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Intergovernmental
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Commission

TSP INDIA Products Demonstration

J Padmanabham

TSP India
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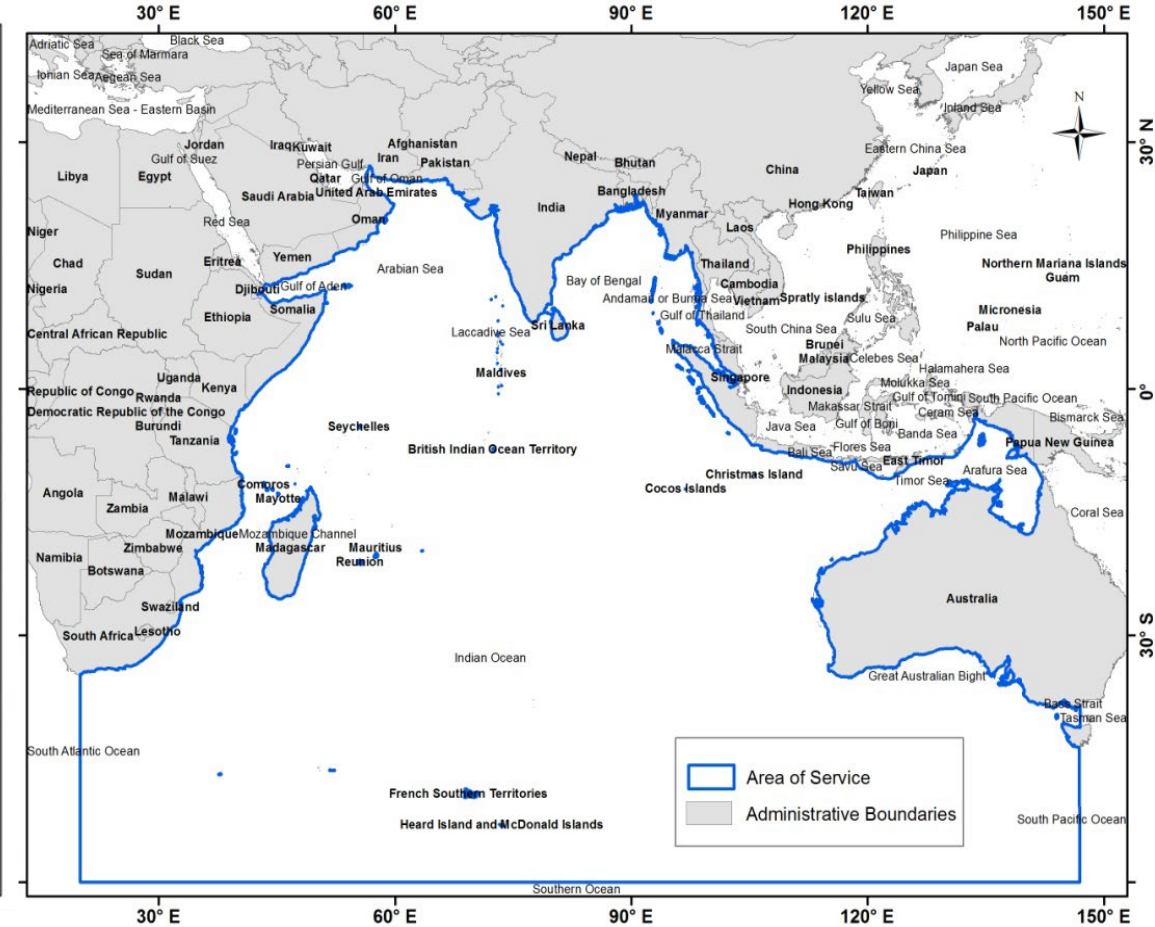
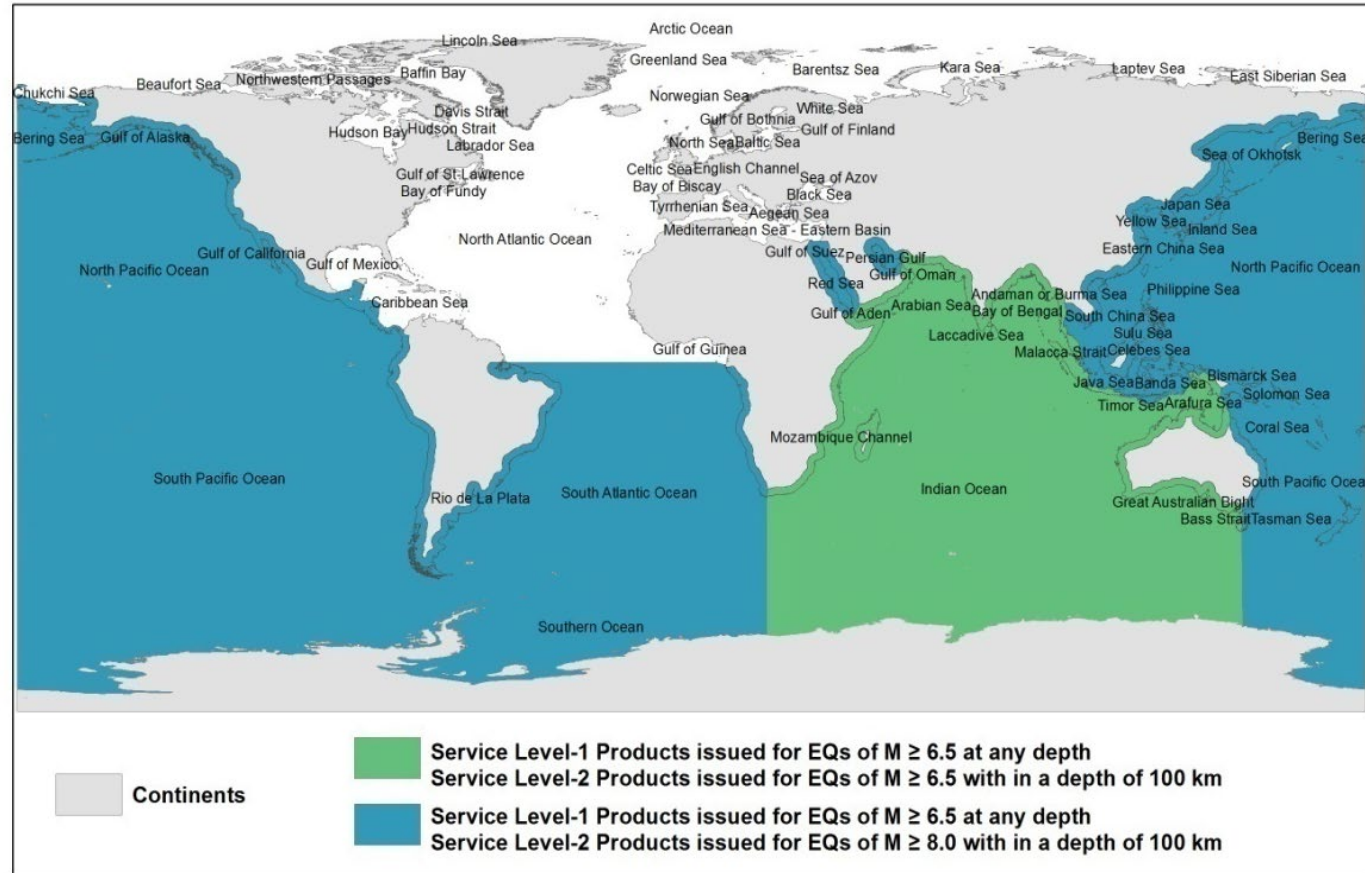
*Intergovernmental Coordination Group for Indian Ocean Tsunami Warning & Mitigation System (ICG/IOTWMS)
North-Western Indian Ocean Member States Training Workshop:
Review Standard Operating Procedures (SOPs) and Tsunami Service Provider (TSP) Products in Preparation for Exercise IOWave23
7 – 8 August 2023*

IOTWMS Earthquake Source zone and Area of Service



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Commencement of TSP bulletins



❑ Issue SL-1 (earthquake information) bulletin for all IOTWMS Earthquake Source Zone (Indian Ocean, Pacific Ocean, South Atlantic) events of magnitude ≥ 6.5

