

Technical Advice - Lakeshore geomorphology by Martin Single

Date	27 August 2025
To	Ellie Watson, Environmental Manager – South Island Renewables, Genesis Energy
From	Martin Single, Shore Processes and Management Ltd
Project advice provided for	Tekapo Power Scheme – Applications for Replacement Resource Consents
Documents referred to	I prepared the document “<i>Tekapo Power Scheme re-consenting: Lakeshore geomorphology and processes Existing environment and future effects</i>” M. Single 2022 Report to Genesis Energy Ltd, February 2023, 52pp submitted as “Appendix N Lakeshore Geomorphology and Processes Tekapo PS Reconsenting” with the Genesis Fast-track Approvals Act Tekapo applications. <i>Takapō Power Scheme Lakeshore geomorphology and processes Review Memo</i> Matt Balkham, Jacobs, October 2022, 2pp <i>Draft Lakeshore Erosion Management Plan – Lake Tekapo/Takapō</i> Prepared by Genesis Energy in consultation with Martin Single (Shore Processes and Management Ltd), April 2025, 9pp
Qualifications	My full name is Martin Bernard Single. I have the following qualifications: - I hold a Ph.D. in Geography, which investigated coastal processes and geomorphological change. - I am an associate member of the Institute of Professional Engineers of New Zealand, a member of the International Coastal Navigation Association PIANC, and a member of the New Zealand Coastal Society. I am an environmental consultant with over 30 years of experience. I am a director and principal consultant for Shore Processes and Management Limited, specialising in the science, management and planning of coastal lands and waters. I also hold an adjunct position as a Senior Fellow in the School of Earth and Environment, University of Canterbury. I have authored or co-authored over 250 reports dealing with coastal geomorphology and management in New Zealand, Scotland and Fiji, including hazard assessment and mitigation measures, nearshore, beach and estuarine sediment transport, dredge spoil dispersal, beach nourishment, beach management prescriptions, and planning and audit control of consents for coastal protection structures and lake shoreline change. My areas of specialisation are coastal processes and coastal management of New Zealand ocean beaches, lakeshores and harbours. My work on lakeshore morphology has included describing lakeshore geomorphology and physical processes, monitoring of lakeshore change, hazard assessment and where necessary the

	development of hazard mitigation measures and management and monitoring prescriptions for: Genesis Energy at Lakes Waikaremoana and Tekapo; Meridian Energy Limited at Lakes Pūkaki, Ōhau, Ruataniwha, Benmore, Aviemore Waitaki, Manapouri and Te Anau; Manawa (TrustPower) Limited at Lakes Coleridge, Mahinerangi, Matahina, Matariki, Mangaonui, McLaren and Rotorangi; Pioneer Generation at Lake Monowai; Mighty River Power at Lake Taupo, and the lakes along the Waikato River; Canterbury, Hawkes Bay and Taranaki Regional Councils, Westland District Council and the Department of Conservation; Hawea Community Association and Contact Energy Limited at Lake Hawea, and Peer review of Lake Taupo management strategy reports for King Country Energy, TrustPower (Manawa) and Genesis Energy. I am a principal consultant in assessing the physical environmental effect of hydropower operations on lakeshore morphodynamics for Meridian Energy, Genesis Energy, Manawa Energy (TrustPower), Pioneer Energy and the Guardians of Lakes Manapouri, Monowai and Te Anau. I have assessed the effects of boat wakes on lakeshores for the Guardians and for Mighty River Power as well as for the Canterbury Conservancy of the Department of Conservation. I am a co-author along with Dr Mark James and Professor Alan Mark, of the Ministry for the Environment publication "Lake Managers' Handbook, Lake Level Management" published in 2002. My role in relation to Genesis Energy's application for water permits and discharge permits for the continued operation of the Tekapo Power Scheme has been to provide advice in relation to lakeshore geomorphology. I drafted the <i>Lakeshore geomorphology and processes</i> report included in the Assessment of Environment Effects accompanying the Application. My assessment of the effects of continued operation of the Tekapo Power Scheme is based upon the historical effects of the scheme and its continued operation within the existing lake level operating regime. Although my report was completed in 2022/23, the information and assessment remains relevant with regard to ongoing changes to the lakeshore and the existing and future effects of the Tekapo Power Scheme.
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	