

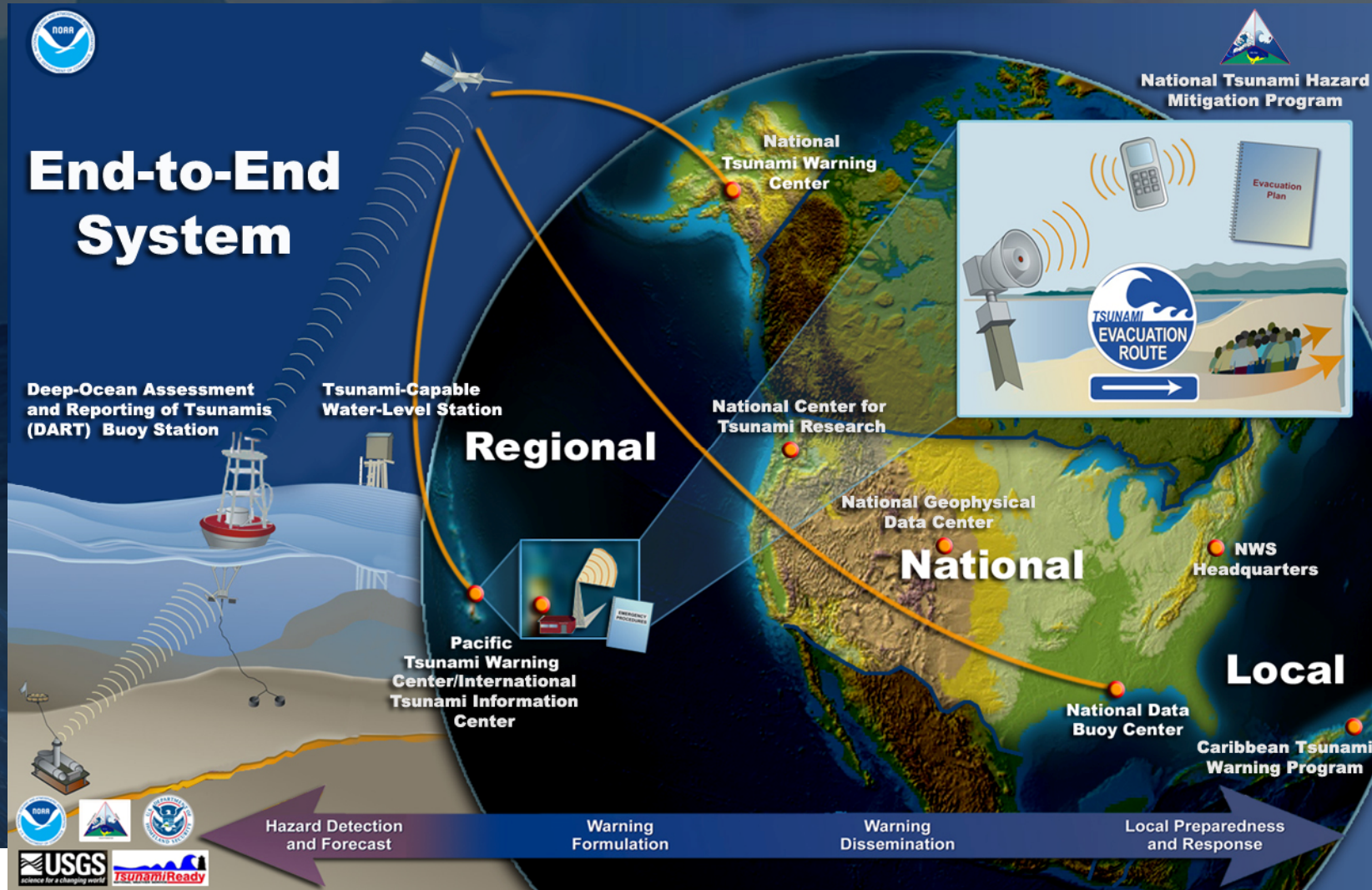
NOAA/NWS Tsunami Program

NOAA/NWS Tsunami Program