❑ SL-2 (threat assessment) bulletins

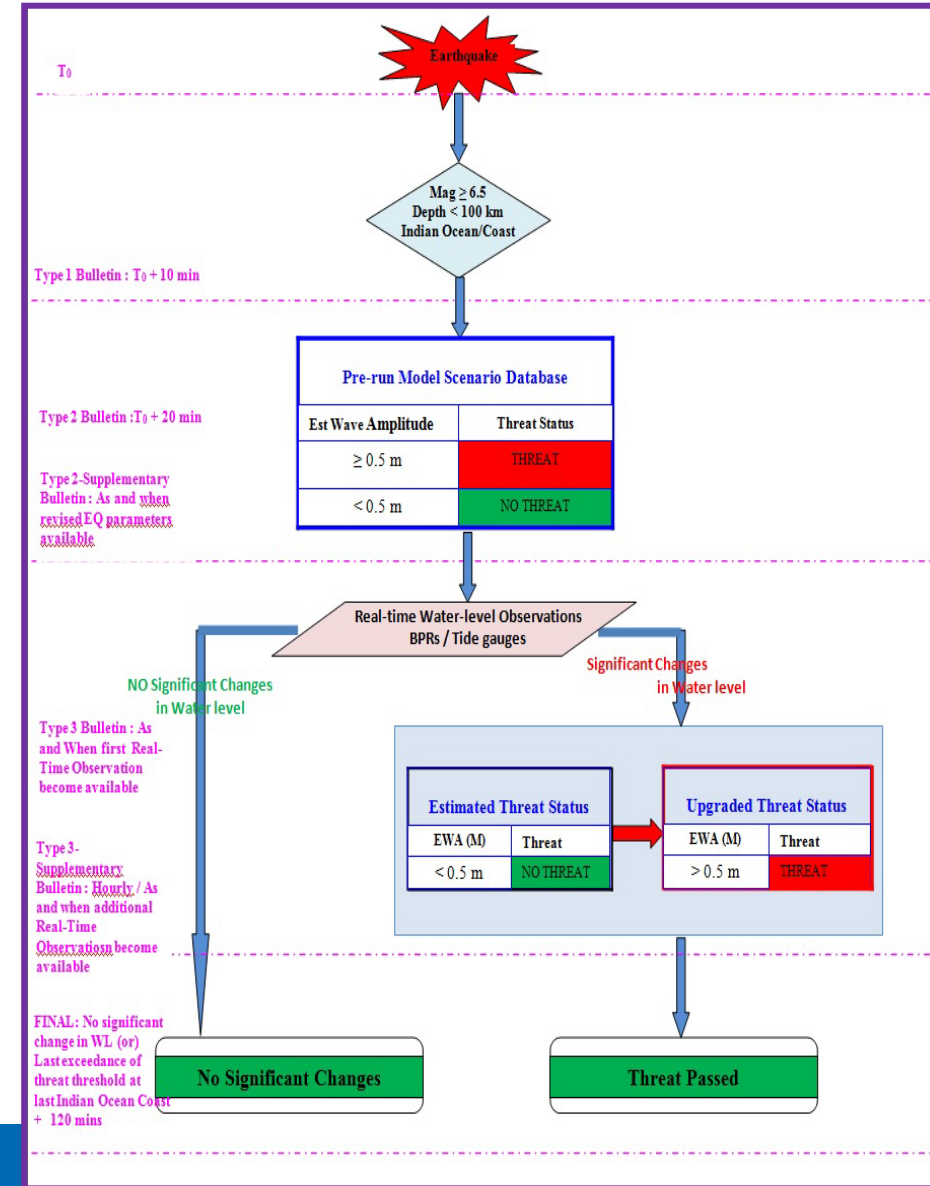
$M \geq 6.5$ in the Indian Ocean

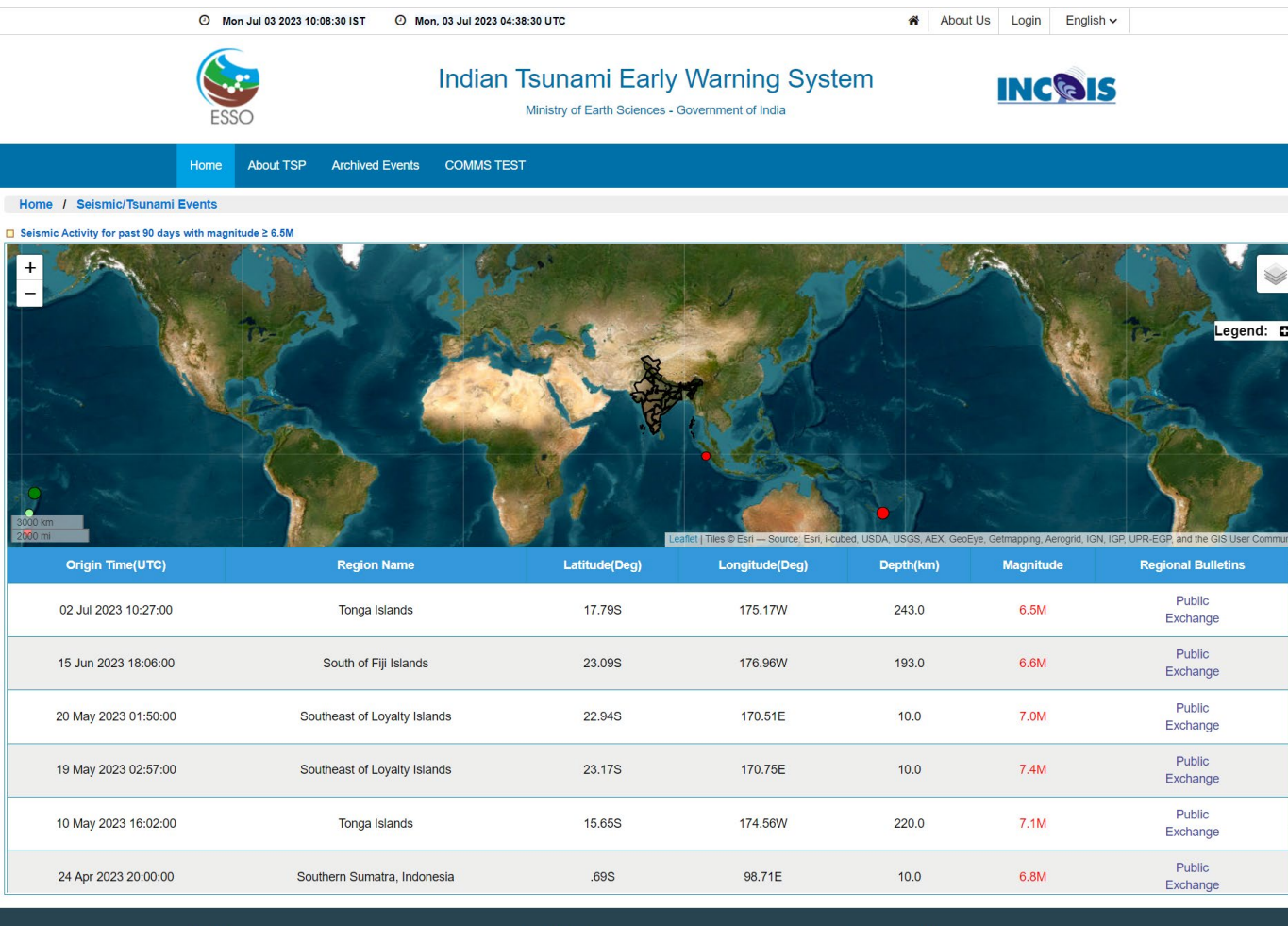
[or]

$M \geq 8.0$ in the Pacific and South Atlantic Oceans

[or]

Any tsunamigenic event that may have probability to generate tsunami in the Indian Ocean Basin





- **Notification Messages** are issued in **text** format via Email, SMS, FAX and GTS
- **Bulletins** are generated in both **text** and **HTML formats** on the websites
- **Graphics** are generated in jpg or png format on the websites

Website URLs to access the TSP-INDIA Products

❑ TSP-INDIA Website :

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

❑ For IOTWMS Communication Test:

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

❑ For IOTWMS – NTWC Feedback Summary Page:

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

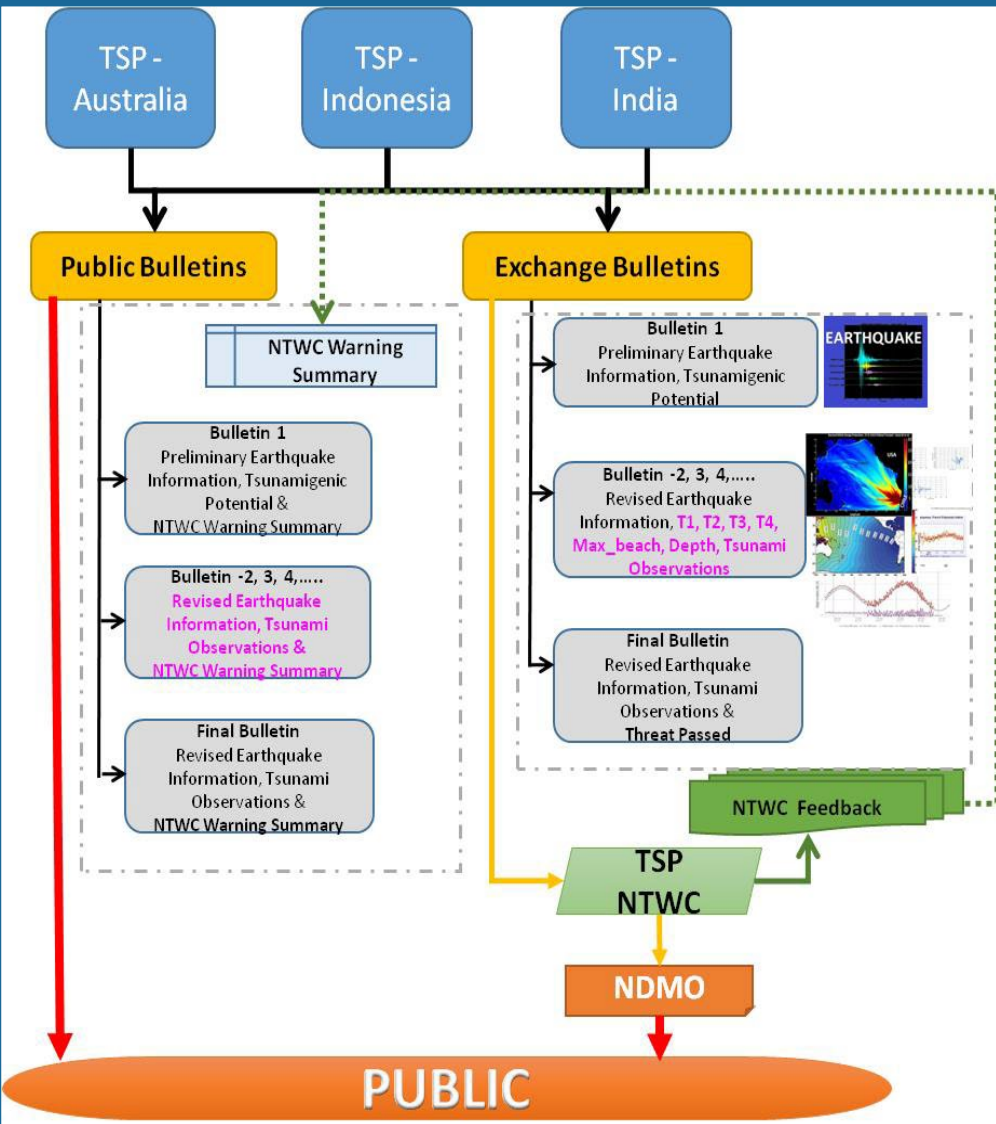
❑ NTWC WARNING STATUS REPORTING FORM:

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

TSP-INDIA Website

Types of TSP Bulletins

Sequence of Bulletins

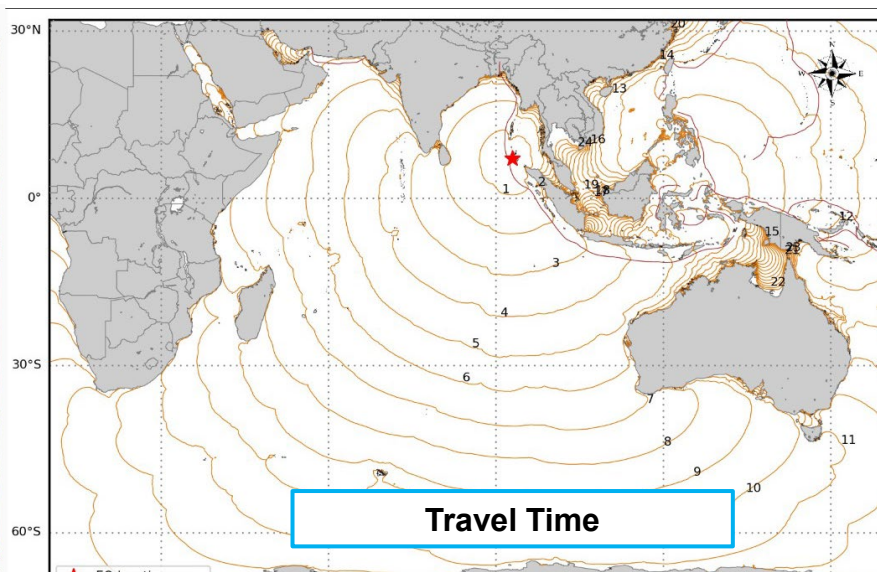


Bulletin type	Information	Time of issue
TYPE I Earthquake Bulletin	Earthquake Information , plus a qualitative threat assessment (e.g. “,,this earthquake may be capable of generating a tsunami...”)	Target: within 10 minutes
TYPE II Threat Assessment Bulletin	No Threat Bulletin , based on assessment using model scenarios	Target: within 20 minutes
	Potential Threat Bulletin , based on assessment using wave models. Contains specific threat information for each Indian Ocean coastal zone.	
TYPE III Threat Confirmation Bulletin	Confirmed Threat Bulletin , based on real-time sea-level observations confirming a tsunami was generated . Contains specific threat information for each coastal zone.	<ul style="list-style-type: none"> When the first real-time sea level observation confirming tsunami waves is available Then hourly updates, or when significant new real-time sea level observations are available
TYPE IV Final Bulletin	THREAT PASSED – all zones.	120 mins after the last exceedance of 0.5 M threat threshold at last IO country

Model Output Parameters (Dynamic)

- T1 = Time of arrival of first detectable tsunami wave (amplitude $\geq 0.02\text{m}$)
- T2 = Time of arrival of first wave over $+0.5\text{m}$ amplitude on the beach
- T3 = Time of arrival of largest wave (“max beach”)
- T4 = Time of arrival of last wave over $+0.5\text{m}$ amplitude
- max_beach (Maximum Positive wave amplitude at the shoreline)

Sample Product Formats



TSUNAMI BULLETIN NUMBER 2 (TYPE-II THREAT ASSESSMENT BULLETIN)
 IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWS)
 ISSUED AT 0615 UTC Wednesday 07 June 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

IOTWMS-TSP INDIA has detected an earthquake with the following preliminary information:
 Magnitude: 9 M
 Depth: 10 km
 Date: 07 JUN 2023
 Origin Time: 0600 UTC
 Latitude: 7.2 N
 Longitude: 92.9 E
 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.

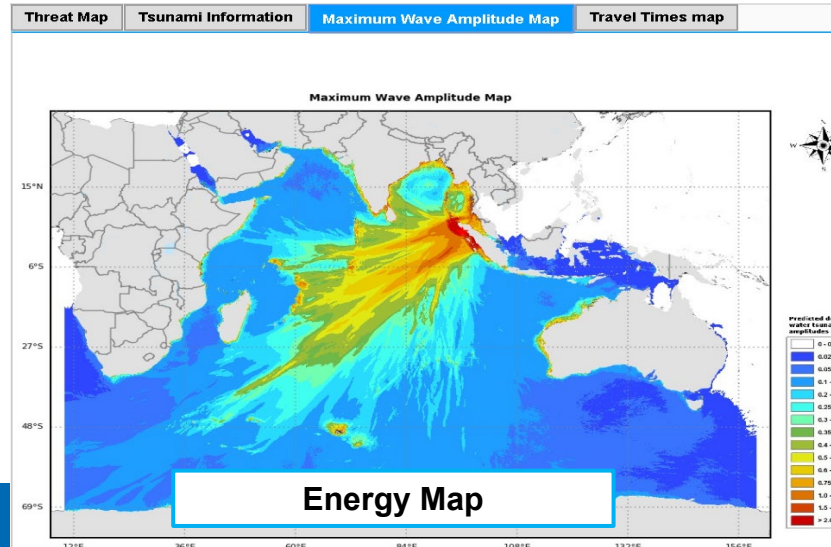
Based on pre-run model scenarios, the zones listed below are POTENTIALLY UNDER THREAT.

