

Online Access to Tsunami and Related Data

<http://www.ngdc.noaa.gov/hazard/hazards.shtml>

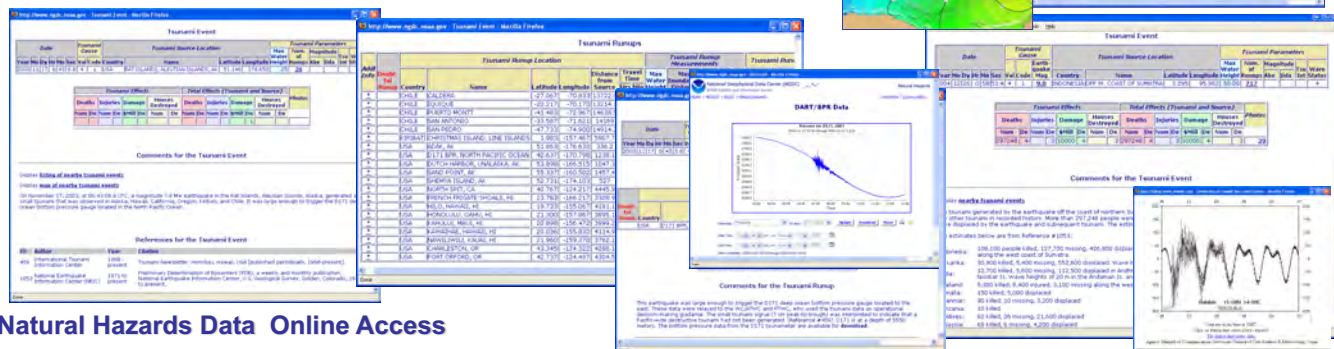
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Global Natural Hazards Databases

➤ NGDC/WDS's hazards databases include the Tsunami Source Event, Tsunami Runup, Significant Earthquake, and Significant Volcanic Eruptions files.

➤ The global historic event databases contain information such as the date, location, magnitude, deaths, and damage for all tsunami source events, tsunami runups (locations that observed tsunami effects), destructive and tsunamigenic earthquakes and volcanic eruptions.

➤ Examples of search results, maps, DART and tide gauge plots, and images from NGDC/WDC's hazards databases are shown.



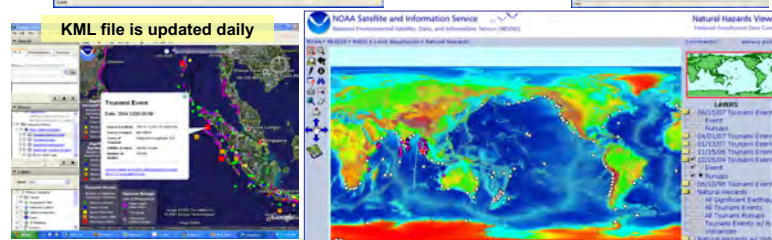
Natural Hazards Data Online Access

➤ The natural hazards data are all stored in Oracle and integrated. The data are available on-line (<http://www.ngdc.noaa.gov/hazard>) and can be searched by attribute (e.g. event, runup, location, date, deaths, etc). The search results link to additional information, sources, imagery, plots and download screens of the Deep-ocean Assessment and Reporting of Tsunamis (DART) buoys (if triggered), and plots of tide-gauge data (where available).

➤ All of the natural hazards data are accessible via Open Geospatial (OGC) Web Map Services which allows any OGC-enabled client to incorporate a map image of the data. The Web maps operate off the same oracle databases as the traditional forms. They provide limited GIS capability and are linked to photos, additional event information, and references.

➤ The DART Metadata are available via OGC Web Feature Service (Allows any OGC-enabled client to access DART metadata, links to NGDC to download high-resolution data)

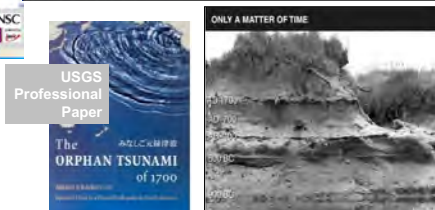
➤ The hazards data are also available via Google Earth (the NGDC/WDC Web site serves a KML file containing tsunami sources and runups, significant earthquakes and volcanic eruptions. The Google Earth view provides basic information on each event (death, damage, magnitude, date) and links to the to the NGDC/WDC database for the full content.



CEOS European data server displaying NGDC Hazards Data

Tsunami Deposits Database

➤ NGDC/WDC has developed a tsunami deposits database to extend the tsunami database backwards in time. For example, the "Only a Matter of Time" image is a paleoseismic and paleotsunami record at Willapa Bay, Washington. A stack of layers dating from 1700 A.D. back to 900 B.C. is very distinctive. Each layer represents the downdropping of the marsh during a Cascadia subduction zone earthquake and subsequent depositing of locally generated tsunami sands. This database is available online and is linked with the historical tsunami event database.



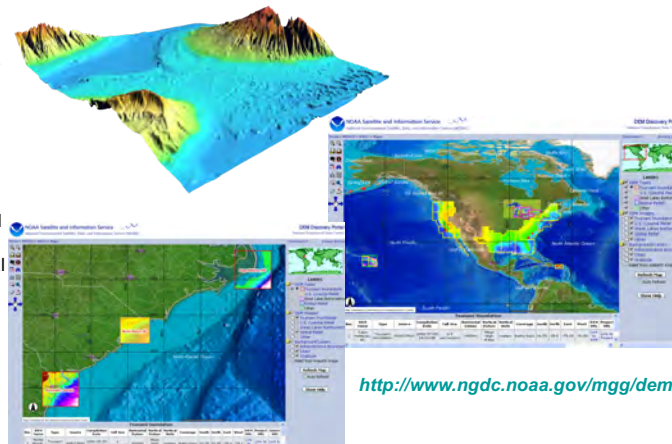
Tsunami Inundation Digital Elevation Models (DEM) and DEM Portal

➤ NGDC/WDC is building high-resolution digital elevation models (DEMs) for select U.S. coastal regions. These combined bathymetric-topographic DEMs are used to support tsunami forecasting and modeling efforts at the NOAA Center for Tsunami Research, Pacific Marine Environmental Laboratory (PMEL).

➤ The DEMs are part of the tsunami forecast system SIFT (Short-term Inundation Forecasting for Tsunamis) currently being developed by PMEL for the NOAA Tsunami Warning Centers, and are used in the MOST (Method of Splitting Tsunami) model developed by PMEL to simulate tsunami generation, propagation, and inundation.

➤ The project website allows for search, viewing and download of DEMs, detailed DEM development reports, and metadata.

➤ NGDC/WDC has created a web-based interactive map portal for locating Digital Elevation Models (DEMs), or gridded representations of terrain data collected from above and below water. The "DEM Discovery Portal" makes it easier for researchers to locate, preview and download DEMs from organizations within and external to NOAA. In North Carolina, for instance, a high-resolution tsunami inundation DEM for Cape Hatteras is being used as a template for building a state-wide coastal DEM for hurricane storm-surge modeling. Once completed, the new DEM will be included in the portal. Within NOAA, scientists in just about every line office use DEMs, from ecologists mapping fish habitat to hurricane modelers estimating coastal inundation.



<http://www.ngdc.noaa.gov/mgg/dem/>