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National report of Russia

(GLOSS and Tsunami – activity)

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GLOSS ACTIVITY

1. List of tide gauge sites

В соответствии с GLOSS-activity в 2005 г. был предложен проект развития Russian GLOSS-network. According to this project the Russian GLOSS tide gauge network consists of 19 stations, which are located on the coast and islands of 10 seas and the Pacific Ocean, and 2 Antarctic stations working occasionally (Tab. 1).

Table 1.

List of the proposed Russian GLOSS- network

Name/ GLOSS-number	Sea	Begin of observation	Data in PSMSL
Baltiysk	Baltic	1811	-
Kronstadt	Baltic	1806	-
Murmansk/ 274	Barents	1917	1952-2004
Barentsburg/ 231	Barents	1933	1948-2004
Malye Karmakuly	Barents	1950	-
Amderma	Kara	1939	-
Dikson	Kara	1915	-
Tcheluskin Cape	Kara / Laptev	1938	-
Tiksi	Laptev	1932	-
Shalaurova Cape	East-Siberian	1950	-
Pevek	East-Siberian	1939	-
Wrangel Island	Chukchi	1950	-
Anadyr	Bering	1930	-
Lawrova Bay	Bering	1930	-
Petropavlovsk-Kamchatsky, 93	Pacific Ocean	1910	1957-2004
Nagaev Bay, 92	Okhotsk	1932	1957-2004
Yuzhno-Kurilsk, 90	Pacific Ocean	1946	-
Nakhodka	Japan	1945	-
Tuapse, 98	Black	1916	1917-2004
Mirny	Antarctica	2002	
Progress	Antarctica	2002	

This project haven't been realized till now days. Roshydromet redirect its activity fixed it on the Far-East region after some catastrophic tsunami.

Roshydromet regional bodies gave the information on working stations and possibility of closed sites reinstallation. Now Roshydromet is making efforts to replace closed station sites.

GLOSS-ACTIVITY (2006)

N	ACTION	STATUS
1.	Monthly processing and transmission to the oceanographic center (Hawaii university, Honolulu) monthly mean sea level values for 2006 observed at the stations of Petropavlovsk-Kamchatski and Yujo-Kurilsk	In 2006 12 reports have been sent from Petropavlovsk-Kamchatski station (plotter at Yujo-Kurilsk station doesn't work from 1995)
2.	Annually transmission to the British oceanographic center monthly mean sea level values observed at 8 Russian HMS for the previous year	In 2006 there have been transmitted data for 2004 from 5 HMS – Barentsburg, Murmansk, Nagaev, Tuapse, Petropavlovsk-Kamchatski (there were no data from Russkaya Gavan, Pionerski and Yujo-Kurilsk course of plotters failure)

GLOSS-ACTIVITY (2007)

N	ACTION	STATUS
1.	Monthly processing and transmission to the oceanographic center (Hawaii university, Honolulu) monthly mean sea level values for 2007 observed at the stations of Petropavlovsk-Kamchatski and Yujo-Kurilsk	To June,1 2007 4 reports have been sent from Petropavlovsk-Kamchatski station (plotter at Yujo-Kurilsk station doesn't work from 1995)
2.	Annually transmission to the British oceanographic center monthly mean sea level values observed at 8 Russian HMS for the previous year	In July 2007 there would be transmitted data for 2006 from 5 HMS – Barentsburg, Murmansk, Nagaev, Tuapse, Petropavlovsk-Kamchatski (there are no data from Russkaya Gavan, Pionerski and Yujo-Kurilsk course of plotters failure)

2. An overview of the data availability

Russia has already sent monthly mean sea level data on 5 stations from this list (**Murmansk, Barentsburg, Petropavlovsk-Kamchatsky, Nagaev Bay, Tuapse**) and will keep on doing it. If the Russian Antarctic Expedition considers the data obtained since 2002 of reliable quality it may be given to international data exchange. Stations **Mirny** and **Progress** will continue sending data after tide gauge performance check is finished. Two stations in the Baltic Sea (**Kronstadt and Sankt-Petersburg**) are available for international exchange on the site **BOOS**.

