



## 2.b. Utilizing TSP Threat Information Products in NTCW SOP and Reporting Back Mechanism

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# Caution !!

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## IOTWMS TSPs do not issue National warnings

- TSPs provide **advisory information** and **data on tsunami threats** to NTWCs.
- It remains the **responsibility of NTWCs** and **national authorities**, operating within the legal framework of **the sovereign nation** in which they reside and serve, to provide tsunami warnings, watches, and advisories to their public, their emergency response agencies and their government.
- As **TSPs have an Indian Ocean-wide scope**, they provide services to all NTWCs.
- An NTWC may elect to utilise services from one or more TSPs.
- All NTWCs should implement well-documented, routinely exercised and tested Standard Operating Procedures (SOPs) for staff to adhere to during tsunami events for the preparation and dissemination of tsunami threat and warning information.
- Staff competencies should be routinely tested against these SOPs.

# NTWC Responsibilities

- ❑ Receive earthquake and tsunami information from TSPs through designated Tsunami Warning Focal Points (TWFPs)
- ❑ Monitor seismicity and tsunamis in real-time (optional)
- ❑ Analyse all information received / Accessed on TSP websites and assess the national tsunami threat
- ❑ Develop and issue timely warnings or cancellations to DMOs and other stakeholder agencies (and nationally agree if also the public, with community response actions developed beforehand in consultation with DMOs) in accordance with National Tsunami Warning and Emergency Response Plan

## Understand the Message Types / Bulletin Types and Purpose

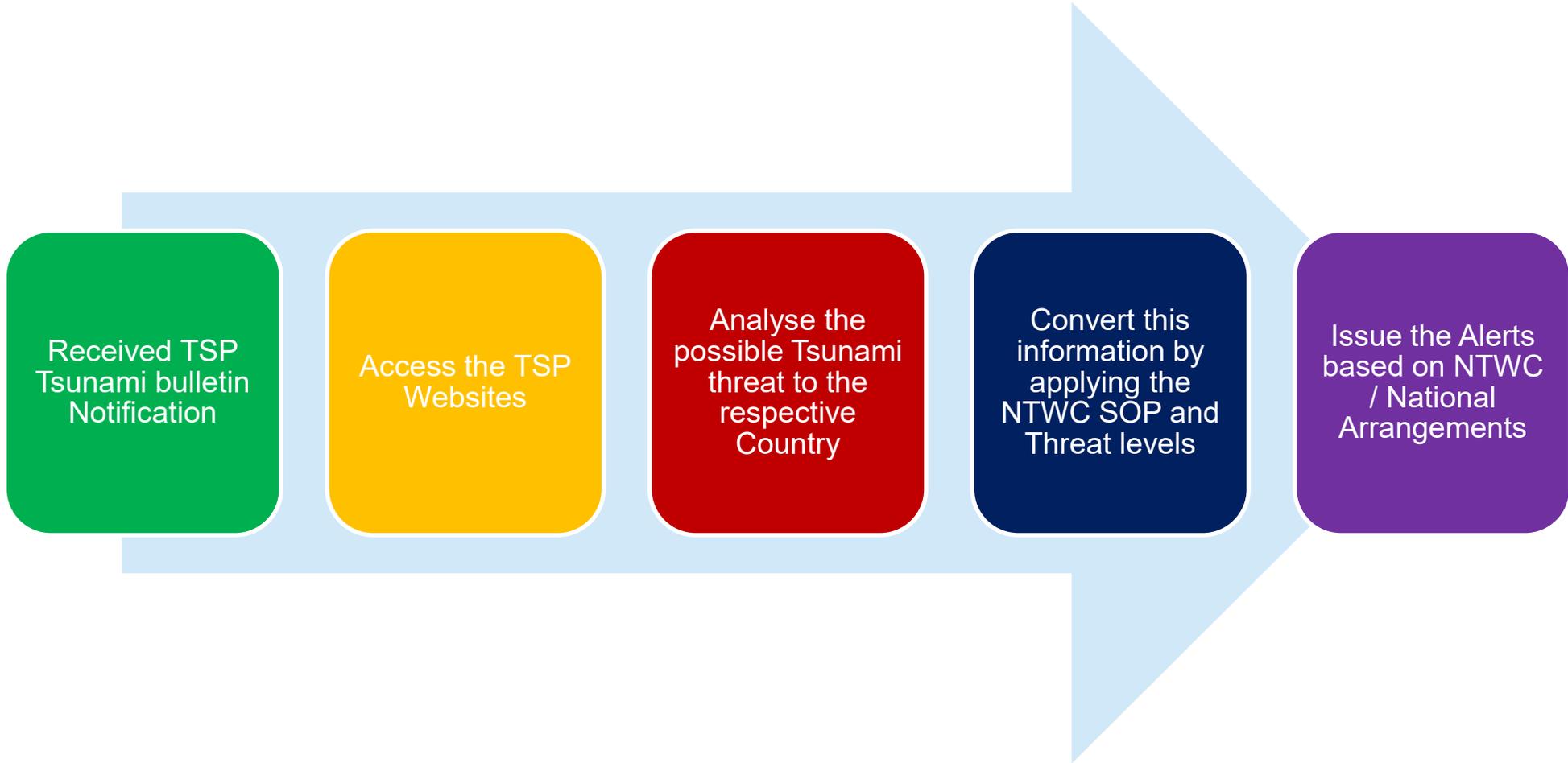
Message Type	Description	Purpose
Notification Message		Alert NTWCs to generation/update of bulletins and other threat information on the TSP websites
Exchange Bulletin Type 1	Earthquake Bulletin	Provide earthquake parameters and a qualitative statement of the tsunamigenic potential
Exchange Bulletin Type 2	Threat Assessment Bulletin	Provide initial forecast of tsunami threat. Two sub-types: <ul style="list-style-type: none"> <li>- No Threat Bulletin</li> <li>- Potential Threat Bulletin</li> </ul>
Exchange Bulletin Type 3	Confirmed Threat Bulletin	Provide forecast of tsunami threat and confirming sea-level observations
Exchange Bulletin Type 4	Final Bulletin	Advise on finalisation of tsunami threat
Cancellation Message		Inform NTWCs that a Notification Message previously issued was false or incorrect, and is now cancelled

# Utilization of TSP products – Process Chart



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# Access TSP Websites – for Updated Information



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**IOTWMS-TSP Australia**  
Tsunami Service Provider for the Indian Ocean Tsunami Warning and Mitigation Service (IOTWMS)  
A service provided by the Joint Australian Tsunami Warning Centre (JATWC), operated by the Australian Bureau of Meteorology and Geoscience Australia

**Recent Events**

- 10:27 UTC 02 July 2023 Mag 6.7 Tonga Islands
- 18:06 UTC 15 June 2023 Mag 7.0 South of Fiji Islands
- 06:00 UTC 07 June 2023 Mag 9.0 NICOBAR ISLANDS, INDIA REGION \*\*\* TEST EVENT \*\*\*
- 14:56 UTC 21 May 2023 Mag 6.8 Prince Edward Islands Region
- 01:50 UTC 20 May 2023 Mag 7.3 Southeast of Loyalty Islands
- 02:57 UTC 19 May 2023 Mag 7.6 Southeast of Loyalty Islands
- 16:02 UTC 10 May 2023 Mag 7.5 Tonga Islands
- 03:13 UTC 28 April 2023 Mag 6.5 South of Fiji Islands
- 20:00 UTC 24 April 2023 Mag 6.9 Southern Sumatra, Indonesia
- 00:41 UTC 24 April 2023 Mag 7.2 Kermadec Islands Region
- 04:31 UTC 18 April 2023 Mag 6.6 South of Fiji Islands
- 09:55 UTC 14 April 2023 Mag 7.0 Java, Indonesia
- 03:06 UTC 03 April 2023 Mag 6.5 Near East Coast of Kamchatka
- 18:04 UTC 02 April 2023 Mag 7.0 New Guinea, Papua New Guinea
- 17:12 UTC 18 March 2023 Mag 6.8 Near Coast of Ecuador
- 00:56 UTC 16 March 2023 Mag 7.2 Kermadec Islands Region
- 00:55 UTC 16 March 2023 Mag 6.8 Kermadec Islands Region
- 06:41 UTC 04 March 2023 Mag 6.6 Kermadec Islands, New Zealand

