in application.

Common name	Scientific name	IUCN Red List status
Archey's frog	*Leiopelma archeyi*	Critically Endangered (stable)
Hochstetter's frog	*Leiopelma hochstetteri*	Least Concern (decreasing)
Northern striped gecko	*Toropuku inexpectatus*	N/A
Pacific gecko	*Dactylocnemis pacificus*	Least Concern (stable)
Elegant gecko	*Naultinus elegans*	Vulnerable (decreasing)
Raukawa gecko / Common gecko	*Woodworthia maculata*	Least Concern (stable)
Forest gecko	*Mokopirirakau granulatus*	Vulnerable (decreasing)
Striped skink	*Oligosoma striatum*	Vulnerable (decreasing)

Ornate skink	*Oligosoma ornatum*	Least Concern (decreasing)
Common skink / northern grass skink	*Oligosoma polychroma*	Least Concern (stable)
Copper skink	*Oligosoma aeneum*	Least Concern (stable)
Moko skink	*Oligosoma moco*	Least Concern (stable)

Consistency with statutory planning documents and policy

200. The following statutory planning documents and associated policies are recommended to be considered alongside the wildlife approval sought by this Project.

Conservation General Policy 2005

201. The Conservation General Policy 2005 (CGP) provides guidance for the administration and management of lands and waters and natural and historic resources managed under conservation legislation including the Wildlife Act.

202. Policy 4.6(a) states that "Activities on public conservation lands and waters should be planned and managed in ways which avoid or otherwise minimise adverse effects on the quality of ecosystem services".

203. The CGP does not contain policies specific to the proposed wildlife activities. The application is not inconsistent with the CGP.

Waikato Conservation Management Strategy 2014

204. The Waikato Conservation Management Strategy 2014 (CMS 2014) describes the conservation values present in the Waikato and provides guidance for the Department's work in the form of a vision, objectives, outcomes for Places, policies and milestones. The boundary of the CMS 2014 extends as far south as SH2 and SH25 and does not include Waihi township. It is relevant to activities within the Coromandel Forest Park and the Willows Road Farm.

205. Section 4 addresses Treaty of Waitangi partnerships. Policies relate to maintaining and strengthening relationships with tangata whenua through respectful, cooperative and mutually beneficial engagement. Implementation of Treaty settlement obligations and consideration of iwi environmental plans are integral to the Department's operations and conservation management approach.

206. Section 5 provides objectives relating to maintaining and restoring natural heritage.

"The diversity of New Zealand's natural heritage is maintained and restored with priority given to:

a) *conserving a full range of New Zealand's ecosystems to a healthy functioning state, with an emphasis on priority ecosystems in Appendix 4;*

b) *supporting the work of others to maintain and restore ecosystem types selected from Appendix 2;*

c) *conserving Threatened species to ensure persistence, with an emphasis on those species listed in Appendix 6."*

207. The species listed in Appendix 6 include those in this application those with a threat status of At Risk or Threatened.

208. The Wharekirauponga area is within Section 9 - Hauraki-Coromandel Peninsula Place. The outcomes for the Place include that "*the area comprising Maratoto, Wentworth and Wharekirauponga is recognised and highly valued for its natural and heritage values, and backcountry visitor setting*" and that *"Populations of Threatened and At Risk species (including Archey's frog) are protected with assistance from the community and interested parties".*

Waikato Conservation Management Strategy 1996

209. For those parts of the application south of the CMS 2014 boundary the Waikato Conservation Management Strategy 1996 (CMS 1996) still has effect. The CMS 1996 is relevant to lizard salvage activities occurring within the Waihi Area.

210. The location is within the Hauraki sub-region (Chapter 3). The application area does not fall within any of the six areas of particular interest identified in sections 3.5 – 3.10.

211. General objectives for protection of natural resources are provided for in Chapter 8. A key implementation policy is to "seek protection of remaining native forest, especially areas which can function as corridors or buffer zones".

212. Chapter 10 addresses uses and activities on land administered by the Department. The overarching management objective is to *"conserve natural and historic resources, foster public recreational enjoyment of those resources and allow their use for tourism; and ensure that any non-recreation, non-tourism uses of areas administered by the department conform with the legislation to which the area is subject"* (10.1.1).

213. Regarding commercial use, the objective is "*To ensure that all non-recreational, non-tourism activities on land administered by the department are consistent with conservation of natural and historic resources and conform with the legislation to which the area is subject"* (10.5.1) with the implementation policy being to *"assess and process all proposals for use or activity in accordance with the procedures and criteria in section 10.6".*

214. Section 10.6 of the CMS sets out procedures for assessing proposed activities on conservation land. Activities that have significant effects or will be undertaken for five years or more are grouped into Category C or D. The process for Category C and D includes that the application will be shared with

the Waikato Conservation Board and any iwi authority likely to be affected, and that assessment will be in accordance with the statutory requirements of the Acts the land is subject to, the CMS, any existing departmental policy and comments from iwi and the Conservation Board. Approvals may be subject to conditions, including to avoid effects of vegetation clearance that may disturb fauna.

215. Provided that effects are adequately managed, and the application is consistent with the Wildlife Act requirements, the application is not inconsistent with the CMS 1996.

Coromandel Peninsula Conservation Land Management Plan 2002

216. The Coromandel Peninsula Conservation Land Management Plan 2002 (CPCLMP) establishes objectives for the integrated management of natural and historic resources on conservation land in the Coromandel Peninsula.

217. The application area is within the Wentworth/Wharekirauponga Visitor Management Zone (Section 3.3.1.6). The objective is to "*ensure visitor access to, and a self-exploration approach for the Wentworth / Wharekirauponga valleys*". A relevant implementation policy it to "*be aware of the need to protect natural, historic, and cultural resources and values*".

218. Section 3.9.1 is relevant to concessions but does not address Wildlife Act authorisations. Section 3.9.8 relates to survey and research, relevant to the frog monitoring proposal, although no policies are specific to the application.

219. The application is not inconsistent with the CPCLMP.

Commentary on information required for a wildlife approval

220. As described in paragraph , the completeness test was approached by DOC on the basis that the application was for the activities of lizard salvage, frog salvage and frog monitoring. Given the purported increased scope of the application to include killing and harm of a wide range of species, it does not appear that the information requirements of Schedule 7 clause 2 are complied with.

Treaty of Waitangi settlement considerations and obligations

Treaty of Waitangi settlement obligations

221. Under section 7 of the Act the Panel must act in a manner that is consistent with obligations arising under existing Treaty Settlements.

222. The Ministry for the Environment (MfE) provided a report which sets out the section 18 matters it considered relevant to the application. DOC was consulted by MfE on this report.

223. DOC has read the section 18 report prepared by the Ministry of the Environment. DOC agrees that the primary matter for consideration by the Panel as relevant to the wildlife approvals will be the consultation requirements for conservation approvals in the Ngāi Tai Ki Tamaki Deed of Settlement and Pare Hauraki Collective Agreement Deed of Settlement.

224. At this stage, DOC has not identified any specific conditions that specifically relate to Treaty to settlements and that should be imposed in accordance with section 84. DOC notes that relevant Māori entities have been invited to provide comments to the Panel on the application.

Treaty partner engagement

225. A summary of the engagement DOC has undertaken with its Treaty partners, including the views received, is set out in DOC's Covering Report.

226. As relevant to the wildlife approvals, DOC highlights the following aspects of the feedback received.

227. Ngāti Hako has highlighted that Wharekirauponga is an area of high cultural significance. Significant concerns regarding the potential impacts of the Waihi North Project on taonga species, particularly Archey's frog (pepeketua). They stress the cultural importance of these species and advocate for DOC's active involvement in biodiversity planning and implementation. Ngāti Hako supports a collaborative approach to protection of te taiao, calling for co-designed mitigation, monitoring and adaptive management strategies to ensure the long-term safeguarding of ecological and cultural values.

228. Ngāti Pū emphasised the importance of protecting terrestrial wildlife within the context of the Waihi North Project. Their concerns reflect a deep cultural and environmental responsibility to safeguard native species and habitats, particularly those located at Wharekirauponga. They also emphasised a desire for collective iwi voice and how collaboration with DOC to protect te taiao is critical. Their position reflects a broader commitment to the integrity of te taiao and the wellbeing of species that hold ecological and cultural significance.

229. Ngāti Tara Tokanui have raised concerns generally about the fast-track process and how it threatens to undo progress made because of existing legal and regulatory frameworks.

