

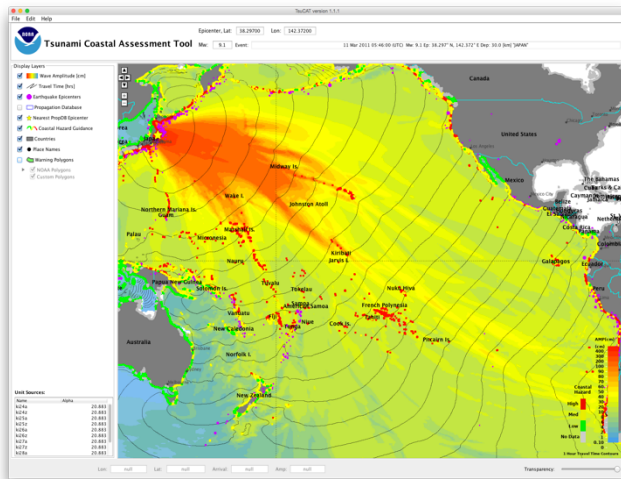
Tsunami Coastal Assessment Tool (TsuCAT)

TsuCAT provides access to a Pacific, Caribbean, and Indian Ocean database of tsunami modeling results from NOAA’s pre-computed catalog of sources and for the Pacific and Caribbean, the RIFT model, to assist a country in its tsunami hazard assessment, tsunami exercise and response planning, and warning decision-making. Simulations for historical tsunami sources from NOAA’s National Centers for Environmental Information (NCEI) and the U.S. Geological Survey earthquake archive, as well as IOC expert meeting worst case regional seismic tsunami scenarios are included.

A new tool allows countries to choose their own scenario and to generate the PTWC’s enhanced text and graphical products to use in their exercises.

During an event, national tsunami warning centers must be able to assess their threat, and decide when to issue warnings based on their alert level criteria. For earliest decision-making, especially for local tsunamis, countries may want to use a pre-computed, look-up database containing plausible warning scenarios and thresholds. TsuCAT may be help by providing

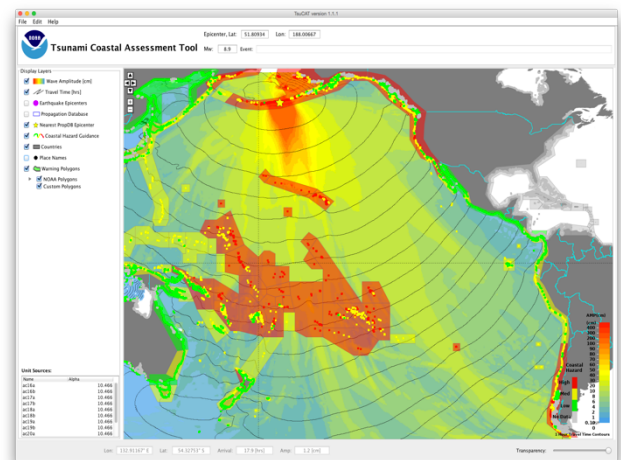
TsuCAT graphical user interface. Maximum wave amplitude and wave arrival time contours for the 11 March 2011 Japan Tsunami is shown when TsuCAT is launched.



a quick and easy way to obtain scenario-based coastal impact guidance before official event-specific PTWC information is available.

TsuCAT is platform independent and ‘stand-alone’ in that it runs on the Windows, Apple, and Linux computing platforms, and does not require Internet connectivity. All libraries, databases, and documentation are installed in their entirety on the host machine. The only requirement is a Java v1.8 or higher free installation.

TsuCAT features include: Pan and zoom map; Editable epicenter and Mw; Base-layer map image tile, place names and labeling; Map display layer control; Results export; Easily-queried maximum wave amplitude and arrival times; tsunami observations. The Coastal Hazard Guidance is represented as the deep-ocean wave amplitude extrapolated to the coastline accounting for shoaling using the Green’s Law approximation. The Coastal Hazard Polygon layer is identical to the PTWC’s Coastal Tsunami Amplitude Forecast Polygon map, and customizable. PTWC text and enhanced product messages are created using the user’s source location, magnitude, origin time. Customized exercise injects can also be generated.



Warning polygons for a Mw 8.9 scenario in Aleutian Islands

TsuCAT v1 was introduced at ICG/PTWS-XXVII (2017), and subsequent versions released at meetings and trainings to authoritative tsunami officials globally. TsuCAT v4.0 was issued in April 2019, and v4.4 in August 2024. New features since V4.3.2 include the real-time event ingest from the USGS and multi-county PTWC message injects.

Feedback or questions about TsuCAT, its use, or to report bugs should be directed to NCTR and/or ITIC: Christopher.Moore@noaa.gov; Laura.Kong@noaa.gov http://itic.ioc-unesco.org/index.php?option=com_content&view=category&layout=blog&id=2239&Itemid=2763

Ref: Gica, E., M.C. Spillane, V.V. Titov, C.D. Chamberlin, and J.C. Newman (2008): Development of the forecast propagation database for NOAA’s Short-term Inundation Forecast for Tsunamis (SIFT), NOAA Tech. Memo OAR PMEL139, NOAA/PMEL, Seattle, WA, 89 pp.

Ref: Users Guide for the Pacific Tsunami Warning Center Enhanced Products for the Pacific Tsunami Warning System. IOC Technical Series No 105, Revised edition. UNESCO/IOC 2014 (English; Spanish)