

**Before an Independent Hearing Commissioner at Hurunui
District Council**

under: the Resource Management Act 1991

in the matter of: application RC210098 for land use consent to install
and operate a Gravity-Based Recreation Activity within
the Conical Hill Reserve, Hanmer Springs

between: **Hanmer Springs Thermal Pools & Spa**
Applicant

and: **Hurunui District Council**
Consent Authority

Response to peer review of LMP by Mandy D. Tocher

Dated: 5 November 2021

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RESPONSE TO PEER REVIEW OF LIZARD MANAGEMENT PLAN

INTRODUCTION

- 1 My name is Mandy D. Tocher. I currently hold the position of Principal Herpetologist for LizardExpertNZ, having very recently been a Principal Ecologist for Ryder Environmental, Dunedin.
- 2 I have previously provided ecological evidence and a summary statement in relation to the Flyride proposal. My primary evidence is dated 23 September 2021 and my summary statement is dated 7 October 2021.
- 3 I have also completed a Lizard Management Plan (LMP) for the Applicant, entitled "The Te Tihi o Rauheia, Conical Hill Reserve Switchback Project Lizard Management Plan", dated 3 May 2021 (referred hereon in as the "LMP"). The LMP has been submitted to the Department of Conservation (DOC) to support an application for Wildlife Act (1953) permission to carry out works over lizard habitat/populations. The LMP was attached as Appendix 2 to my ecological evidence but was removed prior to evidence exchange due to sensitivity around locations of rare geckos that could be subjected to illegal poaching.
- 4 On October 11, 2021, the Commissioner issued Minute 3, requiring a peer review of the LMP. The purpose of the LMP peer review was:

"to consider what the analysis is based on and whether it is robust, how significant the effects on lizards will be, and whether the proposed mitigation contained within the LMP will be adequate and effective and be able to achieve what is proposed".
- 5 The review was required because the LMP was not available for consideration by submitters and their representatives and, as such, they were unable to assess if the LMP is fit for purpose.
- 6 Dr Marieke Lettink was identified as a suitably qualified herpetologist to undertake the review, and this was provided to me on 1 November 2021.
- 7 On October 21, 2021, the Commissioner issued Minute 4, requesting that a response to any matters raised by Dr Lettink's Peer Review be provided by 5 November 2021.

SCOPE

- 8 My supplementary evidence responds to matters raised in Dr Lettink's Peer Review. In doing so, I cover the following topics:
 - 8.1 Overall peer review assessment of the LMP;

- 8.2 Securing of a QEII Covenant;
- 8.3 Compensation versus offset;
- 8.4 Adherence to salvage developing/guiding principles;
 - (a) Alternatives to moving lizards must be considered;
 - (b) Lizard salvage, transfer and release must use the best available methodology;
 - (c) Receiving sites and their carrying capacities must be suitable in the long-term;
 - (d) Post-release monitoring for salvaged lizard;
- 8.5 Relevance of the updated DOC threat rankings; and
- 8.6 Significance of effects.

OVERALL PEER REVIEW ASSESSMENT OF THE LMP

- 9 Dr Lettink considered the LMP is fit for purpose, and that the mitigation proposed is sufficient to result in a no net loss outcome for lizard values, with the single caveat that a suitable QEII covenant must be secured.
- 10 Importantly, Dr Lettink agreed that should the covenant be secured (and its management plan implemented), the LMP once implemented in its entirety will not result significant residual adverse effects on Conical Hill lizard values.
- 11 Dr Lettink's conclusion is consistent with an assessment made by the Department of Conservation on August 6, 2021, conveyed during a Microsoft TEAMS meeting¹ convened as part of the process of assessing the application for Wildlife Act permission to construct and operate the Flyride.
- 12 There are, however, three areas of concern that Dr Lettink considers should be addressed. These relate primarily to scant explanatory text for the approach adopted. Concerns are as follows:
 - 12.1 The lack of documented commitment to securing a conservation covenant (and related management plan) over rough gecko habitat.

¹ Present for DOC: Lynn Adams, Nicola Toki, Sandy Yong, Akasha-Werner Mason. Present for Applicant: Graeme Abbot, Ben Smith, Nick Radburnd, Mat Whittleston, Mandy Tocher; notes attached as Appendix 1 of this evidence.

- 12.2 The lack of explanation for why all nine DOC developing practice lizard salvage principles were not adhered too². Concerns relate primarily to release site selection and post-release monitoring.
- 12.3 The relevance of updated DOC threat rankings, that entered the public domain early October 2021.
- 13 I agree with Dr Lettink’s assessment and consider she has correctly identified the most pertinent issues and I find her recommendations to be appropriate.
- 14 I explain below what course of action will be undertaken on all issues raised. A summary of these actions is provided in tabular form in Appendix 2, including a list of revisions that will be made to the LMP.

