

MT MESSENGER BYPASS PROJECT: SUMMARY OF EVIDENCE OF SIMON PERCIVAL CHAPMAN (BATS AND HERPETOFAUNA) FOR THE NZ TRANSPORT AGENCY

1. I have been involved in the Mt Messenger Bypass project since November 2016. I designed and implemented bat and herpetofauna surveys, initially to assist in route selection and design, and subsequently to assess the Project's effects on bats and herpetofauna. I participated in the first of two MCA workshops during which I provided expert input on the implications of the presence of bats, and the likely presence of native herpetofauna, for the selection of route options, alignment optimisation and construction methodologies. I have also provided substantial input to the ELMP prepared for the Project, particularly as it relates to bats (Chapter 5) and herpetofauna (Chapter 7).

Bat and herpetofauna survey and assessment methodologies and results

2. Acoustic surveys for bats were carried out using ABM units within the Project footprint and wider Project area. Long-tailed bats were detected at 99 of 105 survey sites. No short-tailed bats were detected. A bat trapping and radio-tracking programme was also implemented. No bats were captured during nine nights of attempted trapping, despite a substantial effort at 11 trapping sites.
3. Three herpetofauna survey methodologies were utilised:
 - (a) artificial refuge surveys using ACOs and CCFCs;
 - (b) VES including manual daytime searching and nocturnal spotlighting; and
 - (c) funnel trapping.
4. No herpetofauna were found within the Project footprint. A colony of copper skinks was found on a farm during manual daytime searching approximately 600m west of the Project footprint.
5. Assessments of ecological effects for bats and herpetofauna broadly followed the EIANZ EclA guidelines¹, with some adaptation, including allowance for expert opinion to be applied within the context of the EIANZ framework.
6. For bats, I conservatively assessed the overall level of effects as "Moderate" for long-tailed bats, and "Low" for short-tailed bats.
7. I conservatively assessed the overall level of effects of the Project on herpetofauna as "Moderate".

¹ EIANZ, 2015. Ecological impact assessment (EclA): EIANZ guidelines for use in New Zealand: Terrestrial and freshwater ecosystems. Melbourne: Environment Institute of Australia and New Zealand. 100 p.

Measures to avoid, mitigate and offset/compensate potential effects on bats and herpetofauna

8. Measures to avoid, mitigate and/or offset/compensate potential effects of the Project on bats include:
 - (a) avoiding effects through Project route selection and design, the implementation of VRP to mitigate to a negligible level (in my experience) the felling of occupied bat roosts; and
 - (b) a large-scale PMA of 3,650 hectares and habitat enhancement to mitigate and offset/compensate the overall effects of the Project on ecological values. The PMA area has been increased from 1,085 to 3,650 hectares primarily to benefit bats in the wider Project area.

9. Measures to avoid, mitigate and/or offset potential effects of the Project on herpetofauna include:
 - (a) minimise effects through Project route selection and design;
 - (b) the implementation of an HMP aimed at salvaging and relocating native lizards to suitable habitats away from the Project footprint; and
 - (c) pest control and habitat enhancement in the PMA to mitigate and offset the overall effects of the Project on ecological values which may also benefit some herpetofauna species.

10. In addition, as there is some uncertainty as to the precise level of effect the Project will have on herpetofauna, an area (no smaller than one hectare) of known significance for herpetofauna outside the Project footprint will be selected in consultation with DOC for the Transport Agency funded predator-proof fencing and pest eradication to offset the Project's possible residual effects on herpetofauna. The location of the site is being progressed with the landowner and management specifications for the fence and pest management will be added to the ELMP.

11. I support the mitigation and offset/compensation package (the updated version of the ecological Restoration Package as presented in the supplementary evidence of Mr MacGibbon) proposed by the Transport Agency, which in my opinion represents an appropriate response to the Project's actual and potential construction and operational effects on bats and herpetofauna. In my opinion, any effects of the Project on bats and/or herpetofauna will be appropriately addressed. I consider the Project will have a

net positive effect for bats and and no net loss for herpetofauna (and possibly a net positive effect).

