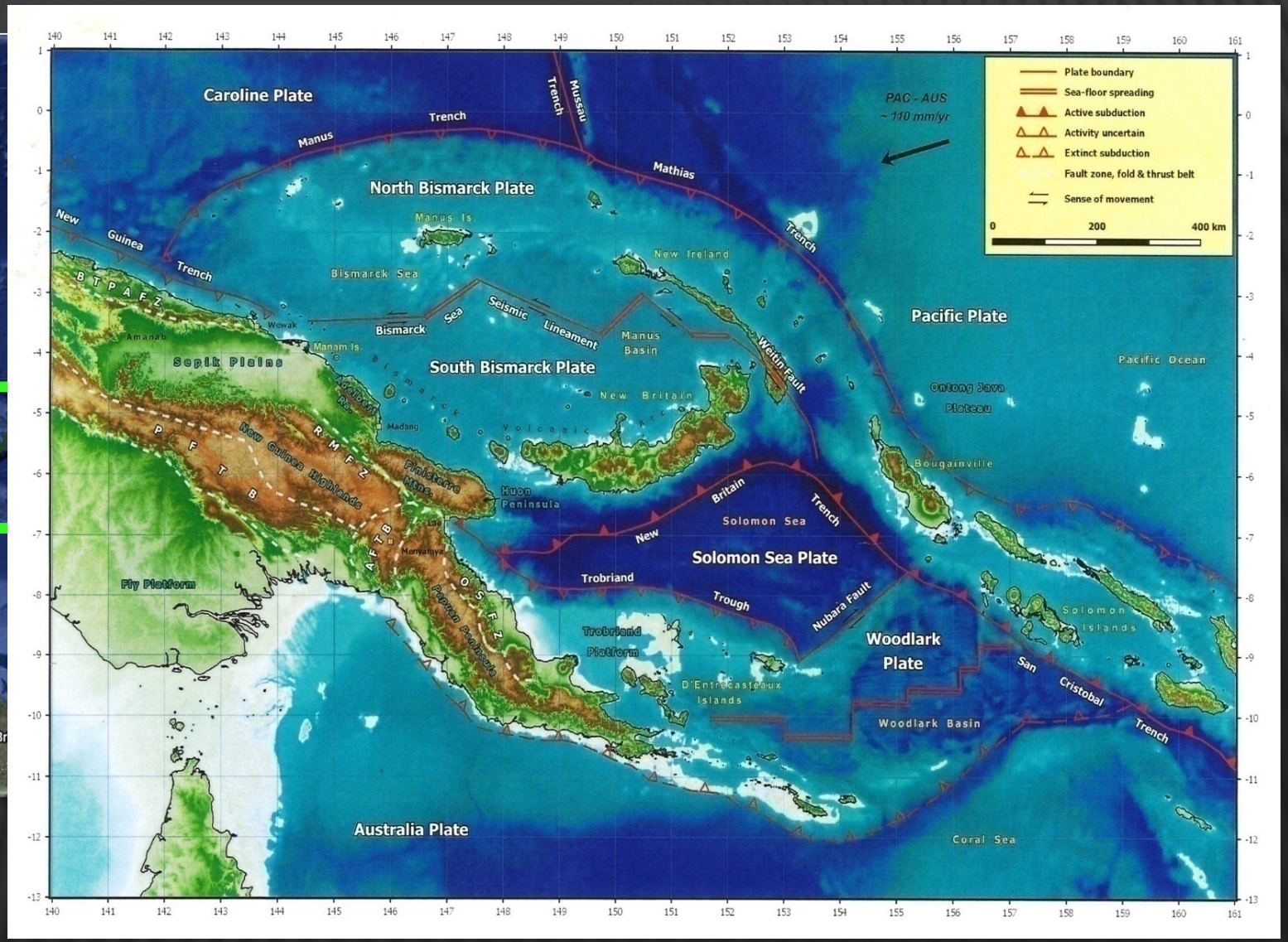
TSUNAMI WARNING IN PAPUA NEW GUINEA

Port Moresby Geophysical Observatory

Department Mineral Policy & Geohazards Management

ITP HAWAII, 07-18 AUGUST 2023

PNG location & Tectonic Setting



PMGO's Function & Information Flow

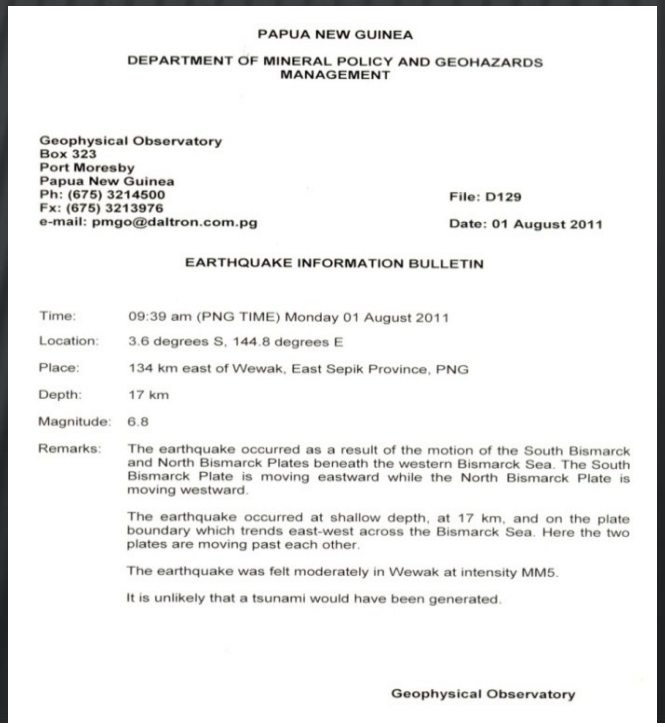
Monitor Earthquakes & Tsunamis

PNG's Tsunami Focal Point

- Earthquake/tsunami information from local & regional seismic networks and tsunami advisories/warnings from PTWC are evaluated before being sent to PNG National Disaster Centre for dissemination to their Provincial Disaster Offices, Lines Agencies, Media, General Public and/or activation of their warning/evacuation SOPs/protocols.