**EARTHQUAKE: Tonga Islands 10:27 UTC 02 July 2023 Mag 6.7**

**INFORMATION FOR BULLETIN 1.Earthquake Bulletin 1038UTC 02 Jul 2023**

Exchange Bulletins Threat Map Threat Table Deep Water Wave Amplitude Map Travel Times Map NTWC Status Reporting Form Other

IDY68503

TSUNAMI BULLETIN NUMBER 1 (TYPE-I EARTHQUAKE BULLETIN)  
IOTWMS TSUNAMI SERVICE PROVIDER AUSTRALIA (JATWC)  
ISSUED AT 1038 UTC Sunday 02 July 2023

... EARTHQUAKE BULLETIN ...

This bulletin applies to areas within and bordering the Indian Ocean. It is issued in support of the UNESCO/IOC Indian Ocean Tsunami Warning and Mitigation System (IOTWMS).

1. EARTHQUAKE INFORMATION

IOTWMS-TSP AUSTRALIA has detected an earthquake with the following preliminary information:

Magnitude: 6.7 Mwp  
Depth: 227km  
Date: 02 Jul 2023  
Origin Time: 1027 UTC  
Latitude: 17.8775  
Longitude: 174.982W  
Location: Tonga Islands

2. EVALUATION

Although this earthquake may be capable of generating a tsunami in the Pacific or South Atlantic Ocean, based on historical data and tsunami modelling it is not capable of generating a tsunami affecting the Indian Ocean region. However IOTWMS-TSP AUSTRALIA will monitor the situation and may issue further bulletins if new information becomes available.

**Indian Tsunami Early Warning System**  
Ministry of Earth Sciences - Government of India

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Home / Seismic/Tsunami Events

Seismic Activity for past 90 days with magnitude ≥ 6.0M

Origin Time(UTC)	Region Name	Latitude(Deg)	Longitude(Deg)	Depth(km)	Magnitude	Regional Bulletins
02 Jul 2023 10:27:00	Tonga Islands	17.79S	175.17W	243.0	6.5M	Public Exchange
15 Jun 2023 18:06:00	South of Fiji Islands	23.09S	176.96W	193.0	6.6M	Public Exchange
20 May 2023 01:50:00	Southeast of Loyalty Islands	22.94S	170.51E	10.0	7.0M	Public Exchange
19 May 2023 02:57:00	Southeast of Loyalty Islands	23.17S	170.75E	10.0	7.4M	Public Exchange
10 May 2023 16:02:00	Tonga Islands	15.65S	174.56W	220.0	7.1M	Public Exchange
24 Apr 2023 20:00:00	Southern Sumatra, Indonesia	.69S	98.71E	10.0	6.8M	Public Exchange

**AGENCY FOR METEOROLOGY CLIMATOLOGY AND GEOPHYSICS**  
Indonesia Tsunami Service Provider

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**Earthquake Event List**

Origin Time (UTC)	Mag	Depth (km)	Latitude	Longitude	Location	Type	Bulletin Number	Bulletin Type	Event Group
2023-07-02 10:27:27	7.2	82	17.97S	174.75W	Tonga Islands	REAL EVENT	1	EARTHQUAKE BULLETIN	202307024027
2023-06-15 18:06:22	6.9	161	22.82S	176.44W	South of Fiji Islands	REAL EVENT	1	EARTHQUAKE BULLETIN	202306151806
2023-06-07 06:00:00	9.0	10	7.2N	92.9E	Nicobar Islands, India Region (CommTE-EST-Jun-2023)	TEST EVENT	4	FINAL BULLETIN	202306070600COM
2023-06-07 06:00:00	9.0	10	7.2N	92.9E	Nicobar Islands, India Region (CommTE-EST-Jun-2023)	TEST EVENT	3, 1	CONFIRMED THREAT BULLETIN	202306070600COM
2023-06-07 06:00:00	9.0	10	7.2N	92.9E	Nicobar Islands, India Region (CommTE-EST-Jun-2023)	TEST EVENT	2	THREAT ASSESSMENT BULLETIN	202306070600COM
2023-06-07 06:00:00	9.0	10	7.2N	92.9E	Nicobar Islands, India Region (CommTE-EST-Jun-2023)	TEST EVENT	1	EARTHQUAKE BULLETIN	202306070600COM
2023-05-20 01:50:59	7.5	17	22.96S	170.57E	Southeast of Loyalty Islands	REAL EVENT	1	EARTHQUAKE BULLETIN	202305200150
2023-05-19 02:57:05	7.9	28	23.13S	170.81E	Southeast of Loyalty Islands	REAL EVENT	1	EARTHQUAKE BULLETIN	202305190257
2023-05-10 16:02:01	7.5	224	15.67S	174.48W	Tonga Islands	REAL EVENT	1	EARTHQUAKE BULLETIN	202305101602
2023-04-28 03:13:38	6.5	589	24.95S	179.64E	South of Fiji Islands	REAL EVENT	1	EARTHQUAKE BULLETIN	202304280313
2023-04-24 20:00:57	6.9	84	0.93S	98.39E	Southern Sumatra, Indonesia	REAL EVENT	2	THREAT ASSESSMENT BULLETIN	202304242000
2023-04-24 20:00:57	7.3	84	0.93S	98.39E	Southern Sumatra, Indonesia	REAL EVENT	1	EARTHQUAKE BULLETIN	202304242000
2023-04-24 00:41:56	7.0	62	29.88S	177.29W	Kermadec Islands, New Zealand	REAL EVENT	1	EARTHQUAKE BULLETIN	202304240041
2023-04-14 09:55:46	6.5	604	6.12S	112E	Java, Indonesia	REAL EVENT	1	EARTHQUAKE BULLETIN	202304140955
2023-04-03 03:06:55	6.7	75	5.9N	150.3E	Near East Coast of Kamchatka	REAL EVENT	1	EARTHQUAKE BULLETIN	202304030306

Page 1 of 12

Current Time (UTC)  
Jul 04, 2023  
09:44:46

Miscellaneous  
Earthquake Event List  
Earthquake Event Map  
Performance Indicator

Links  
NTWC Status Reporting Form (India)  
TSP Australia Website  
TSP India Website  
IOC-UNESCO Website  
IGGWIWS Secretariat Website  
PTWC Website  
JMA Website

Documentation  
TSP Indonesia User Manual  
TSP Australia User Manual  
TSP India User Manual

## TSP- Australia

<https://reg.bom.gov.au/tsunami/rtsfp/>

## TSP- India

<https://tsunami.incois.gov.in/TEWS/TSP>

## TSP- Indonesia

<https://rtsfp.bmkg.go.id/>

Pre-IOWave25 Workshops on Standard Operating Procedures for NTWCs and DMOs  
Hybrid – August 2025

