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Oceanographic
Commission

Call to Action

**Be Aware, Be Prepared
Be Tsunami Ready !**

Dr. Laura Kong

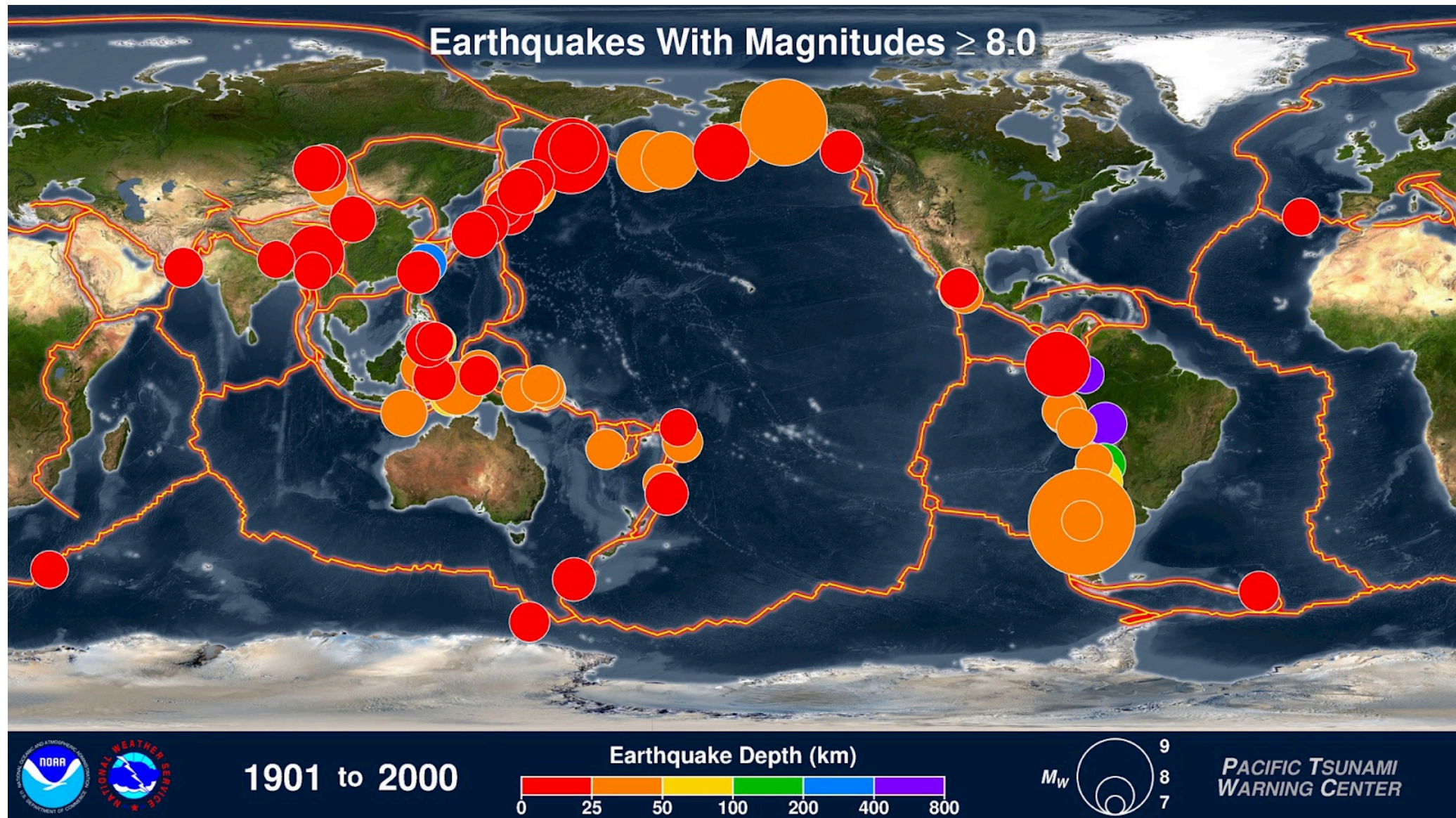
Chair, Tsunami Ready Coalition

International Tsunami Information Centre (ITIC), Honolulu