SECURING A CONSERVATION COVENANT WITH A MANAGEMENT PLAN

- 15 Dr Lettink considers that the addition of a conservation covenant is vital in assuring the sufficiency of the Flyride LMP mitigation/compensation package to fully address adverse effects and result in no net loss of lizard values.
- 16 I agree with this assessment and, to that end, appropriate land for a 4-ha QEII conservation covenant (with management plan) over rough gecko habitat on private land has been identified and I understand that an agreement with the landowner is expected to be signed next week. It will be the first QEII covenant for rough gecko ever created on private land. I note that securing a QEII covenant, with a management plan to benefit resident lizards, is the only remaining outstanding task that when secured, will allow DOC to issue a Wildlife Act permit to construct and operate the Flyride, subject to approval from their treaty partners.
- 17 The 4-ha covenanted rough gecko habitat is at least twice as large as the entire Flyride footprint, and more than three times the area of rough gecko habitat affected by the Flyride project. The covenant will be applied over a site where rough geckos are known to exist as a viable population, and at a site linked to a wider rough gecko population on public conservation land.
- 18 The rough gecko habitat of the covenant is vulnerable to habitat clearance by right under the relevant District Plan.

² DOC TAG, 2019. Key principles for lizard salvage and transfer in New Zealand. Department of Conservation. 19 pages.

- 19 The covenant will be subject to a management plan prohibiting earthworks and vegetation clearance, afforestation, and providing for woody weed control to increase naturalness in perpetuity.
- 20 It is expected that protection and ongoing management of this covenant will benefit rough gecko and other lizard species residing there. Rock outcropping habitat of the covenanted area is likely to provide habitat for Southern Alps geckos, and maybe pygmy gecko.

COMPENSATION VERSUS OFFSET

- 21 Dr Lettink believes the acquisition of the QEII Covenant (and presumably the formation and implementation of its management plan) is a form of compensation, rather than an offset, and then refers to BBOP for definitions of these two terms (paragraph 53 of Dr Lettink's evidence).
- 22 I agree with Dr Lettink insofar as the QEII covenant (and its ensuing management) were offered up in the LMP as compensation actions, but reference to BBOP definitions³ is redundant in my view.
- 23 The QEII covenant and its management were never proposed as an offset because offsets are not possible to achieve for lizards. Indeed, there are no precedents that I am aware of for lizard values to be effectively managed through an offset.
- 24 In my view, there are three primary reasons why lizard values do not make suitable candidates for offsets:
- 24.1 There is considerable uncertainty around measuring efficacy of actions related to an offset that relates to lizards. This is particularly the case for a difficult to monitor species such as the rough gecko, or a species where individuals cannot be reliably identified such as Canterbury grass skink (also see paragraphs 89-93 below). Monitoring cannot, therefore, determine the scale of efficacy as it is simply not able to generate robust data for any of the Flyride lizards.
- 24.2 There is usually a perceived difference in measurable benefits of the offset, versus impacts of the development. For example, for the Flyride project I cannot say for sure whether the compensation offered up in the form of the covenant and its management will be more, or less value to rough geckos, than the habitat over the Flyride footprint because they are different, like oranges are from apples.

³ The definitions of 'compensation' and 'offset' in Business and Biodiversity Offsets Programme (BBOP) 2018. Glossary. BBOP, Washington, D.C. 3rd updated edition.

- 24.3 There tends to be issues with comparing like for like. For the Flyride, for example, rough gecko habitat affected is small and is highly modified (less natural) and disturbed (by the public) compared with the habitat of the covenant that has indigenous vegetation cover, is relatively large and continuous (buffered) by extensive tracts of public conservation land. The like for like principle is not adhered to, and nor should it be in my view; the covenant is on the face of it a high-quality upgrade from the rough gecko habitat of Conical Hill.
- 25 The lack of adherence to at least three BBOP principles rules out the appropriateness of an offset in the case of the Flyride lizard values.
- 26 Rather, I have used biodiversity compensation as an appropriate mechanism to address residual adverse effects that cannot be avoided, remedied or mitigated. As a compensation offering, I note that the QEII covenant and the implementation of its management plan may or may not fully address residual effects following my rigorous application of the RMA mitigation hierarchy (see paragraph 34); there really is no means of knowing with certainty, but my expert opinion is that it does, and then some.
- 27 DOC, in their assessment of the LMP and the mitigation/compensation package within, and Dr Lettink, concur.

ADHERENCE TO DOC SALVAGE PRINCIPLES

Background to lizard salvage of the Flyride Footprint

- 28 I am very familiar with the nine DOC lizard salvage guidance principles having developed them myself under contract to DOC⁴. This contribution was acknowledged by Dr Lettink at paragraph 23.
- 29 I can confirm, with some authority, that the principles are developing principles, not best practice. This is stated in the DOC lizard salvage guidance document on page 2, paragraph 1 as follows:
- "Lizard salvage is still relatively new in New Zealand, therefore methodologies do not reflect extensive scientific study; instead, they are presently based on the 'best guess' of experienced ecologists. Thus, the information provided here should not be considered 'best practice' but as 'developing practice' that should be improved and tested over time."*
- 30 The nine principles are, therefore, for guidance only. As Dr Lettink points out in paragraph 24, full adherence to all principles is rarely achieved. As the creator of the principles, I can also confidently state

⁴ My contract document was "re-packaged" by the DOC lizard TAG, that I was then a member of, to ensure principles were perceived as DOC-generated.

that it is rarely possible or even appropriate to fully adhere to the principles, especially if doing so results in a mitigation/compensation package for affected lizard populations that is inconsistent with the on-the-ground context.

- 31 In the case of the Flyride LMP, I crafted a bespoke LMP, with an explicit goal to:⁵

“manage the lizard values of the Switchback™ footprint to achieve an overall positive outcome locally, post works, i.e., populations of the four species of indigenous lizards found over the footprint and adjacent areas are expected to be the same or enhanced following successful implementation of the mitigation package relating to the project.”