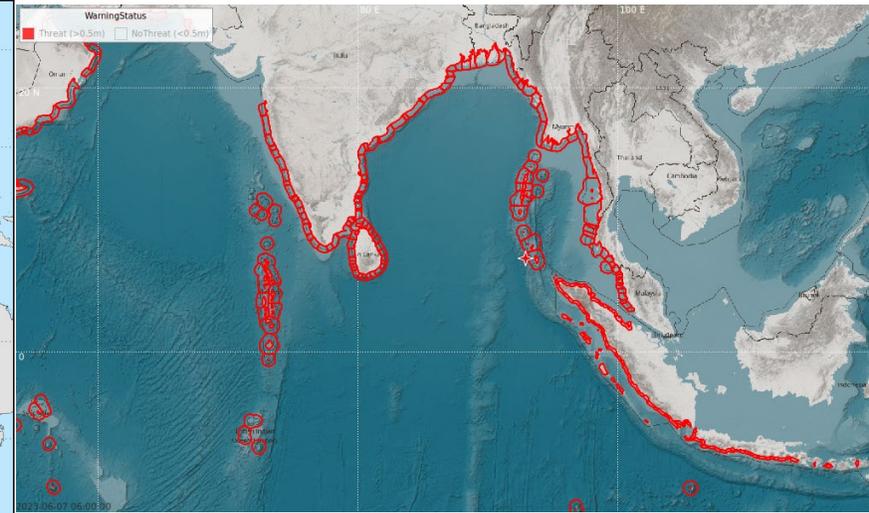
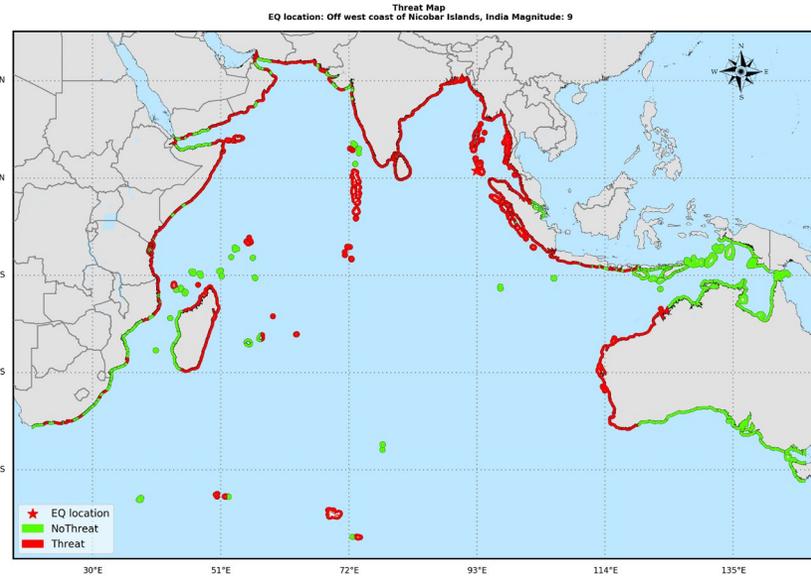
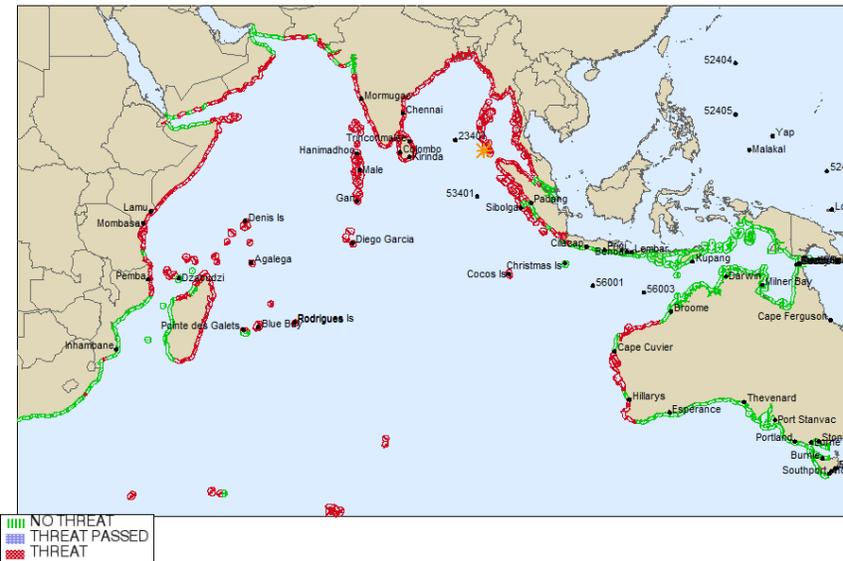


# Observe the Threat Status



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- Access the TSP website
- Understand and Interpret the possible tsunami threat for the respective Country.
- Apply NTWC SOP, Convert the tsunami information to Threat status.

Tsunami Wave Amplitude	Threat Status
EWA $\geq$ 0.5 Meters	Threat
EWA $<$ 0.5 Meters	No Threat



# Analyse all information received on TSP Exchange bulletins and assess the national tsunami threat

Filter by



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Country	State/Territory	Zone	T1(UTC)	T2(UTC)	T3(UTC)	T4(UTC)	Amplitude(m)	ThreatStatus
MADAGASCAR	ANTSIRANANA	VOHEMAR	07-Jun-2023 13:29	07-Jun-2023 13:57	07-Jun-2023 13:58	-	1.1	Threat
MADAGASCAR	TOAMASINA	TOAMASINA AIRPORT	07-Jun-2023 13:57	07-Jun-2023 14:27	07-Jun-2023 18:02	08-Jun-2023 06:58	1.1	Threat
MADAGASCAR	FIANARANTSOA	AMBAHY	07-Jun-2023 14:14	07-Jun-2023 14:33	07-Jun-2023 19:23	08-Jun-2023 06:40	1.0	Threat
MADAGASCAR	TOAMASINA	TAMPOLO	07-Jun-2023 14:01	07-Jun-2023 14:36	07-Jun-2023 14:37	-	1.1	Threat
MADAGASCAR	TOLIARA	MANANTENINA	07-Jun-2023 14:35	07-Jun-2023 14:51	07-Jun-2023 23:41	08-Jun-2023 07:00	1.0	Threat
MADAGASCAR	ANTSIRANANA	FARAFAGANA	07-Jun-2023 14:21	07-Jun-2023 16:48	07-Jun-2023 16:48	-	0.5	Threat
MADAGASCAR	GLORIOSO ISLANDS MADAGASCAR	GLORIOSO ISLANDS	07-Jun-2023 13:54	07-Jun-2023 17:11	07-Jun-2023 17:06	-	0.9	Threat
MADAGASCAR	TOLIARA	SAMPONA	07-Jun-2023 15:18	07-Jun-2023 18:24	08-Jun-2023 02:22	08-Jun-2023 06:58	0.9	Threat
MADAGASCAR	ANTSIRANANA	ANOROTSANGANA	07-Jun-2023 13:36	07-Jun-2023 20:05	07-Jun-2023 16:14	-	0.7	Threat
MADAGASCAR	MAHAJANGA	BALY	07-Jun-2023 14:31	07-Jun-2023 22:54	07-Jun-2023 20:02	-	0.7	Threat
MADAGASCAR	ANTSIRANANA	AMBANJA	07-Jun-2023 14:20	08-Jun-2023 06:14	08-Jun-2023 01:20	-	0.6	Threat

Public Bulletin Exchange Bulletin Notification Bulletin Threat Table Threat Map Traveltime Map SSHMax Map