PMGO's Earthquake & Tsunami Bulletins

- PMGO issues an Earthquake/Tsunami Information Bulletin for every local earthquake ≥ M6
- For local earthquakes ≥M7, with depths ≤ 100km, that occur off/or near the coast, PNG NDC is advised to be on standby (for the potential of a local tsunami) pending further information on earthquake parameters
- Earthquake/Tsunami Bulletins may be issued for regional/distant earthquakes that cause tsunamis which may affect PNG coastlines



PAPUA NEW GUINEA

DEPARTMENT OF MINERAL POLICY AND GEOHAZARDS MANAGEMENT

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File: D129

Date: 01 August 2011

EARTHQUAKE INFORMATION BULLETIN

Time: 09:39 am (PNG TIME) Monday 01 August 2011

Location: 3.6 degrees S, 144.8 degrees E

Place: 134 km east of Wewak, East Sepik Province, PNG

Depth: 17 km

Magnitude: 6.8

Remarks: The earthquake occurred as a result of the motion of the South Bismarck and North Bismarck Plates beneath the western Bismarck Sea. The South Bismarck Plate is moving eastward while the North Bismarck Plate is moving westward.

The earthquake occurred at shallow depth, at 17 km, and on the plate boundary which trends east-west across the Bismarck Sea. Here the two plates are moving past each other.

The earthquake was felt moderately in Wewak at intensity MM5.

It is unlikely that a tsunami would have been generated.

Geophysical Observatory

SOP s – LOCAL SOURCE TSUNAMI

00-03min

- Earthquake parameters are obtained from local/regional seismic networks (PMGO, RVO,ORSNET, RIMES, etc)
- Initial PTWC information is received (if any at this time)

03-10mins

- Evaluate preliminary seismic data for possible tsunami potential
- Evaluate information received from PTWC (if any at this time)
- Advise NDC on earthquake event
- Officers alerted and put on standby

10-30 mins

- Re-evaluate earthquake parameters
- Continued monitoring for further updates from PTWC (if any products are received)
- Send out preliminary earthquake/tsunami bulletin
- On-going communication with NDC for next course of action
- NDC to broadcast advisory/warning if required

30 -60 mins

- Pending further updates/information received from PDCs through NDC, and/or further information from PTWC (if any), the decision to cancel or not to cancel advisory/warning is taken
- NDC is advised accordingly
- An updated earthquake/tsunami information bulletin is sent out
- Cancellation of warning is done by NDC

nb: earthquake source mechanism is critical for local source events.

PMGO does not operate tide gauges or have access to tide gauge information

❖**Community Awareness on local tsunamis and natural warning signs is the best approach in educating the public**

SOP s– REGIONAL/DISTANT SOURCE TSUNAMI

00-03min	• Initial PTWC information is received • Earthquake parameters are obtained from local/regional seismic networks (PMGO, RVO,ORSNET, RIMES, etc)
03-10mins	• Evaluate information received from PTWC if applicable to PNG for potential tsunami • Advise NDC on the event accordingly • Officers alerted and put on standby
10-30 mins	• Continued monitoring for further updates from PTWC • Evaluate text and graphical products received • Send out preliminary earthquake/tsunami bulletin if required • On-going communication with NDC for next course of action
30 -60 mins	• Pending further information from PTWC, the decision to issue/not to issue advisory/warning is taken • NDC is advised accordingly • An updated earthquake/tsunami information bulletin is sent out

❖There is ample lead time for advisory/warning

CURRENT EFFORTS

- Tsunami awareness and drills in schools in collaboration with NDC and other agencies
- Awareness of Tsunami hazard during International Day for Disaster Reduction and World Tsunami Day
- Soon to launch Geohazards Website for information disseminaton on geological hazards (GMD – earthquakes, tsunamis, volcanoes, landslides)
- Establishment of muiltihazard early warning centre in collaboration with RIMES & PNG Weather Service
- Geohazards course to be taught at the University of Papua New Guinea

Tsunami Awareness and Drill in Elementary and Primary School

Lemanmanu, Buka, Autonomous Region of Bougainville

April, 2022

in collaboration with NDC, NDoE, UNDP & IOM

World Tsunami Day 2022 – Awareness & Tsunami Drill conducted in collaboration with NDC, NDoE and UNDP at a Primary School in Port Moresby

CHALLENGES

- Unavailability of high resolution bathymetry data for DEM to make use of ComMIT tool from PTWC for tsunami inundation modeling.

  Currently using only TsuCAT for scenarios during awareness.
- Warning reaching the last mile still a challenge especially with local source tsunamis
- Enforcing warnings, in terms of cooperation & coordination between stakeholders & the general public
- Misinterpretation & fake information from the internet, social media, causes unnecessary panic and doubt

CONCLUDING REMARKS

- Large magnitude earthquakes that may be tsunamigenic are common in Papua New Guinea
- Ongoing need public awareness and education of natural signs of a tsunami
- Need to enhance stakeholder networking, engagement & cooperation
- Work towards getting Tsunami Ready status for communities at a high risk

THANK YOU!