TSUNAMI THREAT FOR THE INDIAN OCEAN
 The list below shows the forecast arrival time of the first wave estimated to exceed 0.5m amplitude at the beach in each zone (or a different threshold determined by an NTWC), and the amplitude of the maximum beach wave predicted for the zone. Zones where the estimated wave amplitudes are less than the threshold amplitude at the beach are not shown.

The list is grouped by country (alphabetic order) and ordered according to the earliest estimated times of arrival at the beach.

AUSTRALIA

BARBARA COAST WEST	1237z	07 Jun 2023	0.8m	Threat
SCOYNE COAST	1641z	07 Jun 2023	0.9m	Threat
WARD ISLAND AND MCDONALD ISLANDS	1646z	07 Jun 2023	1.1m	Threat
BARBARA COAST EAST	1701z	07 Jun 2023	0.9m	Threat
WALDLTON COAST	1717z	07 Jun 2023	1.0m	Threat
WILBUR YEOURIS COAST	1718z	07 Jun 2023	0.8m	Threat
WALGALOO COAST	1809z	07 Jun 2023	0.6m	Threat
LEEUEWUIN COAST	1842z	07 Jun 2023	0.8m	Threat
LANCELIN COAST	0101z	08 Jun 2023	0.6m	Threat
ALBANY COAST	0421z	08 Jun 2023	0.6m	Threat



Country	State/Territory	Zone	T1(UTC)	T2(UTC)	T3(UTC)	T4(UTC)	Amplitude(m)	ThreatStatus
INDIA	ANDAMAN AND NICOBAR	INDIRA POINT	07-Jun-2023 06:02	07-Jun-2023 06:02	07-Jun-2023 06:06	08-Jun-2023 06:58	12.5	Threat
INDIA	ANDAMAN AND NICOBAR	KOMATRA & KATCHAL ISLAND	07-Jun-2023 06:02	07-Jun-2023 06:02	07-Jun-2023 06:02	08-Jun-2023 07:00	9.6	Threat
INDIA	ANDAMAN AND NICOBAR	CAR NICOBAR	07-Jun-2023 06:04	07-Jun-2023 06:04	07-Jun-2023 06:17	08-Jun-2023 06:54	6.9	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-JAYA	07-Jun-2023 06:18	07-Jun-2023 06:20	07-Jun-2023 06:07	08-Jun-2023 07:00	6.1	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR P.BREUEH	07-Jun-2023 06:20	07-Jun-2023 06:21	07-Jun-2023 06:25	08-Jun-2023 06:40	7.6	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR B	07-Jun-2023 06:22	07-Jun-2023 06:23	07-Jun-2023 06:32	08-Jun-2023 07:00	10.1	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD KOTA-BANDA-ACEH	07-Jun-2023 06:20	07-Jun-2023 06:23	07-Jun-2023 06:47	08-Jun-2023 07:00	9.4	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD KOTA-SABANG P.WEH	07-Jun-2023 06:24	07-Jun-2023 06:27	07-Jun-2023 06:31	08-Jun-2023 06:28	3.9	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR P.PENASI	07-Jun-2023 06:27	07-Jun-2023 06:29	07-Jun-2023 06:32	08-Jun-2023 06:10	5.9	Threat
INDIA	ANDAMAN AND NICOBAR	LITTLE ANDAMAN	07-Jun-2023 06:29	07-Jun-2023 06:33	07-Jun-2023 06:40	08-Jun-2023 07:00	9.6	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BARAT	07-Jun-2023 06:35	07-Jun-2023 06:38	07-Jun-2023 10:33	08-Jun-2023 06:40	3	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD SIMULUE P.SIMEULUE	07-Jun-2023 06:35	07-Jun-2023 06:41	07-Jun-2023 06:54	08-Jun-2023 07:00	3.4	Threat

Threat Table

Energy Map

Sample Notification Messages



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IOTWMS TSP-INDIA Notification (EqInfo) for 6.5 Earthquake at Tonga Islands



ITWC INCOIS
To: ITEWC_RTSP

This message has extra line breaks.

Notification Message (E-mail)

WEIO20 DEMS 021044

TSUNAMI BULLETIN NOTIFICATION MESSAGE NUMBER 1
IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWC)
ISSUED AT 1044 UTC SUNDAY 02 JULY 2023

TO: INDIAN OCEAN NATIONAL TSUNAMI WARNING CENTRES (NTWC)
FROM: IOTWMS-TSP INDIA

NOTIFICATION:
IOTWMS-TSP INDIA HAS JUST ISSUED TSUNAMI BULLETIN NUMBER 1
FOR THE INDIAN OCEAN, BASED ON THE FOLLOWING EARTHQUAKE EVENT:

Magnitude : 6.5 M
Depth : 243.0 km
Date : 02 Jul 2023
Origin Time : 1027 UTC
Latitude : 17.79 S
Longitude : 175.17 W
Location : Tonga Islands

TO VIEW THE BULLETIN GO TO THE IOTWMS-TSP INDIA WEBSITE AT:
<https://tsunami.incois.gov.in/TEWS/displaybulletinslatest.jsp?type=TSP&eventId=incois2023mwig&aos=exchange&currBullNo=1&latestBullNo=1>

NOTE: THIS IS A RESTRICTED-ACCESS WEBSITE CONTAINING TECHNICAL DATA
FOR INDIAN OCEAN NATIONAL TSUNAMI WARNING CENTRES ONLY. IT IS NOT
FOR GENERAL PUBLIC ACCESS.

GENERAL PUBLIC INFORMATION FOR THIS EVENT IS AVAILABLE FROM:

INDIAN TSUNAMI EARLY WARNING CENTRE (ITEWC)
INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)
ADDRESS: OCEAN VALLEY, PRAGATHI NAGAR (BO), NIZAMPET (SO),
HYDERABAD - 500 090, INDIA
PHONE: 91-40-23895011
FAX: 91-40-23895012
EMAIL: tsunami@incois.gov.in
WEB: <https://tsunami.incois.gov.in/TEWS/TSP>

END OF NOTIFICATION MESSAGE

SMS - Notification Message

INCOIS-TSP-INDIA
BULLETIN 1 (EqInfo)
Issued
[https://
tsunami.incois.gov.in](https://tsunami.incois.gov.in) EQ
Auto OT= 1027 UTC 02
Jul 2023 LOC= -17.79
-175.17 Mag= 6.5 D=
243.0 km Tonga Islands

Type-I Exchange Bulletin



- Bulletin4
- Archived Bulletins
- Bulletin3
- Bulletin2
- Bulletin1
- Light Version
- NTWC Status Reporting Form
- NTWC Feedback Summary

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

*** TEST TEST TEST TEST TEST TEST TEST TEST ***

*** THIS IS TSUNAMI IOWAVE EXERCISE / COMMUNICATIONS TEST OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***

*** THIS IS NOT A REAL TSUNAMI EVENT ***

INDIAN OCEAN TSUNAMI BULLETIN NUMBER 1
IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWC)
ISSUED AT: 2023-06-07 06:05:01

*** TEST TEST TEST TEST TEST TEST TEST TEST ***

-----EARTHQUAKE BULLETIN-----

Location Map Earthquake Information

EARTHQUAKE INFORMATION	
Magnitude :	9.0 M
Depth :	10 km
Origin Date :	07 Jun 2023
Origin Time :	0600 UTC
Latitude :	7.2° N
Longitude :	92.9° E
Location :	Nicobar Islands, India Region

EVALUATION
Based on historical data and tsunami modelling, this earthquake may be capable of generating a tsunami affecting the Indian Ocean region. IOTWMS-TSP INDIA will monitor sea level gauges near the earthquake to determine if a tsunami was generated and will issue further bulletins for this event. Further information on this event will be available at: <http://www.incois.gov.in/incois/tsunami/eqevents.jsp>

ADVICE
This bulletin is being issued as advice. Only national/state/local authorities and disaster management officers have the authority to make decisions regarding the official threat and warning status in their coastal areas and any action to be taken in response.

UPDATES
Additional bulletins will be issued by IOTWMS-TSP INDIA for this event as more information becomes available.

