

FORECASTING BEACH HAZARDS IN AUCKLAND, NZ

Location: Auckland, New Zealand

Project Dates: May 2018 – Dec 2019

Clients: Auckland Council and Surf Life Saving Northern Regions

Scope of work:

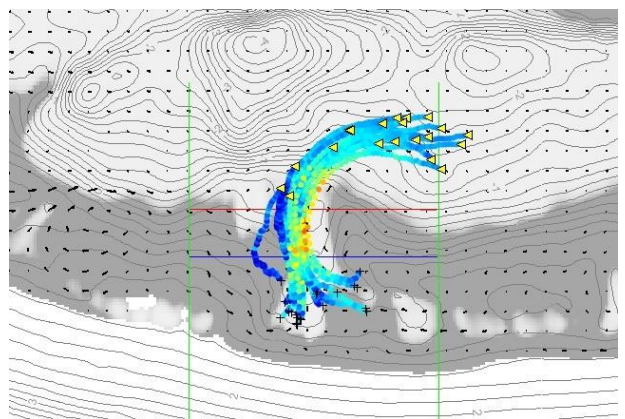
- Analysis of 10 years of lifeguard incident records
- Field measurements of rip currents on two Auckland beaches
- Numerical modelling of rip current hazard under varying wave and tide conditions (Xbeach)
- Analysis of environmental forcing of beach hazards including rip currents

“Our increased understanding of beach hazards, has ensured that SLSNZ can effectively communicate the dangers of rip currents and wind conditions to the general public” A. Wooler; Chief Operations Officer at Surf Life Saving New Zealand

PROJECT DESCRIPTION

Auckland’s beaches feature a range of physical hazards that can cause significant life risk to bathers. To forewarn beach users of these dangers, lifesaving authorities in New Zealand are starting to use a data-driven approach to forecast when and where peak bathing hazards will occur, and broadcast the information publicly via the ‘Safeswim’ beach safety website.

CMAR determined the thresholds at which various hazards are forecasted, using historic lifeguard data, field-based rip current experiments, and numerical modelling using XBeach.



Top: Observed rip current circulation from GPS drifters deployed at Muriwai Beach, Auckland, NZ.

Below: Simulated rip current behaviour using virtual drifters deployed in the numerical model XBeach, showing surf-zone exits