230. Although not the decision maker, DOC has acted in good faith by engaging with Treaty partners. The feedback received generally aligns with DOC's interest in ensuring adequate protection of protected wildlife. As noted above, relevant Māori entities will have the opportunity to review DOC's reports and have been invited to provide comments for the Panel to consider. At this stage, therefore, DOC does not suggest any additional conditions that may be required to specifically address the interests of these relevant Māori entities.

Appendices

Appendix 1: Wildlife Approval Proposed Conditions – marked up with DOC's proposed changes and recommendations.

WAIHI NORTH PROJECT – PROPOSE D WILDLIFE ACT APPROVAL CONDITIONS

DOC marked up version, 11 August 2025

Wildlife Act Approval for wildlife located on public conservation land

SCHEDULE 1

1	**Authorised activity (including the species, any approved quantities and collection methods)** (Schedule 2, clause 2)	A. Activity: a) To catch, salvage and relocate native frog and lizard species listed in Schedule 4 prior to vegetation clearance at mineral exploration and mining operation sites (see list of sites, in next section). b) To catch ~~and hold~~and then release native frogs for the purpose of long-term monitoring. c) To take or destroy the eggs of the following wildlife species when unavoidable: i. Pīwakawaka / New Zealand fantail (*Rhipidura fuliginosa);* ii. Kāhu / Australasian harrier (*Circus approximans);* iii. Korimako / Bellbird (*Anthornis melanura);* iv. Riroriro / Grey warbler (*Gerygone igata);* v. Keruru / NZ pigeon (*Hemiphaga novaeseelandiae);* vi. Kotare / Kingfisher (*Todiramphus sanctus);* vii. Tauhou / Silvereye (*Todiramphus sanctus);* viii. Miromiro /Tomtit (*Petroica macrocephala);* ix. Tūi (*Prosthemadera novaeseelandiae);* x. Warou /Welcome swallow (*Hirundo neoxena);* xi. Pōpokotea / Whitehead (*Mohoua albicilla);* xii. Kākāriki/ Yellow-crowned parakeet (*Cyanoramphus auriceps);* xiii. Ruru / Morepork (*Ninox novaeseelandiae);* xiv. Kākā (*Nestor meridionalis);* xv. Pipīwharauroa / Shining cuckoo (*Chrysococcyx lucidus); and* xvi. Stag beetle (*Geodorcus auriculatus* sp). d) To kill the wildlife species listed in A(c)(i – xvi) above, and / or long-tailed bats (*Chalinolobus tuberculatus*) when unavoidable

Commented [A1]: DOC requires more information to understand the scope of these activities of killing/harm to wildlife - to appropriately frame the activity and determine what conditions are required to address effects. We agree that this requires further discussion.

Commented [A2]: DOC notes that the FTAA allows for the applicant to apply more broadly for any absolutely protected wildlife. Whichever approach is taken, DOC needs to better understand the potential causes of harm that approval is sought for to be able to assess it and ensure appropriate conditions are applied.

		e) Any accidental / unintentional harm to wildlife that could arise from any of the activities undertaken in relation to the Waihi North Project. B. Methodology: a) Within the Coromandel Forest Park: Except when instructed otherwise by the Grantor, the methods set out in: i. The Terrestrial Ecology Management Plan as included in the Wharekirauponga Underground Mine Ecology and Landscape Management Plan and included in Part H of the application documents; and ii. Native Frog Monitoring Plan. b) Outside the Coromandel Forest Park: Methods set out in the Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan and included in Part H of the application documents, and the Lizard Management Plan section of the Waihi Area Ecology and Landscape Management Plan and included in Part H of the application documents.
2	**The Land** (Schedule 2, clause 2)	Areas marked Area 1 – Area 7 on Map 1 in Schedule 5, except that monitoring of native frogs may take place anywhere in the areas shown on Map1 and Map 2.
3	**Personnel authorised to undertake the Authorised Activity** (Schedule 2, clause 3)	a) Katherine Muchna b) Liam Ireland c) Jenna Powell d) Cassie McArthur* e) Matthew Turner f) Bella Burgess* g) Brittany Pearce* h) Michaela Scarrott* i) Additional personnel as may be approved in writing by the Grantor. * these persons may only handle native frogs subject to direct supervision and training by Katherine Muchna.
4	**Term** (Schedule 2, clause 4)	[insert date of approval] to [insert date 30 years from date of approval]
5	**Approval Holder's address for notices**	The Approval Holder's address in New Zealand is:

Commented [A3]: As above - further discussion needed. It is not clear whether "any accidental / unintentional harm to wildlife" is also intended to capture incidental killing (being killing of wildlife that is not directly intended but is unavoidable and foreseeable as a consequence of carrying out the activities). We presume the intention is that incidental killing would be authorised, and not just killing that occurs purely by accident (i.e., not foreseeable). For example, it can be foreseen that some wildlife will inevitably be incidentally killed when habitat is removed, in contrast to the killing of wildlife by accident, such as inadvertently trampling wildlife.

Commented [A4]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

Commented [A5]: In relation to frog competencies, DOC makes the following assessment based on CVs provided by OGNZL. It is recommended that, other than those listed as competent, any person undertaking frog handling need direct supervision and training by Katherine Muchna.

Competent
- Katherine Muchna
- Liam Ireland
- Jenna Powell
- Mathew Turner

Supervision and training needed:
- Amanda Healy (not listed in wildlife approval but CV provided)
- Bella Burgess
- Michaela Scarrott

Relevant experience but limited, some supervision recommended:
- Brittany Pearce

Requires assessment – no CV provided:
- Cassie McArthur

CV provided (and competent) but not listed in conditions:
- Dylan Van Winkle

	(Schedule 2, clause 8)	Physical: 22 Maclaggan Street, Dunedin 9016, New Zealand Postal: PO Box 5442 Dunedin 9054 Phone: 03 479 4736 Email: NZ.Legal@oceanagold.com
6	**Grantor's address for notices**	The Grantor's address for all correspondence is: [Hauraki District Office, 3/366 Ngati Maru Highway (SH25) Thames 3500 (physical); PO Box 343, Thames 3540 (postal); Phone: 0800 275 362; Email: thames@doc.govt.nz]

SCHEDULE 2

STANDARD TERMS AND CONDITIONS OF THE APPROVAL

1. Interpretation

1.1. The Approval Holder is responsible for the acts and omissions of its employees, contractors or agents. The Approval Holder is liable under this Approval for any breach of the terms of the Approval by its employees, contractors or agents as if the breach had been committed by the Approval Holder.

1.2. Where obligations bind more than one person, those obligations bind those persons jointly and separately.

2. What is being authorised?

2.1. The Approval Holder is only allowed to carry out the Authorised Activity on the Land described in Schedule 1, Item 2.

2.2. Any arrangements necessary for access over private land or leased land are the responsibility of the Approval Holder. In granting this approval the Grantor does not warrant that such access can be obtained.

2.3. The Approval Holder must advise the Department of Conservation's local Operations Manager(s) ("Manager") prior to carrying out the Authorised Activity (where possible, one week prior).

2.4. The Approval Holder and Authorised Personnel must carry a copy of this Approval with them at all times while carrying out the Authorised Activity.

2.5. The Approval Holder must comply with any reasonable request from the Grantor for access to any wildlife.

2.6. The Approval Holder may publish authorised research results.

2.7. The Approval Holder must immediately notify the Grantor of any taxa found which are new to science. In addition, the Approval Holder must lodge holotype specimens and a voucher specimen of any new taxa with a recognised national collection.

3. Who is authorised?

3.1. Only the Approval Holder, its employees, contractors and agents and the Authorised Personnel described in Schedule 1, Item 3 are authorised to carry out the Authorised Activity, unless otherwise agreed in writing by the Grantor, such agreement is not to be unreasonably delayed or withheld.

4. How long is the Approval **for - the Term?**

4.1. This Approval commences and ends on the dates set out in Schedule 1, Item 4.

5. What are the liabilities?

5.1. The Approval Holder agrees to exercise the Approval at the Approval Holder's own risk and releases to the full extent permitted by law the Grantor and the Grantor's employees and agents from all claims and demands of any kind and from all liability which may arise in respect of any accident, damage or injury occurring to any person or property arising from the Approval Holder's exercise of the Authorised Activity.

5.2. The Approval Holder must indemnify the Grantor against all claims, actions, losses and expenses of any nature which the Grantor may suffer or incur or for which the Grantor may become liable arising from the Approval Holder's exercise of the Authorised Activity.