Jul 2016



U.S. Tsunami Warning System



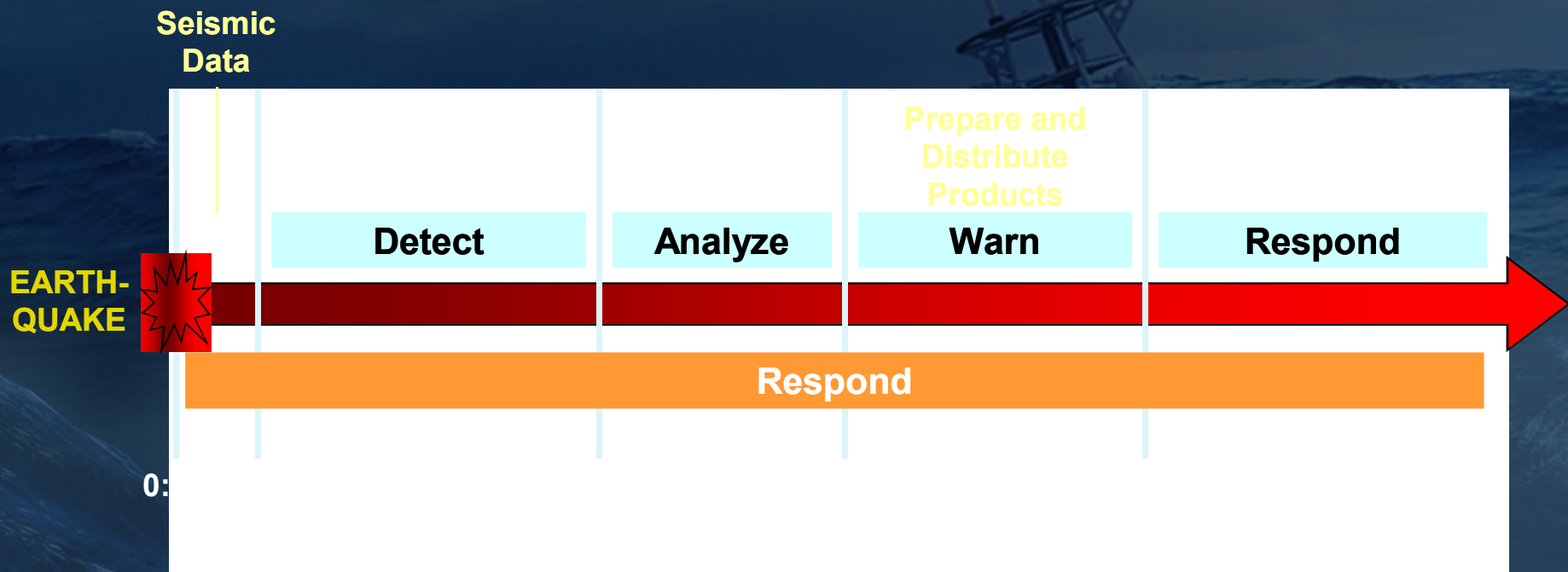
Tsunami Warning Centers