12. In particular, two aspects of the revised Restoration Package will ensure a positive outcome for bats and herpetofauna respectively. Specifically:
 - (a) a 3,650-hectare PMA with intensive pest management to be carried out in perpetuity will ensure the long-term survival of a viable population of a bat species likely to be in decline across the vast majority of its range. This will go substantially beyond mitigating/offsetting/compensating the effects of the Project on long-tailed bats; and
 - (b) a >1 ha pest-free lizard enclosure will make a substantial contribution towards the conservation of a poorly-known 'At-Risk' herpetofauna species with few known strongholds (striped skink), and is also likely to provide a safe and secure release site for herpetofauna salvaged from the Project footprint.
13. Additionally, the reduced VRP will result in a clear focus on minimising the risk of communal roosts trees being felled while occupied by bats. It enables resources to be targeted towards ecological management, certain to have substantial benefits for bats and the adverse effects of vegetation clearance on long-tailed bats is likely to be negligible.

Response to DOC's submission and evidence

14. DOC's submission raises a number of points, including:
 - (a) in relation to bats, the need for a pre-consenting mark-recapture study, the measures needed to address effects on bats and the need for post-construction monitoring; and
 - (b) in relation to herpetofauna, the need for a precautionary approach, the need for a "*compensation approach*" in addition to mitigation measures proposed, possible "*unintended outcomes for lizards*" as a result of pest management (in particular mice and rats) and the need to include further specific measures in the ELMP and PMP.
15. In terms of the mark-recapture study, this was attempted over a 9-day period in December 2017 however no bats were captured. Difficulties in trapping bats are not uncommon, however in the absence of the information that such a study could have – if successful – provided, a conservative approach to the assessment of effects on bats was required and has been adopted. The approach adopted in my view appropriately

reflects the information obtained from the ABM surveys and will ensure potential effects on bat roosts will be appropriately avoided or mitigated.

16. In my view, and as set out above, the measures included in the revised Restoration Package for addressing effects on bats are substantial and will provide for the growth of, and long-term sustainability of, a long-tailed bat stronghold in North Taranaki. In my opinion, monitoring should only be required as a reflection of the level of effects of the Project on bats and where monitoring results can be tied to the effects of the Project. I do not consider acoustic monitoring is capable of providing information about population size and trends.
17. I consider the proposed revised Restoration Package programme will be more than sufficient to address any residual effects of the Project on bats. The size of the proposed PMA has been increased from 1,085 to 3,650 hectares to allow for uncertainty and to provide buffering. Combined with the adjacent Parininihi pest control area the total area of pest control exceeds the 5,000 hectares recommended by DOC for long-tailed bat population recovery.
18. In terms of herpetofauna, the avoidance and minimisation achieved through the selection and design process, on-site mitigation (salvage and relocation), the revised Restoration Package and the >1 ha sanctuary will collectively address the Project's actual and potential effects on herpetofauna appropriately. To the best of my knowledge the lizard compensation proposed for the Project (>1 ha pest-proof enclosure known to have rare native lizards within) represents a substantial step up from that proposed or implemented on any other project in New Zealand. The sanctuary approach is supported by Ms Adams.

Response to NPDC section 42A report

19. The section 42A report raised a number of points including in relation to effects of lighting on bats, using the correct conservation status of long-tailed bats in the ELMP, mitigation measures, the size of the PMA, monitoring conditions and designation conditions.
20. A number of these points (for instance lighting, conservation status and VRP) have been addressed in the updated ELMP and CEMP. I also note the PMA has been increased to 3,650 ha as set out in my supplementary evidence and above. Finally, as set out in my EIC I do not agree that monitoring for bats and herpetofauna should be included in the Project as it would not provide any worthwhile information in this case.