5.3. This indemnity is to continue after the expiry or termination of this Approval in respect of any acts or omissions occurring or arising before its expiry or termination.

6. What about compliance with legislation and Grantor's notices and directions?

6.1. The Approval Holder must comply with all statutes, bylaws and regulations, and all notices, directions and requisitions of the Grantor and any competent authority relating to the conduct of the Authorised Activity. Without limitation, this includes the Conservation Act 1987 and the Acts listed in the First Schedule of that Act and all applicable health and safety legislation and regulation.

7. Are there limitations on public access and closure?

7.1. The Approval Holder acknowledges that the public conservation land being part of the Land is open to the public for access and that the Grantor may close public access to that public conservation land during periods of high fire hazard or for reasons of public safety or emergency.

8. When can the Approval **be terminated?**

8.1. The Grantor may terminate this Approval at any time in respect of the whole or any part of the Land, and/or the whole or any part of the Authorised Activity if:

(a) the Approval Holder breaches any of the conditions of this Approval; or

(b) in the Grantor's opinion, the carrying out of the Authorised Activity causes or is likely to cause any unforeseen or unacceptable effects in relation to protected wildlife.

8.2. If the Grantor intends to terminate this Approval in whole or in part, the Grantor must give the Approval Holder such prior notice as, in the sole opinion of the Grantor, appears reasonable and necessary in the circumstances.

9. How are notices sent and when are they received?

9.1. Any notice to be given under this Approval by the Grantor is to be in writing and made by personal delivery or email to the Approval Holder at the physical or email address specified in Schedule 1, Item 5. Any such notice is to be deemed to have been received:

(a) in the case of personal delivery, on the date of delivery;

(b) in the case of email, on the date receipt of the email is acknowledged by the addressee by return email or otherwise in writing.

9.2. If the Approval Holder's details specified in Schedule 1, Item 5 change then the Approval Holder must notify the Grantor within 5 working days of such change.

10. What about the payment of costs?

10.1. The Approval Holder must pay the standard Department of Conservation charge-out rates for any staff time and mileage required to monitor compliance with this Approval and to investigate any alleged breaches of the terms and conditions of it.

11. Biosecurity

11.1. The Approval Holder must take all precautions to ensure weeds and non-target species are not introduced to the Land; this includes ensuring that all tyres, footwear, gaiters, packs and equipment used by the Approval Holder, its staff and clients are cleaned and checked for pests before entering the Land.

12. Are there any Special Conditions?

12.1. Special conditions are specified in Schedule 3. If there is a conflict between this Schedule 2 and the Special Conditions in Schedule 3, the Special Conditions will prevail.

13. Can the Approval be varied?

13.1. The Approval Holder may apply to the Grantor for variations to this Approval in line with clause 7(2) of Schedule 7 of the Fast-track Approvals Act 2024.

SCHEDULE 3

SPECIAL CONDITIONS

Compatibility with Access Arrangement and Concession Documents

1. The Special Conditions in the following documents apply within their respective areas of effect:

    a. Wharekirauponga Access Arrangement [reference number]

    b. Favona Access Arrangement [reference number]

    c. Northern Concession [reference number]

    d. Willows Area Concession [reference number]

Management and Monitoring Plans

2. All Activities authorised by this Wildlife Act Approval must be undertaken in accordance with the following management and monitoring plans included in Part H of the application documents, or any amended versions that may be made under Condition 3:

    a. Within the Coromandel Forest Park:

        i The Terrestrial Ecology Management Plan as included in the Wharekirauponga Underground Mine Ecology and Landscape Management Plan;

        ii The Native Frog Monitoring Plan;

        iii The Native Frog Salvage Release Plan as included in the Wharekirauponga Underground Mine Ecology and Landscape Management Plan.

    b. Outside the Coromandel Forest Park:

        i The Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan;

        ii The Lizard Management Plan as included in the Waihi Area Ecology and Landscape Management Plan.

3. In accordance with Conditions C8A – C8C of Resource Consent [to link in the consent number of the Combined HDC and WRC Conditions] the Approval holder may make amendments to any of the management plans referred to in Condition 2 at any time, provided that:

    a. The Approval holder must invite the Manager to participate in a collaborative workshop with the Approval holder to discuss the proposed amendments.

Commented [A6]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

Advice Note: The collaborative workshop may occur as a standalone workshop, or it may be combined with other collaborative workshops required by this Authority if practical.

b. If the Manager agrees to participate in a workshop:

   i The Approval holder must provide a copy of the amended management plan to the Manager at least 15 working days before the workshop;

   ii The Approval holder must circulate a record of the workshop discussions to the Manager within 5 days of the completion of the workshop; and

   iii The Manager must be given an opportunity to provide written feedback to the Approval holder on the management plan amendments within 15 working days of the completion of the workshop.

c. If the Manager declines the opportunity to participate in a collaborative workshop, the Approval holder must provide a copy of the amended management or monitoring plan to the Manager and give the Manager 15 working days to provide written feedback to the Approval holder on the proposed amendments.

d. If the Manager has not, within 15 Working Days of receipt of the amendment, advised the Approval holder that Condition 3(e) applies, any Works associated with the amendment may proceed.

e. Except where Condition 3(b) applies, until an amendment is approved, any work must be conducted in accordance with the existing management or monitoring plan.

Terrestrial Ecology Management Plan as included in the Wharekirauponga Underground Mine Ecology and Landscape Management Plan

4. The objective of the Terrestrial Ecology Management Plan is to describe (and outline actions) the ecological management actions to appropriately minimises and mitigates the potential terrestrial ecological effects associated with vegetation and habitat clearance for the WUG.

5. Any current version of the Terrestrial Ecology Management Plan must as a minimum:

   a. Remain consistent with the objective of the Terrestrial Ecology Management Plan (as set out in Condition 4);

   b. Include maps for visual tools which identify the location and extent of any proposed management and mitigation measures, including identification of which specific Areas within which these measures will occur;

Commented [A7]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

c. Include details of monitoring and reporting to the Management prior to, during and post-construction and operation to determine if the Terrestrial Ecology Management Plan objective is met; and

d. Include details of the roles and responsibilities of key staff responsible for implementing the Terrestrial Ecology Management Plan and procedures for training of contractors and other Project staff regarding the Terrestrial Ecology Management Plan.

6. By 30 June each year the Approval holder must engage a suitably qualified and experienced ecologist to prepare an annual Terrestrial Ecology Monitoring Report that covers activities addressed in the Terrestrial Ecology Management Plan for the previous year.

   Advice Note: The Terrestrial Ecology Monitoring Report may be provided as a standalone report, or it may be integrated into a combined report with any of the other annual reports required by this Authority.

7. The Terrestrial Ecology Monitoring Report required by Condition 6 above must include:

   a. A description of any works and other actions envisaged by the Terrestrial Ecology Management Plan completed by the Approval holder in the previous twelve months;

   b. Where aspects of the Terrestrial Ecology Management Plan have not been implemented, the reasons why, and the measures that have been taken by the Approval holder to address this;

   c. An assessment of the effectiveness of the actions taken to implement the Terrestrial Ecology Management Plan in achieving its objective. Where the report identifies that the objective has not been met, the Report must include:

      i The reasons why the objective has not been met;

      ii Specific measures that have already been implemented, or are required to be implemented to achieve performance indicators; and

   d. Details of any amendments needed to the Terrestrial Ecology Management Plan or any other of the other management plans identified in Condition 2 to better ensure that the objective will be met.

8. If the Department of Conservation is not satisfied that the actions taken by the Approval holder are achieving the objective of the Terrestrial Ecology Management Plan, the Approval holder and the Department of Conservation shall participate in a collaborative workshop to discuss the levels of achievement, and to identify any measures that are required to be implemented to address any agreed failure to achieve the objective.

   In the instance that there is disagreement between the Approval holder and the Department of Conservation at the conclusion of the collaborative workshop, the process in Conditions 47 and 48 (Dispute Resolution) is to be implemented.

Advice Note: The collaborative workshop may occur as a standalone workshop, or it may be combined with other collaborative workshops required by this Authority if practical.

Native Frog Monitoring Plan

Commented [A8]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

9. The objective of the Native Frog Monitoring Plan is to outline the frog monitoring undertaken with incorporation of success indicators.