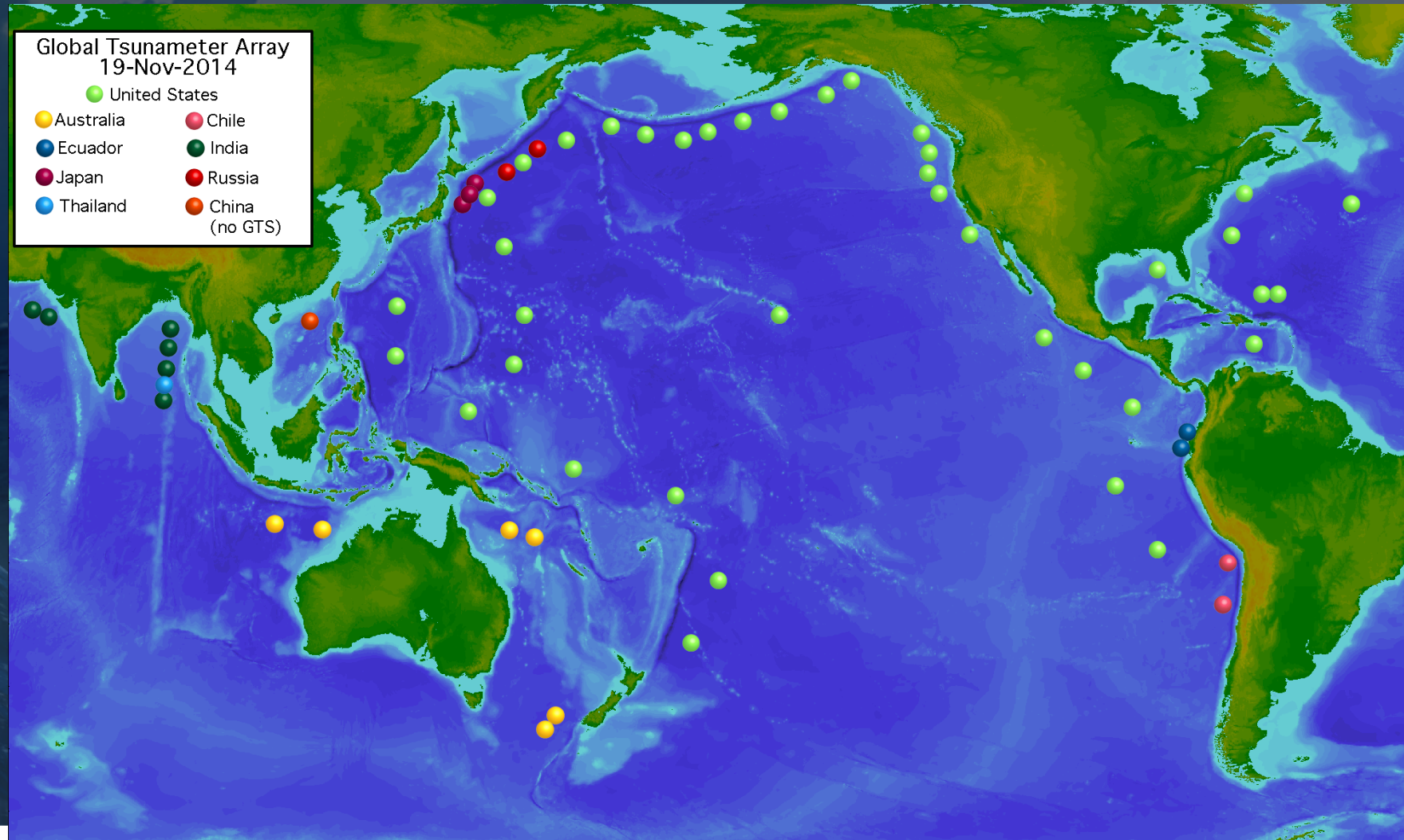
**National Tsunami Warning Center
Palmer, AK**



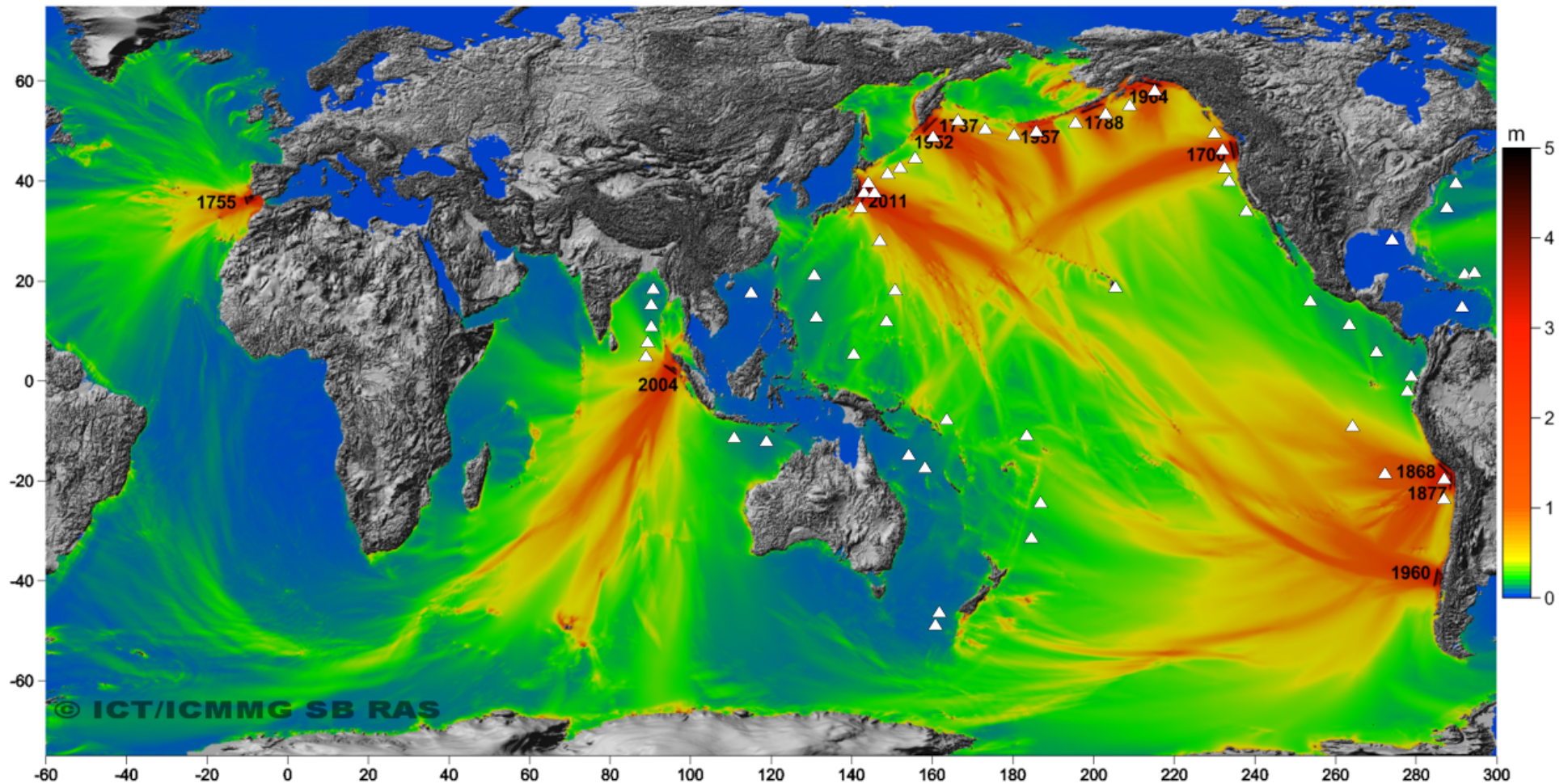
Typical Tsunami Response Timeline



DART Buoy Stations

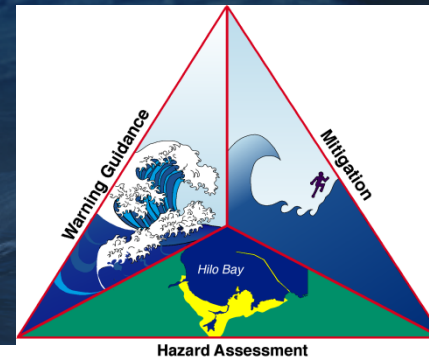
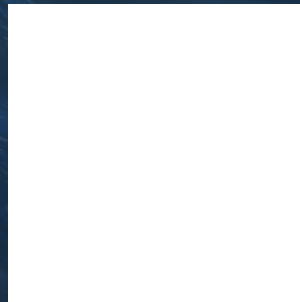


DART Locations and Historical MegaTsunamis



NOAA Tsunami Program: Information, Preparedness and Mitigation

- International Tsunami Information Center (ITIC)
- Caribbean Tsunami Warning Program (CTWP)
- National Tsunami Hazard Mitigation Program (NTHMP)
- TsunamiReady® Program
- NWS Weather Forecast Offices

