

This report by Waikato University reviews coastal hazards for the Kāpiti Coast District in New Zealand. The key points are:

The report meticulously considers natural hazards as defined in New Zealand legislation, with a specific focus on coastal erosion and inundation. It delves into previous studies of coastal hazards in the area, encompassing storm waves, storm surges, groundwater, tsunamis, vertical land movement, and the effects of climate change.

It critically reviews Jacobs's (2022) recent coastal hazard assessment, finding methodological issues that likely overestimate future coastal erosion. In particular, the Bruun Rule used is an inundation model unsuitable for predicting erosion.

Analysis of historical shoreline position data from 1870-2022 shows that most of the Kāpiti Coast is stable or accreting, with erosion mainly around river mouths and Queen Elizabeth Park. Sea level rise has not caused widespread erosion so far.

Geological evidence indicates that shorelines tend to accrete under rising sea levels if the sediment supply is sufficient. The assumption that the sediment supply will decrease in the future is outdated.

Climate change projections suggest quantifiable impacts on coastal hazards are unlikely before 2100 except for sea level rise. However, analysis of tide gauge data shows no significant acceleration in sea level rise rates yet.

The report strongly advocates for a different risk-based approach, one that prioritizes monitoring, defining impact thresholds, and adaptive planning over long-term predictions. It concludes that the Jacobs assessment is not fit-for-purpose for coastal hazard management planning.

In summary, the report finds the Kāpiti Coast is not highly vulnerable to coastal erosion and that recent hazard assessments are likely overly pessimistic. A more adaptive approach to future coastal hazard planning is recommended.