Country	Location	T1 (UTC)	T2 (UTC)	T3 (UTC)	T4 (UTC)	EWI	Status
11. MADAGASCAR							
MADAGASCAR	VOHEMAR	2023-06-07 13:24:00	2023-06-07 13:31:00	2023-06-07 17:17:15	2023-06-07 18:00:00	1.29	Threat
MADAGASCAR	ANOROTSANGANA	2023-06-07 13:23:30	2023-06-07 13:51:30	2023-06-07 17:18:15	2023-06-07 17:57:15	0.78	Threat
MADAGASCAR	TAMPOLO	2023-06-07 13:47:30	2023-06-07 14:03:00	2023-06-07 17:52:30	2023-06-07 18:00:00	0.87	Threat
MADAGASCAR	AMBAHY	2023-06-07 14:00:15	2023-06-07 14:14:15	2023-06-07 16:24:15	2023-06-07 17:58:15	0.81	Threat
MADAGASCAR	FARAFAGANA	2023-06-07 14:08:15	2023-06-07 14:15:45	2023-06-07 15:59:30	2023-06-07 18:00:00	1.35	Threat
MADAGASCAR	MANANTENINA	2023-06-07 14:18:30	2023-06-07 14:27:15	2023-06-07 16:35:00	2023-06-07 16:49:30	0.87	Threat
MADAGASCAR	SAMPONA	2023-06-07 14:54:15	2023-06-07 15:04:30	2023-06-07 16:14:45	2023-06-07 17:45:15	0.89	Threat
MADAGASCAR	TOAMASINA AIRPORT	2023-06-07 13:45:00	2023-06-07 16:01:30	2023-06-07 17:08:00	2023-06-07 18:00:00	0.65	Threat
MADAGASCAR	GLORIOSO ISLANDS	2023-06-07 13:45:15	2023-06-07 16:55:45	2023-06-07 17:47:30	2023-06-07 17:48:30	0.67	Threat

Exchange Bulletins Threat Map Threat Table Deep Water Wave Amplitude Map Travel Times Map NTWC Status Reporting Form Other Data

**SELECT COUNTRY:**

- AUSTRALIA
- BANGLADESH
- COMOROS
- DJIBOUTI
- FRANCE
- INDIA
- INDONESIA
- IRAN
- KENYA
- MADAGASCAR
- MALAYSIA
- MALDIVES
- MAURITIUS
- MOZAMBIQUE
- MYANMAR
- OMAN
- PAKISTAN
- SEYCHELLES
- SINGAPORE
- SOMALIA
- SOUTH AFRICA
- SRI LANKA
- TANZANIA
- THAILAND
- TIMOR-LESTE
- UNITED ARAB EMIRATES
- UNITED KINGDOM
- YEMEN

(Red = Threat, Blue = Threat Passed, Green = No Threat)

**ZONE PREDICTIONS FOR MADAGASCAR:**

COUNTRY ZONE	MAX BEACH (m)	MAX DEEP (m)	DEPTH AT MAX DEEP (m)	T1 (UTC) First Wave	T2 (UTC) First Above Threat Level	T3 (UTC) Max Wave	T4 (UTC) Last Above Threat Level	THREAT CATEGORY
ANOROTSANGANA	1.1	0.42	47	07 Jun 1324Z	07 Jun 1332Z	07 Jun 1542Z	07 Jun 2218Z	Threat
VOHEMAR	1.08	0.32	129	07 Jun 1322Z	07 Jun 1330Z	07 Jun 1428Z	07 Jun 1608Z	Threat
AMBANJA	0.47	0.13	165	07 Jun 1416Z		07 Jun 1622Z		No Threat
FARAFAGANA	1.64	0.5	116	07 Jun 1402Z	07 Jun 1412Z	07 Jun 1556Z	07 Jun 2352Z	Threat
EUROPA ISLAND	0.18	0.03	1384	07 Jun 1548Z		07 Jun 1638Z		No Threat
AMBAHY	1.05	0.27	233	07 Jun 1350Z	07 Jun 1402Z	07 Jun 1546Z	07 Jun 1628Z	Threat
GLORIOSO ISLANDS	0.39	0.07	1010	07 Jun 1344Z		07 Jun 1356Z		No Threat
JUAN DE NOVA ISLAND	0.18	0.03	1186	07 Jun 1510Z		07 Jun 1516Z		No Threat
BALY	0.63	0.25	41	07 Jun 1430Z	07 Jun 1626Z	07 Jun 1632Z	07 Jun 1812Z	Threat
TAMOTAMO	0.33	0.05	1875	07 Jun 1440Z		07 Jun 1452Z		No Threat
TOAMASINA AIRPORT	0.55	0.18	88	07 Jun 1338Z	07 Jun 1404Z	07 Jun 1406Z	07 Jun 1550Z	Threat
TAMPOLO	1.07	0.47	27	07 Jun 1342Z	07 Jun 1500Z	07 Jun 1816Z	08 Jun 0538Z	Threat
SAMPONA	1.11	0.48	29	07 Jun 1444Z	07 Jun 1612Z	08 Jun 0518Z	08 Jun 0534Z	Threat
MANANTENINA	0.86	0.26	122	07 Jun 1406Z	07 Jun 1414Z	07 Jun 1508Z	07 Jun 1746Z	Threat
ANDROKA	0.32	0.1	101	07 Jun 1502Z		07 Jun 1548Z		No Threat
MANJA	0.26	0.1	49	07 Jun 1610Z		07 Jun 1758Z		No Threat



# Textual Exchange Bulletin Information from TSPs

TSUNAMI BULLETIN NUMBER 2 (TYPE-II THREAT ASSESSMENT BULLETIN)  
IOTWMS TSUNAMI SERVICE PROVIDER INDONESIA (InaTEWS-BMKG)  
issued at 0615 UTC, Jun 07, 2023

... POTENTIAL TSUNAMI THREAT IN THE INDIAN OCEAN ...

This bulletin applies to areas within and bordering the Indian Ocean. It is issued in support of the UNESCO/IOC Indian Ocean Tsunami Warning and Mitigation System (IOTWMS).

## 1. EARTHQUAKE INFORMATION (updated)

IOTWMS-TSP INDONESIA has detected an earthquake with the following details:

Magnitude : 9.0 Mwp (REVISED)  
Depth : 10km  
Date : 07 Jun 2023  
Origin Time: 06:00:00 UTC  
Latitude : 7.20N  
Longitude : 92.90E  
Location : Nicobar Islands, India Region

## 2. EVALUATION

Earthquakes of this size are capable of generating tsunamis. However, so far there is no confirmation about the triggering of a tsunami.

An investigation is under way to determine if a tsunami has been triggered. This TSP will monitor sea level gauges and report if any tsunami wave activity has occurred.

Based on pre-run model scenarios, the zones listed below are POTENTIALLY UNDER THREAT.

## AUSTRALIA

COCOS ISLAND	08:28z	07Jun2023	1.32m
CHRISTMAS ISLAND	11:59z	07Jun2023	1.15m
GASCOYNE COAST	12:06z	07Jun2023	1.18m
LEEUEWIN COAST	13:36z	07Jun2023	0.88m
PILBARA COAST WEST	13:49z	07Jun2023	0.85m
NINGALOO COAST	14:01z	07Jun2023	0.71m
GERALDTON COAST	14:14z	07Jun2023	0.63m
PILBARA COAST EAST	15:20z	07Jun2023	0.51m
BUNBURY GEOGRAPHE COAST	16:12z	07Jun2023	0.62m
LANCELIN COAST	16:14z	07Jun2023	0.74m
HEARD ISLAND AND MCDONALD ISLANDS	16:21z	07Jun2023	1.62m
AURORA BANK	17:02z	07Jun2023	0.93m

## BANGLADESH

COXS BAZAR	08:57z	07Jun2023	1.67m
KUTUBDIA ISLAND	09:07z	07Jun2023	1.62m
BARGUNA	09:36z	07Jun2023	1.88m
CHALNA	10:02z	07Jun2023	1.49m

## COMOROS

BAMBAO	14:19z	07Jun2023	0.66m
CHEZANI	14:24z	07Jun2023	0.86m
FOMBONI	14:31z	07Jun2023	1.17m
DZAUDZI	15:33z	07Jun2023	0.79m

## FRANCE

SAINT-DENIS	13:30z	07Jun2023	0.65m
ILE SAINT-PAUL-NORTH	13:32z	07Jun2023	1.04m
ILE SAINT-PAUL-SOUTH	13:45z	07Jun2023	0.98m
ILE DE LA POSSESSION	15:22z	07Jun2023	1.12m
NES CROZET	15:29z	07Jun2023	0.93m
CROZET PLATEAU	15:49z	07Jun2023	0.76m
ILE KERGUELEN	15:58z	07Jun2023	0.65m

