# ADRIFT (Assessing Debris Related Impact From Tsunami) Project – Outline and legacy products

**Cathryn Clarke Murray[1,2)], Thomas W. Therriault[2)], Nancy Wallace[3)], Hideaki Maki[4)], and Alexander Bychkov[1)]**

1 North Pacific Marine Science Organization (PICES)
2 Fisheries and Oceans Canada, Canada
3 National Oceanic and Atmospheric Administration (NOAA), USA
4 National Institute for Environmental Studies (NIES), Japan

The Great East Japan Earthquake on March 11, 2011 caused a devastating tsunami that washed millions of tons of debris from terrestrial and coastal environment into the North Pacific Ocean. Within a year, Japanese Tsunami Marine Debris (JTMD) began arriving on the shores of the Pacific coast of North America and the Hawaiian Islands carrying hundreds of living coastal Japanese species. Scientists from multiple disciplines were involved in rigorous research activities to document and evaluate the potential impacts from JTMD and associated non-indigenous species (NIS) to coastal ecosystems in Pacific North America and Hawaii. The ADRIFT project, funded by the Japanese Ministry of the Environment through PICES, focused on three major themes: 1) modeling movement of marine debris in the North Pacific to forecast and hindcast JTMD trajectories and landings; 2) surveillance and detection of JTMD landfall and accumulation, and 3) characterizing and assessing the invasion risk of NIS transported on JTMD.

Legacy products of the project are now available for public use:
– *JTMD species database*, accessible through the Smithsonian Institution online portal NEMESIS (National Exotic Marine and Estuarine Species Information System), is an important resource for improving our basic understanding of species transport and attributes related to invasion success for selected marine invertebrates and algae from the Northwestern Pacific, including those associated with JTMD, and can contribute to risk assessments.
– *JTMD specimen archive* – the biological collection of over 1,000 individual samples (marine invertebrates) from 650 registered JTMD objects, housed and curated at the Royal British Columbia Museum (Victoria, Canada), will allow researchers world-wide to access this unique resource in years to come, especially with the advance of new analytical techniques.
– *Products from aerial surveys of the British Columbia outer coast and the main Hawaiian Islands* (aerial photographs, debris ranking segments and maps), accessible through online sources, provide baselines of marine debris for vast, uninhabited shorelines.