

Evidence talking points summary.

In my evidence I outline the anticipated effects of the proposed resource consent application, to alter the lagoon opening regime, on the catchment's indigenous freshwater fish community.

1. Waituna lagoon has a diverse fish community by nations standard with 12 species of native freshwater fish. The Lagoon's hydrological connectivity to the sea, via the barrier beach, is a key factor influencing the life cycles of fish species within the catchment, including those that require access to marine environments for spawning and / or juvenile development. These include īnanga and longfin eel / tuna which are listed as 'at risk declining' and lamprey / kanakana, which are listed as 'Nationally Vulnerable'.
2. Prior to this current resource consent application none of the previous consents had provisions to allow for fish passage. Mechanical openings were undertaken (roughly annually) to facilitate drainage and manage flood risk to surrounding farmland. Fish passage was provided for as a by-product of these opening events.
3. The current fish community, over the past few decades, with its high representation of ocean

migratory fish, is a product of the previous opening regime. The makeup of the fish community today is likely different to what the fish community would have been like in its natural state when the lagoon was closed more often. In its past state, it would have had lower relative abundances of ocean-migratory species and a higher proportion of fish that can complete their life cycles entirely within freshwater.

4. Under the proposed barrier beach opening regime, if lagoon closed periods coincide with key migration periods for ocean-migratory fish, there is potential for reduced recruitment in the wider catchment for species such as lamprey and inanga. Conversely, other fish species, that do not require access to the ocean, such as giant kōkopu, may benefit because of the increased occurrence of the large productive freshwater lake environment that is created when the barrier beach is closed.
5. In the case of giant kokopu, closed lagoon conditions (during spring and summer) are likely to improve recruitment in the wider catchment because the lake environment provides better larval rearing conditions for this species compared with an open estuarine lagoon.
6. Improving the recruitment of giant kōkopu in the Waituna catchment would improve the resilience of

one of Aotearoa New Zealand's most important populations of this 'at risk' freshwater fish species. From a whole-of-ecosystem perspective, this potential benefit can be seen to compensate for occasionally weaker recruitment, during some years, for ocean migratory species such as lamprey / kanakana, which also have high cultural and conservation values.

7. To address the potential for reduced recruitment of ocean migratory species, provision for fish passage opening is built into the proposed consent conditions. Should openings to manage water levels or water quality not provide adequate passage for key species, there is provision to open the lagoon every 2 years for fish passage as part of proposed Consent Condition 6.
8. The proposed conditions allow for the needs of ocean migratory native fish populations to be considered alongside other key management goals – such as supporting the development of healthy macrophyte beds, including *Ruppia* spp. and restoring a more natural lagoon water-level regime.
9. Long-term quantitative fish population data for the lower Waituna Creek provides a sound baseline for detecting changes in fish community structure and abundance when paired with ongoing fish population

monitoring (as is proposed in the draft monitoring plan).

Thank you, and I now invite any questions.