10. Any current version of the Native Frog Monitoring Plan must as a minimum:

    a. Remain consistent with the objective of the Native Frog Monitoring Plan (as set out in Condition 9);

    b. Include maps for visual tools which identify the location and extent of any proposed management and mitigation measures, including identification of which specific Areas within which these measures will occur;

    c. Include details of monitoring and reporting to the Management prior to, during and post-construction and operation to determine if the Native Frog Monitoring Plan objective is being met; and

    d. Include details of the roles and responsibilities of key staff responsible for implementing the Native Frog Monitoring Plan and procedures for training of contractors and other Project staff regarding the Native Frog Monitoring Plan.

11. By 30 June each year the Approval holder must engage a suitably qualified and experienced herpetologist to prepare an Annual Leiopelmatid Frog Monitoring Report that covers activities addressed in the Native Frog Monitoring Plan for the previous year.

    Advice Note: The Annual Leiopelmatid Frog Monitoring Report may be prepared in conjunction with the Annual Leiopelmatid Frog Monitoring Report prepared in accordance with the requirements applying to the 'Waihi North Project – Wharekirauponga Access Arrangement'. The Annual Leiopelmatid Frog Monitoring Report may be provided as a standalone report, or it may be integrated into a combined report with any of the other annual reports required by this Authority.

12. The Annual Leiopelmatid Frog Monitoring Report required by Condition 11 above must include:

    a. A description of any works and other actions envisaged by the Native Frog Monitoring Plan completed by the Approval holder in the previous twelve months, including;

        i the number and biometric data (snout vent length, SVL) of any Archey's or Hochstetter's frogs;

ii the release pen (for Archey's frogs), or stream location (for Hochstetter's frogs) that they were released into; and

iii a clear dorsal photograph for photographic identification; and all survey details (climatic conditions, time and date, and search effort).

b. Where aspects of the Native Frog Monitoring Plan have not been implemented, the reasons why, and the measures that have been taken by the Approval holder to address this;

c. An assessment of the effectiveness of the actions taken to implement the Native Frog Monitoring Plan in achieving its objective. Where the report identifies that the objective has not been met, the Report must include:

i The reasons why the objective has not been achieved;

ii Specific measures that have already been implemented, or are required to be implemented to meet the objective; and

d. Details of any amendments needed to the Native Frog Monitoring Plan or any other of the other management plans identified in Condition 2 to better ensure that the objective will be met.

13. If the Department of Conservation is not satisfied that the actions taken by the Approval holder are achieving the objective of the Native Frog Monitoring Plan, the Approval holder and the Department of Conservation shall participate in a collaborative workshop to discuss the levels of achievement, and to identify any measures that are required to be implemented to address any agreed failure to achieve the objective.

In the instance that there is disagreement between the Approval holder and the Department of Conservation at the conclusion of the collaborative workshop, the process in Conditions 47 and 48 (Dispute Resolution) is to be implemented.

Advice Note: The collaborative workshop may occur as a standalone workshop, or it may be combined with other collaborative workshops required by this Authority if practical.

Native Frog Salvage Release Plan as included in the Wharekirauponga Underground Mine Ecology and Landscape Management Plan

14. The objective of the Native Frog Salvage Release Plan is to detail the process and methods to be undertaken when salvaging and translocating native frogs.

15. Any current version of the Native Frog Salvage Release Plan must as a minimum:

a. Remain consistent with the objective of the Native Frog Salvage Release Plan (as set out in Condition 14);

b. Identify where any frogs are to be released ("the release site");

Commented [A9]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

c. Provide data which confirms the resident frog population at the release site;
d. Explain how the release site is to operate (i.e. multiple release pens and types of pens);
e. Outline frog salvage methods including transportation methods, transportation timings / durations, frog handling protocols, and release process;
f. Identify what monitoring is to occur at the release site following the release of frogs at the site, and how this monitoring is to be implemented;
g. Provide details of how / when the operation and monitoring of the release site is to conclude;
h. Include details of monitoring and reporting to the Manager prior to, during and post-construction and operation to determine if the Native Frog Salvage Release Plan objective is being met; and
Include details of the roles and responsibilities of key staff responsible for implementing the Native Frog Salvage Release Plan and procedures for training of contractors and other Project staff regarding the Native Frog Salvage Release Plan.

16. By 30 June each year the Approval holder must engage a suitably qualified and experienced herpetologist to prepare an Annual Native Frog Salvage Release Report that covers activities addressed in the Native Frog Salvage Release Plan for the previous year.

Advice Note: The Annual Native Frog Salvage Release Report may be provided as a standalone report, or it may be integrated into a combined report with any of the other annual reports required by this Authority.

17. The Annual Native Frog Salvage Release Report required by Condition 16 above must include:
    a. A description of any works and other actions envisaged by the Native Frog Salvage Release Plan completed by the Approval holder in the previous twelve months;
    b. Where aspects of the Native Frog Salvage Release Plan have not been implemented, the reasons why, and the measures that have been taken by the Approval holder to address this;
    c. An assessment of the effectiveness of the actions taken to implement the Native Frog Salvage Release Plan in achieving its objective. Where the report identifies that the objective has not been met, the Report must include:
        i The reasons why the objective has not been achieved;

ii Specific measures that have already been implemented, or are required to be implemented to meet the objective; and

d. Details of any amendments needed to the Native Frog Salvage Release Plan or any other of the other management plans identified in Condition 2 to better ensure that the objective will be met.

Advice Note: The collaborative workshop may occur as a standalone workshop, or it may be combined with other collaborative workshops required by this Authority if practical.

18. If the Department of Conservation is not satisfied that the actions taken by the Approval holder are achieving the objective of the Native Frog Salvage Release Plan, the Approval holder and the Department of Conservation shall participate in a collaborative workshop to discuss the levels of achievement, and to identify any measures that are required to be implemented to address any agreed failure to achieve the objective.

    In the instance that there is disagreement between the Approval holder and the Department of Conservation at the conclusion of the collaborative workshop, the process in Conditions 47 and 48 (Dispute Resolution) is to be implemented.

Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan

19. The objective of the Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan is to outline the ecological values of the Willows Site, the activities to be undertaken and outline how vegetation and fauna will be managed as vegetation and habitat clearance is undertaken.

20. Any current version of the Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan must as a minimum:

    a. Remain consistent with the objective of the Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan (as set out in Condition 19);

    b. Include maps for visual tools which identify the location and extent of any proposed management and mitigation measures, including identification of which specific Areas within which these measures will occur;

    c. Include details of monitoring and reporting to the Management prior to, during and post-construction and operation to determine if the Wharekirauponga Underground Mine Ecology and Landscape Management Plan objective is being met; and

    d. Include details of the roles and responsibilities of key staff responsible for implementing the Wharekirauponga Underground Mine Ecology and Landscape Management Plan and procedures for training of contractors and other Project staff regarding the Wharekirauponga Underground Mine Ecology and Landscape Management Plan.

Commented [A10]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

21. If the Department of Conservation is not satisfied that the actions taken by the Approval holder are achieving the objective of the Willows Site section of the Wharekirauponga Underground Mine Ecology and Landscape Management Plan, the Approval holder and the Department of Conservation shall participate in a collaborative workshop to discuss the levels of achievement, and to identify any measures that are required to be implemented to address any agreed failure to achieve the objective.

    In the instance that there is disagreement between the Approval holder and the Department of Conservation at the conclusion of the collaborative workshop, the process in Conditions 47 and 48 (Dispute Resolution) is to be implemented.

    Advice Note: The collaborative workshop may occur as a standalone workshop, or it may be combined with other collaborative workshops required by this Authority if practical.

The Lizard Management Plan as included in the Waihi Area Ecology and Landscape Management Plan

22. The objective of the Lizard Management Plan is to minimise potential adverse effects on native lizards within the proposed footprints.
23. Any current version of the Lizard Management Plan must as a minimum:
    a. Remain consistent with the objectives of the Lizard Management Plan (as set out in Condition 22);
    b. Include maps for visual tools which identify the location and extent of any proposed management and mitigation measures, including identification of which specific Areas within which these measures will occur;
    c. Include details of monitoring and reporting to the Management prior to, during and post-construction and operation to determine if the Lizard Management Plan objective is met; and
    d. Include details of the roles and responsibilities of key staff responsible for implementing the Lizard Management Plan and procedures for training of contractors and other Project staff regarding the Lizard Management Plan.
24. By 30 June each year the Approval holder must engage a suitably qualified and experienced ecologist to prepare an annual Lizard Monitoring Report that covers activities addressed in the Lizard Management Plan for the previous year.

