

Technical Advice - Ecology by Ken Hughey

Date	28 August 2025
To	Ellie Watson, Environmental Manager – South Island Renewables, Genesis Energy
From	Ken Hughey
Project advice provided for	Tekapo Power Scheme – Applications for Replacement Resource Consents
Documents referred to	K Hughey memo to Ellie Watson dated 18 July 2025; Department of Conservation comment 22 August 2025; Forest and Bird comments 25 August 2025 (and additionally statements of evidence from K McArthur, R McLellan and M Harding); Canterbury Regional Council technical advice from J Jack and K Lange; and the draft consent conditions document 8_25Aug CRC Appendix 10
Qualifications and Experience	PhD (Resource Management) which concerned the hydrological needs of riverbed nesting birds in Canterbury; around 45 years of research and management relating to rivers generally, across the country but concentrating in Canterbury; was one of the principal designers of the original Project River Recovery agreement; and, led the Department of Conservation negotiations with Genesis and Meridian that resulted in the Indigenous Biodiversity and Enhancement Programme agreement.
Code of Conduct	As an expert witness I have read, and I am familiar with, the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. This memorandum has been prepared in compliance with that Code. In particular, unless I state otherwise, this response is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.
Signature	

I have reviewed the evidence prepared by Forest and Bird, DOC and the Canterbury Regional Council and my assessment (K Hughey memo to Ellie Watson dated 18 July 2025) still stands.

I note the following in response to Forest and Bird's principal evidence:

- The compensation package is an agreement between DOC, Genesis and Meridian (not just between DOC and Genesis) – this is a vital point because it takes an integrated and holistic approach to compensation needs, across the catchment, and not a reductionist and simplistic cause and effect approach as suggested in both the Forest and Bird comments (see para 10 and 217) and the evidence of the other Forest and Bird experts I have reviewed (namely K McArthur, R McLellan and M Harding).
- In the same paragraph Forest and Bird state the agreement “...reflects a negotiated outcome rather than an effects-based assessment...” – this is true because a focus simply on the latter would not address broader opportunities for habitat enhancement and other management that a negotiated whole of catchment approach can take. As I note in my advice to Ellie Watson an effects-based approach would deliver much less in

terms of nature conservation because much more is required to address the underlying issues that are threatening biodiversity across the riverine environment.

- At para 133 in the Forest and Bird comments and adjacent, the question of environmental flows is considered and whether the Panel should impose such (and see paras 185 and 186 re Forest and Bird options and its preferred option). Imposing such flows would come at significant expense to the supply of renewable energy generation to New Zealand, would likely deliver relatively little (cf the IBEP approach) and might result in the abandonment of the IBEP. As such Project River Recovery might end and the benefits accruing from the existing and planned programme would be lost. I have reviewed the four options set out in para 95 of Ms McArthur's evidence and in my opinion the IBEP overall will deliver better ecological outcomes for the Waitaki catchment as a whole than any individual flow options for the Takapō River.
- Para 196 in the Forest and Bird comments states that with regard to the compensation package *"There is a lack of transparency, with no evidence linking residual ecological effects to the compensation. The amount of the compensation is the amount that was agreed upon between Genesis, Meridian, and DOC. As discussed below, there is no ecological justification for this amount, it is simply what Genesis would agree to"*. These statements fail to recognise the way the IBEP was developed between the three parties. The focus from the time I took the lead for DOC was on understanding what the affected and desired native biodiversity outcomes needed to be in terms of conservation management to improve the:
 - Condition;
 - Resilience;
 - Indigenous biodiversity;
 - Ecological processes; and
 - Other values of:
 - The braided rivers including their braid plains and margins;
 - Lake margins and deltas; and
 - Wetland and springs associated with lakes and braided rivers within the Waitaki Catchment.

Once these defined outcomes were agreed between the parties the components were costed in terms of delivery and an agreement reached with DOC to fund a programme of work to meet the objective. To be clear – the negotiations were **not** driven by funding amount.

