



Tsunami Hazards on the East and Gulf Coasts

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Overview

- Research Goals
- Overview of program
- Available products

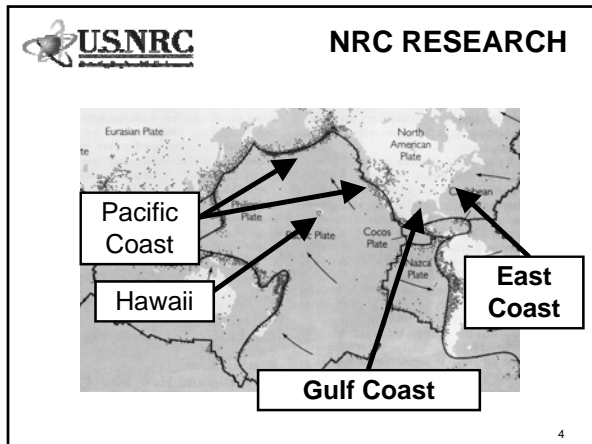
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Research Goals

- Better understanding for all US coasts
- Development of a source database
- Integration of landslide modeling
- Input for probable maximum tsunami (PMT) hazard levels
- PTHA (probabilistic) where appropriate
- Incorporation into regulatory guidance

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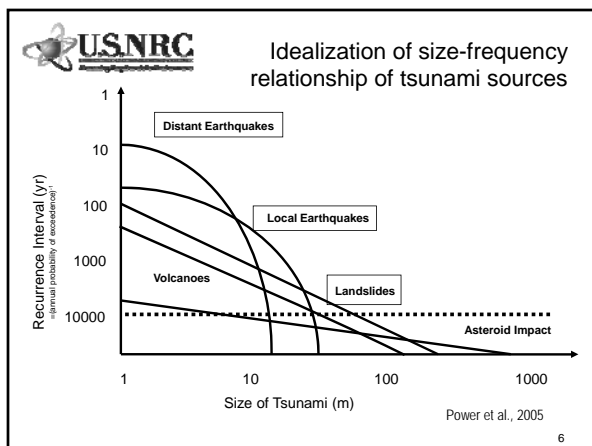


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Damage comes from...

- Wave inundation ←
- Drawdown (important for plants) ←
- Floating debris
- Scour

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Sources Addressed

- Near-field seismic
- Far-field seismic
- Near-field landslide
- Far-field landslide
- NOT:
 - Asteroid Impacts
 - Volcanic

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Research Plan

1. Data collection, review of current state of knowledge, interpretation of data, basic modeling (completed - first USGS report)
2. Targeted field work, additional analyses, additional modeling (second USGS report)
3. Updating NOAA models for landslide sources, global modeling
4. Hazard map development
5. PTHA

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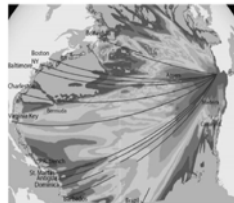


Data collection, review of current state of knowledge, interpretation of data, basic modeling (2008)
ML082960196
 (IJMG special publication)

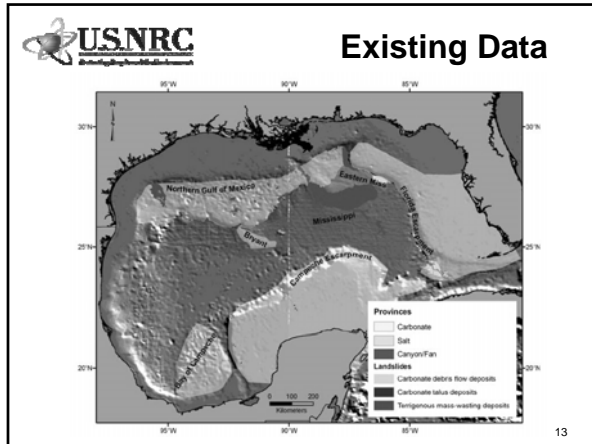
Evaluation of Tsunami Sources with the Potential to Impact the U.S. Atlantic and Gulf Coasts