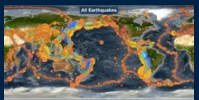
Bernardo Aliaga

Head, UNESCO/IOC/Tsunami Resilience Section, Paris

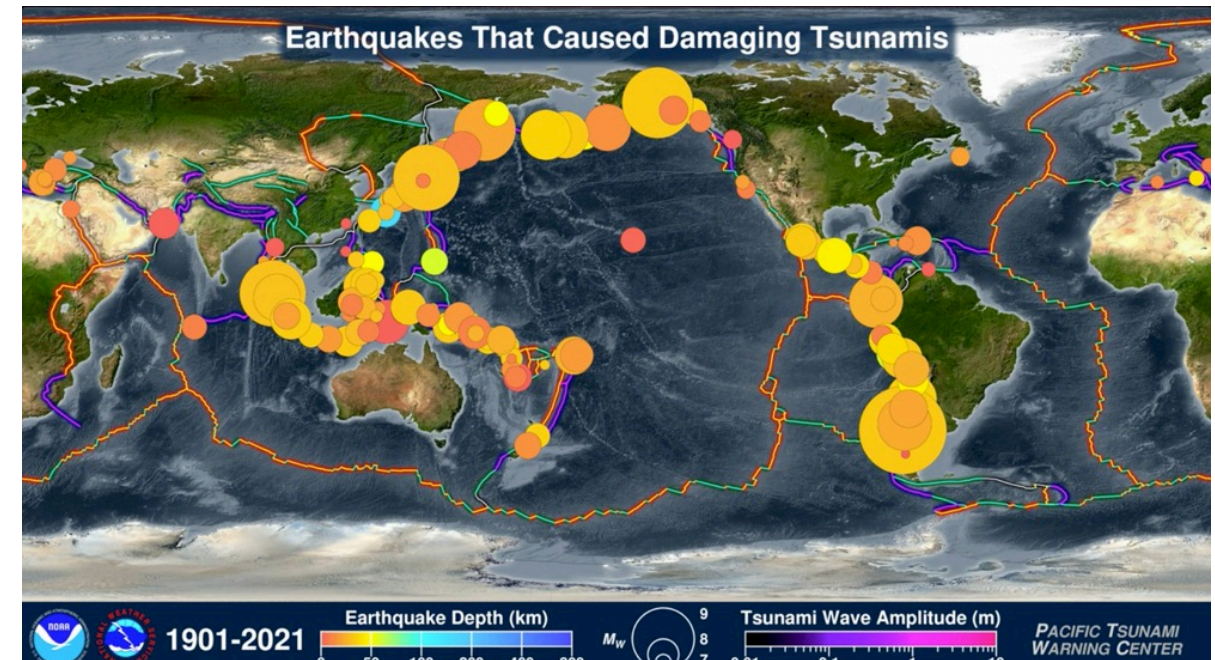
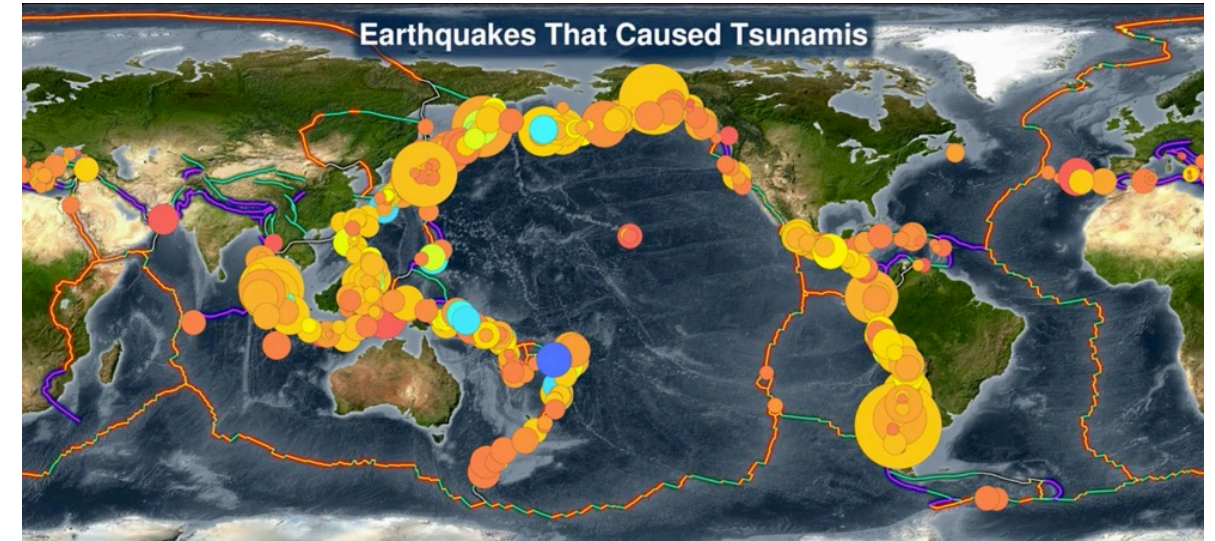
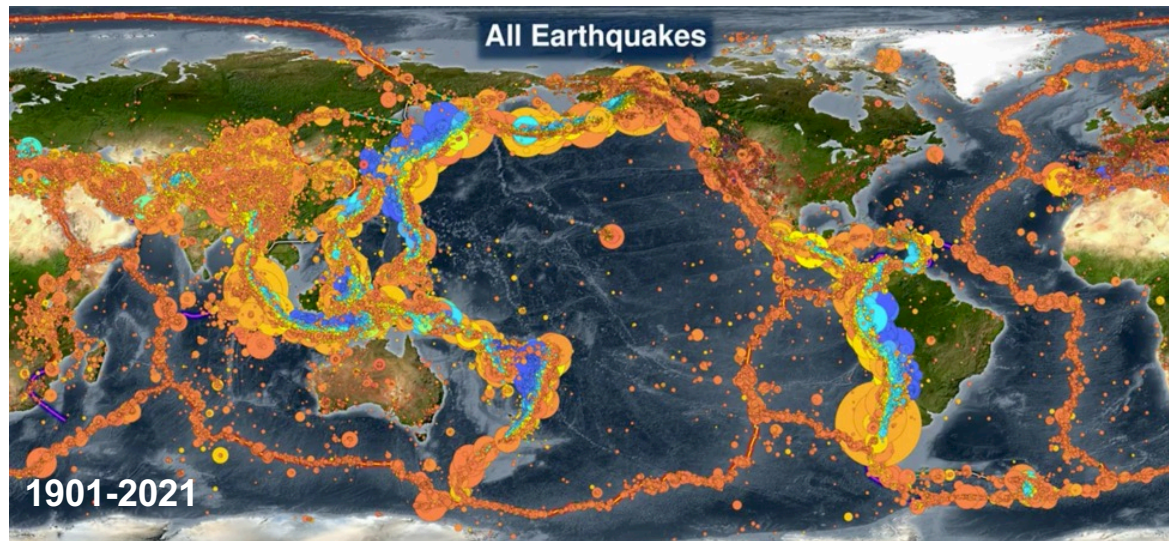
DANGEROUS EARTHQUAKES & TSUNAMIS