Commented [A11]: DOC considers there are still fundamental aspects of OGNZL's proposed use of management plans for the purposes of the DOC approvals that remain unclear. Clarification from OGNZL before DOC can comment on whether or not the approach is appropriate.

Advice Note: The Lizard Monitoring Report *may be provided as a standalone report, or it may be integrated into a combined report with any of the other annual reports required by this Authority.*

25. The Lizard Monitoring Report required by Condition 24 above must include:

    a. A description of any works and other actions envisaged by the Lizard Management Plan completed by the Approval holder in the previous twelve months;

    b. Where aspects of the Lizard Management Plan have not been implemented, the reasons why, and the measures that have been taken by the Approval holder to address this;

    c. An assessment of the effectiveness of the actions taken to implement the Lizard Management Plan in achieving its objective. Where the report identifies that the objective has not been met, the Report must include:

        i The reasons why the objective has not been met;

        ii Specific measures that have already been implemented, or are required to be implemented to achieve the objective; and

    d. Details of any amendments needed to the Lizard Management Plan or any other of the other management plans identified in Condition 2 to better ensure that the objective will be met.

    If the Department of Conservation is not satisfied that the actions taken by the Approval holder are achieving the objectives and performance indicators of the Lizard Management Plan, the Approval holder and the Department of Conservation shall participate in a collaborative workshop to discuss the levels of achievement, and to identify any measures that are required to be implemented to address any agreed failure to meet the objective.

    In the instance that there is disagreement between the Approval holder and the Department of Conservation at the conclusion of the collaborative workshop, the process in Conditions 47 and 48 (Dispute Resolution) is to be implemented.

    Advice Note: The collaborative workshop may occur as a standalone workshop, or it may be combined with other collaborative workshops required by this Authority if practical.

Lizard Capture and Handling

26. Lizards must only be handled by Authorised Personnel named in Schedule 1, or under the direct supervision of the Authorised Personnel in accordance with Schedule 2, clause 3.1.

27. Lizard capture and relocation must be undertaken between the 1st October and 30 April when lizards are most active.

28. Capture and handling of lizards must involve only techniques that minimise the risk of infection or injury to the animal.

29. Capture and handling methods shall follow those described in the Herpetofauna inventory and monitoring toolbox http://www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/herpetofauna/

30. The Approval Holder must ensure all live capture traps are covered to protect lizards from exposure and minimise stress. Damp leaf litter or other material must be provided to reduce desiccation risk and the bottom of the pit-fall trap must be perforated to allow drainage of water.

31. The Approval Holder must ensure all live capture traps, (e.g. pitfall traps and G-minnow traps), are checked daily within 12 hours of sunrise.

32. The Approval Holder must sterilise any instruments that come in contact with the lizards and/or are used to collect or measure lizards between each location. A separate holding bag must be used for each animal. All gear should be thoroughly cleaned and dried between sites.

33. The Approval Holder must ensure lizards are temporarily held individually in a suitable container (e.g. breathable cloth bag) and held out of direct sunlight to minimise the risk of overheating, stress, and death.

Frog Capture and Handling

34. The Approval Holder must adhere to the current national Frog Hygiene for Handling Protocol to minimise the possible spread of chytrid fungus and other pathogens to, within and between the sites. The current protocol at the time of approval is attached as Schedule 7.

35. The Approval Holder must ensure that personnel undertaking frog handling and capture activities are accompanied by a suitably qualified herpetologist or staff trained by a suitably qualified herpetologist. Suitably qualified means a herpetologist who:

    (a) Demonstrates expertise and experience in frog survey, capture, handling, and release, including extended periods of experience undertaking frog surveys. They will understand and demonstrate competency in survey methods and searching techniques (including where, when and in what conditions it is best to survey to maximise detection), frog identification, and safe capture, handling and release of frogs to the satisfaction of the Manager (who will consult with the Native Frog Recovery Group).

36. Frog capture and handling methods shall follow those described in the Herpetofauna inventory and monitoring toolbox http://www.doc.govt.nz/our-work/biodiversity-inventory-and-monitoring/herpetofauna/, the current Frog Hygiene for Handling Protocol, and those listed below to minimise the risk of injury or death:

a. Catch frogs by gently scooping and holding the frog in cupped, gloved hands, or by gently holding the middle of the frog between 1st or 2nd forefingers and thumb. Do not squeeze the frog and never hold it by the legs or head.

b. Frogs should be placed in a safe location to avoid accidental trampling. If holding frogs during the day, they must be held out of direct sunlight and bright day light to minimise the risk of overheating, drying out, stress and/or death.

c. Release frogs at the original capture point and check bags/containers to ensure every frog has been released. If releasing frogs during the daytime, they should be released next to the cover object under which they were found and gently tapped with a gloved hand to encourage them to return under the refugia.

d. New gloves and new bags should be used for each individual frog found.

37. Frogs captured for relocation must be held individually in rigid bodied plastic containers with adequate aeration (perforated lid) containing a wet paper towel (use water from nearest stream). Frogs must be transported in chilly bins with low temperatures (e.g. <12 C) maintained for the period frogs are temporarily held.

38. Frogs must be checked every 6 hours (except for one 8 hour period per 24 hours; this 8 hour period must be during the hours of darkness).

39. Containers must be cleaned and rinsed between individual frogs following the current Frog Hygiene for Handling Protocol..

40. Any buccal swabbing shall follow current DOC buccal swabbing protocols, and only be undertaken by a suitably qualified herpetologist trained in buccal swabbing techniques. The current protocol at the time of approval is attached as Schedule 9. Buccal swabbing can only be used if it is a proven and reliable technique for individual frog identification.

41. Any swabbing for chytrid fungus shall follow current DOC swabbing protocols. The current protocol at the time of approval is attached as Schedule 8.

42. Hochstetter's frog surveys / monitoring shall follow current DOC protocols for Hochstetter's frogs. The current version at the time of approval is attached as Schedule 10.

~~36.~~43. The Approval Holder must take all practicable steps to minimise trampling and disturbance of frogs and their habitat by:

(a) Using the same marked access routes for access to the site.

(b) Avoiding survey of habitat that may result in crushing or collapse of delicate refugia, e.g. stream seepages with small, stacked pebbles that could collapse entirely if searching is attempted.

Commented [A12]: DOC proposes the addition of these condition to ensure best practices handling and transport methods that minimise the chances of harm caused to frogs.

(c) Returning all captured and handled frogs to their original capture point (unless the frog is being relocated) using a system of release that avoids the risk of liberated frogs being disturbed or trampled.

Ownership and holding of Absolutely Protected Wildlife

~~37.~~44. This Approval gives the Approval Holder the right to hold absolutely protected wildlife for no longer than 12 hours in accordance with the terms and conditions of the Approval, but the wildlife remains the property of the Crown. This includes any dead wildlife, live wildlife, any parts thereof, any eggs or progeny of the wildlife, genetic material and any replicated genetic material.

~~38.~~45. Unless expressly authorised by the Grantor in writing, the Approval Holder must not donate, sell or otherwise transfer to any third party any wildlife, material, including any genetic material, or any material propagated or cloned from such material, collected under this Approval.

Death of wildlife associated with activities covered by the approval

~~39.~~46. If, in the course of undertaking the Activities, all reasonable effort has been made to meet all of the conditions expressed and implied in this approval; and wildlife is killed by the Approval Holder, then that will be permitted under this approval.

~~40.~~47. If any protected wildlife is found dead; the Approval Holder must contact the Grantor's Hauraki Office on 07 867 9180, with known details of the animal's history. Then, if the Grantor requests it, the body must be sent to Massey University Wildlife Post Mortem Service for necropsy.

~~41.~~48. In that eventuality; the Approval Holder must, if requested by the Grantor:

a. Ensure that the body is to be chilled if it can be delivered within 24 hours, or frozen if it will take longer than 24 hours to delivery.

b. Ensure appropriate measures are taken to minimise further deaths.

c. Discuss with the Grantor's Hauraki office, whether it is necessary to halt all further handling until full investigations of death(s) occur.

d. Pay for any costs incurred in investigation of the death

Euthanasia

~~42.~~49. The Approval Holder must not euthanize any wildlife unless the Approval Holder:

a. Obtains the recommendation of a veterinarian where euthanasia is on animal welfare grounds; or

b. Carries out the euthanasia under direction from the Grantor and in consultation with a veterinarian (as applicable).