## INDIA

CAR NICOBAR	06:03z	07Jun2023	12.84m
KOMATRA AND KATCHAL ISLAND	06:04z	07Jun2023	15.19m
INDIRA POINT	06:08z	07Jun2023	12.76m
LITTLE ANDAMAN	06:11z	07Jun2023	6.84m
NORTH SENTINEL ISLAND	06:26z	07Jun2023	4.44m

## MADAGASCAR

VOHEMAR	13:31z	07Jun2023	1.29m
ANOROTSANGANA	13:51z	07Jun2023	0.78m
TAMPOLO	14:03z	07Jun2023	0.87m
AMBAHY	14:14z	07Jun2023	0.81m
FARAFAGANA	14:15z	07Jun2023	1.35m
MANANTENINA	14:27z	07Jun2023	0.87m
SAMPONA	15:04z	07Jun2023	0.89m
TOAMASINA AIRPORT	16:01z	07Jun2023	0.65m
GLORIOSO ISLANDS	16:55z	07Jun2023	0.67m

## MALAYSIA

SATUN	09:28z	07Jun2023	2.49m
YAN	09:29z	07Jun2023	1.63m
WEST OF ALOR SETAR	09:39z	07Jun2023	1.67m
SEBERANG PERAI SELATAN	09:59z	07Jun2023	2.61m
SEBERANG PERAI UTARA AND BARAT DAYA	10:01z	07Jun2023	2.22m
KERIAN	10:17z	07Jun2023	1.93m
LARUT AND MATANG	10:25z	07Jun2023	1.94m
KUALA MUDA	10:27z	07Jun2023	1.43m
MANJUNG	10:38z	07Jun2023	1.90m
HILIR PERAK	11:53z	07Jun2023	1.33m
SABAK BERNAM	13:24z	07Jun2023	1.04m
KUALA SELANGOR	14:20z	07Jun2023	0.73m

## MALDIVES

MALE	09:05z	07Jun2023	7.77m
KULHUDUFFUSHI	09:07z	07Jun2023	4.52m
KOLHUFUSHI	09:07z	07Jun2023	7.44m
DHIYAMIGILI	09:08z	07Jun2023	9.54m
THINADHOO	09:09z	07Jun2023	4.63m
HITHADHOO	09:13z	07Jun2023	5.24m
GOIDHOO	09:20z	07Jun2023	2.63m
NILANDHOO	09:25z	07Jun2023	5.05m
FERIDHOO	09:26z	07Jun2023	3.33m

## MAURITIUS

LA FERME	11:50z	07Jun2023	1.51m
CARGADOS CARAJOS	12:21z	07Jun2023	1.72m
AGALEGA ISLAND	12:24z	07Jun2023	0.85m
GRANDE REVIERE SUD EST-EAST	12:39z	07Jun2023	1.36m
GRANDE REVIERE SUD EST-WEST	14:07z	07Jun2023	0.70m

Spatial data files containing

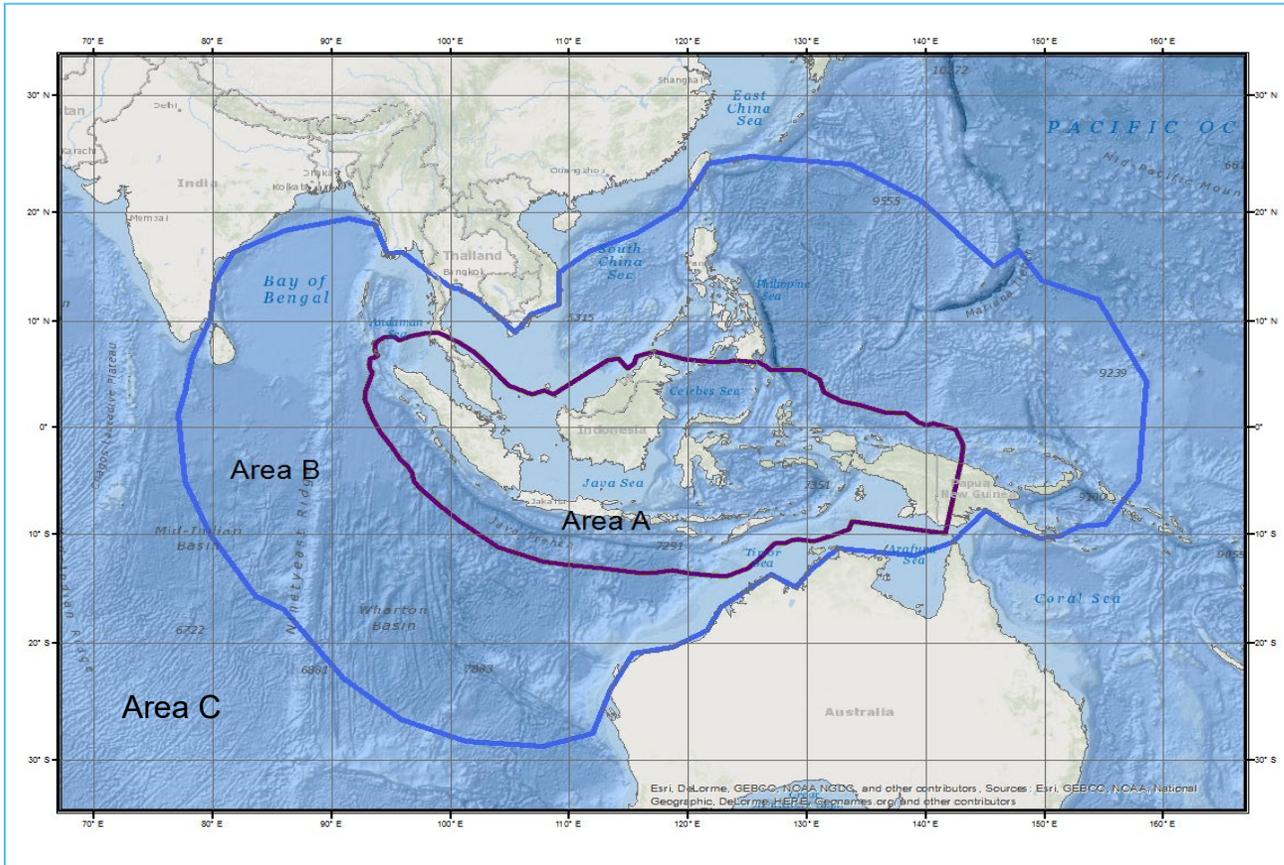
- Threat Category
- wave forecast data
- T1, T2, T3 & T4 Tsunami Arrival times in minutes

These spatial data can be overlaid on GIS software to display in mapping applications

