

## **Henriette Lake Dam Memo**

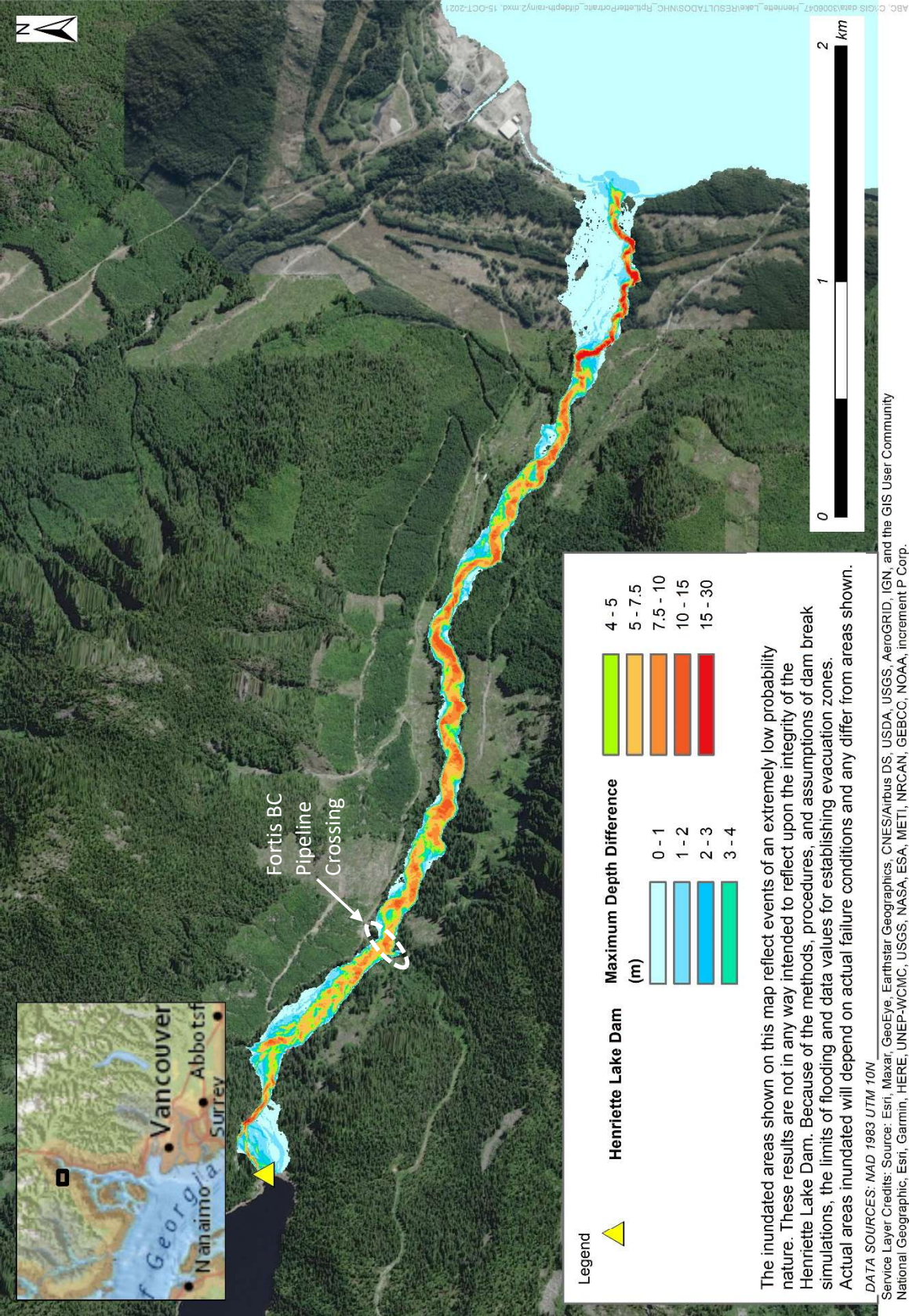
### **Henriette Lake Dam Breach and Consequence Classification Analyses - 2022**

The Henriette Lake Dam Breach and Consequence Classification results suggest that a breach of Henriette Dam would not result in any significant wave activity within Howe Sound. The wave heights within Howe Sound near the shoreline reached up to approximately 0.7 m south west of the mouth of Woodfibre Creek with maximum velocity of 6 m/s, and up to approximately 0.9 m to the northeast of the mouth of Woodfibre Creek with a maximum velocity of 1.0 m/s. Initial waves and flow velocity entering Howe Sound attenuated rapidly. A review of available information regarding wave activity within Howe Sound (Golder 2015) indicates that the maximum wave resulting from a breach of Henriette Lake Dam would not be significantly larger than the annual average wind-induced wave height (0.4 m) and would be substantially smaller than the reported five-year wave height (2.6 m). Model results indicate that the dam breach induced wave within Howe Sound would be no larger than the annual average wave height at a location approximately 75 m offshore from the mouth of Woodfibre Creek.