CONTACT INFORMATION
Indian Tsunami Early Warning Centre (ITEWC)
Indian National Centre for Ocean Information Services (INCOIS)
Address: "Ocean Valley", Pragathi Nagar (BO), Nizampet (SO),
Hyderabad - 500 090, India.
Tel: 91-40-23895011
Fax: 91-40-23895012
Email: tsunami@incois.gov.in
Website: www.incois.gov.in

Detailed Type-I Bulletin (Earthquake Info)

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Contact Us

Indian National Center for Ocean Information Services (INCOIS)
"Ocean Valley", Pragathi nagar (BO),
Nizampet (SO) Hyderabad-500090,
Telangana.



- Bulletin4
- Archived Bulletins
- Bulletin3
- Bulletin2
- Bulletin1
- Light Version
- NTWC Status Reporting Form
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Location Map Earthquake Information

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

*** TEST TEST TEST TEST TEST TEST TEST TEST ***

*** THIS IS TSUNAMI IOWAVE EXERCISE / COMMUNICATIONS TEST OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***

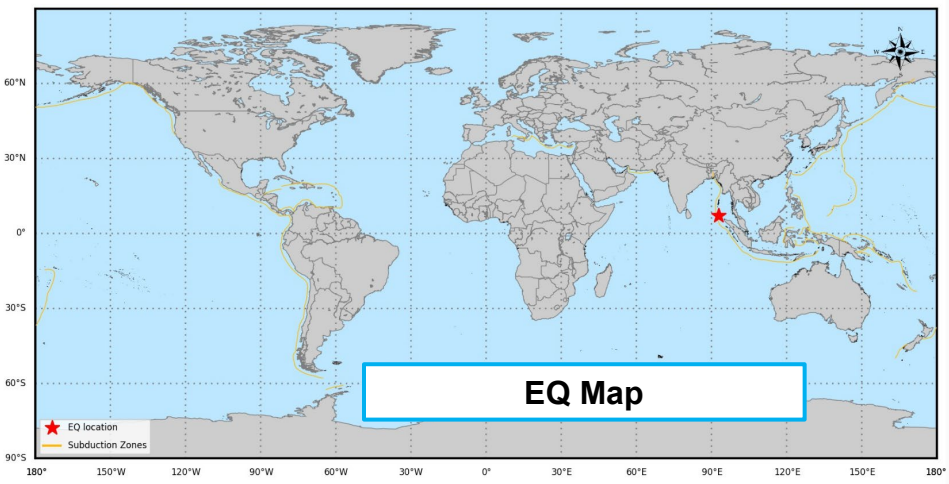
*** THIS IS NOT A REAL TSUNAMI EVENT ***

INDIAN OCEAN TSUNAMI BULLETIN NUMBER 1
IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWC)
ISSUED AT: 2023-06-07 06:05:01

*** TEST TEST TEST TEST TEST TEST TEST TEST ***

-----EARTHQUAKE BULLETIN-----

Earthquake location: Nicobar Islands, India Region Magnitude: 9.0



EQ Map

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Quicklinks

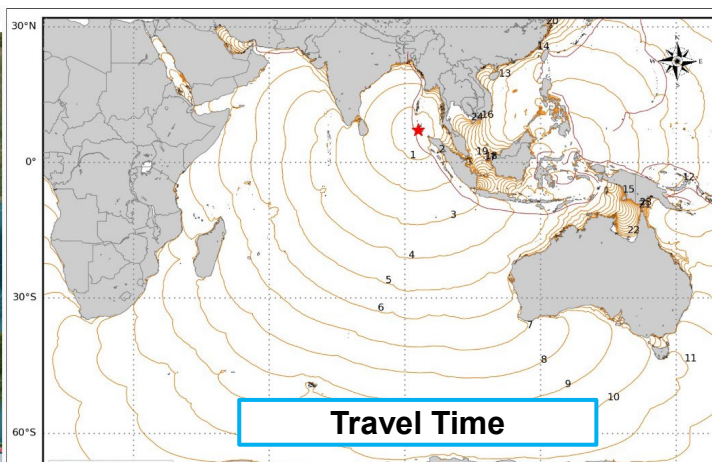
- API/RSS Feeds
- About Us
- Photo Gallery

Contact Us

Indian National Center for Ocean Information Services (INCOIS)
"Ocean Valley", Pragathi nagar (BO),
Nizampet (SO) Hyderabad-500090,
Telangana.

Type-II Exchange Bulletin

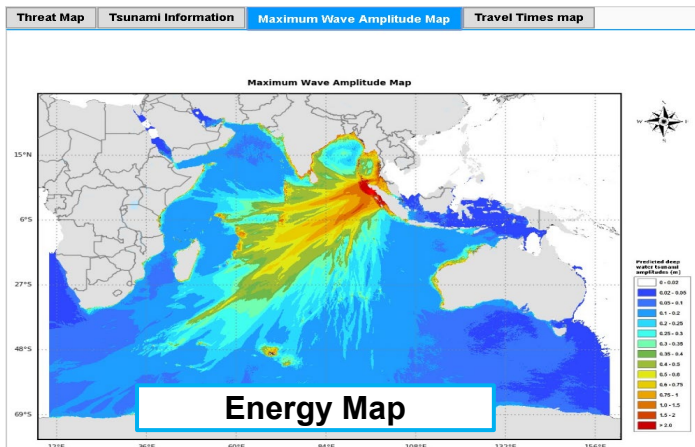
(Potential Tsunami Threat Bulletin)



Filter by

Country	State/Territory	Zone	T1(UTC)	T2(UTC)	T3(UTC)	T4(UTC)	Amplitude(m)	ThreatStatus
INDIA	ANDAMAN AND NICOBAR	INDIRA POINT	07-Jun-2023 06:02	07-Jun-2023 06:02	07-Jun-2023 06:08	08-Jun-2023 06:58	12.5	Threat
INDIA	ANDAMAN AND NICOBAR	KOMATRA & KATCHAL ISLAND	07-Jun-2023 06:02	07-Jun-2023 06:02	07-Jun-2023 06:03	08-Jun-2023 07:00	9.6	Threat
INDIA	ANDAMAN AND NICOBAR	CAR NICOBAR	07-Jun-2023 06:04	07-Jun-2023 06:04	07-Jun-2023 06:17	08-Jun-2023 06:54	6.9	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-JAYA	07-Jun-2023 06:16	07-Jun-2023 06:20	07-Jun-2023 06:07	08-Jun-2023 07:00	7.1	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR P/BEUEH	07-Jun-2023 06:20	07-Jun-2023 06:21	07-Jun-2023 06:25	08-Jun-2023 06:40	6.6	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR B	07-Jun-2023 06:22	07-Jun-2023 06:23	07-Jun-2023 06:26	08-Jun-2023 07:00	10.1	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD KOTA-BANDA-ACEH	07-Jun-2023 06:20	07-Jun-2023 06:23	07-Jun-2023 06:47	08-Jun-2023 07:00	9.4	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD KOTA-SABANG P/WEH	07-Jun-2023 06:24	07-Jun-2023 06:27	07-Jun-2023 06:31	08-Jun-2023 06:28	3.9	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR P/PENASI	07-Jun-2023 06:27	07-Jun-2023 06:29	07-Jun-2023 06:32	08-Jun-2023 06:10	5.9	Threat
INDIA	ANDAMAN AND NICOBAR	LITTLE ANDAMAN	07-Jun-2023 06:29	07-Jun-2023 06:33	07-Jun-2023 06:40	08-Jun-2023 07:00	9.6	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BARAT	07-Jun-2023 06:32	07-Jun-2023 06:38	07-Jun-2023 10:33	08-Jun-2023 06:40	3	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD SIMEULUE P/SIMEULUE	07-Jun-2023 06:35	07-Jun-2023 06:41	07-Jun-2023 06:54	08-Jun-2023 07:00	3.4	Threat

Threat Table



- Bulletin4
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This bulletin applies to areas within and bordering the Indian Ocean. It is issued by Tsunami Service Provider INDIA in support of the UNESCO/IOC Indian Ocean Tsunami Warning and Mitigation System (IOTWMS).