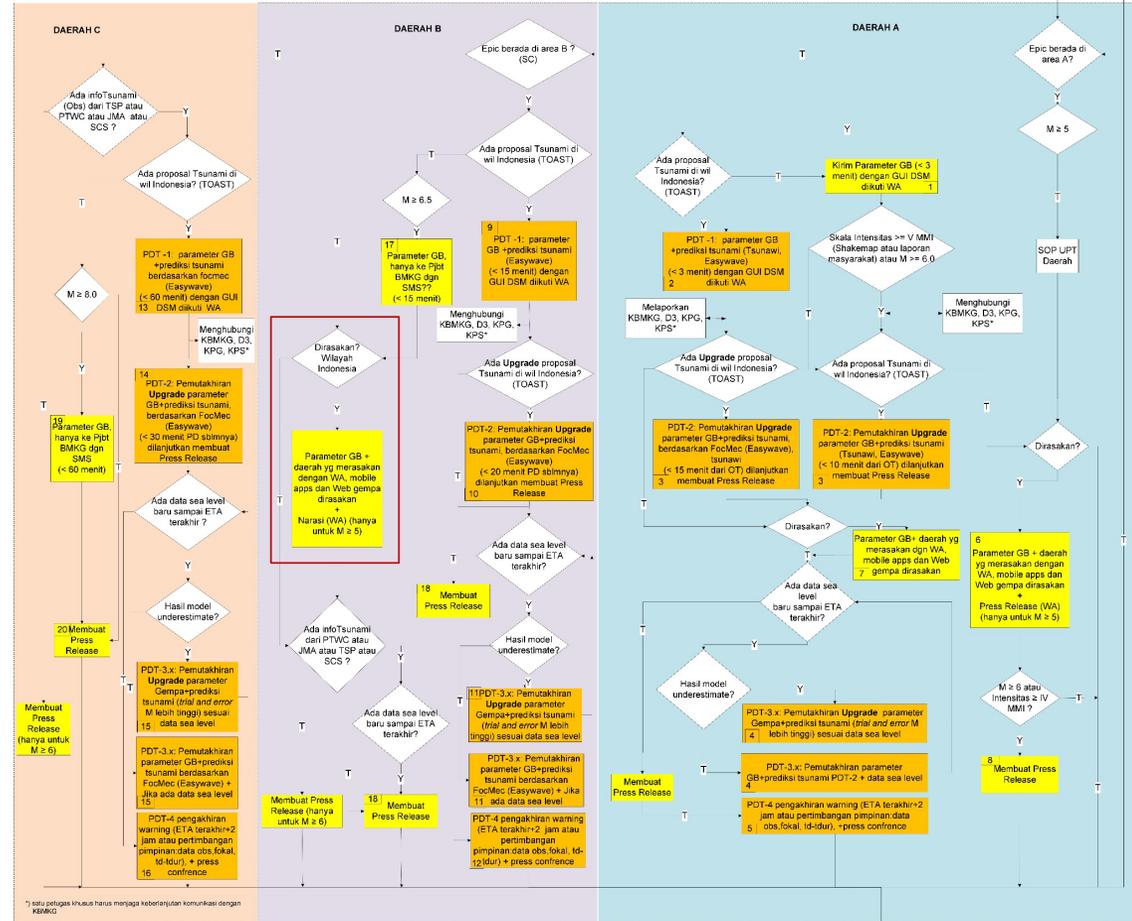
COUNTRY	CNTRY_CODE	CENT_LON	CENT_LAT	T1	T2	T3	T4	MAX_BEACH	MAX_DEEP	DEPTH	THREAT_CAT	AOM
SINGAPORE	158.000000000000	103.85124677100	1.33881427142	840.000000000000	-99.000000000000	1004.000000000000	-99.000000000000	0.29538846016	0.109999999940	52.000000000000	No Threat	AOS
AUSTRALIA	0.000000000000	73.26342044540	-53.29986985450	594.000000000000	668.000000000000	734.000000000000	1216.000000000000	2.01416110992	0.90999999662	24.000000000000	Threat	AOS
FRANCE	0.000000000000	68.86434073000	-49.95065712740	548.000000000000	562.000000000000	762.000000000000	1432.000000000000	1.03955352306	0.47999998927	22.000000000000	Threat	AOS
FRANCE	0.000000000000	51.84936029750	-46.69022650880	552.000000000000	560.000000000000	596.000000000000	666.000000000000	1.08699142933	0.25999999046	305.000000000000	Threat	AOS
FRANCE	0.000000000000	50.01169595120	-46.15794402920	562.000000000000	570.000000000000	608.000000000000	896.000000000000	0.87969326973	0.22999998927	214.000000000000	Threat	AOS
FRANCE	0.000000000000	77.30990071540	-37.83452541810	400.000000000000	408.000000000000	408.000000000000	560.000000000000	0.64558058977	0.10999999940	1186.000000000000	Threat	AOS
MADAGASCAR	0.000000000000	40.60656972800	-22.36277740410	588.000000000000	-99.000000000000	638.000000000000	-99.000000000000	0.18298400939	0.02999999933	1384.000000000000	No Threat	AOS
MADAGASCAR	0.000000000000	42.96214118790	-17.05909700690	550.000000000000	-99.000000000000	556.000000000000	-99.000000000000	0.17605258524	0.02999999933	1186.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	19.96789765520	-35.04806520970	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	22.51863354250	-34.25372965890	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	23.99238476010	-34.26563686740	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	25.67552384520	-34.26099157890	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	27.02885157870	-33.78575233050	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	29.18659626930	-32.27909658450	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	29.61889648440	-31.87977634490	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	0.000000000000	29.99125031150	-31.59009250280	650.000000000000	-99.000000000000	716.000000000000	-99.000000000000	0.27714878321	0.09999999404	59.000000000000	No Threat	AOS
SOUTH AFRICA	246.000000000000	30.58339917880	-30.97505927820	648.000000000000	1000.000000000000	1002.000000000000	1006.000000000000	0.55538940430	0.22999998927	34.000000000000	Threat	AOS
SOUTH AFRICA	246.000000000000	31.18374150590	-30.05259366170	648.000000000000	-99.000000000000	686.000000000000	-99.000000000000	0.35043060780	0.10999999940	103.000000000000	No Threat	AOS
SOUTH AFRICA	246.000000000000	32.00834019800	-29.12181438410	636.000000000000	-99.000000000000	694.000000000000	-99.000000000000	0.49542510509	0.14999999106	119.000000000000	No Threat	AOS
MOZAMBIQUE	0.000000000000	33.02951049800	-25.72757920700	656.000000000000	-99.000000000000	1418.000000000000	-99.000000000000	0.36706930399	0.10999999940	124.000000000000	No Threat	AOS

# Example - INDONESIA-NTWC SOP

## NTWC AREA



SOP NTWC v4.2025 (BMKG-JICA Cooperation)

