

National Reports will be posted to the ICG/PTWS-XXXI website without TWFP contact details

NATIONAL REPORT

Submitted by Russian Federation

BASIC INFORMATION

1. ICG/PTWS Tsunami National Contact (TNC)

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Name of office, operational unit or position: Sakhalin Tsunami Warning Center

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National Tsunami Warning Centre (if different from the above)

NTWC Agency Name: Federal Tsunami Warning Center (Organization: Federal
Environmental Emergency Response Centre of Roshydromet)

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Federation

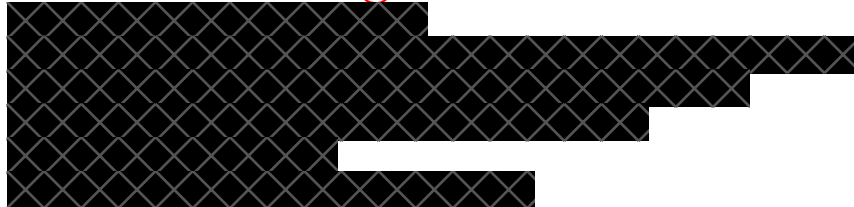
3. Tsunami Advisor(s), if applicable

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4. Tsunami Standard Operating Procedures for a Local Tsunami (when a local tsunami hazard exists)

Tsunami monitoring, prediction and warning for the Pacific coasts of Russia now are provided by the centers of the Tsunami Warning System (TWCs) of ROSHYDROMET in Yuzhno-Sakhalinsk, Petropavlovsk-Kamchatsky and Vladivostok working in close cooperation with regional structures of the Ministry for Emergency Situations of the Russian Federation, seismic centers of the Geophysical Service of the Russian Academy of Sciences (GS RAS) and local hydrometeorological stations of ROSHYDROMET. Russian TWCs efficiently cooperate with the TWCs of other Pacific countries.

The divisions involved in the TWS provide twenty-four hours per day, 7 days per week operation, including continuous monitoring of seismicity and sea level variations, situation analysis, declaring and canceling Tsunami Watches and Warnings, preparation and relaying of appropriate signals and messages in accordance with the established procedure.

In cases of local tsunamigenic events, the parameters of earthquakes are estimated by seismic centers (SC) of the GS RAS located in Yuzhno-Sakhalinsk, Petropavlovsk-Kamchatsky and Vladivostok. The initial tsunami warning is provided by the same seismic centers. Criteria for the warning notification are based on the magnitude, M_s , and the location of the tsunamigenic earthquake.

At present time, the GS RAS magnitude criteria (magnitude threshold values for tsunami warning) are as follows:

- For areas along the coasts of Kamchatka, the Kuril Islands, the Sea of Okhotsk and the Sea of Japan: **$M_s = 7.0$** ;

- For areas along the coasts of the Komandor Islands and Hokkaido Island: **$M_s = 7.5$** ;

- For areas along the coasts of the Andreanof Islands and Honshu Island: **$M_s = 8.0$** .

Tsunami warning is cancelled:

- If the tsunami has been recorded, but maximum wave heights are less than 0.5 m
- If the tsunami warning has been declared, but tsunami signatures are absent in the data of coastal tide gauges, the warning is cancelled 0.5-1.0 hour after the latest estimated tsunami arrival time to the settlements on the coast.

The cancellation of tsunami warnings is made by seismic centers and Tsunami Warning Centers (TWCs) in Yuzhno-Sakhalinsk, Petropavlovsk-Kamchatsky and Vladivostok

5. Tsunami Standard Operating Procedures for a Distant Tsunami (when a distant tsunami hazard exists)

Tsunami warnings for distant tsunamigenic events are provided by the Tsunami Warning Centers in Yuzhno-Sakhalinsk, Petropavlovsk-Kamchatsky and Vladivostok.

After receiving information and relevant parameters of a strong distant earthquake from the seismic centers of the GS RAS, foreign seismic stations, the Pacific Tsunami Warning Center (PTWC) and JMA NWPTAC, the above Tsunami Warning Centers carry out:

- Assessment of the tsunami hazard of the Russian coast based on the magnitude-geographic criterion.
- Calculation of the time of tsunami arrival at specific areas of the coast.
- Sending "Warning and Vigilance" messages to coastal hydrometeorological stations; activation of sea level monitoring and witness observations of changes in sea level near the coast.
- Situational analysis based on the entire array of information, including information on actual observations of tide gauges of the Pacific Tsunami Warning Center (PTWC), JMA NWPTAC and other foreign centers.
- Final decision on the actual tsunami threat for the coast of Russia with the announcement (if necessary) of a tsunami warning.
- Transmission of emergency tsunami messages via communication channels in accordance with the warning rules of local and central authorities, all segments of the population at risk, as well as to foreign tsunami warning centers.

A more accurate determination of the tsunami parameters and threat for the coast of Russia is based on information on the recorded tsunami wave heights at stations located near the source area or between the source area and the coast of Russia, as well as on other information received from foreign centers.