Click below
for video
EQ-Tsunami
1901-2021

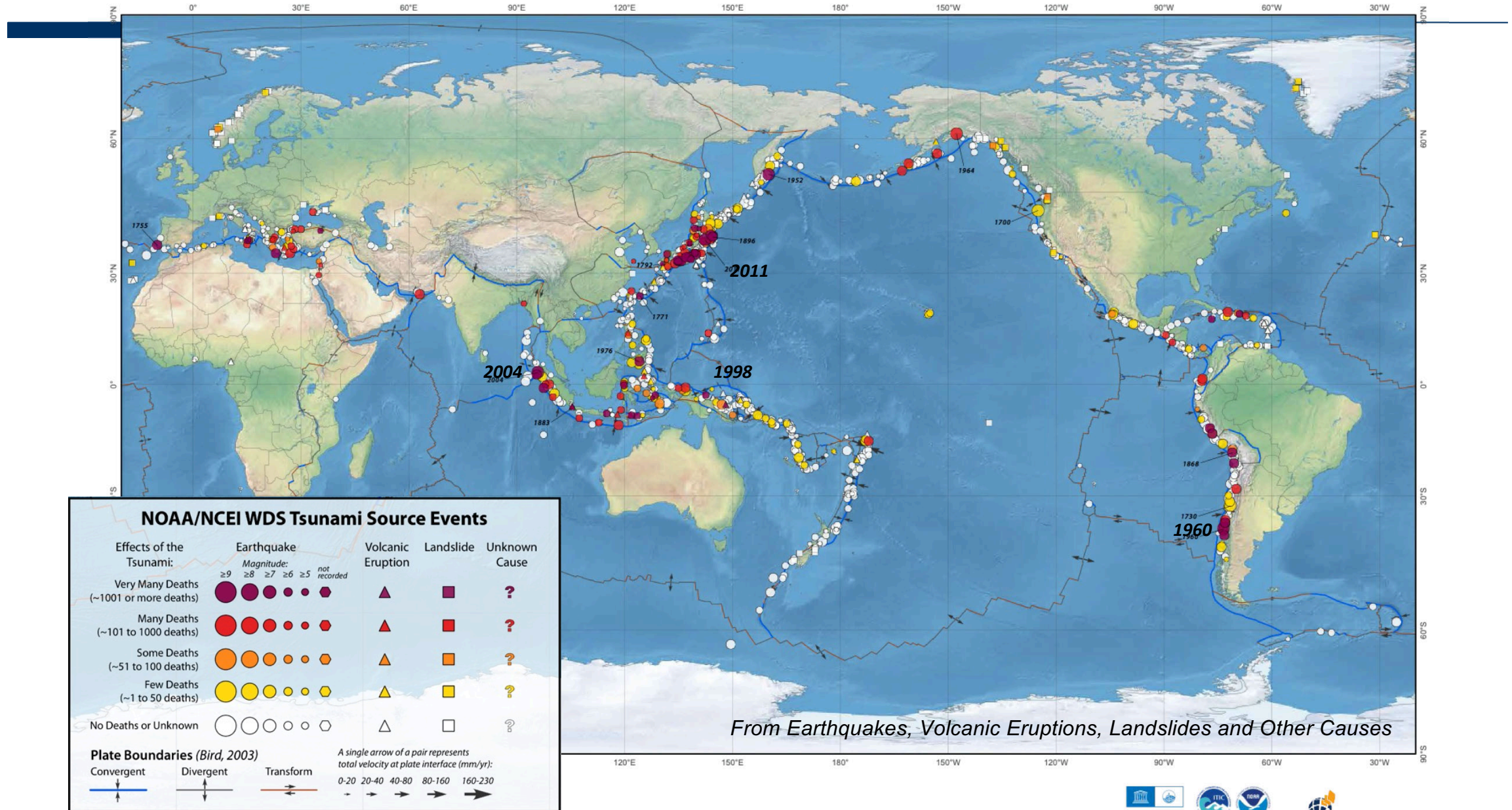


DANGEROUS EARTHQUAKES & TSUNAMIS

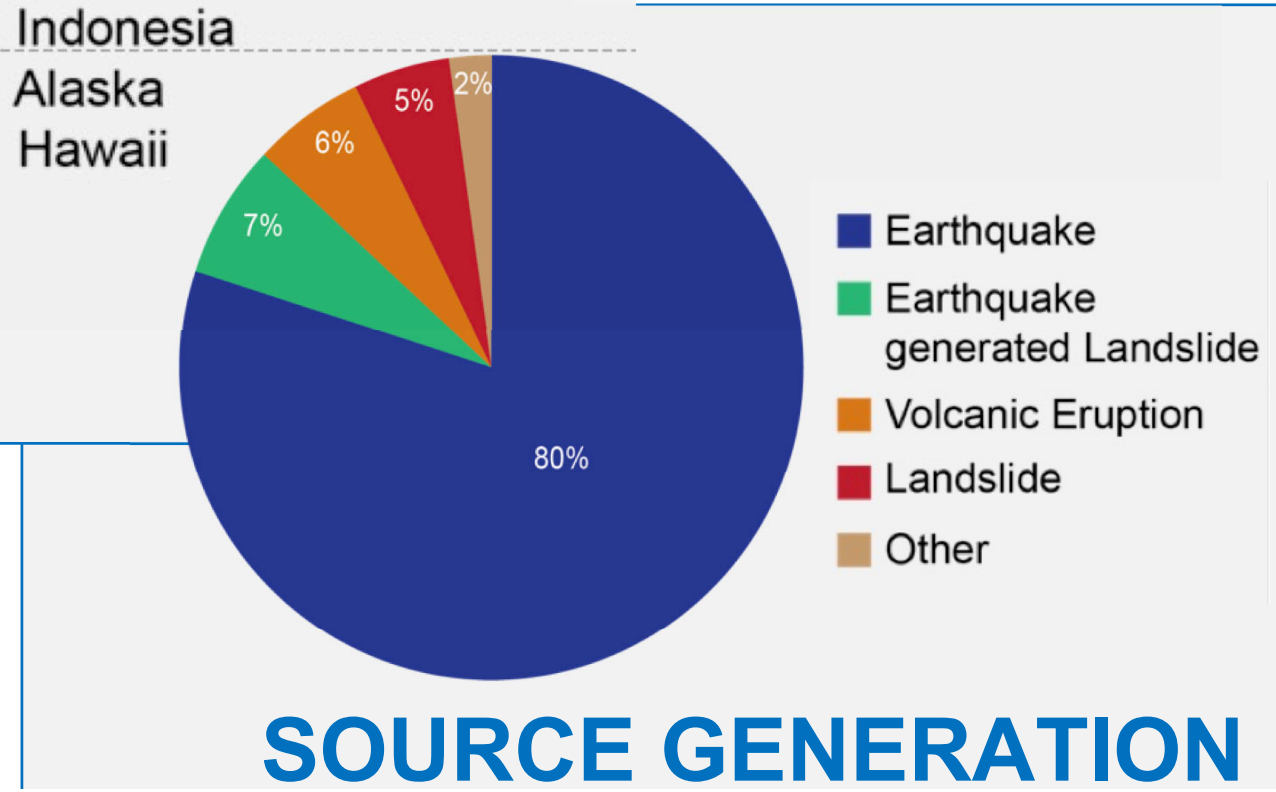
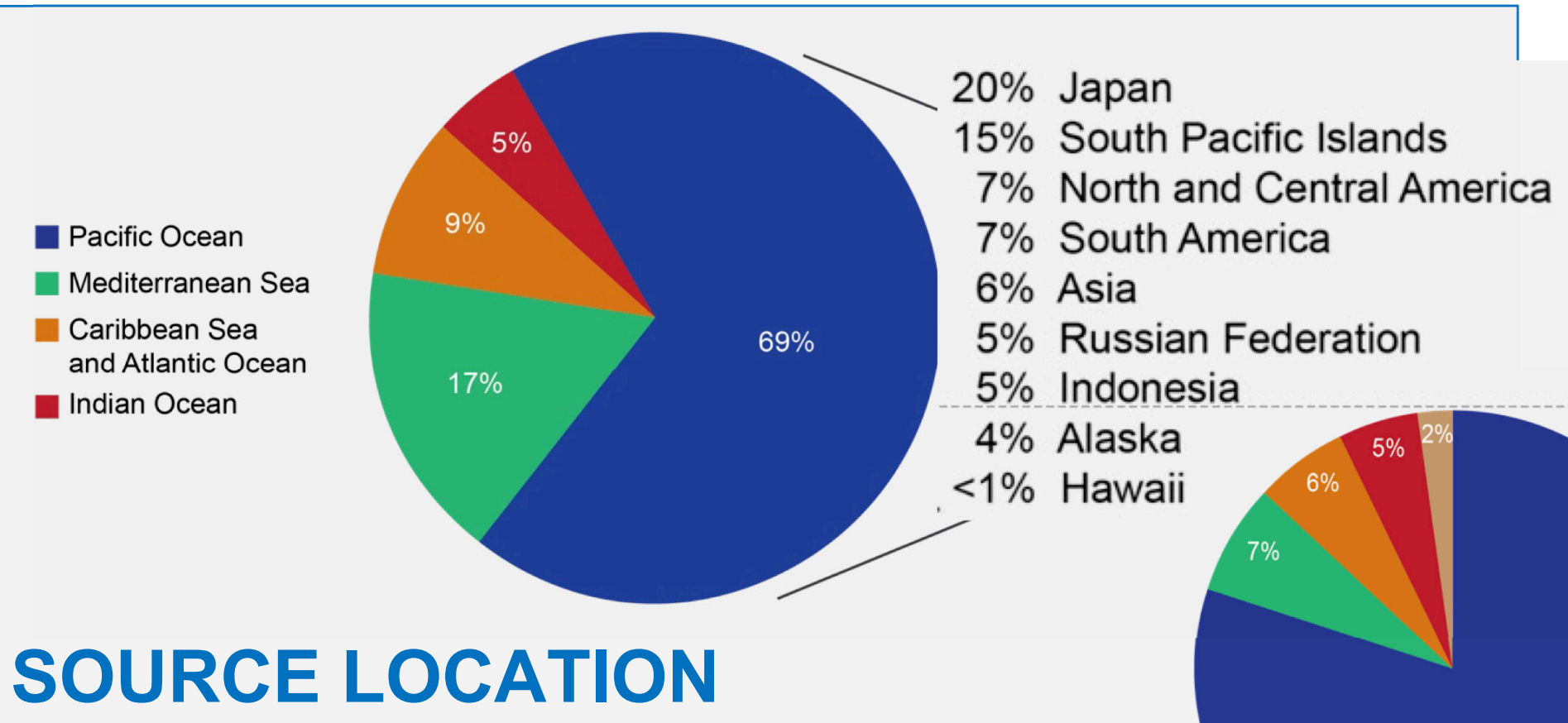


- ❑ 80% caused by earthquakes
- ❑ Shallow, undersea/near coast
- ❑ Magnitude 8+ (M7+)

DEADLY TSUNAMIS (1620 B.C to A.D. 2023)

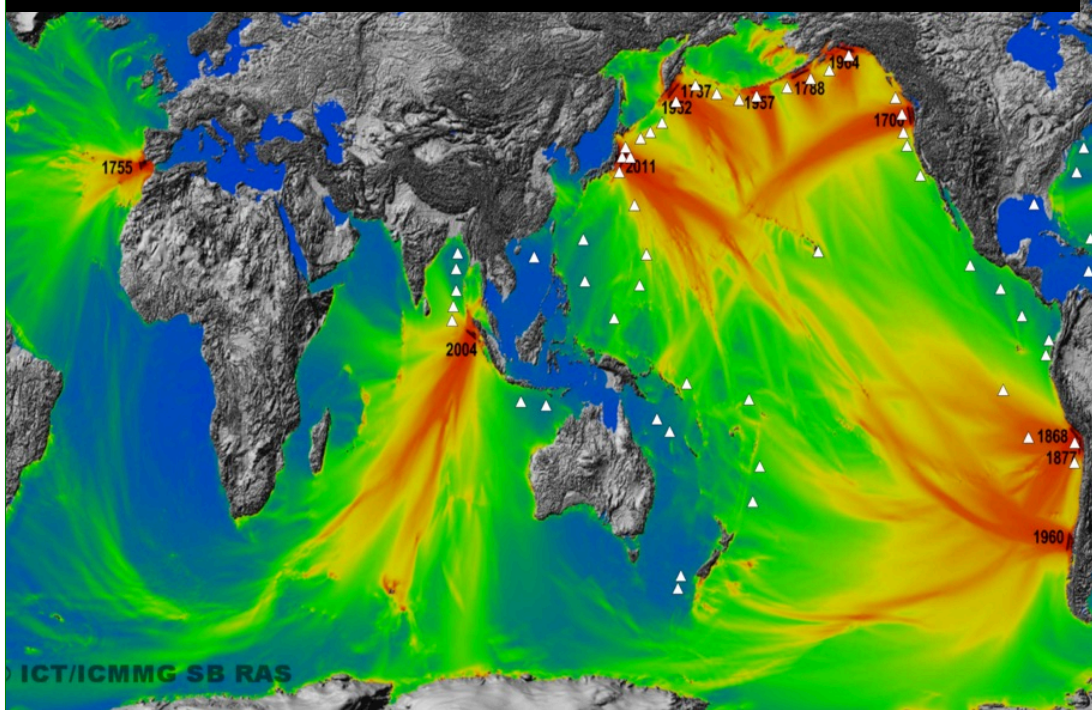


DEADLY TSUNAMIS (1620 B.C to A.D. 2023)

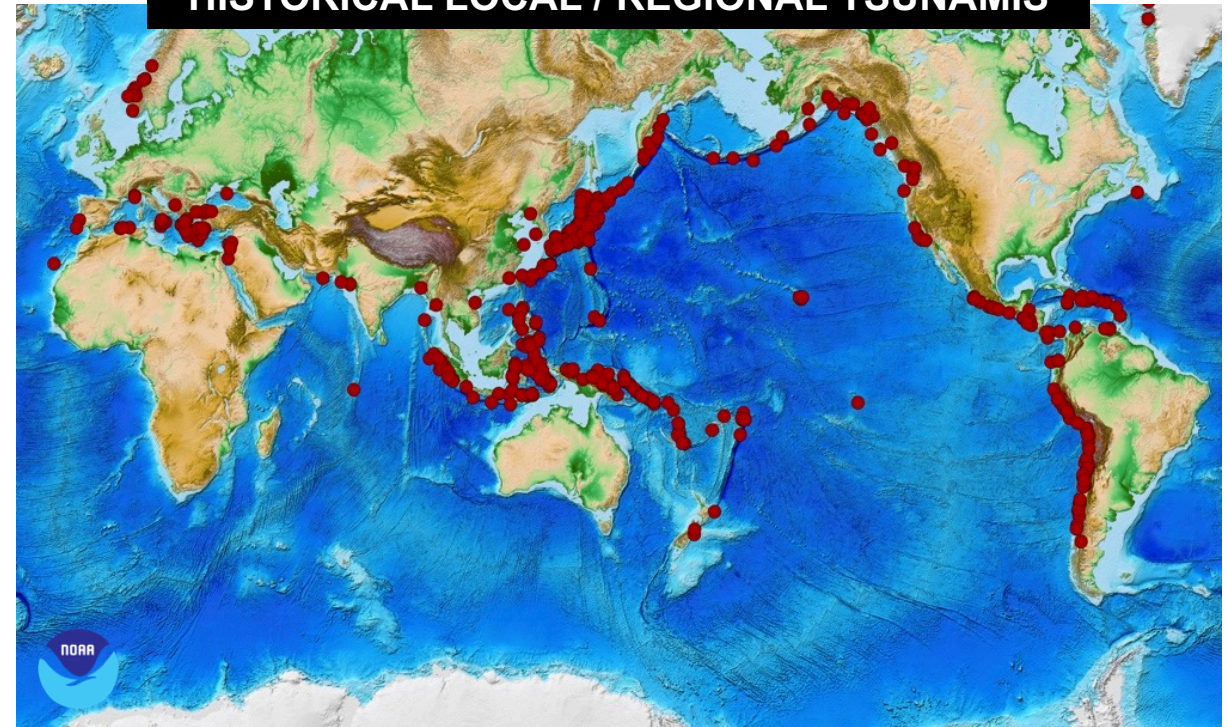


Deadly Tsunamis – MOST ARE LOCAL

HISTORICAL TRANS-OCEANIC DISTANT TSUNAMIS



HISTORICAL LOCAL / REGIONAL TSUNAMIS



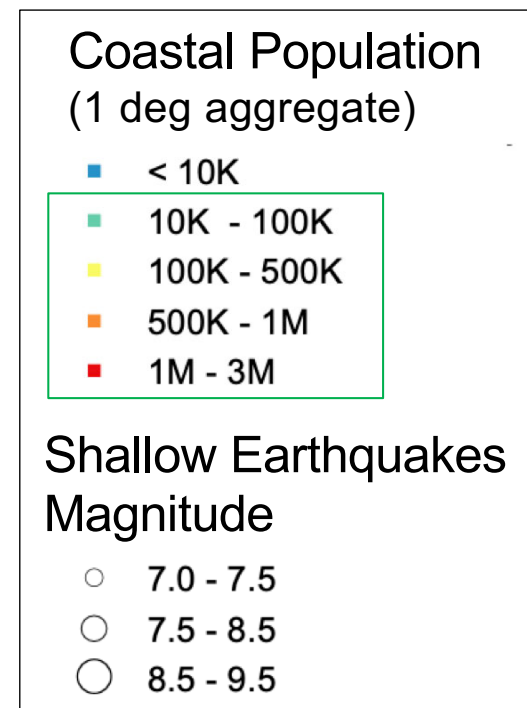
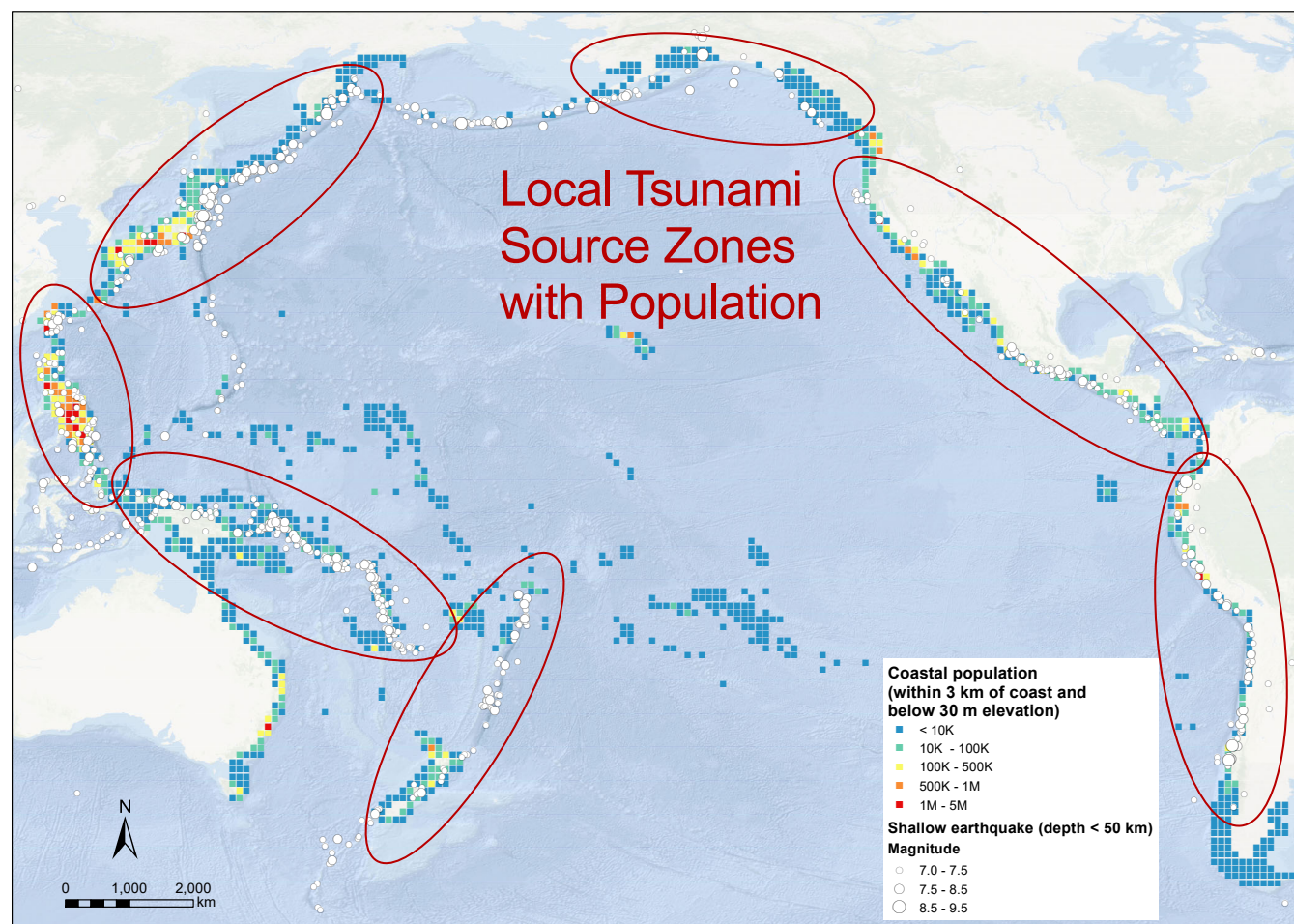
- ❑ Most tsunamis are local (< 1 hr) or regional (1-3 hrs)
- ❑ Globally, 90% of deaths from local or regional tsunamis (in Pacific, 99% of deaths)



At-risk population - Pacific



Tsunami evacuation zone	Population to evacuate
Less than 30 m elevation and within 3 km of coast	83,413,677



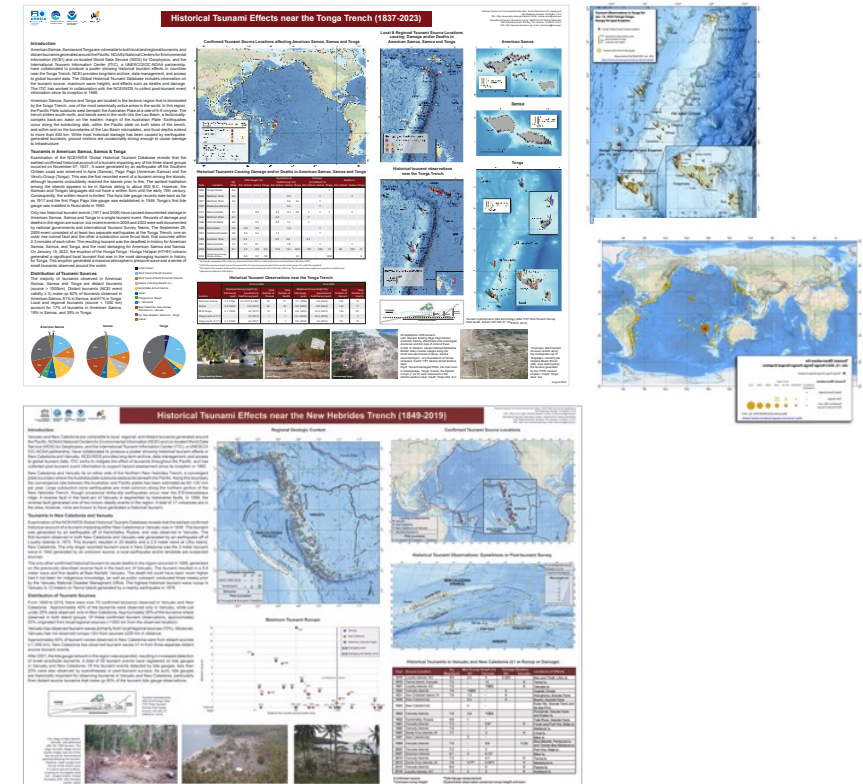
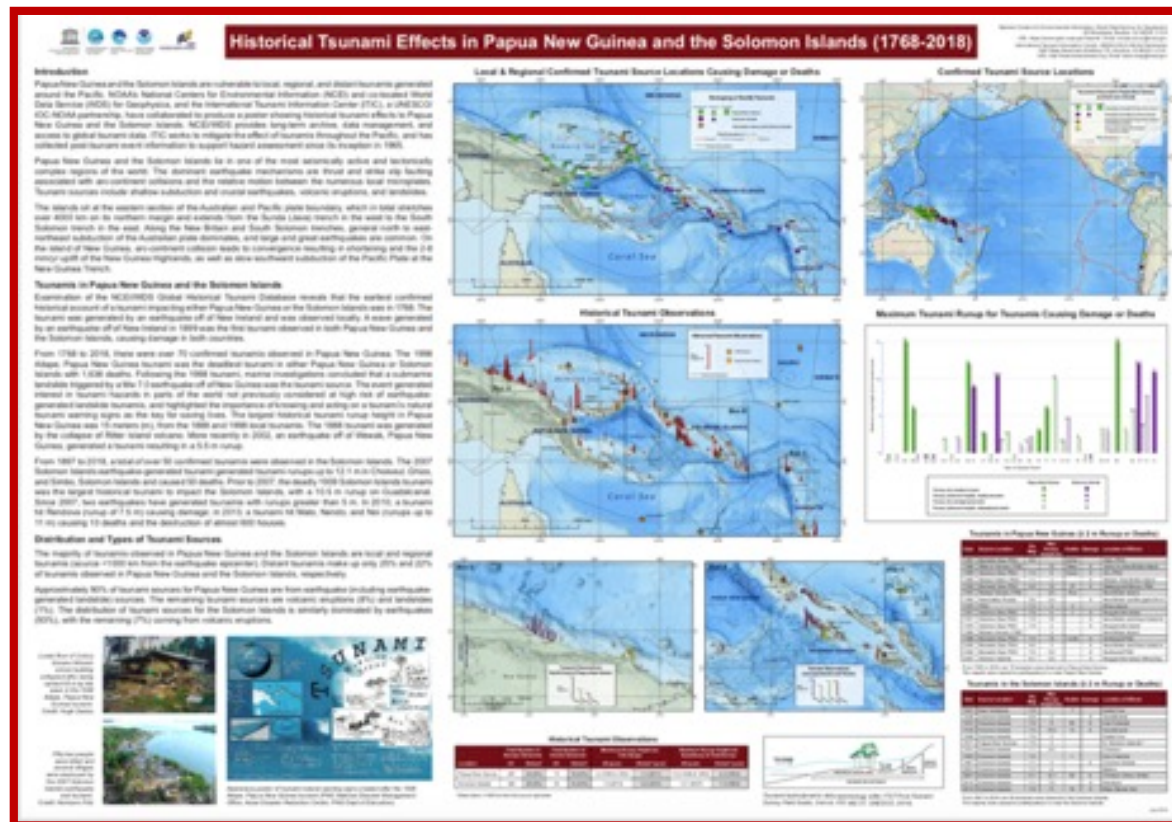
Gridded Population of the World, Version 4 (GPWv4) (<https://sedac.ciesin.columbia.edu/binaries/web/sedac/collections/gpw-v4/gpw-v4-documentation-rev11.pdf>).
30 sec resolution aggregated to 1 deg
B. Fry, GNS Science, NZ

Regional Historical Tsunami Effects posters (NCEI-ITIC)



- **Papua New Guinea / Solomons 1768-2018 (2019)**
- **American Samoa, Samoa, Tonga 1837-2023 (update HTHH 2023)**
- **Vanuatu / New Caledonia, 1949-2019 (2021)**

15% Pacific Deadly Tsunami in Southwest Pacific. 99% Pacific deaths from Local/Regional Tsunamis





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UNESCO/IOC Tsunami Ready Recognition Programme

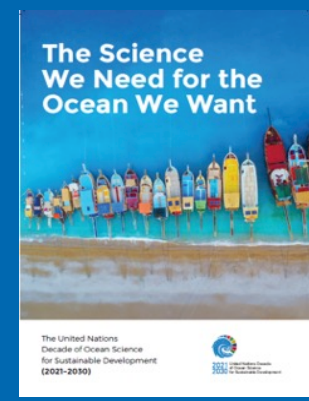


Vision:
*“The science we need
for the ocean we want”*

Mission:
*Transformative Ocean Science
solutions for sustainable
development, connecting
people and our ocean*



2016-2017



2018-2019



2019-2020

Ocean Decade Goals: Societal Outcomes



4. A Predicted Ocean

Society understands and can respond to changing ocean conditions.



5. A Safe Ocean

Life and livelihoods are protected from ocean-related hazards.



6. An Accessible Ocean

Open and equitable access to data, information and technology and innovation.

Capacity Development

Cross-cutting. No one left behind.





OCEAN DECADE TSUNAMI PROGRAMME

A SAFE OCEAN

THE MAIN SOCIETAL OUTCOME

TO MAKE
100%

OF COMMUNITIES AT RISK
OF TSUNAMI PREPARED FOR
AND RESILIENT TO TSUNAMIS

BY
2030

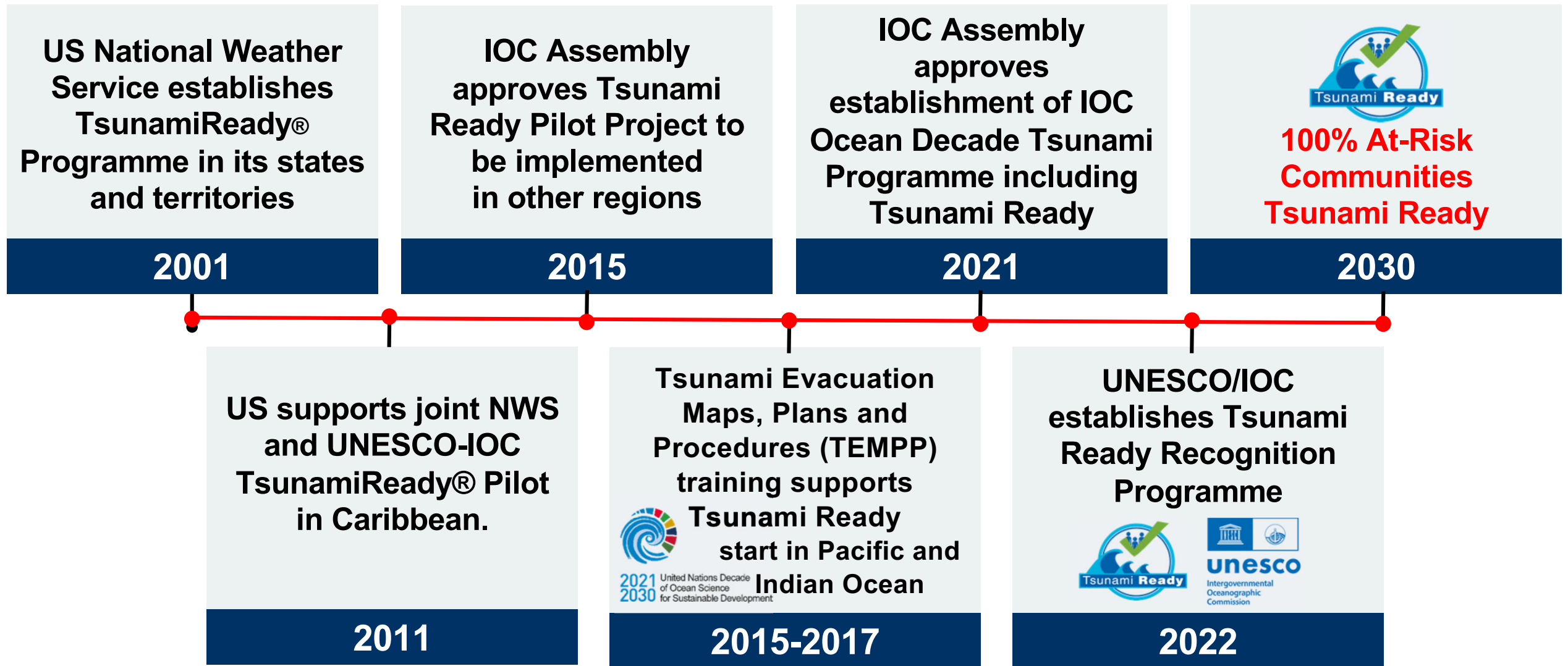
➤ *Tsunami Coalition: collaborative with critical UN stakeholders, civil protection, others ==> Raise profile. Facilitate resourcing*