- Paras 198 and further in the Forest and Bird comments outline Forest and Bird's concerns about the agreement, its lack of transparency, etc. They fail to understand this is a strategic, integrated and holistic approach to biodiversity conservation that goes far beyond a simple cause and effect approach which likely cannot be mitigated by flows and their management alone. As a result, the IBEP is based on adaptive learning and a commitment over time to achieving the objective described above. It includes also the development of 10-year strategic plans (Kahu Ora) and annual operational plans with in-built monitoring and review processes to inform management. While there are no guarantees of outcome success (and I query whether such is possible) there are guarantees about process and a legacy of very positive performance from the existing PRR (as proven by independent reviews). To expect detailed plans with precise costings,

locations, etc, within a strategic plan is, in my opinion, unrealistic and indeed likely to be counterproductive.

- In my opinion it is inappropriate to impose a condition that places an obligation on Genesis to deliver specific species population outcomes or targets (refer to proposed condition 25d which has been suggested by CRC, and is also suggested by Forest and Bird in their comments). I especially note that this condition requires that the IBEP “include outcomes to maintain or increase indigenous plant, fish, invertebrate, lizard and avifauna populations within catchments affected by the Waitaki or Tekapo power schemes”. Such a condition is contrary to the intent of the IBEP which is to take a holistic and whole of catchment approach to delivering such outcomes for these values, and will likely deliver such. Trying to impose and guarantee such outcomes in the affected scheme rivers is probably impossible without enormous and unrealistic expense, and would come at the cost of the broader catchment-wide benefits that are anticipated to be accrued from the proposed IBEP approach in Genesis’ application. Furthermore, the delivery of species-specific population targets cannot be guaranteed and is an unfair condition to impose on Genesis when dealing with a catchment-scale approach. The Waitaki catchment is an active and dynamic natural environment. Species and environments are subject to a range of external impacts (e.g., weather, natural hazards, multiple predators, existing and new weed incursions and avian diseases) that are beyond the control of Genesis.
- Referring again to CRC’s proposed condition changes, specifically in this case 28g which requires “...*monitoring and reporting of species listed as Nationally Critical, Nationally Endangered, Nationally Vulnerable and Declining*”. There are dozens of these species in the catchment and to monitor each of them individually and effectively is an enormous and very expensive task, beyond the scope of the IBEP and its resources. The IBEP already requires monitoring in condition 28e which will involve a significant subset of these ‘threatened and at risk’ species – this subset will be sufficient to monitor the effectiveness of the IBEP activities over time when taking into account broader effects on population levels that are outside of the control of the IBEP.
- Para 201 and onwards in the Forest and Bird comments refers to a report by Lewis and Maloney (2020) which they suggest should have been the basis for the negotiations, and then to the negotiation process that I led for DOC which they note was about ‘getting to yes’. I note that the mix of work identified in the report addresses biodiversity matters in the catchment, rather than a reductionist cause and effect approach that would likely achieve less overall for biodiversity. As noted above and in their submission ‘getting to yes’ was about achieving the desired biodiversity outcomes (para 212) - I stand by this approach and this objective and believe we have achieved it with the IBEP, within which the underlying costings are derived from the Lewis and Maloney work.
- Overall, having read the F&B principal evidence and that of three relevant experts (and the proposed CRC condition 25d), I am left with the view they are approaching the issue from a very individualistic value-based perspective, e.g., freshwater fish and macro-invertebrates, or riverbed birds or native vegetation. As a result, they pursue narrow cause and effect relationships without seeing the opportunities that broader ecosystem, community and species diversity thinking can provide and which is articulated in the IBEP. Where possible the IBEP seeks to protect and enhance a range of these values (e.g., birds, vegetation and terrestrial invertebrates at place (at different scales of course)) thus delivering cost-effectiveness and the potential to achieve very significant outcomes. The success of this approach has been demonstrated through

PRR since 1991. What is now proposed is a significantly bigger programme and associated much greater funding that can only deliver enhanced benefits for indigenous biodiversity. The more layers of, in my opinion, unnecessary and resource-intensive species-specific monitoring that is imposed through the consent conditions and IBEP, the more value that is taken away from the potential for actual outcomes being delivered through the IBEP implementation.