In the period from 2023 to 2025, the situational analysis was carried out each time PTWC issued a tsunami warning for the Pacific Ocean. These analyses, in particular, included the study of data from tide gauges from Russian and foreign stations.

6. National Sea Level Network

Hydrometeorological stations (HMS) located along the Russian coast of the Pacific Ocean and marginal seas of the Russian Far East carry out sea level observations. Some of these stations have digital systems (tide gauges) for monitoring sea level variations (Table 1 and Figure 1).

Table 1 Sea level observation network

N	Station	Latitude (Degrees)	Longitude (Degrees)
1.	Korf (Kamchatka)	60.43	166.075
2.	Ossora (Kamchatka)	59.3	163.167
3.	Nikol'skoe (Bering Isl.)	55.200	165.983
4.	Semyachik (Kamchatka)	54.117	159.983
5.	Petropavlovsk-Kamchatsky (Kamchatka)	52.983	158.650
6.	Ozernaya (Kamchatka)	51.497	156.496
7.	Vodopadnaja (Kamchatka)	51.49	158.067
8.	Poronaisk (Sakhalin Isl)	49.217	143.100
9.	Uglegorsk (Sakhalin Isl)	49.076	142.074
10.	Sovetskaya Gavan' (Primorje)	48.970	140.291
11.	Starodubskoye (Sakhalin Isl)	47.417	142.850
12.	Kholm'sk (Sakhalin Isl)	47.050	142.050
13.	Nevel'sk (Sakhalin Isl)	46.685	141.859

N	Station	Latitude (Degrees)	Longitude (Degrees)
14.	Korsakov (Sakhalin Isl)	46.650	142.767
15.	Sosunovo (Primorje)	46.533	138.333
16.	Cril'ion (Sakhalin Isl)	45.900	142.083
17.	Vladivostok (Primorje)	43.11	131.90
18.	Preobragenie (Primorje)	42.900	133.900
19.	Nakhodka (Primorje)	42.80	132.92
20.	Posiet (Primorje)	42.651	130,808
21.	Rudnaya Pristan' (Primorje)	42.367	135.850
22.	B. Olga (Primorje)	43.733	135.267
23.	Kurilsk (Sakhalin Isl)	45.23	147.88
24.	Cape Lopatka (Kamchatka)	50.867	156.667
25.	Malokurilskoe (Sakhalin Isl)	43.85	146.6
26.	Severo-Kurilsk (Sakhalin Isl)	50.683	156.133
27.	Simushir (Sakhalin Isl)	46.851	151.901
28.	Yuzhno-Kurilsk (Sakhalin Isl)	44.017	145.867

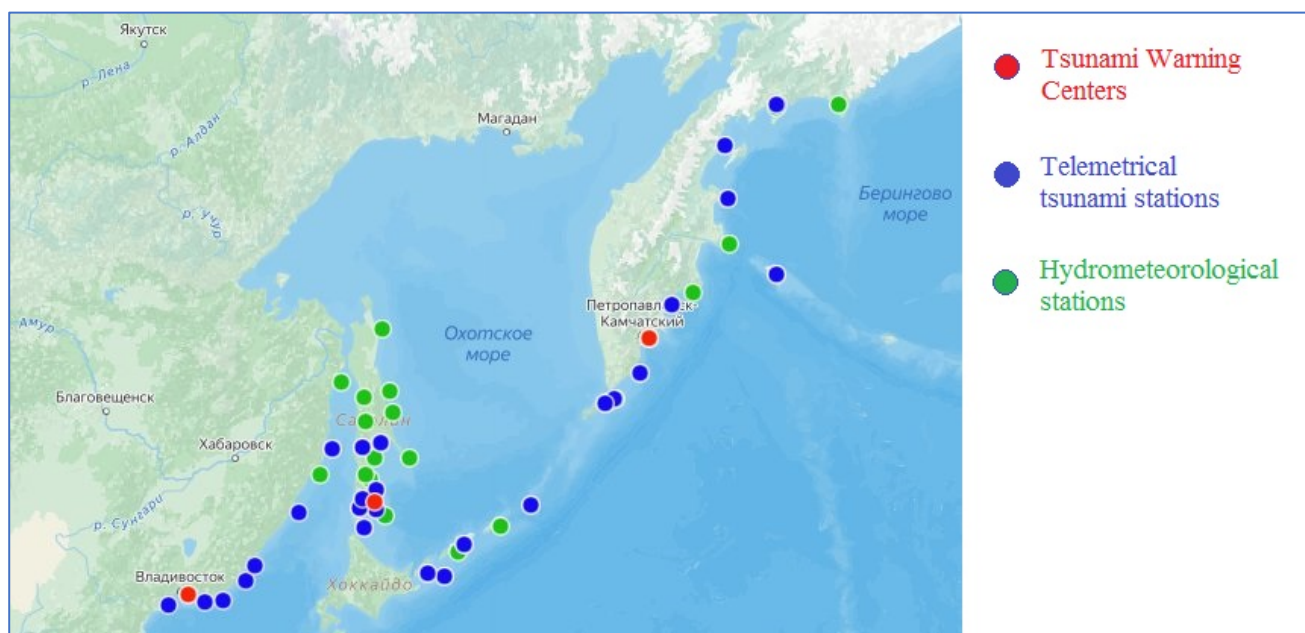


Figure 1. Scheme of location of tide gauges

7. Information on Tsunami occurrences

Events 2023-2025

Strong underwater earthquakes that did not pose a threat to the coast of the Russian Federation:

- In the area of the Kermadec Islands 03/16/2023, magnitude 6.9, coordinates 30.2 S, 176.0 W;
- In the area of the Kermadec Islands 04/24/2023, magnitude 6.7, coordinates 29.8 S, 178.3 W;
- In the area of the Loyalty Islands 05/19/2023, magnitude 7.3, coordinates 23.1 S, 170.6 E;

- Near the Loyalty Islands 05/20/2023, magnitude 7.2, coordinates 23.1 S, 170.3 E;
- Off the coast of Alaska 07/16/2023, magnitude 6.9, coordinates 54.38 N, 160.7 W;
- Off the coast of Japan 10/05/2023, magnitude 5.5, coordinates 29.9 N, 139.9 E;
- Near the island of Mindanao (Philippines) 12/02/2023, magnitude 7.0, coordinates 8.2 N, 126.3 E;
- Off Vanuatu 12/07/2023, magnitude 6.7, coordinates 20.5 S, 169.6 E;
- Off the coast of Taiwan 04/03/2024, magnitude 7.9, coordinates 23.80 N, 122.0 E;
- Off the coast of Peru 06/28/2024, magnitude 7.0, coordinates 15.80 S, 74.50 W;
- Off the coast of Japan 08/08/2024, magnitude 7.2, coordinates 31.71 N, 131.71 E;
- Off the coast of Northern California 12/05/2024, magnitude 6.5, coordinates 40.7 N, 125.2 W;
- Off the coast of Vanuatu 12/17/2024, magnitude 7.5, coordinates 17.7 S, 168.2 E;

A tsunami warning was issued by the Russian tsunami warning system due to the occurrence of earthquakes:

- Off the coast of Japan 01/01/2024, magnitude 7.6, coordinates 37.40 N, 137.20 E;
- Off the coast of Kamchatka Krai 08/17/2024, magnitude 7.4, coordinates 52.7 N, 160.5 E.

Russian TWS regularly participates in PTWC and NWPTA communications tests:

in 2023, 21 took part in 2 NWPTA tests and 12 PTWC tests;

in 2024, 22 took part in 2 NWPTA tests and 12 PTWC tests;

In connection with the fact that the IOC UNESCO declared November 5 as World Tsunami Awareness Day, the Russian TWS organized and held various events among the population of the Far Eastern region of Russia, dedicated to this day.

8. Web sites (URLs) of national tsunami-related web sites

<http://www.rtw.s.ru>

9. Summary plans of future tsunami warning and mitigation system improvements.

NATIONAL PROGRAMMES AND ACTIVITIES INFORMATION

10. EXECUTIVE SUMMARY

Modernization of Russian CCs was carried out on an ongoing basis.

Russian SPC provides:

- tsunami warning within 4 minutes after detection of an earthquake based on macroseismic characteristics for tsunami-protected settlements closest to the epicenter;
- determination of earthquake parameters (time at the epicenter, epicenter coordinates, magnitude, depth) and assessment of its tsunamigenicity within 7 minutes for the near area and within 30 minutes for distant earthquakes;
- situation analysis, decision-making on tsunami warning within 5 minutes after receiving earthquake parameters;
- transmission of "Storm. Tsunami" messages to territorial centers of the Russian Emergencies Ministry within 1 minute;
- elimination of tsunami misses and minimization of false tsunami warnings.

Exercise Pacific Wave 2024 (November 5)

On November 5, 2024, the Russian Federation, together with 46 countries of the Pacific region, took part in the international exercise Pacific Wave 2024 (Pacific Wave 2024).

The following participated in the exercise from the Russian TPC:

Tsunami Warning Center of the Sakhalin UGMS;

Tsunami Warning Center of the Kamchatka UGMS;

Tsunami Warning Center of the Primorskoye UGMS;

Federal Information and Analytical Center of Roshydromet, NPO Typhoon.

The exercise was conducted by the Intergovernmental Oceanographic Commission of UNESCO through its Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS). These are the eleventh exercises of this type, the first of which was held in 2006, and subsequent exercises were held in 2008, 2011, 2013, 2015, 2016, 2017, 2018, 2020 and 2024.

All necessary actions were fully performed by the exercise participants. No failures in the functioning of communication channels were detected.

Detailed information about the participation of the Tsunami Warning Center of the Sakhalin UGMS is available on the official website of the organization.

These are the twelfth exercises of this type, the first of which was held in 2006, and subsequent exercises were held in: 2008, 2011, 2013, 2015, 2016, 2017, 2018, 2020, 2022 and 2024.

11. NARRATIVE

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Date: Name: