

IN THE MATTER OF the Resource Management Act 1991

AND

IN THE MATTER OF 24 applications by the Aupouri
Aquifer Water User group to the Northland regional Council
to take groundwater from the deep shell bed aquifer of the
Aupouri Peninsula (REQ.596300).

Joint Witness Statement

Task 9(f) - Threatened Species

16 December 2020

1. This document was drafted by Marlene Oliver based on emails received from the experts named below.
2. The JWS from the expert conference held on 27 November 2020 records at paragraphs 21 - 23:

“21. Task 9(f) – DOC’s reference to Threatened Species.

22. Jon Williamson expressed his view that if there were no hydrological impacts arising from the proposed activities, then there would be no adverse effects on Threatened Species. Further Jon asked for clarification about which species were considered relevant.

23. Agreed by Dave West and Jon Williamson that:

(i) Dave West would review any records DOC had of threatened species covered by NZCPS Policy 11/NPSFM 2020 to identify species and locations of interest.

Dave to circulate his report and locations of threatened species by **5pm Wednesday 2 December 2020** to Jon Williamson and NRC representative (it was acknowledged that Katrina might not be available and so another person in NRC would be sought. In this regard Lisa Forester was suggested by Dave. Dave to liaise with NRC on this matter. Katrina was not present for this part of the expert conference on 27 November 2020.)

(ii) Dave West, Jon Williamson and any NRC representative to then discuss this report and any hydrological effects that could be relevant and to discuss whether there was any issue relating to Threatened Species that should be addressed further. **Dave West agreed to report back on the outcomes of this process, confirming the positions of each expert by 1pm Friday 4th December 2020.** To be circulated to these experts and copied to Marlene Oliver.”

3. On 3 December 2020 Dave West emailed:
“As tasked at Meeting on Friday here is a DRAFT report summarising available threatened freshwater species within the Aupouri aquifer extent. Incomplete without input from Katrina and Lisa next week but a starter.
The report is attached as Appendix 1.”

4. An online discussion was held on 4 December 2020, between Jon Williamson and Dave West. The following record of their discussion was provided:
 - i. Agree that the draft Threatened Species report provides a useful understanding of what occurs or may occur in the area;
 - ii. Agree that there is potential to affect the Threatened Species if wet habitats were to experience more frequent and longer droughts;
 - iii. Jon indicated that the proposed GMCP monitoring provides a safeguard and early warning system (canary in the mine analogy) for protection of the threatened species by monitoring the shallow groundwater levels, which provide an alarm before any impacts propagate to the surface;
 - iv. Dave indicated he is finding it difficult (struggles) to understand the surrogacy of bore spaces greater than 1 km apart for providing this protection over a wide area.
 - v. Jon explained that the monitoring bores were positioned by Brydon in areas that he felt had merit for monitoring based on combined understanding of the submitter concerns and also the magnitude/extent of drawdown.
 - vi. We both invite Brydon to comment on the above statement and add or clarify if not correct.
 - vii. Jon considers the existing monitoring as proposed in the GMCP covers the DOC's areas of interest regarding threatened species.
 - viii. Dave has residual uncertainty about the appropriateness of the monitoring, particularly the surrogacy of shallow piezometers for protection of surface water features.
 - ix. Dave was going to discuss this further with Tom.
 - x. We both agreed that it was unlikely we would be able to resolve the differing views on this point.”

5. In response to para 4.vi (above) - **Brydon Hughes** noted that existing and proposed monitoring of shallow groundwater on the Aupouri Peninsula includes a total of 27 monitoring sites (10 with continuous monitoring, the remainder monitored manually). The monitoring network includes sites monitored by NRC that have a long monitoring record (since the late 1980s), as well as more recent sites installed for resource consent compliance and additional monitoring sites proposed for the AAWUG applications.

A majority of the current and proposed monitoring sites (with the exception of the long-term NRC sites) are located in areas where current and proposed abstraction is concentrated, and modelled drawdown in the shallow aquifer is greatest (e.g., Sweetwater,

Paparore and Houhora). Available monitoring data in these areas shows no discernible water level response in the shallow aquifer due to current abstraction from the deeper shellbed aquifer. It is noted this observation is consistent with model scenarios that predict little to no drawdown in the shallow aquifer due to existing and proposed abstraction.

Given the concentric nature of groundwater drawdown, any effects in the shallow aquifer due to abstraction from the shellbed are likely to be picked up early at existing (and proposed) monitoring sites, with locations further from concentrated areas of abstraction likely to experience drawdown of a smaller magnitude.

Brydon Hughes provided a shapefile of current and proposed shallow groundwater monitoring on the Aupouri Peninsula to Dave West on Monday 7th December 2020.

6. **Katrina Hansen** commented (email dated 10/12/20) on Dave West's report as follows:

"Your draft report for threatened freshwater species looks good (I've added a couple of comments to attached doc, otherwise my comments are below). The only other records we have here of threatened species is lake survey data for Lake Waihopo in area O, Lake Waiparera west of I (and Split Lake at D, with no threatened species) and threatened species data recorded for the top wetlands (<https://www.nrc.govt.nz/media/tjupf3q3/2489northlandstopwetlands.pdf>).

I can collate this to add if needed.

For birds, it would be good to include other Threatened and At Risk wetland birds, but there are very few recorded sightings, particularly within Aupouri, so without this background data it could be hard to determine impacts on wetland species from the application, apart from loss of their habitat. It would be really good to include sightings/survey in the monitoring programme, such as fernbird, but I'm not sure that would be included by consents/planners in the GCMP.

Lisa may have some comments on your plant list. "

7. In relation to para 4.ix (above) **Dave West** advised (email dated 10/12/20) that he had talked with Tom Drinan and James Blyth about linkages of surface water changes and effects on freshwater ecosystems and species and they (ie. the three DOC experts) are going to provide something to capture intersects of monitoring across Tasks 1, 6 and 9(f).
8. **Jon Williamson** responded (email 14/12 20) as follows"

"I'm not sure further effort is required into detailing the "Threatened Species" across the entire Aupouri Peninsula as part of this consent application. Rather the focus should be on those areas identified as potentially having the highest risk of hydrological impact from the pumping of deep shellbed aquifer groundwater. The point I'm making is that threatened species that occur in areas outside the agreed areas of interest (AOI) are not relevant to this case before us at the current time. I'm not suggesting they are not important or shouldn't be studied, but just want to make it clear that the work outside of the AOI should be funded outside of this consenting process by your own organisations (NRC and DOC) if considered of importance and/or priority.

The monitoring of shallow groundwater level is the most direct method of receiving any early warning signs of potential impact on groundwater dependent ecosystems at the surface, and the level of monitoring provided under all three GMCP's (coupled with existing NRC monitoring) is arguably the most intense in NZ over a wide regional scale from my experience.

I have cc'd Brydon into this as he has proposed the monitoring regime on behalf of NRC."

9. **Katrina Hansen** (email 16/12/2020) clarified that it was her understanding that surveying and monitoring of threatened species would be only for the confirmed AOI wetlands (refer to JWS Task 6), and be incorporated in such methodology as Wetland Condition Index (WCI), as per the existing/proposed GMCP. This is also noted in the JWS 27 November 2020 in (para 19).
10. **All experts agreed to the following:** that the above recorded the experts' opinions. On that basis, no further conferencing on this JWS (Task 9(f)) would occur. It was noted that additional material on monitoring, being prepared by the DOC experts, would also be relevant to other tasks and therefore it was proposed that a separate JWS be prepared on that topic.
11. Signed:



Jon Williamson



Brydon Hughes



Katrina Hansen



Dave West