CHAIR is LAURA KONG

➤ *Capacity Development: "Tsunami Ready" training, augmented by online IOC Ocean Teacher Global Academy (OTGA) ==> Global reach, deep curricula*

ITIC is OTGA STC

History of Tsunami Ready Programme

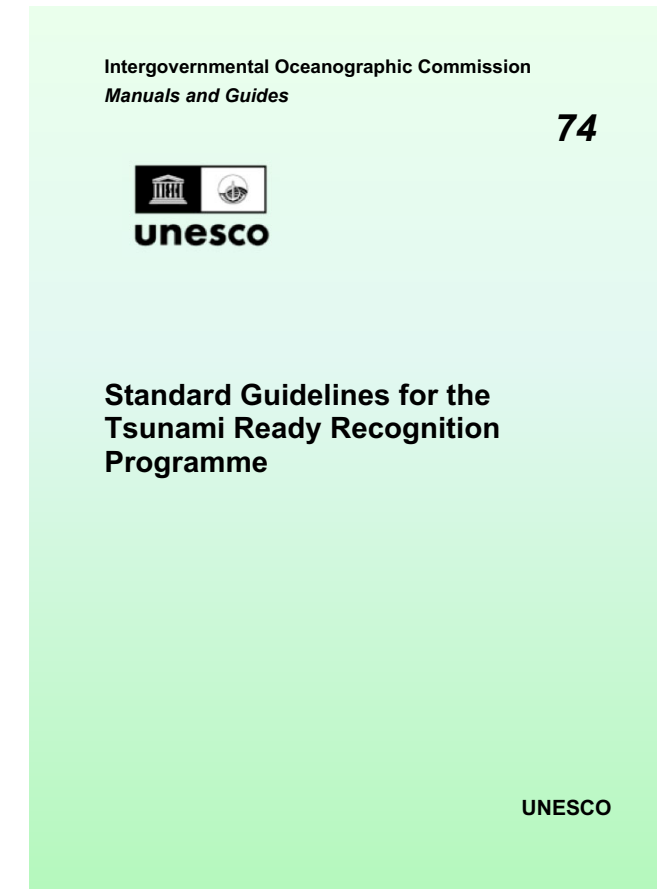


Tsunami Ready



UNESCO-IOC Tsunami Ready Recognition Programme is:

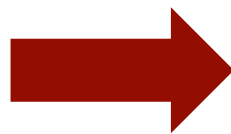
- Voluntary international performance-based community programme.
- Facilitated by UNESCO-IOC Tsunami Information Centres* (CTIC, IOTIC, ITIC, and NEAMTIC) of each region
- Formal recognition process follows standard guidelines (UNESCO-IOC Manual and Guide 74).



UNESCO-IOC Tsunami Information Centres



UN OCEAN DECADE TSUNAMI PROGRAMME: 100% AT-RISK COMMUNITIES TSUNAMI READY



UNESCO IOC TSUNAMI READY INDICATORS	
I	ASSESSMENT (ASSESS)
1	ASSESS-1. Tsunami hazard zones are mapped and designated
2	ASSESS-2. The number of people at risk in the tsunami hazard zone is estimated
3	ASSESS-3. Economic, infrastructural, political, and social resources are identified
II	PREPAREDNESS (PREP)
4	PREP-1. Easily understood tsunami evacuation maps are approved
5	PREP-2. Tsunami information is publicly displayed
6	PREP-2. Outreach and public awareness and education resources are available and distributed
7	PREP-3. Outreach or educational activities <u>are held at least three times a year</u>
8	PREP-4: A community tsunami exercise is conducted at least every two years
III	RESPONSE (RESP)
9	RESP-1. A community tsunami emergency response plan (ERP) is approved
10	RESP-2. The capacity to manage emergency response operations during a tsunami is in place
11	RESP-3. Redundant and reliable means to timely receive 24-hour official tsunami alerts are in place
12	RESP-4. Redundant and reliable means to timely disseminate 24-hour official tsunami alerts to the public are in place

- **STRATEGY:**
Be Aware, Be Prepared
- **FRAMEWORK:**
 - Harmonized global guidelines UNESCO IOC Tsunami Ready
 - Performance-based Community Recognition
- **ACTION:**
National programs empower Communities
- **GLOBAL MEASURE**
 - 12 Indicators – Assessment, Preparedness, Response

UNESCO/IOC TSUNAMI READY RECOGNITION PROGRAMME (TRRP)

54
TSUNAMI READY COMMUNITIES

11 – **IOTWMS**
 20 – **PTWS (16/46 countries)**
 20 – **CARIBE-EWS**
 3 – **NEAMTWS**
 ○ – in progress (next yr)

MAJOR ACTIVITIES IN 2021-2024+

- **Ramp-up for Tsunami Ready**
- **Development of a global Tsunami Ready Interactive Map Viewer**
- **Hosting by ITIC of the Tsunami Ready web site**
- **Development of a new Tsunami Ready Board Game**
- **Publication of the IOC Manuals and Guides 74 «Standard Guidelines for Tsunami Ready Recognition Programme»**

Spain ○
 France ●
 Italy ○
 Türkiye ●
 Greece ○
 Israel ○
 Egypt ●

India (2)
 Noliyasahi,
 Venkatraipur

Palau (1) ○

Indonesia (9)
 Kelurahan Lolong Belanti,
 Kelurahan Purus,
 Panggarangan Village,
 Pangandaran Village,
 Kemadang Village,
 Glagah Village,
 Tambakrejo Village,
 Tanjung Benoa,
 Kuta Mandalika Village