- 32 A high-level summary of the Flyride LMP mitigation/compensation package can be found in paragraphs 38-50 of my summary statement dated October 7, 2021.

- 33 Salvage, in the case of the Flyride LMP, was not a primary action to achieve the aforementioned goal, but rather an action considered worthwhile for the two most threatened species⁶. In other words, salvage was “the cherry on top” of the package, a term used by DOC when assessing sufficiency of such packages against the nine guiding salvage principles.

- 34 LMP actions were not prioritised in the LMP, instead they form a package. That is consistent with the RMA (1991) mitigation hierarchy. I sought first to avoid adverse effects, then remediate/rehabilitate for effects that could not be avoided, and then mitigate remaining adverse effects. Lastly compensation in the form of a QEII covenant and its management plan was put forward to address any residual effects not adequately provided for by avoid, remedy and/or mitigation actions. The salvage is therefore a minor part of the overall package designed - to achieve the LMP goal in paragraph 31.

- 35 In formulating the LMP and its mitigation/compensation package, I adopted whichever aspects of the nine principles that contributed most effectively to achieving the LMP goal. This approach is not challenged by Dr Lettink, but nevertheless, I agree with her assessment that further explanation would help submitters better understand the role of lizard salvage in the overall package.

- 36 Dr Lettink considers that of the nine guiding principles, five were fully met in the LMP, three were partially met, and one was not met at all. I concur fully with this assessment, and in response will not consider

⁵ Page 6 of the LMP.

⁶ See my commentary in paragraphs 96-108 on the relevance of the newly released DOC threat classifications.

further the principles considered by Dr Lettink to be fully met; namely, principles 1, 2, 4, 8 and 9 of the DOC lizard salvage guidance document (Table 2 of Dr Lettink's evidence).

37 The three partially met lizard salvage principles, in Dr Lettink's opinion (from Table 2 of her peer review evidence), are:

37.1 Alternatives to moving lizards must be considered (principle 3).

37.2 Lizard salvage, transfer and release must use the best available methodology (principle 5).

37.3 Receiving sites and their carrying capacities must be suitable in the long-term (principle 6).

38 In addition, principle 7, that relates to post release monitoring was not adhered to at all.

39 I now provide an explanation for why adherence to some of these three principles was relaxed in the salvage methods of Flyride LMP, and why post release monitoring is not proposed.

Principle 3: Alternatives to Moving Lizards must be considered

40 In Table 2 of Dr Lettink's evidence she raises the issue of alternative sites under her "Has/how will this be achieved" column for principle 3, stating:

"The LMP does not consider alternative sites. I do not know whether alternative sites were identified during the project's planning phase."

41 It is important to note that principle 3, "alternatives to moving lizards..." in the DOC lizard salvage guidance document is not analogous to the statutory requirement (RMA, 1991 Schedule 4 clause 6 (1)(a)) to provide a description of possible alternative locations in an Assessment of Environment Effects accompanying a resource consent application when the activity is likely to result in any significant adverse effect.

42 Alternatives, as described in the DOC lizard salvage guidance document, refers to a much narrower brief where it is recommended that lizard salvage is only carried out as a last resort in situations where avoidance and remediation measures have been explored but cannot be fully applied, i.e., in applying principle 3, all reasonable steps must be explored to avoid and/or remediate all lizard habitat. I attach text relating to principle 3 here as Appendix 3.

43 Lizard habitat avoidance actions form a substantive portion of the Flyride LMP mitigation/compensation package, and Dr Lettink concurs in Table 2 where she cites an example from the Flyride LMP:

"Avoidance of some lizard habitat has been achieved by re-design of the project layout (e.g., micro-siting access track sections to avoid habitat)."

- 44 As noted in paragraph 40 of my Summary Statement, in total eight separate lizard habitat avoidance actions form part of the Flyride LMP mitigation/compensation package to safeguard, as far as workable, indigenous lizard habitat.
- 45 Dr Lettink, in Table 2, also refers to the extensive habitat rehabilitation and enhancement (via restoration planting) in the creation of the Flyride LMP mitigation/compensation package, including but not limited to 1 ha of kanuka shrubland plantings to re-establish linkages between rough gecko habitat of the reserve and habitat over adjacent areas.
- 46 Notwithstanding the above, I do note that the widespread and broad habitat-use of rough gecko and other lizard species of the footprint (based on records in the DOC Herpetofauna database and my experience on-the-ground), which means other hills in the vicinity of Conical Hill will likely have similar or even better lizard values to Conical Hill.
- 47 As case in point: DOC have recently advised that anecdotally, rough gecko populations are considered in decline on Conical Hill, yet during a rough gecko focussed survey in 2019, rough geckos were found with relative ease at multiple sites outside Conical Hill (Boffa Miskell, 2019)⁷. For example, rough geckos were located at the summit of nearby Pumpkin Hill (located to the south-west of Conical Hill), and on the small unnamed hill between Conical Hill and Pumpkin Hill (Boffa Miskell, 2019).
- 48 Rough gecko records are also known from other peaks near to Conical Hill in forestry (to the east) and in forestry on the northern flanks of Conical Hill (a site on Conical Hill but outside of the reserve). Other species of the footprint, such as Southern Alps gecko and possibly pygmy gecko and Canterbury grass skink, are also likely to occur within any rocky habitat that gets some sun, and rocky habitat is a feature of the hill-country around Hanmer Basin.
- 49 In my opinion, therefore, with the clarity of correct application of principle 3 provided in paragraphs 41-42 along with the documented avoidance and remediation actions in the LMP, and known lizard values on surrounding hill-country, guiding principle 3 has been

⁷ Boffa Miskell, 2019. Hanmer Springs Rough Gecko Surveys Management Recommendations. Prepared for Department of Conservation, 20 January 2020.

applied when crafting the Flyride LMP mitigation/compensation package, and no changes are required to the LMP.

50 **Principle 5: Lizard salvage, transfer and release must use the best available methodology**

51 Although Dr Lettink states that "*The proposed salvage methods are generally appropriate*", she raises four concerns relating to lizard salvage guiding principle 5 (paragraphs 28-33 of Dr Lettink's evidence, and Table 2). All concerns relate to release methods/sites for rough gecko and Canterbury grass skink, as described in the Flyride LMP.

52 For rough gecko, Dr Lettink adds value to planned release of salvaged rough geckos by highlighting two homing observations in *Naultinus* geckos, the same genus as rough gecko (paragraphs 28-30 of Dr Lettink's evidence). I agree that these homing observations are of great relevance to rough gecko and should be applied to the LMP.

53 The homing observations, in a nutshell, mean that should any salvaged rough gecko be moved to a release site within 50 m from the edge of the Flyride footprint, as currently planned for in the LMP, they may well return (or try to return) to their original capture site. Such unplanned homing movement back into the construction footprint could risk injury and/or death for any rough geckos attempting to return.

54 Dr Lettink outlines options available to remedy the risk of homing in salvaged rough gecko. In addressing this risk, I favour increasing the release distance to 100 m over off-site captive holding or the use of radio transmitters.⁸ This is because it requires minimal intervention and allows any salvaged geckos to remain on Conical Hill, an option that will promote kaitiakitanga of Conical Hill and its taonga.

55 For these reasons, the rough gecko salvage methods in the LMP will be revised to state that no rough geckos are to be released within 100 m of their capture site within the Flyride footprint.

56 For Canterbury grass skink, three⁹ issues were raised under lizard salvage guiding principle 5, relating to release sites for any salvaged Canterbury grass as follows:

56.1 Public interference of the release site.

56.2 The need to plan for >26 Canterbury grass skink captures.

⁸ See paragraph 92 for my views on this method.

⁹ Salvage of pygmy gecko and Southern Alps gecko will not be carried out; see paragraphs 96-108 of this Response.

56.3 Construction methodology of the release pen needs to allow for any skinks already resident at the site.

Public interference of the release site

- 57 On the issue of public interference with the skink pen, I agree with Dr Lettink that a novel pen with new rock and indigenous plantings will quite naturally spark interest from the public that frequent Conical Hill summit. With this interest, some people may even enter the pen, walk on the rock habitat, and disturb the establishing Canterbury grass skink population¹⁰.
- 58 That said, there are very few options for the location of the pen on Conical Hill, and I note there is agreement on the suitability of the proposed release site for Canterbury grass skink (see paragraph 31 of Dr Lettink's evidence).
- 59 By way of context, during my lizard surveys on Conical Hill, it became clear to me that open rocky habitat was once more extensive on the hill. Much is now shaded by a mix of exotic conifers and indigenous shrublands that are much enjoyed by the public. The open sunny area on the summit, the only place where I detected Canterbury grass skink, provided the best opportunity to enhance habitat for Canterbury grass skink through addition of rock and related rehabilitation actions (e.g., plantings of low-growing plants to provide fruit and cover for lizards).
- 60 In my experience, creating such a pen in a public location does not necessarily result in human disturbance, so long as informative signage is put in place. As recently as April 2021, I constructed a similar pen in a popular recreation reserve on Otago Peninsula (located on Te Rauone Beach). Here, signage was put in place explaining the purpose of the pen and a description of the lizard species present, and the purpose of the rodent bait stations. A warning was also issued on the sign, highlighting the presence of a toxin.
- 61 To date, the pen has not been disturbed, and the bait stations remain in place. Bait stations are also locked and anchored to the ground and can be obscured from sight by rocks. In my view, all of this helps to deter casual encounters by unattended dogs and children.
- 62 In the case of the Otago Peninsula example, it is hoped that once works are completed, part of the pen will remain in place as a further signal that sensitive values are present within.

¹⁰ Note: Canterbury grass skinks are not known to be a desirable/targeted species by poachers, and the issue of poaching this species is not raised by Dr Lettink in her peer review of the Flyride LMP.

- 63 The salvage methods section of the LMP will be revised to address Dr Lettink's concerns. The revision will include the need to include signage in and around the release pen, and recommended text for said sign will be provided.

The need to plan for >26 Canterbury grass skink captures

- 64 On the issue that more than 26 Canterbury grass skinks maybe present, I agree that this could well be the case as estimating the population size of grass skinks is riddled with problems (see paragraph 32 of Dr Lettink's evidence and paragraphs 88-95 of this response).
- 65 My estimate of >26 was, however, well considered and based on 34 hours of lizard survey of which 4 hours was dedicated to searches of potential Canterbury grass skink habitat. I remain of the view that Canterbury grass skinks were not at all common, with only 5 detected in total (1.25 skinks per hour searched over their habitat).
- 66 Notwithstanding my opinion on likely numbers of Canterbury grass skinks salvaged, I agree that enlarging the release pen ahead of salvage from 36 m² to 49 m² and adding another 1 m³ of rock habitat to the pen will not only provide contingency habitat should more skinks be salvaged than anticipated, but the rock will further enhance habitat for Canterbury grass skinks at the summit of Conical Hill.
- 67 The LMP will be revised to include these two contingency habitat actions for Canterbury grass skinks.

Construction of the release pen needs to allow for any skinks already resident at the site

- 68 During my lizard surveys on Conical Hill, no Canterbury grass skinks were detected over the site proposed for the release pen, but given they were present in similar habitat nearby, I assumed they could be present. To this end, I confirm that the issue of managing effects on any resident Canterbury grass skinks was considered in the chosen design and location of the release pen for Canterbury grass skinks.
- 69 Nevertheless, I agree with Dr Lettink that describing how the construction of the release pen will avoid creating adverse effects on any resident Canterbury grass skinks, would be a useful addition to the LMP.
- 70 To construct the release pen, the surface substrate plus a 2 m buffer will first be removed by hand and using hand tools, to bare ground. This action will be assisted and supervised by the project herpetologist.

- 71 Although it is not expected that any skinks at all will be located during ground clearance, any Canterbury grass skinks encountered will be temporarily retained onsite using best practice holding methods, for eventual release into the completed pen.
- 72 To help visualise the result of the ground clearance method described in paragraph 70, I have attached a photograph of ground cleared for a single test anchor ahead over the preliminary stages of the Flyride development (Appendix 4). The ground pictured was cleared by me and a Hurunui District Council ranger, Mr Chris Hughey, using hand tools only. Mr Hughey will lead the construction of the release pen.
- 73 Following the ground clearance, construction activity to build the release pen will be restricted to the cleared area, and the pen will be completed using hand tools only. I anticipate the pen will be completed in 3 days.
- 74 The LMP will now be revised to specify how the construction of the fence will avoid creating adverse effects on any resident Canterbury grass skink. With this amendment along with amendments explained in paragraphs 51-67 above, I believe Dr Lettink's concerns relating to adherence to principle 5 have been fully addressed.

Principle 6: Receiving sites and their carrying capacities must be suitable in the long-term

- 75 Principle 6 relates to:
- 75.1 The protection of release sites in perpetuity from future disturbance; and
- 75.2 Carrying capacity of lizard populations at release sites.
- 76 Principle 6 assumes that any wild and free ranging lizard population is already at carrying capacity, and that to make room for new salvaged lizards, enhancements are required that will likely increase capacity. Typically, enhancements include augmenting existing habitat with new habitat (e.g., the addition of suitable rock) and/or implementing predator control.
- 77 In Dr Lettink's opinion, lizard salvage guiding principle 6 has only been partially achieved, primarily because proposed release sites for salvaged rough gecko and Canterbury grass skink are situated on Conical Hill, a recreation reserve that has a raft of exotic predator's present (Table 2 and paragraphs 51-52 of Dr Lettink's evidence).
- 78 I agree with Dr Lettink's assessment insofar as strict adherence has not been achieved in the Flyride LMP and explain below why my approach was nevertheless suitable for the Flyride LMP.

The protection of release sites in perpetuity from future disturbance

- 79 Dr Lettink recognises in Table 2 of her evidence that the site, being a recreation reserve, does enjoy legal protection, but notes that the release sites will be subjected to on-going disturbance by visitors to Conical Hill. She suggests that this disturbance will likely be greatest for the day-active rough gecko and Canterbury grass skink (Table 2 of Dr Lettink's evidence).
- 80 As detailed in paragraphs 58-59 above, options are limited on Conical Hill and mechanisms will now be put in place to deter the public from directly disturbing the Canterbury grass skink release site. On reflection, the establishment of a low stature amenity fence around the track edge of the grassland, below the summit lookout where Canterbury grass skinks will ultimately establish, will further protect the area from unwelcome foot traffic and ensuing disturbance.
- 81 Although Canterbury grass skinks at the summit are already subjected to high levels of disturbance by the public, the LMP will now be updated to reflect the need to create a low-stature amenity fence on the public interface of the grassland/Canterbury grass skink release area, in addition to the measures detailed above (paragraphs 63, 67 and 74).
- 82 For rough gecko, release sites will be very discrete and as detailed in paragraph 55 above, will be situated at least 100 m from their capture location. For these reasons, release sites for rough gecko are buffered from disturbance, and in my opinion, no additional changes are required.

Carrying capacity of lizard populations at release sites

- 83 The carrying capacity at release sites was considered for those lizard species to be salvaged, but I acknowledge further explanation on this aspect would improve the LMP.
- 84 Carrying capacity cannot be determined with any precision for the cryptic and sparsely distributed rough gecko, as acknowledged by Dr Lettink in paragraph 27 of her evidence.
- 85 Wasp control, at least over the longer term, is anticipated to increase the carrying capacity of rough gecko over Conical Hill, as Dr Lettink agrees in paragraph 46 of her evidence.
- 86 For Canterbury grass skink, carrying capacity at the release site will be elevated by short-term rodent control, and the addition of species-specific rock habitat at the release site, that will now be increased from 1.5 m³ of rock to 2.5 m³ of rock to provide contingency rock

habitat in case more Canterbury grass skinks than expected are salvaged (see paragraphs 64-67).