### **Floatel 2 – Henriette Dam Breach Assessment Memorandum - 2025**

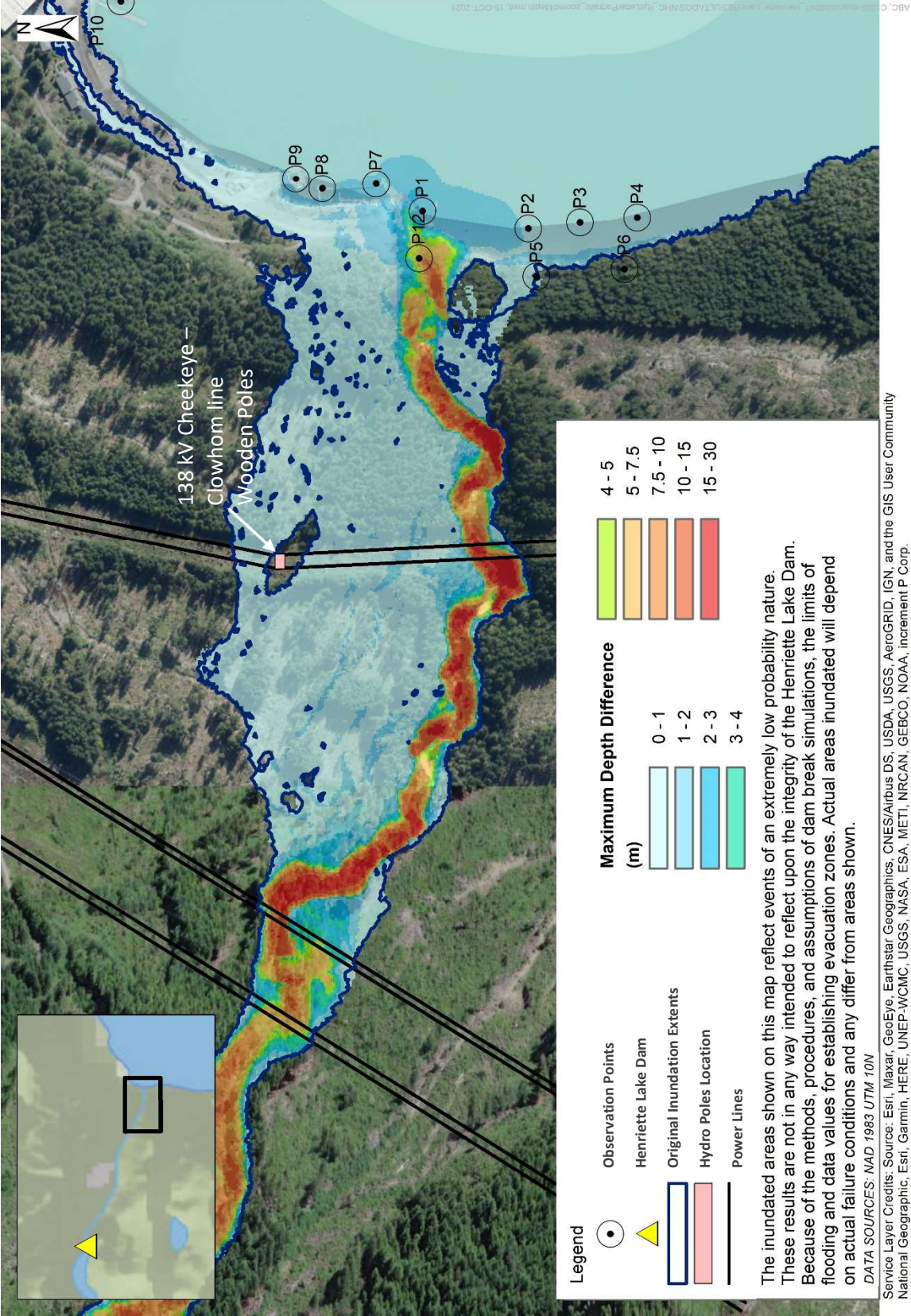
This assessment reviewed the potential impacts of a breach to the Henriette Lake Dam and on the proposed floatel #2 and access barge location. While the breach of the dam would result in a large, high-velocity flood wave conveyed along Woodfibre Creek, previous modelling indicated that the flood wave attenuates relatively rapidly upon entering Howe Sound. The dam breach inundation model does not include observation point at the location of the proposed floatel #2, nearby observation points closer to the shoreline suggest that a hypothetical breach of the dam would result in depth increases of approximately 1 metre, with maximum velocities of approximately 1 to 2 m/s. The modelled increases in depth within Howe Sound are generally half of the previously modeled 1:200 year significant wind-wave heights in the area.

Interpolation of available dam breach inundation model data suggests that a breach wave may attenuate to approximately 0.5 metres at the location of floatel #2 that is directly in line with the mouth of Woodfibre Creek, where depths exceed 20m.



**Figure 21. Maximum Incremental Flow Depths for the Flood-Induced Failure Scenario with 1000-year Flood.**





**Figure 22. Maximum Incremental Flow Depths along Downstream End of Woodfibre Creek for the Flood-Induced Failure Scenario with 1000-year Flood. Maximum Incremental Flow Depths for the Flood-Induced Failure Scenario with 200-year Inflow Outlined in Blue.**