Records

~~43.~~50. All survey, salvage and release records must be made available for inspection at reasonable times by officers of the Grantor.

Lizard and Frog Survey and Salvage Reporting

~~44.~~51. Independent of any reporting required under the conditions of any Access Arrangement or Concession; a report is to be submitted in writing to the Manager by 1 October each year for the life of this Approval (covering the proceeding 1 July – 30 June period); summarising outcomes, and mentioning approval number [insert this WAA reference number]. Each report must include:

a. the species and number of any animals collected and released;

b. the GPS location (or a detailed map) of the collection point(s) and release point(s);

c. results of all surveys, monitoring or research.

~~45.~~52. Completed Amphibian and Reptile Distribution System (ARDS) cards for all herpetofauna sightings and captures must be sent to the Herpetofauna Database Administrator, PO Box 10420 Wellington 6143, or via email to herpetofauna@doc.govt.nz (A copy of the ARDS card is included as Attachment 1 to this Approval).

Dispute Resolution

~~46.~~53. The parties agree to negotiate in good faith to resolve any differences which arise in connection with this Approval.

~~47.~~54. Failing resolution in accordance with Condition 47, any differences and disputes between the parties concerning this Approval, its interpretation, effect or implementation or any act or thing to be done in pursuant thereof (except as otherwise expressly provided) is to be referred to arbitration in New Zealand by a single arbitrator who is to be mutually agreed upon and, failing agreement, is to be appointed by the President of the New Zealand Law Society. In all other respects the provisions of the Arbitration Act 1996 shall apply.

SCHEDULE 4

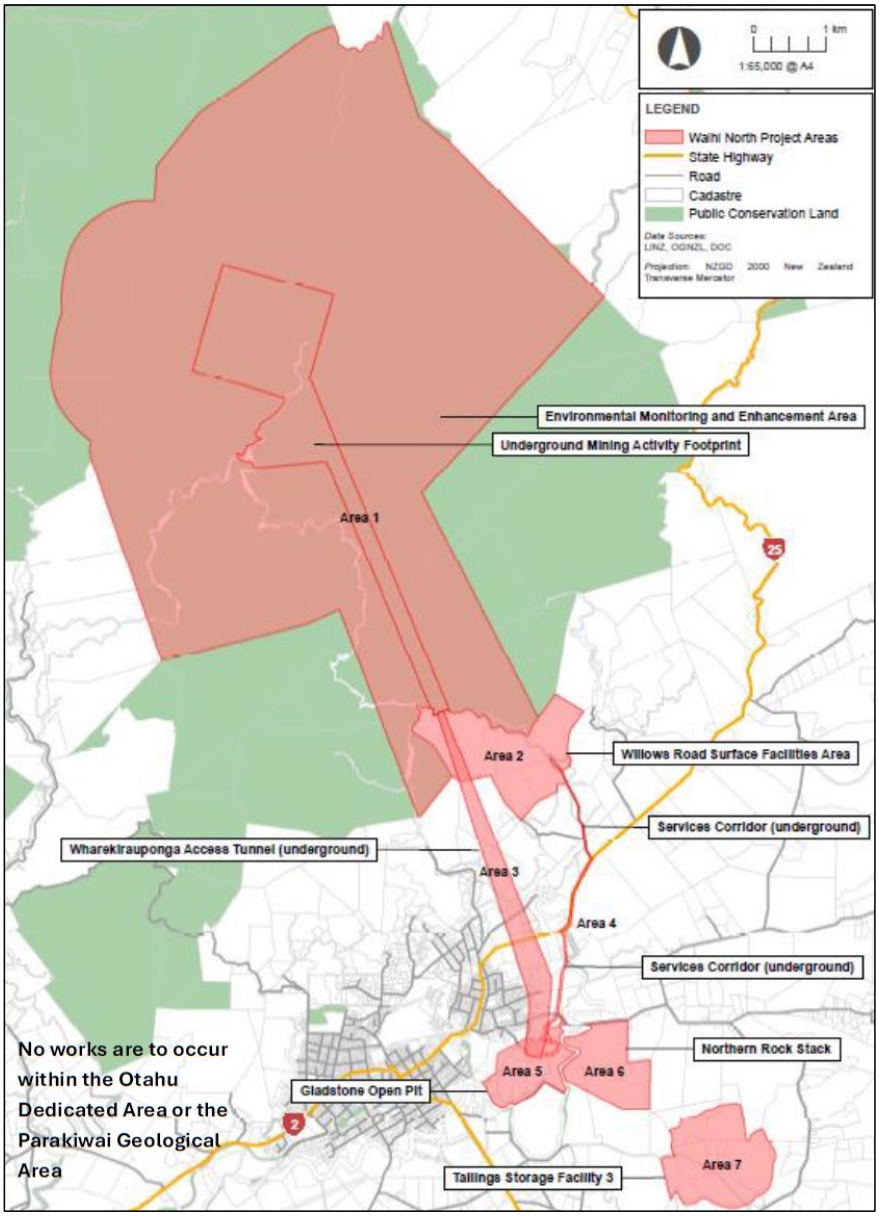
Common Name	Scientific Name	NZ Threat Classification
Northern striped gecko	*Toropuku inexpectatus*	Threatened-Nationally Endangered
Pacific gecko	*Dactylocnemis pacificus*	Not Threatened
Elegant gecko	*Naultinus elegans*	At Risk-Declining
Forest gecko	*Mokopirirakau granulatus*	At Risk-Declining
Striped skink	*Oligosoma striatum*	At Risk-Declining
Ornate skink	*Oligosoma ornatum*	At Risk-Declining
~~Common skink~~	~~*Oligosoma polychroma*~~	~~Not threatened~~
Copper skink	*Oligosoma aeneum*	At Risk - Declining
Moko skink	*Oligosoma moco*	At Risk-Relict
Archey's frog	*Leiopelma archeyi*~~*i*~~	At Risk- Declining
Hochstetter's frog	*Leiopelma hochstetteri*	At Risk-Declining

Commented [A13]: Species not present in the Coromandel

SCHEDULE 5:

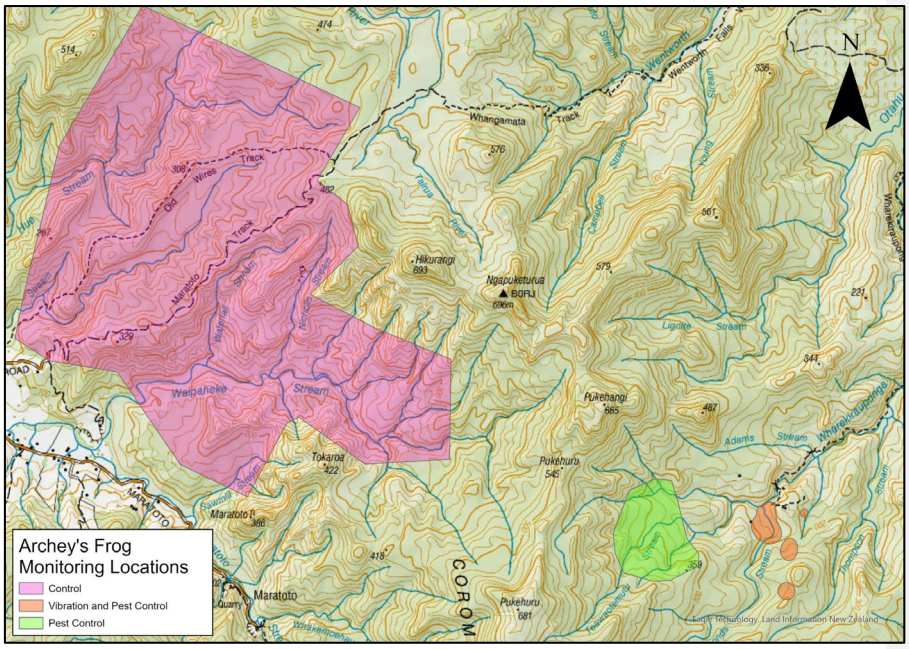
Commented [A14]: DOC understands that OGNZL is preparing maps at DOC's requests that show with more specificity where the various wildlife approval activities are occurring (e.g., frog salvage is only within the Coromandel Forest Park).

Map 1



SCHEDULE 5:

Map 2



SCHEDULE 6:

~~Attachment 1:~~ Amphibian and Reptile Distribution System (ARDS) card

ARDS CARD

NEW ZEALAND AMPHIBIAN/REPTILE DISTRIBUTION SCHEME

Herpetofauna Administrator, RD&I, Department of Conservation, P.O. Box 10420, Wellington.

Card No:

Observer: Initials Surname

Date:

Alt (m):

Locality Name:

Address:

Affiliation:

GPS Easting Northing

Series Map No. Easting Northing

Area Office: Conservancy: Ecol. District:

Species name	No.	Time	Habitat	*Weather*
e.g. *Hoplodactylus maculatus*	6	18:00	16, D, E	6,2,1

Voucher specimen(s) Yes/No Specify:

Photograph(s) **Yes/No**

Extra notes on reverse side **Yes/No**

Notes:

Identified by:

Authority used:

Weather

Light
1 Fine/Sunny
2 Part Cloudy
3 Overcast
4 Showers
5 Rain
6 Night
7 0-½ Moonlit
8 ½-1 Moonlit

Temperature
1 Hot
2 Warm
3 Moderate
4 Cool
5 Cold

Wind
1 Calm
2 Light breeze
3 Mod breeze
4 Gusty
5 Strong winds

Major Habitat Types

1 Beech Forest
2 Podocarp forest
3 Broadleaf forest
4 Exotic forest
5 Scrub
6 Sub-alpine
7 Alpine
8 Undeveloped tussock land
9 Developed farmland
10 River terrace
11 Fresh water
12 Wet land
13 Coastal
14 Scree
15 Bare rocks
16 Beach
17 Urban
18
19
20

Micro habitats
A Foliage
B Trunk
C Branches
D Under stones
E Under wood
F Open ground
G Crevices
H

SCHEDULE 7:
Frog hygiene for handling protocol

Generic Frog Hygiene and Handling Protocol

Background/aims:

- To minimise any possible spread of chytrid fungus and other pathogens to, within and/or between monitoring sites
- To avoid artificially increasing contact between frogs
- To implement the highest level of hygiene protocol that is effective and practicable in the field

Principles:

- Contamination can be managed/reduced through hygiene.
- New or disposable equipment is not a source of infection.
- Use of disinfectants will kill zoospores on equipment and clothing.
- Use of disinfectants will kill zoospores on footwear which has been first scrubbed clean to remove dirt.
- New or disinfected equipment/clothing/footwear should be used at every new site.
- New or disinfected equipment should be used for each frog, where practicable.
- When working in areas in or near where there are native frogs, hygiene protocols should be followed as if chytrid fungus and ranavirus are present and novel pathogenic organisms may be present

Protocol:

Site hygiene:

- Clean between sites by ensuring that soil and other organic matter is removed from all gear including footwear, gaiters, rainwear, clothing, packs, frog handling/measuring equipment and any other equipment used in the area including storage bins.
- Disinfect between sites including footwear, gaiters, rainwear, clothing, packs, frog handling/measuring equipment and any other equipment used in the area including storage bins (Table 1)
    - All clothing must be freshly laundered using hot water,Sterigene, F10 Veterinary disinfectant or Virkon S (including outer clothing).
    - Apply disinfectant solution either via a soaking spray, a very wet wipe-down solution or submersion to achieve good coverage and the correct contact time.
    - Due to rapid evaporation, alcohol sprays will need to be repeatedly reapplied to ensure the full 2 minute contact time before air drying.
    - Wherever a chemical disinfectant is used (e.g. Sterigene, bleach, F10) this must be rinsed off in clean (tap) water after the appropriate contact time.
    - Plan ahead to allow drying times
- Footwear and gaiters must be cleaned and disinfected at the point of entry to a frog field site.
- Dogs: Clean all soil from within the recesses of the dog's paws and from their coat before entering a site and after leaving. At home, use clean water and a dog-friendly soap or shampoo to thoroughly wash all soil off the dog's paws and coat. Dermcare Malaseb shampoo (antifungal and antibacterial dog shampoo, available from vets) can be used prior to entering high conservation value sites. Follow product label directions for use.

Frog handling hygiene:

- A new glove(s) must be used for catching and handling each frog (the same glove can be re-used on the same frog if that glove remains isolated from other frogs and/or their body fluid).
- Each frog must be held in a separate plastic bag (one plastic bag is used per capture and then disposed of).
- Each frog must be weighed and measured in the plastic bag.
- If frogs are too small to be measured in a plastic bag then callipers should be disinfected between frogs using alcohol wipes.
- A new stage platform cover must be used for photographing each frog.
- All stage platform covers must be soaked in 70% ethanol for 2 minutes and air dried between frogs.
    - covers are disinfected daily, sufficient covers must be available for each night so that a clean one can be used for each frog
    - if there are not sufficient covers then they must be cleaned with alcohol wipes.
- The mirror stage must be disinfected with either 70% ethanol (contact time at least 2 minutes, then air dried) or Sterigene or similar product (rinsed thoroughly and air dried) between sites and wiped with alcohol wipes or 70 % ethanol between successive nights at the same site.
- Alcohol wipes must contain 70% alcohol (either ethanol or isopropyl alcohol) and 30% water. Wipe surface for 2 minutes (more than one alcohol wipe may be needed if the first dries). Some alcohol wipes have other additives which will remain when the surface is dried and which are toxic to frogs - these must not be used.
- Minimise handling time to reduce stress and to avoid side effects of stress.

- Sick or dead frogs should be collected and held separately from all other frogs until delivered to the appropriate recipient. All equipment should be thoroughly cleaned and disinfected after use.
- Wherever a chemical disinfectant is used (e.g. sterigene, bleach, F10) this must be rinsed off after the disinfection time. Ethanol can be air dried.

Table 1: Disinfection strategies for frog field studies (minimum times and concentrations) that will kill chytrid fungus and ranavirus

Purpose	Disinfectant	Concentration	Mix	Time	Rinse required	References
Disinfecting cloth (e.g. clothing, cloth bags)	Sterigene	50mL per 4 kg laundry load (do not use detergent, do not overfill)		Normal wash time	Yes	6 (Product label)
	Hot Wash and complete drying	60°C or greater		15 minutes	No	3
Disinfecting footwear	Sodium hypochlorite (household bleach, 4% concentration)	0.5%	5ml bleach in 1 litre water	1minute	Yes	2,3,4
	Sterigene (Trigene)	1%	10ml in 1 litre water (1:100)	1 minute	Yes	3,5, Product label
	F10 Veterinary disinfectant	1%	10ml in 1 litre water (1:100)	1 minute	Yes	3,5, Product label
	Virkon S[1]	1%	10g virkon in 1 litre water	1 minute	Yes	2,3,4, Product label
Disinfecting collection equipment, instruments and containers	Sodium hypochlorite (household bleach, 4% concentration)	0.5%	5ml bleach in 1 litre water	1minute	Yes	2,3,4
	Sterigene (Trigene)	1%	10ml in 1 litre water (1:100)	1 minute	Yes	3,5, Product label
	F10 Veterinary disinfectant	1%	10ml in 1 litre water (1:100)	1 minute	Yes	3,5, Product label
	Virkon S[1]	1%	10g virkon in 1 litre water	1 minute	Yes	2,3,4, Product label
	Ethanol (including alcohol wipes)	70%	Apply liberally	2 minutes	Air dry	1,3,4
	Isopropyl alcohol (including alcohol wipes)	70%	Apply liberally	2 minutes	Air dry	1

[1] WARNING – Virkon is a corrosive substance which will corrode gear over time

	Heat	60°C or greater		15 minutes	No	7

Notes

- Salt solution is not effective on either chytrid fungus or ranavirus
- Leaving gear to dry is only effective against chytrid fungus not ranavirus
- Give everything a good spray, not just a sprinkle
- Items can be rinsed in clean (tap) water after the appropriate contact time, but it is important that they are left to dry thoroughly
- The activity of household bleach begins to reduce once diluted, so this solution must be made fresh each day. Other solutions will last longer after dilution; refer to the manufacturer's instructions. Use alcohol from a small sealed container and replace regularly. Check expiry dates on the concentrated products and don't use expired disinfectants
- Concentration is important. Diluting products to the correct concentration is key to its efficacy.

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SCHEDULE 8:
Amphibian chytrid fungus swabbing protocol

Swabbing protocol for New Zealand frogs.

Prepared by Leigh Marshall 22/12/04. Adapted from protocol prepared by Alex Hyatt (CSIRO).