*** TEST TEST TEST TEST TEST TEST TEST TEST ***

*** THIS IS TSUNAMI IOWAVE EXERCISE / COMMUNICATIONS TEST OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***

*** THIS IS NOT A REAL TSUNAMI EVENT ***

TSUNAMI BULLETIN NUMBER 2

IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWC)

ISSUED AT: 0615 UTC Wednesday 07 June 2023

*** TEST TEST TEST TEST TEST TEST TEST TEST ***

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

EARTHQUAKE INFORMATION

Magnitude	9 M
Depth	10 km
Origin Date	07 Jun 2023
Origin Time	0600 UTC
Latitude	7.2° N
Longitude	92.9° E
Location	Nicobar Islands, India Region

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

TSUNAMI THREAT FOR INDIAN OCEAN

The list below shows the forecast arrival time of the first wave estimated to exceed 0.5m amplitude at the beach in each zone (or a different threshold nominated by an NTWC), and the amplitude of the maximum beach wave predicted for the zone. Zones where the estimated wave amplitudes are less than the threshold amplitude at the beach are not shown.

The list is grouped by country (alphabetic order) and ordered according to the earliest estimated times of arrival at the beach.

Please be aware that actual wave arrival times may differ from those below, and the initial wave may not be the largest. A tsunami is a series of waves and the time between successive waves can be five minutes to one hour.

The threat is deemed to have passed two hours after the forecast time for last exceedance of the 0.5m threat threshold for a zone. As local conditions can cause a wide variation in tsunami wave action, CANCELLATION of national warnings and ALL CLEAR determination must be made by national/state/local authorities.

Filter by **Filter by "Search Word"**

Country	State/Territory	Zone	T1(UTC)	T2(UTC)	T3(UTC)	T4(UTC)	Amplitude(m)	ThreatStatus
MALAYSIA	KEDAH	SATUN	07-Jun-2023 09:05	07-Jun-2023 09:21	08-Jun-2023 04:34	08-Jun-2023 06:53	1.1	Threat
MALAYSIA	KEDAH	YAN	07-Jun-2023 09:12	07-Jun-2023 09:27	08-Jun-2023 02:53	08-Jun-2023 06:50	1.3	Threat
MALAYSIA	KEDAH	WEST OF ALOR SETAR	07-Jun-2023 09:25	07-Jun-2023 09:41	07-Jun-2023 17:42	08-Jun-2023 05:56	1.5	Threat
MALAYSIA	PULAU PINANG	SEBERANG PERAI UTARA & BARAT DAYA	07-Jun-2023 09:41	07-Jun-2023 09:56	07-Jun-2023 10:12	08-Jun-2023 06:56	1.5	Threat
MALAYSIA	PULAU PINANG	SEBERANG PERAI SELATAN	07-Jun-2023 09:44	07-Jun-2023 09:58	07-Jun-2023 16:40	08-Jun-2023 06:49	1.3	Threat
MALAYSIA	KEDAH	KUALA MUDA	07-Jun-2023 09:47	07-Jun-2023 10:04	08-Jun-2023 05:56	08-Jun-2023 06:27	1.3	Threat
MALAYSIA	PERAK	KERIAN	07-Jun-2023 10:03	07-Jun-2023 10:18	08-Jun-2023 00:06	08-Jun-2023 06:26	1.3	Threat
MALAYSIA	PERAK	LARUT AND MATANG	07-Jun-2023 10:12	07-Jun-2023 10:28	07-Jun-2023 17:06	08-Jun-2023 06:52	1.4	Threat
MALAYSIA	PERAK	MANJUNG	07-Jun-2023 10:25	07-Jun-2023 10:42	08-Jun-2023 01:02	08-Jun-2023 06:54	1.5	Threat
MALAYSIA	PERAK	HILIR PERAK	07-Jun-2023 11:06	07-Jun-2023 13:07	08-Jun-2023 04:11	08-Jun-2023 06:46	1.1	Threat
MALAYSIA	SELANGOR	SABAK BERNAM	07-Jun-2023 11:42	07-Jun-2023 13:39	08-Jun-2023 06:00	08-Jun-2023 07:00	1	Threat
MALAYSIA	SELANGOR	KUALA SELANGOR	07-Jun-2023 12:02	07-Jun-2023 13:56	07-Jun-2023 22:40	08-Jun-2023 06:23	1.1	Threat
MALAYSIA	SELANGOR	KUALA LANGAT	07-Jun-2023 12:48	07-Jun-2023 14:25	08-Jun-2023 01:53	08-Jun-2023 06:23	0.9	Threat
MALAYSIA	NEGERI SEMBILAN	PORT DICKSON	07-Jun-2023 14:20	07-Jun-2023 15:50	08-Jun-2023 01:19	08-Jun-2023 06:03	0.7	Threat
MALAYSIA	SELANGOR	SEPANG	07-Jun-2023 14:10	08-Jun-2023 00:55	08-Jun-2023 01:05	08-Jun-2023 06:53	0.6	Threat

ADVICE

This bulletin is being issued as advice. Only national/state/local authorities and disaster management officers have the authority to make decisions regarding the official threat and warning status in their coastal areas and any action to be taken in response.

UPDATES

Additional bulletins will be issued by TSP INDIA for this event as more information becomes available.

CONTACT INFORMATION

Indian Tsunami Early Warning Centre (ITEWC)

Indian National Centre for Ocean Information Services (INCOIS)

Address: "Ocean Valley", Pragathi Nagar (BO), Nizampet (SO), Hyderabad - 500 090, India

Tel: 91-40-23895011

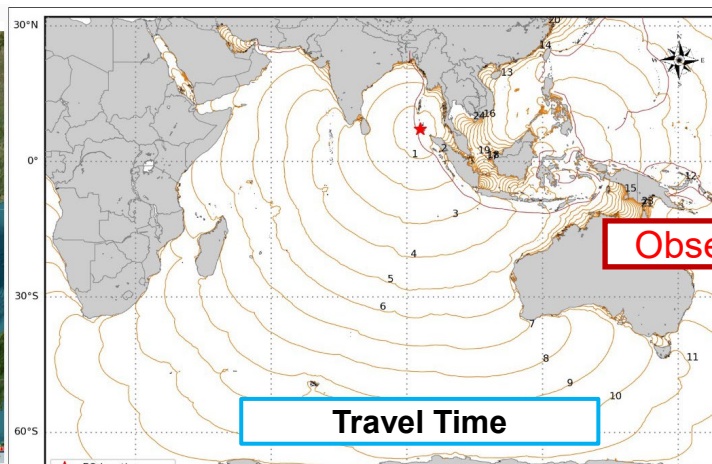
Fax: 91-40-23895012

Email: tsunami@incois.gov.in

Website: www.incois.gov.in

Type-III Exchange Bulletin

(Confirmed Tsunami Threat Bulletin)

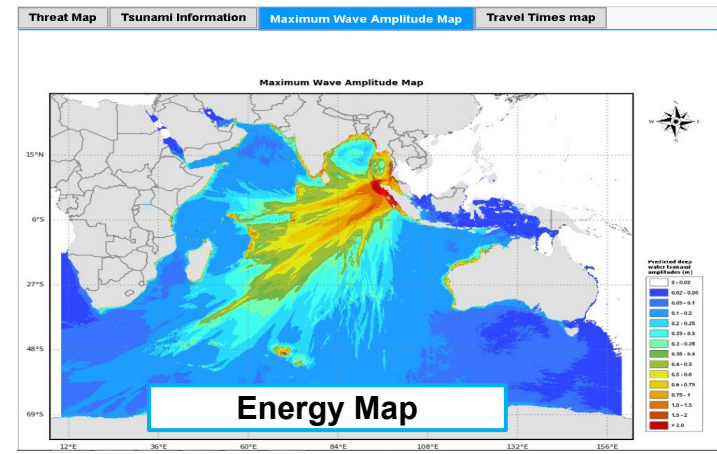


Observations

Filter by

Country	State/Territory	Zone	T1(UTC)	T2(UTC)	T3(UTC)	T4(UTC)	Amplitude(m)	ThreatStatus
INDIA	ANDAMAN AND NICOBAR	INDIRA POINT	07-Jun-2023 06:02	07-Jun-2023 06:02	07-Jun-2023 06:08	08-Jun-2023 06:58	12.5	Threat
INDIA	ANDAMAN AND NICOBAR	KOMATRA & KATCHAL ISLAND	07-Jun-2023 06:02	07-Jun-2023 06:02	07-Jun-2023 06:03	08-Jun-2023 07:00	9.6	Threat
INDIA	ANDAMAN AND NICOBAR	CAR NICOBAR	07-Jun-2023 06:04	07-Jun-2023 06:04	07-Jun-2023 06:17	08-Jun-2023 06:54	6.9	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-JAYA	07-Jun-2023 06:15	07-Jun-2023 06:20	07-Jun-2023 06:07	08-Jun-2023 07:00	6.1	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR P/BEUEH	07-Jun-2023 06:20	07-Jun-2023 06:21	07-Jun-2023 06:25	08-Jun-2023 06:40	7.6	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR B	07-Jun-2023 06:22	07-Jun-2023 06:23	07-Jun-2023 06:26	08-Jun-2023 07:00	10.1	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD KOTA-BANDA-ACEH	07-Jun-2023 06:20	07-Jun-2023 06:23	07-Jun-2023 06:47	08-Jun-2023 07:00	9.4	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD KOTA-SABANG P/WEH	07-Jun-2023 06:24	07-Jun-2023 06:27	07-Jun-2023 06:31	08-Jun-2023 06:28	3.9	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BESAR P/PENASI	07-Jun-2023 06:27	07-Jun-2023 06:29	07-Jun-2023 06:32	08-Jun-2023 06:10	5.9	Threat
INDIA	ANDAMAN AND NICOBAR	LITTLE ANDAMAN	07-Jun-2023 06:29	07-Jun-2023 06:33	07-Jun-2023 06:40	08-Jun-2023 07:00	9.6	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD ACEH-BARAT	07-Jun-2023 06:32	07-Jun-2023 06:38	07-Jun-2023 10:33	08-Jun-2023 06:40	3	Threat
INDONESIA	NANGGROE ACEH DARUSSALAM	NAD SIMEULUE P/SIMEULUE	07-Jun-2023 06:35	07-Jun-2023 06:41	07-Jun-2023 06:54	08-Jun-2023 07:00	3.4	Threat

Threat Table



ESSO

Indian Tsunami Early Warning System

Ministry of Earth Sciences - Government of India

INCOIS

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NTWC Status Reporting Form

NTWC Feedback Summary

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

*** TEST TEST TEST TEST TEST TEST TEST TEST TEST ***

*** THIS IS TSUNAMI IOWWE EXERCISE / COMMUNICATIONS TEST OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***

*** THIS IS NOT A REAL TSUNAMI EVENT ***

TSUNAMI BULLETIN NUMBER 3

IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWC)

ISSUED AT: 0630 UTC Wednesday 07 June 2023

*** TEST TEST TEST TEST TEST TEST TEST TEST TEST ***

CONFIRMED TSUNAMI THREAT IN THE INDIAN OCEAN ...

Threat Map
Tsunami Information
Maximum Wave Amplitude Map
Travel Times map

EARTHQUAKE INFORMATION

Magnitude:	9 M
Depth:	10 km
Origin Date:	07 Jun 2023
Origin Time:	0600 UTC
Latitude:	7.2° N
Longitude:	92.9° E
Location:	Nicobar Islands, India Region

EVALUATION

Sea level observations have confirmed that a TSUNAMI WAS GENERATED. Maximum wave amplitudes observed so far:

Station	County	Latitude	Longitude	Wave Arrival(UTC)	Wave Amplitude(m)
CAMPRELL BAY	INDIA	7.01 N	93.93 E	07-Jun-2023 06:12 00	6.0
NANCOVRY	INDIA	8.05 N	93.55 E	07-Jun-2023 06:20 00	4.2

TSUNAMI THREAT FOR INDIAN OCEAN

The list below shows the forecast arrival time of the first wave estimated to exceed 0.5m amplitude at the beach in each zone (or a different threshold nominated by an NTWC), and the amplitude of the maximum beach wave predicted for the zone. Zones where the estimated wave amplitudes are less than the threshold amplitude at the beach are not shown.

The list is grouped by country (alphabetic order) and ordered according to the earliest estimated times of arrival at the beach.

Please be aware that actual wave arrival times may differ from those below, and the initial waves may not be the largest. A tsunami is a series of waves and the time between successive waves can be five minutes to one hour.

The threat is deemed to have passed two hours after the forecast time for least exceedance of the 0.5m threat threshold for a zone. As local conditions can cause a wide variation in tsunami wave action, CANCELLATION of national warnings and ALL CLEAR determination must be made by national/state/local authorities.

Based on ocean model scenarios, the zones listed below are POTENTIAL.

Filter by

Country	State/Territory	Zone	T1(UTC)	T2(UTC)	T3(UTC)	T4(UTC)	Amplitude(m)	ThreatStatus
MALAYSIA	KEDAH	SATUN	07-Jun-2023 09:05	07-Jun-2023 09:21	08-Jun-2023 04:34	08-Jun-2023 06:53	1.1	Threat
MALAYSIA	KEDAH	YAN	07-Jun-2023 09:12	07-Jun-2023 09:27	08-Jun-2023 02:53	08-Jun-2023 06:50	1.3	Threat
MALAYSIA	KEDAH	WEST OF ALOR SETAR	07-Jun-2023 09:25	07-Jun-2023 09:41	07-Jun-2023 17:42	08-Jun-2023 06:56	1.5	Threat
MALAYSIA	PULAU PINANG	SEBERANG PERAI UTARA & BARAT DAYA	07-Jun-2023 09:41	07-Jun-2023 09:56	07-Jun-2023 10:12	08-Jun-2023 06:56	1.5	Threat
MALAYSIA	PULAU PINANG	SEBERANG PERAI SELATAN	07-Jun-2023 09:44	07-Jun-2023 09:58	07-Jun-2023 16:40	08-Jun-2023 06:49	1.3	Threat
MALAYSIA	KEDAH	KUALA MUDA	07-Jun-2023 09:47	07-Jun-2023 10:04	08-Jun-2023 05:56	08-Jun-2023 06:27	1.3	Threat
MALAYSIA	PERAK	KERIAN	07-Jun-2023 10:03	07-Jun-2023 10:18	08-Jun-2023 00:06	08-Jun-2023 06:26	1.3	Threat
MALAYSIA	PERAK	LARUT AND MATANG	07-Jun-2023 10:12	07-Jun-2023 10:28	08-Jun-2023 17:06	08-Jun-2023 06:52	1.4	Threat
MALAYSIA	PERAK	MALUJUNG	07-Jun-2023 10:25	07-Jun-2023 10:42	08-Jun-2023 01:02	08-Jun-2023 06:54	1.5	Threat
MALAYSIA	PERAK	HILIR PERAK	07-Jun-2023 11:05	07-Jun-2023 11:27	08-Jun-2023 04:11	08-Jun-2023 06:46	1.1	Threat
MALAYSIA	SELANGOR	SABAK BERNAM	07-Jun-2023 11:42	07-Jun-2023 11:39	08-Jun-2023 06:00	08-Jun-2023 07:00	1.1	Threat
MALAYSIA	SELANGOR	KUALA SELANGOR	07-Jun-2023 12:02	07-Jun-2023 13:55	07-Jun-2023 22:40	08-Jun-2023 06:23	1.1	Threat
MALAYSIA	SELANGOR	KUALA LANGAT	07-Jun-2023 12:48	07-Jun-2023 14:25	08-Jun-2023 01:53	-	0.9	Threat
MALAYSIA	NEGERI SEMBILAN	PORT DICKSON	07-Jun-2023 14:20	07-Jun-2023 19:50	08-Jun-2023 01:19	08-Jun-2023 06:63	0.7	Threat
MALAYSIA	SELANGOR	SEPAANG	07-Jun-2023 14:10	08-Jun-2023 06:55	08-Jun-2023 01:05	08-Jun-2023 06:53	0.6	Threat

ADVICE

This bulletin is being issued as advice. Only national/state/local authorised disaster management officers have the authority to make decisions regarding the official threat and warning status in their coastal areas and any action to be taken in response.

UPDATES

Additional bulletins will be issued by IOTWMS-TSP INDIA for this event as more information becomes available.

CONTACT INFORMATION

Indian Tsunami Early Warning Centre (ITEWC)

Indian National Centre for Ocean Information Services (INCOIS)

Address: "Ocean Valley", Pragathi Nagar (BO), Nizampet (SO),
Hyderabad - 500 090, India.

Tel: 91-40-23895011

Fax: 91-40-23895012

Email: tsunami@incois.gov.in

Website: www.incois.gov.in

Type-IV Exchange Bulletin

(Final Tsunami Bulletin)

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

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NTWC Status Reporting Form
NTWC Feedback Summary

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

*** TEST TEST TEST TEST TEST TEST TEST TEST ***
*** THIS IS TSUNAMI LOW WAVE EXERCISE / COMMUNICATIONS TEST OF THE INDIAN TSUNAMI EARLY WARNING SYSTEM ***
*** THIS IS NOT A REAL TSUNAMI EVENT ***
TSUNAMI BULLETIN NUMBER 4
IOTWMS TSUNAMI SERVICE PROVIDER INDIA (ITEWC)
ISSUED AT: 0644 UTC Wednesday 07 June 2023
*** TEST TEST TEST TEST TEST TEST TEST TEST ***
... FINAL TSUNAMI BULLETIN ...

Tsunami Information

EARTHQUAKE INFORMATION

Magnitude :	9 M
Depth :	10 km
Origin Date :	07 Jun 2023
Origin Time :	0600 UTC
Latitude :	7.2° N
Longitude :	92.9° E
Location :	Nicobar Islands, India Region

EVALUATION

Data from sea-level gauges confirmed that a minor tsunami was generated. Based on IOTWMS-TSP INDIA modelling, there is no threat to Indian Ocean countries.

Station	Country	Latitude	Longitude	Wave Arrival(UTC)	Wave Amplitude(m)
CAMPBELL BAY	INDIA	7.00 N	93.93 E	07-Jun-2023 06:12:00	6.0
NANCOWRY	INDIA	8.05 N	93.55 E	07-Jun-2023 06:20:00	4.2
PORTBLAIR	INDIA	11.6 N	92.77 E	07-Jun-2023 06:32:00	3.0
SABANG	INDONESIA	5.83 N	95.33 E	07-Jun-2023 06:40:00	2.4

ADVICE

This bulletin is being issued as advice. Only national/state/local authorities and disaster management officers have the authority to make decisions regarding the official threat and warning status in their coastal areas and any action to be taken in response.

UPDATES

No further bulletins will be issued by IOTWMS-TSP INDIA for this event unless additional information becomes available.

CONTACT INFORMATION

Indian Tsunami Early Warning Centre (ITEWC)
Indian National Centre for Ocean Information Services (INCOIS)
Address: "Ocean Valley", Pragathi Nagar (BO), Nizampet (SO),
Hyderabad - 500 090, India.
Tel: 91-40-23895011
Fax: 91-40-23895012
Email: tsunami@incois.gov.in
Website: www.incois.gov.in

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Indian National Center for Ocean Information Services (INCOIS)
"Ocean Valley", Pragathi nagar(BO), Nizampet(SO) Hyderabad-500090, Telangana.

NTWC Feedback reporting

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

Mon Jul 03 2023 11:01:32 IST Mon, 03 Jul 2023 05:31:32 UTC

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IOTWMS.TSP India - Tsunami Service Provider for the Indian Ocean
NTWC WARNING STATUS REPORTING FORM

This page is to be used by Indian Ocean National Tsunami Warning Centres (NTWCs) to advise TSPs of their current warning status. It should be used every time an NTWC issues a new or updated tsunami warning (or cancellation) for their country. The information will be placed on TSP public websites to enable the public, media and other NTWCs to be aware of the warning status of each country.

EARTHQUAKE INFORMATION	
Magnitude (Preferred) :	9.0
Depth:	10
Date :	07 Jun 2023
Origin Time:	0600 UTC
Latitude:	7.20
Longitude:	92.90
Location:	Nicobar Islands, India Region
Land/ Ocean:	IO
Water Level Depth (if Ocean):	1970 m

COUNTRY'S CURRENT WARNING STATUS

- Select your Country from the list at left
- Select your Country's Current Warning Status (Threat Level 0, 1, 2 or 3) from the list below
- Type Additional Information About The Warning Status in the text box below, such as the time and locations for which the warning has been issued, and the type of warning issued.
- Type your name in the "Sender Name" box.
- Refresh your browser to update the current time.
- Type your email in the "Sender Email" box.
- Press "Submit".

1. Select Your Country:

- Australia
- Bangladesh
- Comoros
- Djibouti
- France (Indian Ocean Territories)
- India
- Indonesia
- Iran
- Kenya
- Madagascar
- Malaysia
- Maldives
- Mauritius
- Mozambique
- Myanmar
- Oman
- Pakistan
- Seychelles
- Singapore
- Somalia
- South Africa
- Sri Lanka
- Tanzania
- Thailand
- Timor-Leste
- UAE
- UK (Indian Ocean Territories)
- Yemen

2. Select Your Country's Current Warning Status:

- Threat Level 0: No impact expected, no flooding, no currents.
- Threat Level 1: There is a potential for tsunami impact, but given the travel time, no response of the public is necessary at the moment.
- Threat Level 2: Threat to coastal marine areas due to strong currents and oscillations in sea level.
- Threat Level 3: Threat of tsunami inundation to land areas.
- Cancellation/All Clear

3. Type Additional Information About The Warning Status:

Max 1950 characters

4. Type Sender Name:

5. Time of Feedback Submission: Mon Jul 03 2023 11:01:34 GMT+0530 (India Standard Time)

6. Type Sender E-mail:

7. Click Here to Submit Your Details:

TSP PUBLIC Bulletins

For each event on the TSP website, public can access directly the bulletin by clicking “Public” link



Mon Jul 03 2023 10:08:30 IST Mon, 03 Jul 2023 04:38:30 UTC

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

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Seismic Activity for past 90 days with magnitude $\geq 6.5M$

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

PUBLIC - NTWC Warning Summary

<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.



Summary of the Current Threat Status as reported by the NTWCs

This page displays the summary of feedback received from individual NTWCs regarding the Threat Status in their area of responsibility. Within 24 hrs of the current event ending (issue of FINAL bulletin by RTSPs), if no further NTWC feedback is received, this page will be cleared to indicate no warnings.

Legend

- Threat Level 0: No impact expected, no flooding, no currents.
- Threat Level 1: There is a potential for tsunami impact, but given the travel time, no response of the public is necessary at the moment.
- Threat Level 2: Threat to coastal marine areas due to strong currents and oscillations in sea level.
- Threat Level 3: Threat of tsunami inundation to land areas.
- Cancellation/All Clear

Show 50 rows entries

Search:

Country	Threat Status	Comments	Sender	Sender Time
Australia	Threat Level 2	Confirmed threat bulletin issued at 06:30UTC, due to observation at Nancovry India, with marine threat continuing for the Cocos Islands, Western Australia, Casey, Mawson and Davis.	Glen Perrin	Wed Jun 07 2023 16:30:28 GMT+1000 (Australian Eastern Standard Time)
Bangladesh	-	-	-	-
Comoros	-	-	-	-
Djibouti	-	-	-	-
France (Indian Ocean Territories)	-	-	-	-
India	Threat Level 3	Tsunami threat issued to East Coast of India. Andaman and Nicobar Islands being inundated. Evacuations initiated.	ITEWC	Wed Jun 07 2023 11:52:02 GMT+0530 (India Standard Time)
Indonesia	Threat Level 2	People in Sumatra are currently reporting felt earthquake. The BMKG issued tsunami early warnings in several affected areas, so that people could carry out self evacuations to safe places.	Sigit	Wed Jun 07 2023 13:19:34 GMT+0700 (Western Indonesia Time)
Iran	-	-	-	-
Kenya	-	-	-	-
Madagascar	-	-	-	-
Malaysia	Threat Level 2	Malaysia NTWC issued a tsunami warning for west coast state of Peninsular Malaysia	NTWC, Malaysia - Mazni	Wed Jun 07 2023 14:24:59 GMT+0800 (Malaysia Time)
Maldives	-	-	-	-
Mauritius	-	-	-	-
Mozambique	-	-	-	-
Myanmar	Threat Level 2	NTWC, Myanmar will issue the Tsunami information for Myanmar coastal areas based on the RTSPs information.	NTWC	Wed Jun 07 2023 13:01:21 GMT+0630 (Myanmar Time)
Oman	-	-	-	-
Pakistan	Threat Level 0	No Threat	NTWC, Karachi, Pakistan	Wed Jun 07 2023 11:15:41 GMT+0500 (Pakistan Standard Time)
Seychelles	Threat Level 0		S. Adam	Wed Jun 07 2023 10:30:22 GMT+0400 (Gulf Standard Time)
Singapore	-	-	-	-
Somalia	-	-	-	-
South Africa	-	-	-	-
Sri Lanka	-	-	-	-
Tanzania	-	-	-	-
Thailand	-	-	-	-
Timor-Leste	-	-	-	-
UAE	-	-	-	-
UK (Indian Ocean Territories)	-	-	-	-
Yemen	-	-	-	-



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THANK YOU