- 87 I am of the opinion, therefore, that concerns raised by Dr Lettink relating to principle 6 (protection of release sites and carrying capacity of release sites), have been appropriately addressed, and as noted above in paragraph 81, the LMP will be revised to include the requirement to provide a low stature amenity fence to further safeguard Canterbury grass skink release habitat.

Principle 7: Post-release monitoring for salvaged lizards

- 88 I agree with Dr Lettink's assessment that principle 7 was not given effect in the LMP, and note that Dr Lettink, in paragraph 35 of her evidence, accepts there are many situations where other activities have greater benefits than post-release monitoring.

- 89 For any given project, the decision to add or not post-release monitoring takes into consideration multiple factors. In the case of the Flyride LMP, this included consideration of:

89.1 The comprehensiveness of other aspects of the Flyride LMP mitigation/compensation package. In the case of the LMP for the Flyride, and as noted in paragraph 33, salvage forms only a small part of a more comprehensive mitigation/compensation package.

89.2 Interpretable data will be unobtainable if the number of lizards salvaged is too low. Robust data cannot be generated. Furthermore, if lizards are unable to be individually identified, it will not be possible to draw conclusions about the outcomes for salvaged lizards.

89.3 How monitoring results will trigger (or not) contingency actions, i.e., there needs to be a purpose to the monitoring.

- 90 I maintain the view that post-release monitoring is not appropriate or useful for the Flyride LMP. My position is not challenged by DOC nor does it conflict with Dr Lettink's views on this principle. For example, in paragraph 27 of Dr Lettink's evidence she states:

"it is not possible to determine population size in Conical Hill/Te Tahi o Rauheia or conduct any meaningful population trend monitoring."

- 91 I concur with her assessment, and in my opinion, the only feasible method to get some information on the fate of any salvaged and released rough geckos, involves fitting animals with radio-transmitters, a method suggested by Dr Lettink to manage rough gecko homing in paragraph 30 of her evidence.

- 92 This method is intrusive and poses survival risk to the animal. The radio-transmitters impede natural movement meaning the gecko may become more vulnerable to predators and, at times, the transmitter can get snagged causing distress and sometimes death to the monitored animal.
- 93 Post-release monitoring of Canterbury grass skink poses a different suite of challenges. For example, the inability to reliably identify individual skinks. This constraint, among others, means that interpretable data from which a useable conclusion might be drawn is unobtainable. The consequence is that monitoring would be pointless and a waste of resources that could be spent on actions that produce material benefit to the lizards.
- 94 Instead, in the case of the Flyride LMP mitigation/compensation package, other aspects of the mitigation/compensation package will provide a more direct benefit to Canterbury grass skinks - such as the rehabilitation of at least 500 m² of habitat at the summit of Conical Hill including addition of quality rock habitat.
- 95 No amendments will be made to the LMP to address principle 7, and as noted above, I believe Dr Lettink's concerns are addressed through the explanation provided in paragraphs 88-94.

UPDATED DOC THREAT RANKINGS

- 96 At the time of writing the LMP, DOC threat rankings had been in place for over 5 years¹¹. As was appropriate, a clear assumption was provided in section 3 the LMP stating that the Flyride LMP mitigation/compensation package was based on the threat rankings that were in the public arena, at the time of writing.
- 97 New threat rankings came out early October 2021¹², 5 months after the LMP was submitted to DOC. New threat rankings affect rough gecko, Southern Alps gecko and pygmy gecko, all of which were elevated to higher threat status categories (see paragraphs 33-34 of my summary statement and paragraph 20 and Table 1 of Dr Lettink's evidence).
- 98 Dr Lettink raises the issue of new threat rankings in paragraph 20 of her evidence but does not form an opinion on whether the LMP should be revised considering the new threat rankings.

¹¹ Hitchmough, R.A, Ben Barr, Mary Lettink, Jo Monks, James Reardon, Mandy Tocher, Dylan van Winkel and Jeremy Rolfe. Conservation status of New Zealand reptiles, 2015. New Zealand Threat Classification Series 17. 14 p.

¹² Hitchmough RA, et al. 2021. Conservation status of New Zealand reptiles, 2021. New Zealand Threat Classification Series 35. Department of Conservation, Wellington. 15 pp.

- 99 Revising the Flyride LMP to take account the updated DOC threat rankings could affect which species are subject to lizard salvage (i.e., salvage would be required for Southern Alps gecko and pygmy gecko) and may affect a subjective assessment of mitigation/compensation sufficiency.
- 100 On the latter and most important issue, in paragraph 20 of her evidence Dr Lettink states:
- "I will be using the most recent threat rankings throughout my evidence..."*
- 101 This means that when forming her view that the Flyride LMP mitigation/compensation package was sufficient to address anticipated effects (paragraph 57 of Dr Lettink's evidence) she considered the elevated threat rankings for three of the four lizard species of the Flyride project.
- 102 The elevated threat rankings of lizards present at the site make no material difference to the appropriateness of the actions specified in the LMP. In particular, the package that includes a 4-ha QEII covenant and related management plan over high-quality rough gecko habitat, creates a package that, in my view, more than compensates for anticipated losses.
- 103 In support of this notion, DOC in their assessment of the LMP required a QEII covenant to be secured that was at least the same size as the area of rough gecko habitat affected by the Flyride. The 4-ha covenant secured far exceeds this requirement and will be at least three times larger than the area of rough gecko habitat affected.
- 104 Also, the rock outcropping habitat of the covenanted area is likely to provide habitat for the widespread Southern Alps geckos, further compensating for anticipated losses for this species, including quality rock outcropping habitat near Tower 5 (referred to in paragraph 44 of Dr Lettink's evidence).
- 105 The new and elevated threat rankings do not change the assessment that the Flyride footprint is significant fauna habitat under Section 6(c) of the RMA (1991).
- 106 Likewise, elevated threat rankings do not change my assessment that in the absence of appropriate mitigation and compensation, adverse effects of the Flyride on lizard values will be significant, and this stance is also supported by Dr Lettink in paragraph 37 of her evidence.
- 107 Finally, in terms of residual effects, the QEII covenant helps protect 4-ha of quality rough gecko habitat from future development/habitat clearance, and the lizards within will benefit from the implementation

