

# Tsunami and Flood Risk Inundation Modelling

Critical for community safety planning

Ocean Networks Canada (ONC) provides science-based inundation modelling, fused with historical Indigenous and local community knowledge, to provide the critical information coastal communities need to improve their resiliency to natural hazard events including tsunamis, storm surge, and sea-level rise due to climate change.

Working with local partners, ONC provides risk assessments that empower communities to prepare critical safety plans.

## Services Provided by ONC:



### Community engagement

Directly engage with Indigenous and coastal communities to understand local tsunami and flood risk priorities, historical knowledge, vulnerabilities, risk tolerances, and resilience levels.



### Hazard identification

Identify the likely sources that could generate tsunamis and model these events to determine the expected impacts to coastal areas. This activity combines both historical Indigenous knowledge and current western science best practices.



### Analysis

Conduct tsunami and storm surge hazard, risk, and vulnerability analyses for coastal communities, identifying populations and key infrastructure likely to be affected.



### Risk assessments

Produce risk assessments based on community and Indigenous partner input and available data to inform emergency response plans and community planning.



### Community outreach

Work with partners to raise awareness and share information about the inundation hazard within communities.

Protect critical infrastructure and plan safe evacuation routes by identifying flood risk zones and tsunami wave arrival time, speed, magnitude, and inundation extents.



### Inundation Modelling:

ONC's inundation modelling produces detailed information related to the maximum wave height, arrival times, and velocities, as well as the expected wave run-up, as shown in the sample image to the left.

With this type of information, communities can start to prepare disaster mitigation plans including identifying affected critical infrastructure and appropriate evacuation routes.

In this example, the light blue represents the extent of the water levels overlaid on top of the land. The darker blue represents an additional safety factor that has been applied.



Visit our [Tsunami & Flood Risk Inundation Modelling webpage](#) for more information.

To learn more about the ONC solutions and inundation modelling services, connect with our integrated team of scientists, engineers and specialists.

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