A permission to give the data from several stations into the data exchange has been obtained and this information (monthly sea level values) seems to be available very soon. For some other stations a permit now is processing in Roshydromet. It is necessary to replace tide gauges and to repair shafts (sometimes to construct a new one) at some stations. These actions are planned for the next few years.

3. An overview of the gauge technology employed in the network

All Russian station transferring information into the international data exchange are equipped with floating gauges. Now digital floating gauges are installed only in Kronstadt and Sankt-Petersburg.

4. An overview of the GPS etc technology in the network

Unfortunately, no one sea level station in Russia has a tide gauge along with GPS-receiver.

5. Web, email etc. addresses of data banks and of sources of further information

National Center of Oceanographic Data (NODC of Russia) under All-Russian Research Institute for Hydrometeorological Information - World Data Centre (ARRIHI-WDC).

Address: 6, Korolev str., Obninsk, Kaluga region, 249035, Russia

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GLOSS in Russia is based upon the observational network of the Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet). Data observed by Roshydromet regional bodies is sent to the All-Russian Research Institute for Hydrometeorological Information - World Data Centre (ARRIHI-WDC) in Obninsk for cataloguing and archiving. ARRIHI-WDC forwards monthly and annual mean sea level values of Russian GLOSS stations to PSMSL and to the Specialized IGOSS Sea Level Centre in Pacific (Honolulu).

Since 2002 at stations Mirny and Progress Russian Antarctic Expedition has been taking sea level measurements using gauges produced in Russia and based on a hydrostatic principle. If the Russian Antarctic Expedition staff is able to maintain sea level observations in the future and to provide their quality, the information from these stations will come into the international data exchange.

Till now Roshydromet has not given a permit to transfer the data from these stations to the international data exchange.

Quality of observations

The heights of all Russian sea level sites are determined relatively major and auxiliary geodetic marks. All the marks except those located on islands are levelled to the unified national geodetic reference system with its basic landmark - zero datum of the tide-gauge in Kronstadt. The level measurement accuracy at 5 Russian GLOSS stations meets GLOSS requirements. Sea level errors do not exceed 1-2 cm, and the timing error is less than 1 minute. Murmansk, Barentsburg, Nagaev Bay, Petropavlovsk-Kamchatsky and Tuapse stations belong to the PSMSL category 1.

Unfortunately, the accuracy of regular routine observations is a little worse, and there are considerable time shifts between observations. At some stations tide gauges were damaged or lacking and observation are made by measuring rods.

We have to confess that for the past several years quality of metocean observations has become worse, which is related to general reduction of the observational network, financial strait, staff shortages at observing sites. These difficulties are most pronounced at many remotely located stations.

It should be noted, providing operability assurance of stations functioning according to

the GLOSS requirements Roshydromet experiences difficulties the same as maintaining stations from its network.

TSUNAMI-ACTIVITY IN FAR-EAST REGION

Seismic active zones of the Pacific Ocean threaten Russian coastal region. Earthquakes and the following tsunami reach the coast and Sachalin island rather quick. That is why Roshydromet proposed to mount 18 coastal stations that could record tsunami as well as storm sea level oscillations. Supposed record resolution is 1 minutes.

There are the primary station list: Petropapavlovsk-Kamchatski, Ust-Kamchatsk (here was installed digital recorder with space transmission system (now it is not working), Lavrova Bay, Nikolskoe, Severo-Kurilsk, Burevestnik, Uzhno-Kurilsk, Malo-Kurilsk, Krabozavodsk, Matua, (all sites are located in Pacific Ocean) and Kurilsk (located in Okhotsk Sea). Besides, it's important to mount meters in the such sites: Korsakov, Nogliki, Okha, Uglegorsk, Holmsk, De Castri (All station on the Sakhalin Island), and also in Nagaevo and Vladivostok on the coastal continent.

This list is preliminary. The most part of this station are not working and need to be restored. According to the expert estimate Tsunami warning service needs in no less than 40 station for the valuable activity.

In this reports information kindly rendered by предоставленную Dr. A. Rabinovich and Dr. E. Kulikov have used.