

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

Summary of evidence of Mandy D Tocher

Dated: 7 October 2021

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SUMMARY OF EVIDENCE OF MANDY D TOCHER

INTRODUCTION

- 1 My name is Mandy D Tocher. I currently hold the position of Principal Herpetologist for LizardExpertNZ, having very recently moved from a position of Principal Ecologist for Ryder Environmental, Dunedin.
- 2 I prepared a statement of ecological evidence for the Applicant, dated 23 September 2021, which focused on falcon.
- 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. This 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. This 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 In this statement, I firstly summarise the key points addressed in my falcon evidence and respond to submitter evidence of Celia and Dave Rodley, and the Officers s42A report.
- 5 I then detail planned mitigation relating to the lizard values of the Flyride footprint and adjacent areas that will be implemented should resource consent and Wildlife Act permission be granted. In detailing lizard mitigation actions, I respond to the evidence of Vicki Barker for Friends of Conical Hill.

SUMMARY OF EVIDENCE: FALCON

- 6 The falcon, a toanga species, was given a national threat status of as At Risk – Recovering by the Department of Conservation in 2016. Populations are predicted to increase by >10% over the next 10 years.
- 7 Sightings of falcon are common and frequent over the Hanmer Basin, including over Conical Hill. This finding is consistent with results of a 10-year national distribution study published in 2017.
- 8 Predation (especially of ground-based scrapes/nests), habitat loss/change/disturbance, shooting and electrocution are the main reported causes of falcon mortality. Electrocution is not considered relevant to the Flyride project.
- 9 Falcons are agile, resilient, and confident birds, but tend to nest on the ground making them, their eggs, and chicks, vulnerable to predation during nesting. In addition, with disturbance, falcon may

abandon a particular scrape/nest site. Nesting is, therefore, the most vulnerable life-history stage of falcon.

- 10 Falcon can become extremely aggressive when incubating eggs and rearing chicks on the scrape/nest and will usually escalate divebombing behaviour to physical attacks on an intruder that approaches within 50 m of the scrape/nest. Divebombing/swooping behaviour can begin at distances of up to 0.4 km from a scrape/nest.
- 11 Falcons display a range of behaviours, with breeding behaviours such as divebombing and swooping very noticeable to even the most casual observer. There have been no reports, however, of aggressive swooping/divebombing behaviour within the Conical Hill Recreation Reserve, and no records from the Flyride footprint itself including from my own bird survey.
- 12 I readily acknowledge in my evidence in chief (EIC) that not all kārearea/falcon sightings are documented/reported by the public. Observations from submitters Celia and Dave Rodley from Oregon Heights, for example, indicate aggressive behaviour has indeed been observed near to but outside of the Flyride footprint (see paragraphs 22-29 below).
- 13 Based on sighting information to hand, including reports from submitters Celia and Dave Rodley, I believe a healthy local breeding population of falcon exists in and around Hanmer Springs. Moreover, there seems little doubt that the up to 15 km² territory of a pair, likely a breeding pair, includes Conical Hill and the Flyride footprint.
- 14 The construction and ongoing operation of the Flyride may cause a mix of adverse and positive effects for falcon as follows: noise and disturbance causing displacement, noise and disturbance to scrapes/nest sites and breeding pairs, injury and/or death through collisions, habitat loss, and a potential positive effect of improved prey abundance through pest management related to the Lizard Management Plan (see paragraphs 46-47 below).
- 15 In my opinion, of the potential and actual adverse effects identified, only two require management: potential disturbance of scrapes/nest sites and breeding pairs, and collisions with Flyride passengers/infrastructure.
- 16 To manage any potential disturbance of scrapes/nest sites and breeding pairs, I recommend four actions are undertaken by the Applicant. These actions include and extend current best practice actions for plantation forestry operations where nests are present. Recommended actions also align fully with resource consent conditions formulated by DOC, for falcon elsewhere.

- 17 To manage potential collisions by falcon into Flyride components, which at worst will be a rare event, I recommend an adaptive management approach is taken. Under adaptive management, collisions are reported and if they occur at a frequency of at least 1 every 2 years, bespoke remedial actions must be developed, in consultation with DOC.

COUNCIL S42A REPORT

- 18 The Council Officer was satisfied that actual or potential effects on indigenous lizards from the Flyride project, is most appropriately addressed and managed under the Wildlife Act 1953.
- 19 I concur with the Officer's assessment as all indigenous lizards are absolutely protected under the Wildlife Act (1953) including those with the 'Not Threatened' DOC threat classification. Under RMA-related significance criteria, such as those referred to in paragraph 35, 'not threatened' taxa such as pygmy gecko and Southern Alps gecko do not trigger site significance and therefore, can be overlooked in RMA decisions.
- 20 The Officer was unable to reach a conclusion on the actual and potential effects of the Flyride project on falcon (paragraph 145 of the s42A report).
- 21 At paragraphs 47-60 of my EIC I detail my effects assessment for falcon and the Flyride project, a summary of which is provided here in paragraph 36.

SUBMITTER EVIDENCE

Celia and Dave Rodley

- 22 I note with interest the additional and expanded descriptions of falcon behaviour observed by Celia and Dave Rodley from their Oregon Heights property, reported in their supplementary evidence. Importantly, observations of "aggressive behaviour" (paragraph 3 of the supplementary evidence of Celia and Dave Rodley) are significant and form the first documented observations of aggressive behaviour in falcon in the vicinity of the Flyride footprint.
- 23 Although the timing of observations of falcon aggressive behaviour are not reported in evidence; Celia and Dave Rodley do provide some valuable context by commenting that such observations in the evening form "a very special occasion" (paragraph 3 of the supplementary evidence of Celia and Dave Rodley). Also, observations have occurred at some stage since 1999, when their house was first built, i.e., occasionally over the last 22 years.

- 24 Falcons in forestry areas are known to establish nests in recently cleared forest, so called cutover areas. In paragraph 41 of my evidence in chief EIC I acknowledge that cutover habitat favoured for nesting by falcon is present near to the proposed Base/Stop station. I believe it is possible, therefore, that falcon may have nested in the recently cleared forest on Conical Hill following the felling of trees in 2016, and this nesting is consistent with occasional observations of Celia and Dave Rodley from their property on Oregon Heights over the last 22 years.
- 25 Alternatively, the aggressive behaviour observed by Celia and Dave Rodley may have been of a breeding pair of falcon nesting elsewhere, up to 0.4 km from the nest site and outside of Conical Hill and closer to Oregon Heights. The observation/s of aggressive behaviour from the Oregon Heights property is consistent with the reported observation of "...falcons defending their ground nest under a fallen tree just above our house" reported in the first submission of Celia Rodley (paragraph 8).
- 26 In my opinion, the aggressive behaviour observed on Oregon Heights, c. 120 m from the southern edge of the Flyride footprint, does not necessarily mean falcon were nesting on Conical Hill/Flyride footprint. Moreover, in terms of the existing environment, the cutover area cleared in 2016 now has scrubby vegetation up to 2 m tall in places, rendering this habitat now unsuitable for falcon nesting (but suitable for foraging).
- 27 Notwithstanding the possibility that nesting occurred c. 5-years ago on Conical Hill (or nearby); paragraph 54 of my EIC acknowledges nesting could also occur over 2021/2022 during construction. I have recommended, therefore, a series of actions to be undertaken by the Applicant in the event that nesting does occur (see paragraph 61 of my EIC). These actions inform proposed consent conditions.
- 28 I note that the actions recommended in paragraph 61 of my EIC are informally endorsed by DOC, insofar as DOC use the same published peer reviewed paper to develop their consent conditions relating to falcon nests. Also, the recommended actions in paragraph 61 of my EIC go further than the paper favoured by DOC by adding a separate clause, derived from forestry best practice, detailing actions required if a nest cannot be located (paragraph 61.4(d) of my EIC). My recommendations also include actions relating to the Applicants contractors.
- 29 In summary, having read and considered the supplementary evidence provided by Celia and Dave Rodley, I have not read anything that changes the views expressed in my EIC. I remain confident that the proposed consent conditions will protect falcons (if any) that choose to nest on Conical Hill over 2021/2022 during construction.

SUBMITTER EVIDENCE

Vicki Barker – Friends of Conical Hill

- 30 Vicki Barker, for Friends of Conical Hill, having not had the opportunity to view the Te Tihi o Rauheia, Conical Hill Reserve Switchback Project Lizard Management Plan (LMP), has raised legitimate concerns regarding indigenous lizards and the actual and potential effects of the Flyride project on them (paragraphs 7.27-7.28 of the EIC of Vicki Barker, for Friends of Conical Hill).
- 31 As noted in paragraph 3, I have completed a Lizard Management Plan (LMP) for the Applicant. I will now describe the very thorough effects assessment undertaken within the LMP, an assessment that was central to the development an appropriate mitigation package.
- 32 In response to Ms Barkers concerns over the detail of lizard mitigation (paragraph 7.27 of the EIC of Vicki Barker, for Friends of Conical Hill), I will describe a comprehensive mitigation package that firstly sought to avoid lizard habitat, to then remediate to a high standard habitat that could not be avoided and to then employ a series of wide-ranging mitigation measures to minimise effects on all lizard species of the Flyride footprint. Mitigation also includes a substantive off-site measure, that of securing a sizable conservation covenant to protect rough gecko habitat in perpetuity.

Effects assessment

- 33 Four lizard species were found to reside within the Flyride footprint: the not threatened Southern alps gecko (*Woodworthia* "Southern Alps") and pygmy gecko (*W.* "pygmy"); the At Risk - Declining Canterbury grass skink (*Oligosoma* aff. *polychroma* Clade 4) and the Threatened – Nationally Vulnerable rough gecko (*Naultinus rudis*).
- 34 Updated DOC threat classifications, released October 2021, have revised threat rankings for pygmy gecko and Southern Alps gecko to At Risk – Declining, and for rough gecko, threat ranking has increased to Threatened – Nationally Endangered.
- 35 Lizard values (both population and habitat values) are detailed in the LMP, along with an assessment of fauna habitat significance (as per Section 6(c) RMA 1991). I found the Flyride footprint was a significant fauna habitat under significance criteria of Section 2, Appendix 3 of the Canterbury Regional Policy Statement; under significance criteria of Appendix 13.1 of the Hurunui District Plan, and under the DOC guidelines for Assessing Significant Ecological Values (Section 8 of the LMP).
- 36 I then detail the actual and potential effects of the Flyride construction and ongoing operation on lizard values of the footprint. To this end, I provide a breakdown of effects at multiple scales; for example, effects

are detailed on individual lizards (number of lizards of each species affected); lizard habitat (area affected for each species), and effects at the lizard population level for each species (Section 10 of the LMP).

- 37 I consider this addresses Ms Barker's concern around the assessment of effects on lizards.

Mitigation package

- 38 The LMP, in Section 12, describes a generous mitigation package that I believe will more than balance anticipated lizard population and habitat losses related to the Flyride project. The lizard mitigation package includes multiple avoidance, remediation/rehabilitation, and mitigation measures, including a substantial off-site compensation measure.
- 39 Before describing the mitigation package in more detail, I note that the mitigation package was formed, and sufficiency subjectively determined, under an assumption that lizard threat rankings were those in the public domain at the time of writing, i.e., those detailed above in paragraph 33, that were current in May 2021 when the LMP was completed and submitted to DOC. DOC have not challenged this approach.
- 40 The LMP details eight actions to be implemented to ensure that some habitat for rough gecko, Canterbury grass skink, pygmy gecko and Southern alps geckos will be avoided during installation of the Flyride. For example, a decision was made following the lizard survey to avoid a 35 m section of track between Towers 1 and 4, known to be home to Canterbury grass skink, pygmy gecko and Southern alps geckos, and perhaps rough gecko.
- 41 Areas of the Flyride footprint that will be cleared either fully (through earthworks), or partially cleared (selective tree and shrub removal), will be subject to stringent rehabilitation. Rehabilitation of affected areas will only use eco-sourced indigenous plants suitable as habitat for rough gecko and/or Canterbury grass skinks; and rehabilitation will feature a rigorous and lengthy maintenance regime to ensure woody weeds cannot get established in favour of indigenous species.
- 42 To avoid injury and death of individual rough geckos and Canterbury grass skinks, thus minimising the impacts of the Flyride development, an intensive salvage (rescue) of these two species will take place ahead of works.
- 43 Release methods for rescued lizards have been carefully crafted using best practice methods to maximise the chance that released animals will survive, will not home (return) back to works footprint during construction, and to ensure their release will have minimal effects on any lizards already present at the release site.