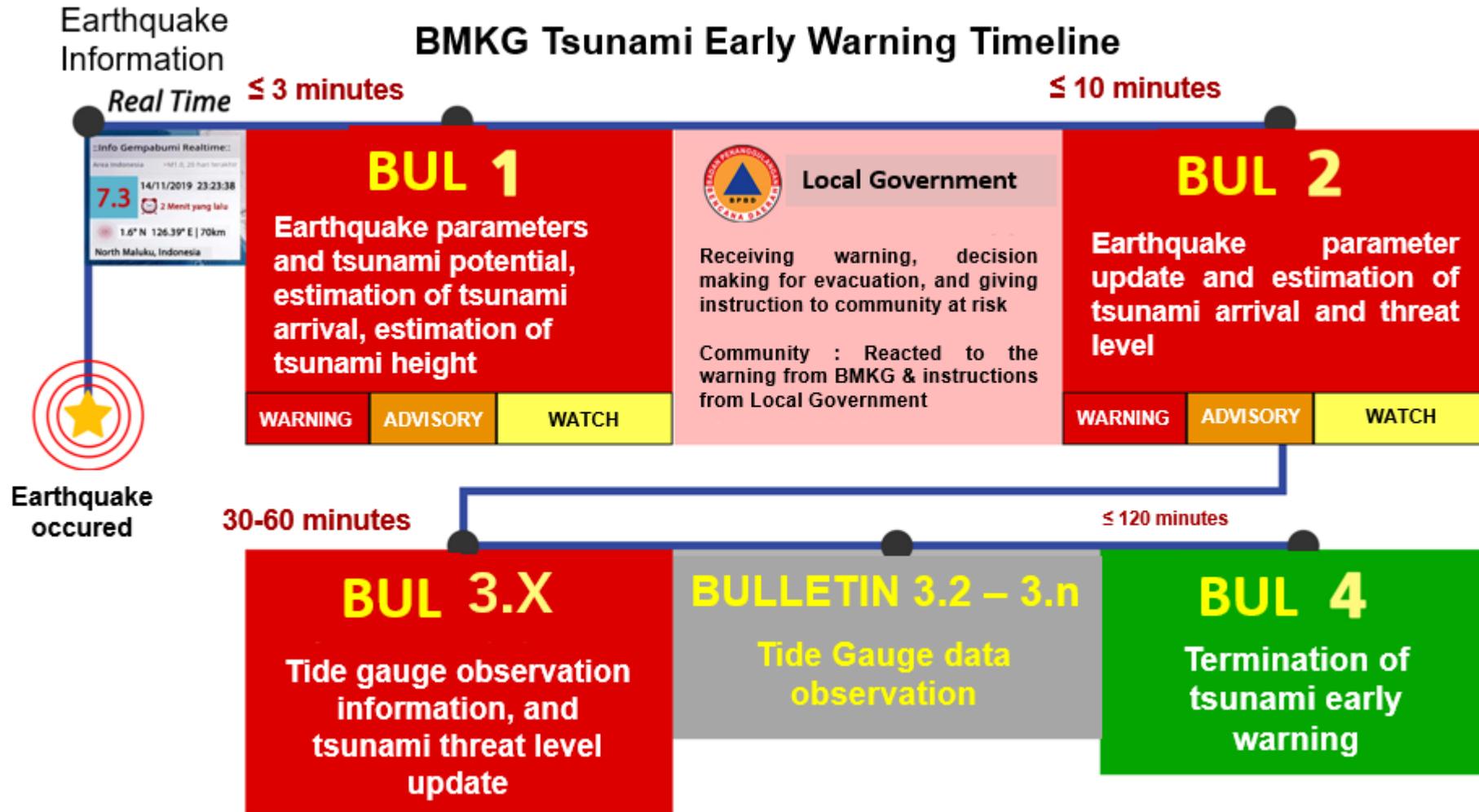


# Example - INDONESIA-NTWC SOP (Timelines)



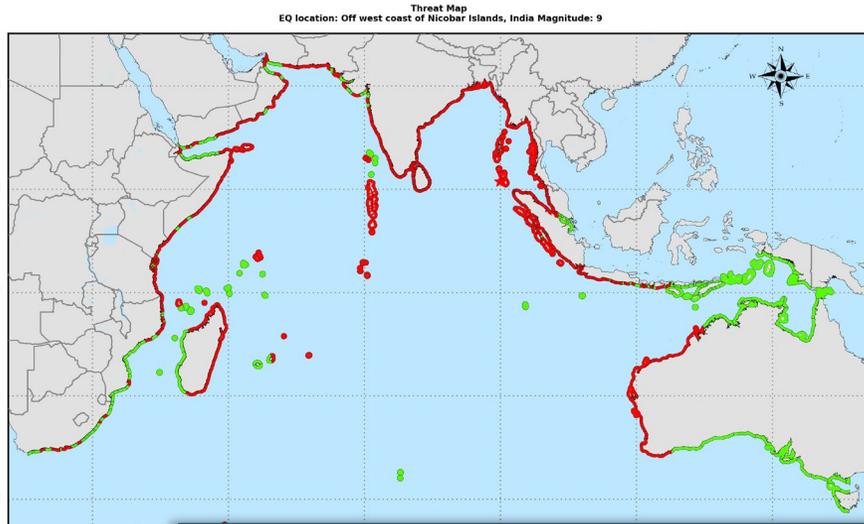
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Commission

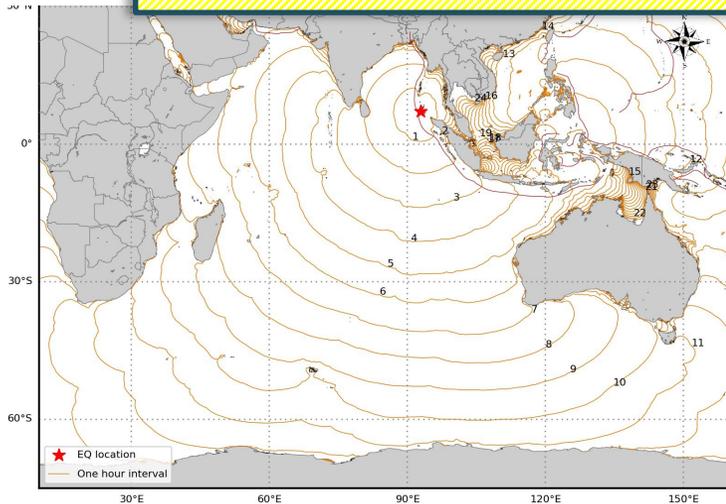


# Example – NTWC Bulletin Types & Timelines (INDONESIA)

Bulletin	Information	Time of issue (Earthquake Origin time as $T_0$ ) minutes
Bulletin-1 (Potential Threat)	Preliminary EQ Parameters and <b>Quantitative Tsunami Threat (MAJOR WARNING / WARNING / ADVISORY)</b> Information from Model Scenarios.	$T_0 + 3$
Bulletin-2 (Potential Threat)	Earthquake parameter update and estimation of tsunami arrival and threat level. Updated EQ Parameters and Quantitative Tsunami Threat (MAJOR WARNING / WARNING / ADVISORY) Information from Model Scenarios - <b>If revised EQ Parameters or tsunami modelling are upgraded.</b>	$T_0 + 10$
Bulletin-3.1 – 3.x (Confirmed Threat)	Revised EQ Parameters and <b>Quantitative Tsunami Threat (MAJOR WARNING / WARNING / ADVISORY)</b> Information from Model Scenarios and <b>Real-time water level observations</b> indicating Tsunami Generation. <b>Hourly update / as and when the subsequent real-time water level observations are available</b>	$T_0 + 30 - 60$
Bulletin-4 (Final)	120 minutes after a significant tsunami passes the last Indian threat zone; <b>Final bulletin and no further bulletins will be issued</b> unless additional information becomes available	<b>Issued 120 minutes after last ETA or Last Water Level Observation</b>



TSP Information



**Apply NTWC SOP**  
Generate the Bulletins based on NTWC SOP, TWS-Templates, and SOP Arrangements

on Standard Operating Procedure  
Hybrid – August 2025



NTWC-Indonesia SOP Example

Recommendation and Instruction based on Warning Level :



Province/District/City governments that are at MAJOR WARNING level are expected to pay attention to this warning and immediately guide their communities for full evacuation