1. MWE MW100-100 is recommended swab (NZ distributor NZ Medical Supplies 09 259 4062 nzms@nzms.co.nz). If using alternatives, validation is required.
2. A **fresh pair of gloves** and **a fresh swab** should be used for each frog.
3. Swab comprehensively (e.g. repeat 2-3 times) on the ventral surface of the frog, including underside of the thighs, feet and legs.
4. Place the swab back into the container. It does not require drying (but air dried is better as it reduces microbe grow) or preserving. Ensure that swabs are not contaminated by water (i.e. keep dry).
5. Label swab with frog's individual identification, location, date and name of swab taker.
6. Swabs should be stored at 4 degrees or frozen to inhibit growth of other organisms. Swabs can be stored for up to 6 months before diagnostics without compromising results.
7. Submit sample to qualified diagnostic laboratory for analysis (until the laboratory has been decided, swabs should be stored as above)

Figure 1. A frog being swabbed according to this method.

SCHEDULE 9:
Frog buccal swabbing protocol

Buccal Swab Collection Protocol for New Zealand Frogs

Prepared by Amanda Haigh (ahaigh@doc.govt.nz) November 2008.
Department of Conservation, Hamilton, NZ

Introduction
Buccal swabbing involves collecting mucosal cells from the buccal (mouth) cavity of a frog and is being trialled/used as a non-destructive method of collecting DNA. This protocol outlines the materials, handling and sampling protocol for collecting buccal swabs from NZ frogs. Buccal swab collection requires careful delicate handling and manipulation of the frog – a light touch and gentle pressure is all that is needed during swabbing manipulations. Only persons experienced at handling frogs and that have received training in buccal swab collection should collect buccal swabs from native frogs.

Training
All persons wishing to collect buccal swabs from *Leiopelma spp*. should first receive training. Training (demonstration and practice) should be completed using an introduced *Litoria spp*., preferably of similar size to the study species.

Materials
1. Sterile micro cotton swabs (with flexible wire shaft)
2. New unused gloves (unpowdered) nitrile or vinyl
3. Sterile guitar picks (rough edges removed)
4. Storage container for swabs (as required)
5. Ampoules of sterile water
6. Plastic bags for holding frogs
7. Head torch & hand torch
8. Headset magnifier (with light) or eye loupe magnifier (optional)

Handling and restraining the frog
1. Each frog should be handled using a **new unused** pair of nitrile or vinyl gloves
2. Hold the frog by restraining it gently so the head exits the hand between fingers and/or thumb (Figure 1). If the head needs further immobilisation, gently clasp the back of the head behind the eyes (Figure 2). Face the head toward the sample collector.
3. Alternatively, cut the corner off a clean unused plastic bag, place the frog into the bag and **gently** manoeuvre the head out through the opened corner. Hold the frog's body on the outside of the plastic bag exposing the head toward the sample collector for easy sample collection.
4. The person opening the frogs mouth and collecting the swab should also wear a **new unused** pair of gloves
5. The frog is now ready for sample collection.

Collection of swab
1. For each sample use a **new unused sterile micro swab** and a **new unused sterile** guitar pick.
2. Once the frog is restrained, very gently insert the guitar pick into the mouth several mm (Figure 2). The frog should respond and slightly open its mouth. Then insert the guitar pick further into the mouth cavity and **very gently** press down until the frog's mouth is sufficiently open to insert the swab (~10 mm) (Figure 3).
3. **Do not use strong force** at any time when attempting to open a frog's mouth this could cause injury to the frog.
4. Holding the wire shaft close to the cotton tip end of the swab (for maximum control), gently slide swab cotton tip into frog's open mouth. **Without applying pressure**, **very gently** wipe/roll the swab over the buccal surfaces for 30 seconds and/or until swab is moist with mucous.

5. Use a head torch/headset magnifier as necessary to provide additional lighting and magnification to assist with swabbing.
6. Replace swab into dry sterile storage tube with **no medium**.
7. It is important that the swab does not touch any other surfaces apart from the frog's mouth and buccal cavity during swabbing. If a swab is touched on any other surface, it must be discarded and another swab collected from that frog.
8. Label swab with species, location, individual ID code and date
9. Keep cool and freeze asap on return from the field.

NB: It is very important the frog is immobilised for swabbing to minimise any chance of injury.

Sterilisation

New guitar picks require sterilisation prior to use and should not be re-used. Sterilise by soaking in 70 % ethanol for 1 minute then air dry, or 4% concentration of bleach for 15 minutes time, rinse thoroughly in sterile water and then air dry.

Figure 1: General holding position

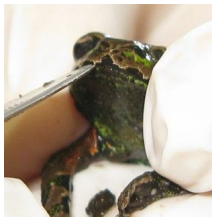

Figure 2: Gentle head immobilisation/Guitar pick insertion

Figure 3: Opening mouth

Images for Figures 2 and 3 supplied by Auckland Zoo.

SCHEDULE 10:
Hochstetter's frog survey protocol

Hochstetter's frog searching protocol

Frog/pepeketua Recovery Group

June 2024

This best practice note covers searching for Hochstetter's frogs during the daytime. The purpose is to provide guidance that will minimise risk to frogs from trampling, habitat disturbance, disease transfer and stress.

When searching for frogs the DOC hygiene protocol (DOCDM-214757) must be followed, alongside any other hygiene protocols that are relevant to the site, e.g. for Kauri dieback.

Study design and preparation

- Because of the risk to frogs, any frog searches must have a clear purpose and conservation benefit.
- The survey or monitoring method must be appropriate to the purpose of the study, e.g. for determining the range of a population a simple detection/non-detection survey of select streams may be appropriate, but for monitoring population changes or estimating abundance repeat surveys are needed. Contact the FRG for advice.
- Do not search for Hochstetter's during wet weather. Frogs not only occur along stream sides, but also away from streams. This is particularly the case during and after heavy rainfall. Searching during wet weather can also cause more habitat disturbance due to slippery rocks and more unstable ground.
- Limit repeated surveys at the same site to minimise habitat disturbance. For example, in one study, three surveys within one day of a stream transect done three years apart is considered the maximum that can be done without too much habitat disturbance.

Field protocols

- Before searching, have a system for knowing where to start and stop searching, and have on hand data sheets, pencil, torch, spare batteries, gps and disposable gloves.
- Search by slowly moving upstream from the start point, carefully examining refugia for frogs (underneath rocks, logs and leaves, and inside crevices and tunnels). Working upstream is easier than downstream, and gentler on the ground underfoot. It also reduces the chance of disturbing frogs which may have been washed downstream during survey disturbance. It is also possible that frogs may hide due to human scent or other disturbances that may flow downstream.
- Carefully assess which objects can be picked up easily and avoid those that can't. Be careful not to accidentally drop the object.
- Do not pick up an object that would cause other objects to subside. e.g. stream seepages with small, stacked pebbles that could collapse entirely if searching is attempted
- Replace all objects carefully to their original position.
- Before replacing the object run your hand lightly across the ground to check that no frogs have been missed. This is particularly important for inexperienced observers.
- If replacing an object poses a risk to a frog, gently pick up the frog/s underneath the object by gently scooping and holding the frog in cupped, gloved hands, or by gently holding the middle of the frog between 1st or 2nd forefingers and thumb. Do not squeeze the frog and never hold it by the legs or head. Then replace the object, and gently put the frog/s headfirst to where it/they can move under the object again. Do this as soon as possible to reduce the time they are held in hot, gloved hands. Be aware

that there can be more than one frog under an object. Use powder free nitrile glove/s, and change glove/s between each frog.

- A torch must be used (there are often low light levels, and the frogs have cryptic colouration).
- Be aware that frogs, particularly small frogs, can be hiding amongst streamside vegetation, so avoid stepping on vegetation within about 2m of the stream bank.
- Walk in the stream (feet in the water) as much as possible. Along stream sides walk where there is least likelihood of frog presence, e.g. on sand or large immobile rocks.
- Use the same marked access routes to transects, using routes that avoid frog habitat where possible.
- Unless it is part of survey method, avoid double checking/disturbing objects. One option is to chalk-mark objects after they are replaced.

Training

Before searching for frogs independently new observers must receive training by an experienced frog observer. Training, at a minimum, must include

- Observations of live frogs of a variety of sizes
- Demonstration of the variety of places and microhabitats frogs can be found
- How to safely lift and replace objects
- Direct (in person) observation by the trainer of the ability of the trainee to follow these guidelines to safely search for frogs

Photo credit: DOC

Figure 1. Hochstetter's frogs can be well camouflaged (there are three frogs in this photo)