of the management plan. I remain of the view, therefore, that even with the elevated threat rankings, that there will be no significant residual adverse effects once the Flyride LMP mitigation/compensation package is fully implemented.

- 108 My opinion is that the LMP is not materially affected by updated threat rankings and so should therefore stand as is. I note that neither Dr Lettink nor DOC recommend revision to reflect the new threat classifications.

SIGNIFICANCE OF EFFECTS

- 109 In response to the Commissioners 4th Minute, I confirm that in my opinion and in the absence of appropriate avoidance, remediation, rehabilitation, mitigation, and compensation, the Flyride will generate significant adverse effects on the lizard values of the footprint.
- 110 Dr Lettink agrees with this assessment in paragraph 37 of her evidence.
- 111 However, in my opinion, the acquisition of the 4-ha QEII covenant and implementation of the related management plan over high-quality rough gecko habitat more than addresses these residual effects, and as a result, there will be no significant residual effects after the Flyride LMP mitigation/compensation package is effectively implemented in its entirety (also see paragraph 26).
- 112 This is also consistent with Dr Lettink's conclusion reached in paragraph 57.

CONCLUSIONS

- 113 To address some matters raised in the peer review of the LMP, some amendments will be made to the LMP. The changes are summarised in Appendix 2, and largely relate to technical detail of rough gecko and Canterbury grass skink salvage and release.
- 114 In my opinion, lizard management and lizard values will be all the better for these changes, should consent for the Flyride be granted.

Dated: 5 November 2021

A handwritten signature in blue ink, appearing to read 'Mandy D Tocher', written in a cursive style.

Mandy D Tocher

APPENDIX 1: AKASHA NOTES FROM TEAMS MEETING, AUGUST 6TH 2021**Meeting Summary**

Attendees: Graeme Abbot, Ben Smith, Mat Whittleston, Mandy Tocher, Nicola Toki, Sandy Yong, Lynn Adams, Akasha Warner-Mason.

This meeting was to discuss the high level mitigation required for lizard salvage in relation to the recently re-classified, Nationally Endangered Rough gecko, currently in Conical Hill. DOC's technical advisor (Lynn Adams) has confirmed that the Lizard Management Plan (LMP) created by herpetologist Mandy Tocher was of high quality and up to DOCs standards. The issues arises around the concern for Rough geckos which are not expected to be able to succeed in the Conical Hill area despite the mitigation currently proposed. The LMP mentioned the possible creation of a conservation covenant on a currently unprotected piece of private land in vague language, it is the requirement of DOC that this aspect be committed to and expanded on in detail before the application can be progressed towards a favourable outcome.

Nicola Toki (Operations Director for the Eastern South Island) has stepped in to be the decision maker on this application due to the status of the Rough gecko.

Current progress from Council:

- Conservations have been had with multiple landowners in the immediate area due to ease and social importance of having the conservation covenant close to the area of lizard salvage.
 - One such landowner has a piece of land adjacent to Conical hill of 11ha, 3-3.5ha of which is still covered in kanuka, Rough geckos have been found in this area according to 2019 surveys. A small slice of this is being considered as a conservation covenant.
 - The developer owner this land intends to subdivide for commercial purposes and will need apply for their own wildlife authority, LMP, and suitable mitigation.
 - It is considered, due to being in a difficult situation, that this land may not be ideal for the conservation covenant.
- The council is up against a difficult situation as the land needing to be covenanted is owned by others, they are currently in the position of resource consent herrings and it is a requirement of this consent to have a wildlife permit. Ultimately the council needs to be able to make a call on whether their development can occur in the next 3-4 weeks (Oct) or funding could be lost.

Alternate land for conservation covenant:

- The land size is not set, however the population of resident Rough gecko in the proposed land should match, or be greater than, the population likely to be effected by the development activity.
 - Conservation covenant should be private land that is not currently protected, although council land could be considered. Key is that an existing population of geckos is present.
 - LMP suggests 1400m² area of land on Conical Hill is affected and that around 12-15 geckos were surveyed in the area (estimate from memory).
 - DOC recommends Mandy continue conversations with Marieke (Fauna Finders) around private land further afield for the covenant as adjacent land may not be possible.
- Possible land including details of size and current Rough gecko populations should be worked through between Mandy and Lynn to come to an agreement on what will be considered to confer protective benefit.

Public interest in the lizard activity:

- Multiple members and groups of the public have approached DOC in reference to the activity; they have not expressed opposition to the development but rather want to ensure that the Rough gecko and NZ Falcon in the area are being provided for.
 - Council has not been able to convey plans to mitigate the effects of the activity to the public due to fear of poaching, which is a real and genuine concern.
- Going forward a form of communication balancing these two things should be looked into to manage this interest from the public.