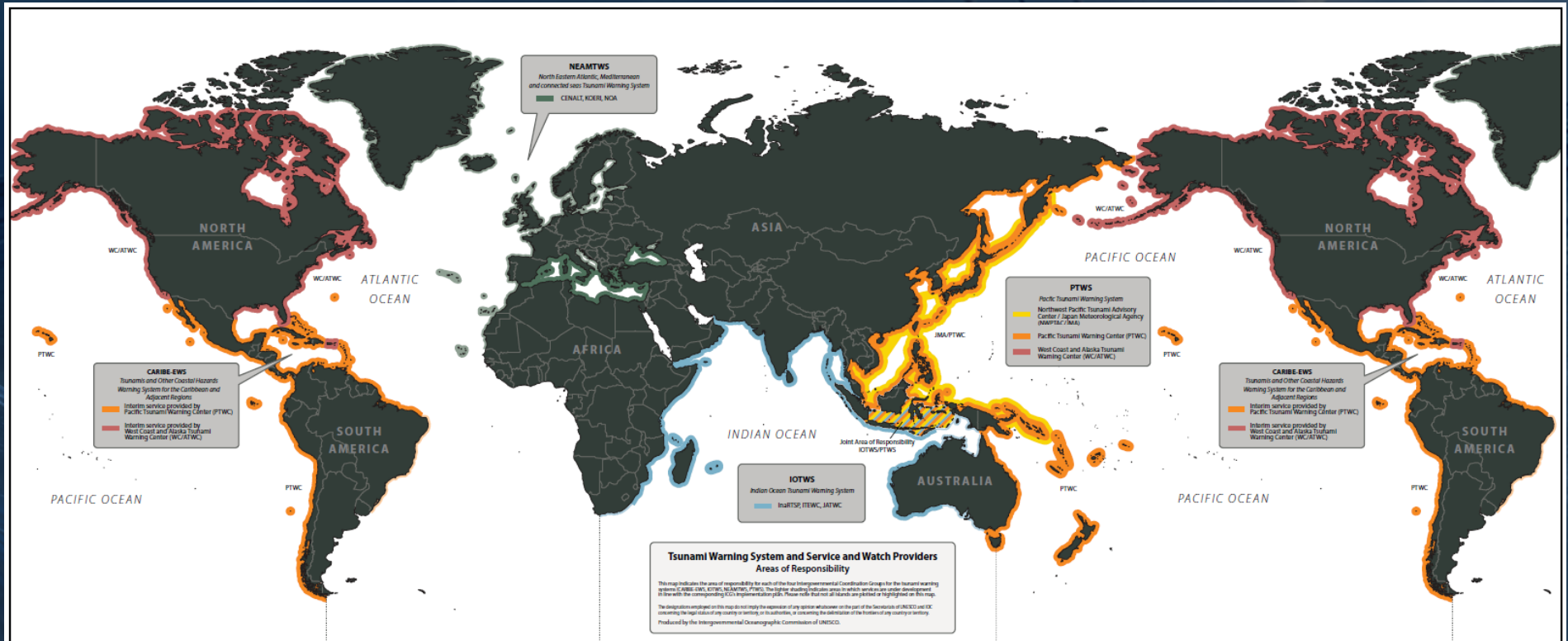


NOAA's Tsunami Outreach and Education

- TsunamiReady Program
 - Improves community awareness, preparation, and education
 - Strengthens local emergency operations
 - 186 communities in the United States have been recognized
- National Tsunami Hazard Mitigation Program
 - Partnership among federal and state/territorial agencies
 - Enhances national tsunami outreach and education efforts
 - Promotes a culture of tsunami preparedness and response
- Outreach activities for public and partners
 - Through the media
 - Community presentations

Outreach and **Education** of tsunami threat are key for residents to safely respond to Tsunami Events

International Tsunami Warning System



TsunamiReady, Tsunami Ready

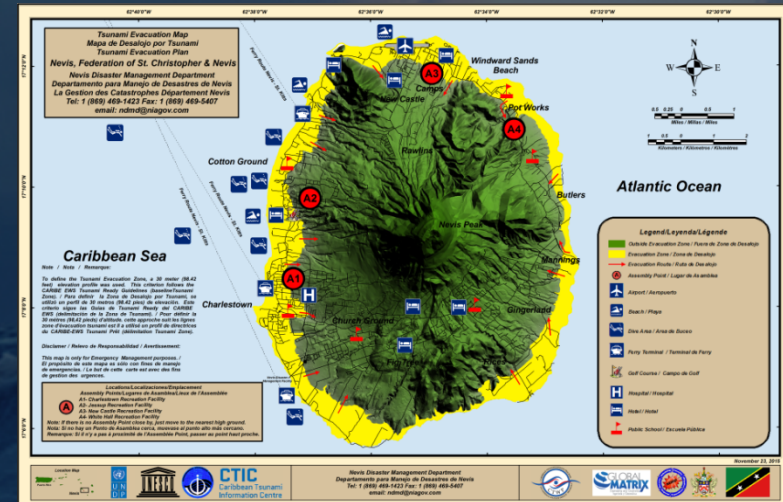


- **US 'TsunamiReady®'** (2001, US NWS, NTHMP)
 - *Guidelines for standard level of capability to mitigate, prepare for, and respond to tsunamis.*
 - *Promote community preparedness – minimize risk through better risk assessment, planning, education, warning communications*
 - *16 states, territories, 195 recognized Communities (29 Mar 2016). Local, tribal govt, or facility with authority to implement*

- **Intl 'Tsunami Ready'** (UNESCO IOC TOWS-IX, Feb 2016)
 - *Modelled after US TsunamiReady*
 - *Tsunami Ready Programme Guidelines (community performance-based recognition) available for use / adaption by other ICG regions (e.g., Pacific) (adopted by ICG/CARIBE-EWS-X, May 2015)*

TSUNAMI READY - INTERNATIONAL

- Currently, 51 Caribbean communities recognized
- Piloting: Caribbean: St. Kitts and Nevis, Pacific: Honduras, possible Tonga, Vanuatu, Samoa
- Identifying funding for other locations. Public-private partnership



Nevis



San Juan, Puerto Rico



PRIORITY CHALLENGE - Communities Ready?