An Updated Report to the Nuclear Regulatory Commission

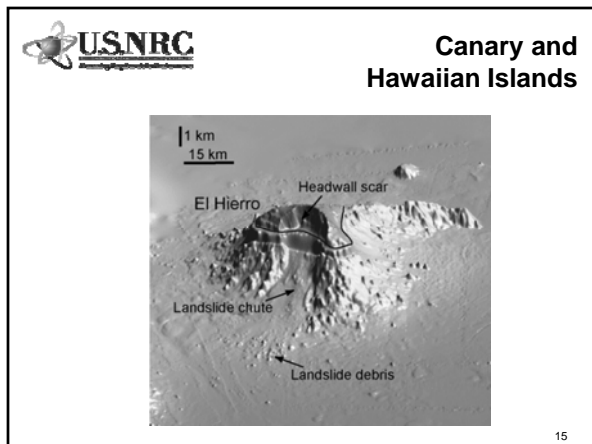
By Atlantic and Gulf of Mexico Tsunami Hazard Assessment Group



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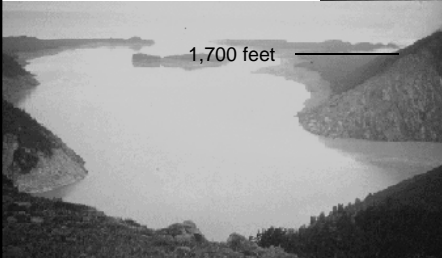


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- USNRC**
Far-Field Landslide Sources EUS
- Cumbre Vieja, Canary Islands
 - Glaciated margins of northern Europe and Canada
 - Storegga landslide, Norway
 - Eastern Scotian margin (0.15 MYA)
 - 1929 Grand Banks landslide
 - The mid-Atlantic ridge

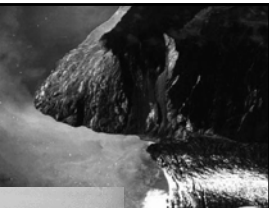


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Lituya Bay



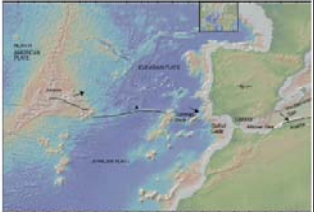
1,700 feet



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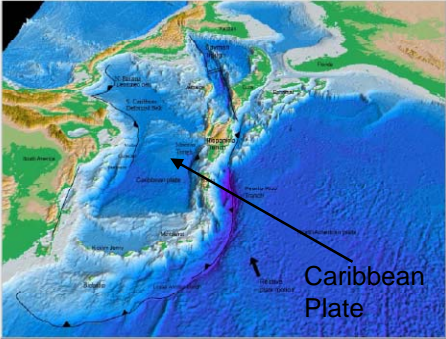
USNRC **Far-Field Seismic Sources**

- West of Gibraltar
 - 1755 Lisbon
 - 1761 Earthquake and Tsunami
- The Northeast Caribbean
 - Puerto Rico Trench
 - Hispaniola Trench
 - Northern Panama



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USNRC **Far-Field Seismic Sources**



Caribbean Plate

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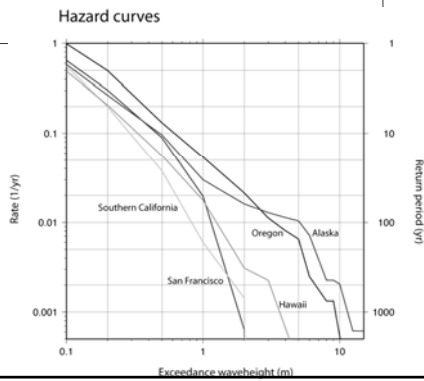


Advanced Methods

- PTHA = Probabilistic tsunami hazard assessments
- Focus of significant US research efforts
- Techniques analogous to probabilistic seismic hazard assessment (PSHA), which are the basis of US NRC seismic hazard guidance

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Probabilistic Tsunami Hazard





Questions

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