- 44 Mitigation measures will also include the creation of 1.05 ha of new habitat for rough gecko, Canterbury grass skink, Southern alps geckos and pygmy geckos adjacent to the footprint, including the restoration of important linkages between rough gecko indigenous shrubland habitat inside and outside the Conical Hill Recreation Reserve.
- 45 Creation of new habitat will involve a mix of indigenous plantings and the provision of new rock habitat, a scarce resource over unshaded areas of Conical Hill. One such new habitat site, near the summit of Conical Hill, will be used as a release site for salvaged Canterbury grass skinks. This site will be restored and augmented with 6 m² rock, ahead of salvage.
- 46 Rodent monitoring will be undertaken across Conical Hill Recreation Reserve including new habitat sites to inform decisions, in the future and as required, regarding the need to carry out rodent control. Notwithstanding this rodent monitoring, short-term rodent control will be undertaken over the Canterbury grass skink habitat to help establish the salvaged population.
- 47 Wasp control will also be implemented over Conical Hill, indefinitely. Wasps are a predator of juvenile lizards, with arboreal species such as the rough gecko likely to benefit most from this control.
- 48 In addition to the avoidance, remediation and mitigation measures described above; at least one conservation covenant is being sought by the Applicant over rough gecko habitat on private land.
- 49 Pleasing progress has been made to secure a 4-5 ha QEII covenant over private and that is otherwise unprotected. Once secured, the covenant will be the first ever established on private land for rough gecko, a species for which habitat loss on private land is a significant threat, hence its recently elevated threat status.
- 50 The covenant in question will be applied over a site where rough geckos are known to exist as an apparently viable population. The covenant will be subject to a management plan prohibiting earthworks and vegetation clearance, afforestation, and providing for woody weed control in perpetuity. It is expected that management of the new covenant may also benefit other lizard species residing there, such as those present over the Flyride footprint.
- 51 I consider this addresses the concern raised in Ms Barker's evidence regarding the lack of detail available around the mitigation package proposed.

Assessment of s 6(c) RMA

- 52 Ms Barker also refers to the lack of a Section 6c (RMA, 1991) significance assessment of the Flyride footprint in the Applicants evidence (paragraphs 7.30-7.31 of the EIC of Vicki Barker, for Friends of Conical Hill). To this I can confirm a significance assessment was performed in Section 8 of the LMP, a summary of which is provided in paragraph 35.
- 53 Moreover, as well as multiple indigenous lizard species of the Flyride footprint triggering the rarity significance criterion of the relevant criteria sets, the presence of the At Risk – Recovering falcon also triggers significance under all criteria sets (this is addressed in Section 7 of the LMP for other fauna species detected during surveys to develop the LMP).
- 54 I consider this addresses Ms Barker’s concern regarding there being no significance assessment.

CONCLUSIONS

- 55 I am confident that the Flyride project will not impact significantly on the local falcon population, so long as my recommendations, provided in paragraphs 61-64 of my EIC, are applied as conditions of resource consent, should it be granted. Indeed, I hold the view that the pest management planned to manage affected lizard values may result in a net positive effect for falcon that frequent Conical Hill.
- 56 For lizards, I anticipate that there will be no significant residual adverse effects once the avoidance, remediation, mitigation and off-site compensation actions described in the LMP have been implemented effectively. In the longer term, I hold the strong view that implementation of the LMP will enable lizard populations within Conical Hill Recreation Reserve, and further afield, to be maintained at higher levels than those observed pre-installation and operating of the Flyride.
- 57 I am happy to answer any questions relating to my evidence, or the Lizard Management Plan.

Dated: 7 October 2021

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

Mandy D Tocher