INTERNATIONAL TSUNAMI READY (I-TR)	DONE
MITIGATION (MIT)	
MIT-1. Have designated & mapped tsunami hazard zones	X
MIT-2. Have a public display of tsunami information	X
PREPAREDNESS (PREP)	
PREP-1. Produce easily understood tsunami evacuation maps as determined to be appropriate by local authorities in collaboration with communities	X
PREP-2. Develop and distribute outreach and public education materials	X
PREP-3. Hold at least three outreach or educational activities annually	X
PREP-4: Conduct an annual tsunami community exercise	X
RESPONSE (RESP)	
RESP-1. Address tsunami hazards in the community's emergency operations plan (EOP)	X
RESP-2. Commit to supporting the emergency operations center (EOC) during a tsunami incident if an EOC is opened and activated	X
RESP-3. Have redundant and reliable means for a 24-hour warning point (and EOC if activated) to receive official tsunami threats	X
RESP-4. Have redundant and reliable means for 24-hour warning point and/or EOC to disseminate official tsunami alerts to the public	X

- **STRATEGY:**
Be Aware,
Be Prepared

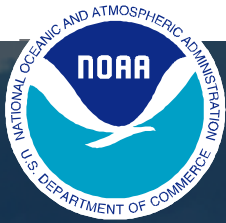
- **FRAMEWORK:**
International
Tsunami Ready (I-TR)
(UNESCO-IOC 2016)
*Performance-based
Community Recognition*

- **ACTION:**
National programs
empower Communities

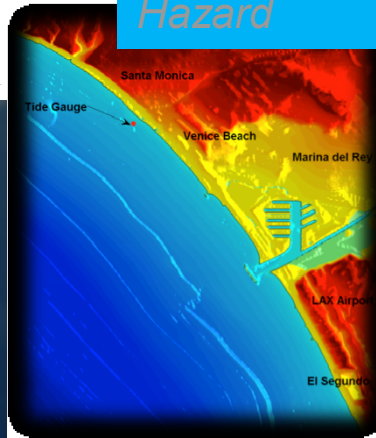


(ICG/CARIBE-EWS Guidelines, 2015)





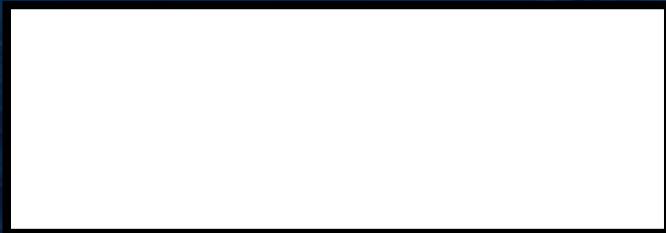
Hazard



Evacuate



Practice

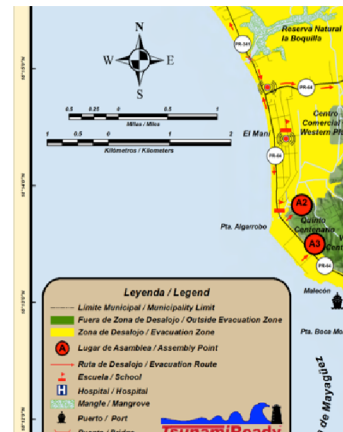


=> READY by PREPARING

=> Communities make Evacuation Maps

'TOWN-WATCHING'

- ✓ Local stakeholder workshops
- ✓ GIS-facilitated maps
- ✓ Critical facilities, Schools, Hospitals, Special needs
- ✓ Safe Assembly areas
- ✓ Practical routes, Signage



CARIBE WAVE 16 – March 17, 2016

- In 2016, 331,000 participants. 140,000 more than in 2014 and 2015
- Every MS participated and completed evaluation
- Communications and response plans tested

