

Glenorchy – consequences of a changing future landscape and climate

Future Changes Anticipated

Geomorphic change – rivers, floodplains and deltas

As is expected in braided river systems, erosion and channel migration likely at other sections of these floodplains.

Riverbed aggradation

Ongoing sediment deposition in the Rees riverbed gradually raises riverbed levels.

Based on survey data this rise is at least 0.1m each decade, and may be as high as 0.2-0.4 per decade.

Continued rise of the Rees channel will eventually break its banks to form a new channel through the wetland and lagoon.

Delta growth

The delta shoreline will continue to grow into the lake at a rate of 2 or 3 metres every year.

Climate change

The climate will continue to change, with more frequent and heavier rainfalls.

This causes larger and more frequent flood events, and an increased rate of sediment transported through the river system.

Higher intensity rainfalls may also cause more likely rainfall-triggered events such as alluvial fan activity and debris flows.

This map illustrates the projected future changes and consequences for Glenorchy. It features a satellite image of the area, with various regions highlighted in blue and yellow to indicate specific impacts. White arrows point from text boxes to these highlighted areas. A scale bar at the bottom indicates 1 km. The map is overlaid with a coordinate grid.

Consequence: Channel breakout
Breakout (avulsion) and formation of new Rees channel. Faster water flow and sediment deposition from Rees breakout

Consequence: Wetland and lagoon
Restricted drainage as riverbed aggrades, causing higher average water levels. Rees breakout flood will cause deeper and faster water flow with sediment deposition

Consequence: Floodbank impacts
Increased erosion of floodbank structure (and maintenance required) Reduced protection levels and more likely overtopping of floodbank

Consequence: Flooding impacts
Increased flood likelihood and impacts on buildings and landuse within flood-prone area of Glenorchy

Consequence: Jetty impact
Water depths at lakeshore decrease as sediment is deposited, and jetty becomes unusable

Consequence: Flooding impacts
Increased likelihood of flooding from the Buckler Burn

This map shows the current landscape and climate of Glenorchy. It is a satellite image of the area, with a scale bar at the bottom indicating 1 km. The map is overlaid with a coordinate grid.