Solomon Islands (9)
 Western Provinces
 Honiara

New Caledonia ○

Vanuatu (10)
 Efate, Santo

Fiji (2)
 Naevuevu Sila

Tonga ○

Samoa (1+)
 Savaia

Palau (1) ○

FSM (4)
 Yap, Chuuk, Pohnpei, Kosrae

RMI (1)
 Majuro

Kiribati (1)
 Tarawa ○

Haiti (1)
 Fort-Liberté

Jamaica (1)
 Old Harbour Bay

Honduras (3)
 Omoa,
 Tornabe/Tela,
 Cedeño

Guatemala (2)
 San Jose,
 Sipacate

El Salvador (2)
 La Libertad,
 Tamanique

Costa Rica (10)
 Ostional,
 Playas El Coco,
 Samara,
 Tamarindo,
 Quepos,
 Uvita-Bahia,
 Playa Hermosa,
 Tivives,
 Puerto Jiménez
 Cahuita

Ecuador (3)
 Galapagos

Panama (1)
 Puerto Armuelles

Nicaragua (2)
 Bluefields,
 Corn Island

United Kingdom (2)
 British Virgin Islands, Anguilla

Dominica (1): Portsmouth

Saint Lucia (1): Laborite

Saint Kitts and Nevis (1)
 Saint Kitts and Nevis

Antigua and Barbuda (1)
 St. John's

Barbados (2)
 St. Lucy & St. Peter
 Christ Church West

Trinidad & Tobago (1)
 Carenage

Grenada (2)
 Carriacou & Petite Martinique,
 St. Patrick

St. Vincent and the Grenadines (2)
 Union Island
 Saint George



Fiji Coral Coast: Nayevuyevu and Sila Villages

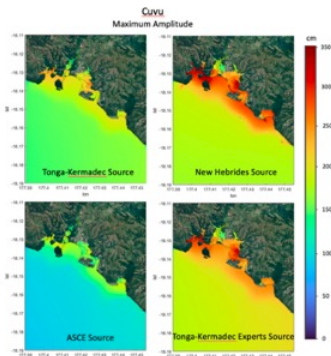


TR Recognition Ceremony: Nov 3, 2023

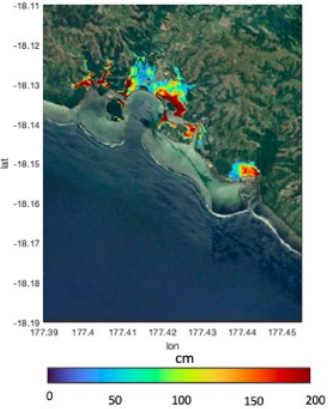
Implementation Approach - Stakeholders

Mineral Resources Dept, National Disaster Management Office, Ministry of Lands, Provincial Administrator, iTaukei Affairs, Plan International, Partners in Community Development (Fiji), People Living with Disability Organization

Preparedness: Hazard and Evacuation



Maximum Composite Flow Depth



Hazard Assessment: Tsunami Sources and Inundation

TSUNAMI EVACUATION PROCEDURE

- If you feel an earthquake - protect yourself! Do not panic. Drop, cover, and hold!
- After an earthquake, be aware that a tsunami may follow. Move away from the beach immediately as a precautionary measure. Look for more information through TV and Radio.
- After an intense and prolonged earthquake, evacuate immediately if possible or look for shelter in Higher Buildings. As a community visitor, please follow Community Disaster Management's instructions.
- The sound of the siren is the official call for evacuation. If the siren sounds, follow the evacuation procedure.

After the first tsunami wave, more waves are likely to come!

Wait for an official "All Clear" message before leaving the shelter.

If it is long or strong, get gone

COLA VINA!! WELCOME TO NAEVUEVU VILLAGE

Legend

- Signage
- FRA Roads
- Districts
- Evacuation Area
- Evacuation Route
- Village Boundaries

DATE DEVELOPED: 2016/02/23

NA I VAKARO MO MURIA NI YACO NA UA LOKA

- Kevaka na vavata na unesece kataka ni vece.
- Mai saka, kataka ni toso me yacora ni oti na unesece.
- Mai yacora me na matawasa e na gacaca tototo me vakua vaka (vaka).
- Na vakaga e na kaka i laka kaka mata e na vaka mata e na vaka mata.

3. Ni oti ga e dua na unesece kataka, me vakacataka sara ni vece e vakacataka.

4. Kataka ni vavata na i vakaro ni Muria me qai vakua vaka, me saka e na gacaca tototo me vakua vaka (vaka).

Na vakaga e na kaka i laka kaka mata e na vaka mata e na vaka mata.

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After the first tsunami wave, more waves are likely to come!

Wait for an official "All Clear" message before leaving the shelter.

If it is long or strong, get gone

COLA VINA!! WELCOME TO SILA VILLAGE

Legend

- Signage
- FRA Roads
- Districts
- Evacuation Area
- Evacuation Route
- Village Boundaries

DATE DEVELOPED: 2016/02/23

NA I VAKARO MO MURIA NI YACO NA UA LOKA

- Kevaka na vavata na unesece kataka ni vece.
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Na vakaga e na kaka i laka kaka mata e na vaka mata e na vaka mata.



Community participatory training, 18-22 Sep 2023

OFFICIAL WARNINGS

when tsunami travel across the ocean from far away, we have more time to warn people what to do.

WARNING	Move to higher ground or inland IMMEDIATELY!	DANGER	A Tsunami is imminent. Flooding and dangerous waves.
ADVISORY	Stay out of the water and away from the shore.	STRONG CURRENTS AND DANGEROUS WAVES	3-3 feet or 0.9-1 meter
WATCH	Be prepared to take action. Stay tuned to local radio!	TSUNAMI POSSIBLE	1-3 feet or 0.3-1 meter
INFORMATION STATEMENT	Move to higher ground or inland IMMEDIATELY!	NO ACTION REQUIRED	RELAX

Alerts & Warnings

Outdoor Sirens, Social Media, Telephone Notifications, Radio, Wireless Emergency Alerts and Text Messages, Television

IF YOU FEEL AN EARTHQUAKE THAT IS LONG AND STRONG, A TSUNAMI MAY FOLLOW

WHAT TO DO IN CASE OF A TSUNAMI

- Drop, cover & hold during an earthquake
- Move inland or to a higher ground quickly, or use local evacuation route
- Wait for official ALL CLEAR before returning to the beach

Sila Village Nadroga Province, Fiji is Tsunami Ready

IN CASE OF STRONG OR LONG EARTHQUAKE OR ANY OFFICIAL MESSAGE, GO TO HIGHER GROUND OR FURTHER INLAND

The recognition does not imply approval or promise that a community can or will perform at a certain level in case of tsunami. Tsunami Ready recognition does not mean that a community is tsunami proof. UNESCO-IOC recognizes that the community have built their capacity and implemented measures in accordance to the agreed indicators of UNESCO-IOC Tsunami Ready Programme, and that they will continue to maintain and ensure the sustainability of this preparedness level.

- | | |
|-------------------------------|---|
| English | iTaukei (Fijian) |
| • Tsunami Hazard Zone | • Na Vanua oqo e rawa ni cabeta na Ualoka |
| • Tsunami Evacuation Route | • Na sala mo ni muria kina i drodro ni Ualoka |
| • Tsunami Safe Zone | • Nai drodro ni Ualoka |
| • Wait for Official All Clear | • Waraka me soli nai vakaro ni veisukayaki |

Warning, Response, Awareness



UNDRR

UN Office for Disaster Risk Reduction



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Call to Action!

Making **100%**

of at-risk communities

Tsunami Ready by **2030.**