Iwi consultation:

- Iwi consultation has not yet commenced as the details of the activity with specific reference to the conservation covenant were too vague.
 - DOC will look into our processes and possibly it may be appropriate to begin consultation soon – discussions with ranger to occur internally.
 - As Graeme has a relationship here, it's a possibility for him to update iwi in an ongoing fashion if this is deemed appropriate by DOC.
- Council will be updated by DOC around what stage in the process iwi consultation can begin.

Fence option:

- From DOCs position fencing the area with a 6-foot fence and cap is the best option, however it is expensive and requires significant monitoring and management – this could be done by community groups.
- Graeme has had many conservation in his capacity in a trust around the potential to fence the entirety of Conical Hill to work towards a predator-free area.
- Largely for the time being decided to be too difficult due to public access, mountain biking tracks etc, however going forward optimistically it could be an idea one day.

Closing actions:

1. DOC will look into when iwi consultation can start in the process.
2. Mandy to discuss further with Marieke around private land further afield that would be suitable for a conservation covenant.
3. Mandy to have open discussions with Lynn around the suitability of these private locations for protective benefit of the Rough geckos.
4. DOC is looking for a commitment around a conservation covenant which may look like signed documents of intention to create a conservation covenant from the land owner and the council although further conversations between Mandy and Lynn will be had around this. Having the covenant actually operational will not be required for the wildlife permit to be issued however it will be a special condition should an authority be granted.

If anyone has any questions or needs clarity on anything please let me know.

Ngā manaakitanga,

Akasha Warner-Mason

Pronouns: [She/Her](#)

Kaitūtohu | Permissions Advisor

Kirikiroa | Hamilton Office

Te Papa Atawhai | Department of Conservation

027 364 8430

Appendix 2: SUMMARY TABLES OF LMP CHANGES TO BE MADE.

Substantive Issues Raised	Paragraph/s of Dr Lettink's evidence	Course of Action to be undertaken to address Issue
1. No firm commitment to acquire QEII Covenant and apply a management plan to enhance lizard values therein.	Table 2 and paragraph 57	Appropriate land for a 4-ha covenant has been identified, with an agreement expected to be signed next week. The site has high-quality rough gecko habitat over indigenous shrubland and a known rough gecko population; is at least 3 x the size of rough gecko habitat affected by the Flyride, is continuous with PCL and will be subject to a management plan to enhance local lizard populations. The LMP will be updated accordingly.
2. The Covenant and its management plan are considered compensation rather than an offset, following the BBOP definitions of these terms.	paragraph 53	Agreed that the Covenant is offered as compensation as an offset was never considered appropriate to manage lizard values of the Flyride; the LMP will be updated accordingly.
3. Homing of rough geckos back into the works footprint may cause injury/death unless they are moved >100 m from footprint for release.	paragraphs 28-30	The LMP will be revised to state that no rough geckos are to be released within 100 m of their capture site within the Flyride footprint.

Substantive Issues Raised	Paragraph/s of Dr Lettink's evidence	Course of Action to be undertaken to address Issue
4. Public could disturb the release site for Canterbury grass skinks.	Table 2 and paragraphs 30-32	The salvage methods section of the LMP will be revised to include the requirement to include signage in and around the release pen, and recommended text for said sign will be provided.
5. Require provision of extra release habitat in case salvage results in more Canterbury grass skinks than anticipated.	Table 2 and paragraphs 30-32	The LMP will be revised to include two contingency habitat actions for Canterbury grass skinks: a larger release pen and another 1 m ³ of rock habitat.
6. The construction of the release pen for Canterbury grass skinks may harm any skinks resident over the area.	Table 2 and paragraph 33	The LMP will be revised to specify how the construction of the Canterbury grass skink release pen/fence will avoid creating adverse effects on any resident Canterbury grass skink.
7. The release site for Canterbury grass skinks needs to be protected from disturbance from the public.	Table 2 and paragraphs 30-32	The LMP will be revised to include a requirement to provide a low stature amenity fence to safeguard Canterbury grass skink release habitat from disturbance from the public.

Minor Issues Raised	Paragraph/s of Dr Lettink's evidence	Course of Action to be undertaken to address Issue
1. Woody weed control is proposed for at least 5 years but should be undertaken for the project's lifetime.	paragraph 45	Agreed; the LMP will be updated accordingly.
2. Describe target "woody weeds".	paragraph 45	Agreed; the LMP will be updated accordingly – it is an extensive list.

Appendix 3: Extract from DOC guidance document entitled "Key principles for lizard salvage and transfer in New Zealand. Department of Conservation Lizard Technical Advisory Group, 2019. 19 pages.

Key principles for lizard salvage and transfer in New Zealand

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Principle 3: Alternatives to moving lizards must be considered

Given that best practice lizard salvage and transfer processes in New Zealand have yet to be established, are not well-tested, can be time-consuming and costly, and can delay the development of a site for many weeks or months, it makes good sense to ensure that they are used as a last resort. Lizard salvage and transfer is only appropriate if avoidance and remediation measures have not resulted in, or cannot result in, no-net-loss of lizards from the development area. Therefore, DOC requires evidence that due consideration has been given to alternative options to preserve lizards where they occur naturally. Adequate justification for disregarding any available options must be provided.

APPENDIX 4: PHOTO OF CLEARED TEST ANCHOR SITE