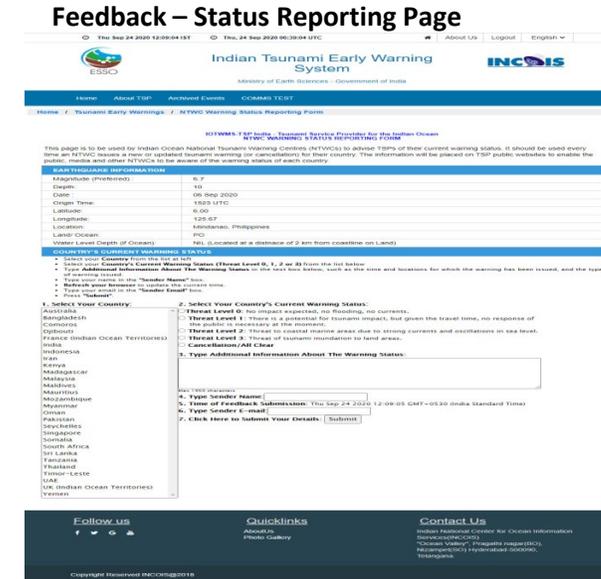
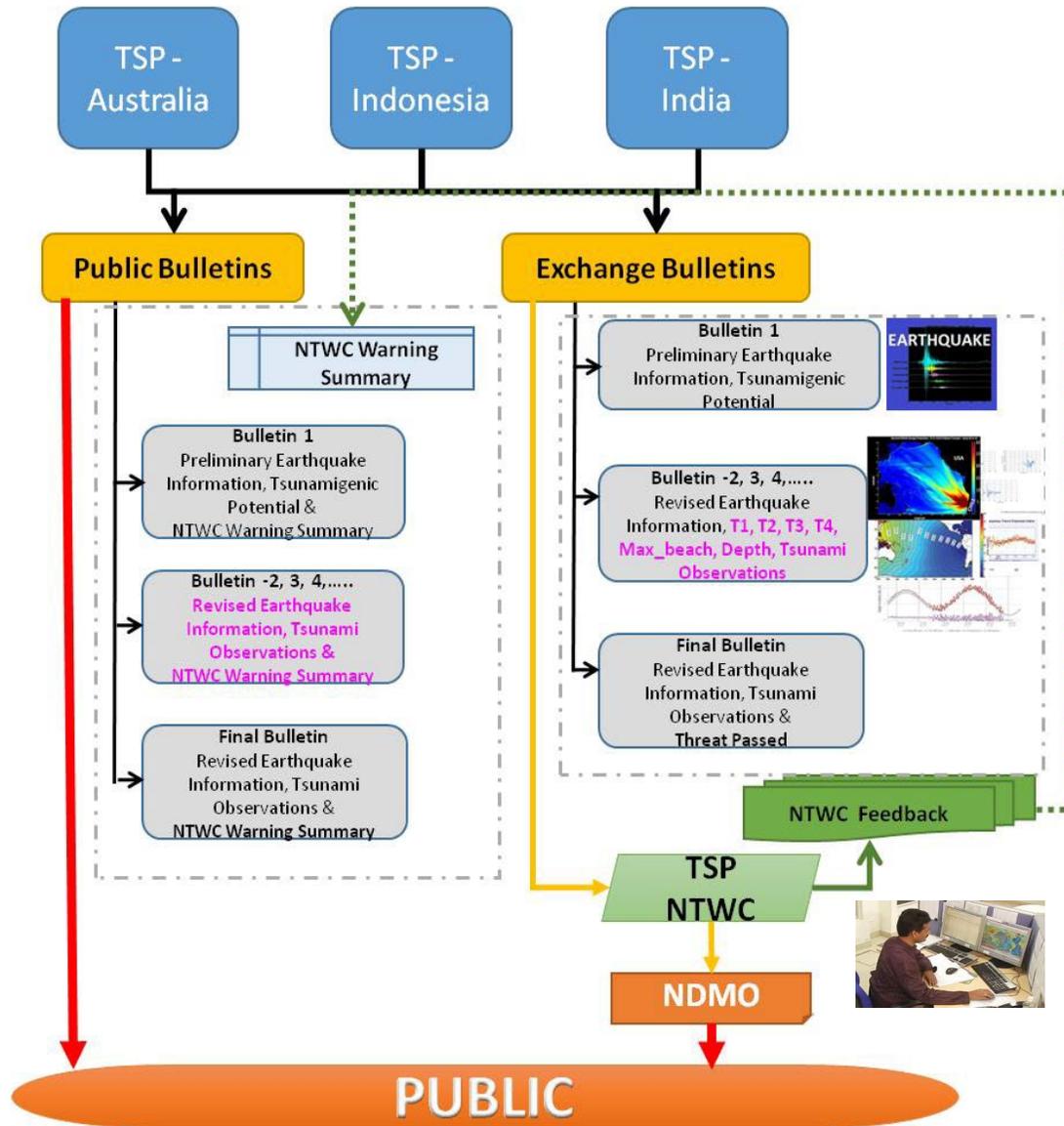


Province/District/City governments that are at WARNING level are expected to pay attention to this warning and immediately guide their communities for evacuation

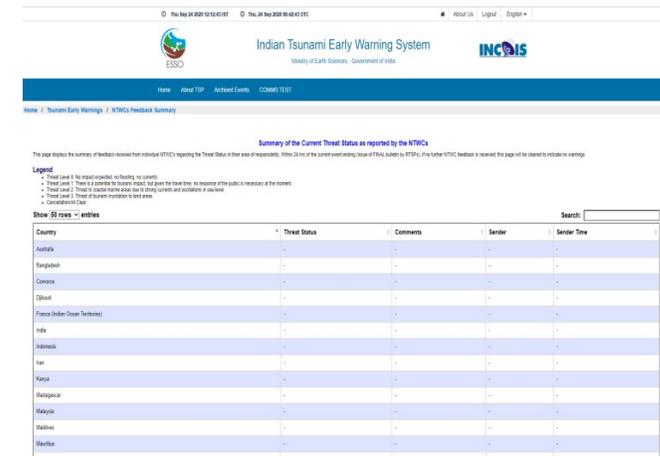


Province/District/City governments that are at ADVISORY level are expected to pay attention to this warning and immediately guide their communities to move away from the beach and river banks

# NTWC Feedback – Status Reporting & Summary Pages



<https://tsunami.incois.gov.in/TEWS/NTWCReportingForm.jsp>



<https://tsunami.incois.gov.in/TEWS/NTWCStatusSummary.jsp>

Within 24 hours of the current event ending (issue of FINAL bulletin by TSPs), if no further NTWC feedback is received, this page will be cleared to indicate no warnings.



# TSP Public Webpages – Showing NTWC Status Feedback

## TSP Australia

**Earthquake Current**  
Check bulletin and map for tsunami information in the Indian Ocean

Event	Date	Mag	Location
1	08:24 UTC 27 February 2016	8.8	NEAR COAST OF CENTRAL CHILE *** TEST EVENT ***
2	00:59 UTC 26 December 2004	9.1	OFF W COAST OF NORTHERN SUMATRA *** TEST EVENT ***

## TSP India

Country	Threat Status	Comments	Action	Issue Time
Indonesia	Threat Level C: No impact expected, no flooding, no currents.	1.935 - 99.22E (Southern Sumatra, Indonesia (IOWave-Sep-2016))	Public Action	2016 07 29 15:00:00 (GMT+05:00)
Sri Lanka	Threat Level C: No impact expected, no flooding, no currents.		Public Action	2016 07 29 15:00:00 (GMT+05:30)
India	Threat Level C: No impact expected, no flooding, no currents.		Public Action	2016 07 29 15:00:00 (GMT+05:30)

**NTWC Status Report for this Bulletin**

[Back to the lists](#)

Magnitude **9.2**

Origin Time : 2016-09-07 03:00:00 UTC  
 Location : 1.935 - 99.22E (Southern Sumatra, Indonesia (IOWave-Sep-2016))  
 Depth : 10 Km  
 Bulletin : 12 2.19 (CONFIRMED TSUNAMI THREAT IN THE INDIAN OCEAN)

NTWC Country	Status	Comments	Sender	Time (UTC)
Seychelles	Threat Level C: No impact expected, no flooding, no currents.	This is only an advisory	F. Albert	Wed Sep 07 2016 07:29:15 GMT+05:00 (Arabian Standard Time)
Seychelles	Threat Level C: No impact expected, no flooding, no currents.	This is only an advisory	F. Albert	Wed Sep 07 2016 07:29:15 GMT+05:00 (Arabian Standard Time)
Madagascar	Threat Level C: No impact expected, no NTWC MADAGASCAR but 1 flooding, no currents.		Bernardo	Wed Sep 07 2016 08:16:01 GMT+05:00 (EAT)
Pakistan	Threat Level C: No impact expected, no flooding, no currents.		NTWC, Karachi Pakistan	Wed Sep 07 2016 11:36:46 GMT+05:00 (Pakistan Standard Time)
Sri Lanka	Threat Level C: No impact expected, no flooding, no currents.		DOM	Wed Sep 07 2016 07:45:23 GMT+05:30 (Sri Lanka Standard Time)

## TSP Indonesia



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**THANK YOU**



**IOWave25**