



# Russian Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet)



*Alexander V. Frolov*

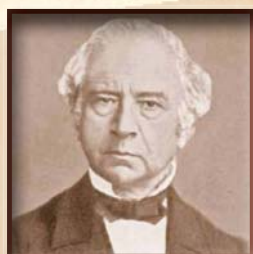
**Russian Federal Service for Hydrometeorology and Environmental Monitoring (Roshydromet)** is a federal executive body under the jurisdiction of the Ministry of Natural Resources and Ecology of the Russian Federation. Roshydromet is involved in administrating the state property and providing services in hydrometeorology and related fields, as well as environmental monitoring. Again, Roshydromet acts as a governmental supervisor of activities in modification of meteorological and other geophysical processes.

The head of Roshydromet is Alexander V. Frolov.

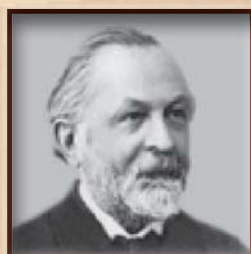
## *Milestones*

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| 1834 | Normal Magnetic and Meteorological Observatory was established in St-Petersburg. Since that time, regular meteorological observations have been conducted in Russia in accordance with the universal guide |
| 1849 | Main Physical Observatory (now known as Voeikov Main Geophysical Observatory) was created on the basis of the Normal Magnetic and Meteorological Observatory   |
| 1921 | Decree on the establishment of the Meteorological Service of the Russian Soviet Federated Socialist Republic was signed  |
| 1929 | Hydrometeorological Committee under the USSR Council of People's Commissars was established  |
| 1930 | The first in the world radiosonde was launched in the Pavlovsk observatory   |
| 1936 | Central Administration of the Hydrometeorological Service was established under the USSR Council of People's Commissars  |
| 1937 | Drifting station "North Pole-1" came into operation  |
| 1947 | Atmospheric research started by using meteorological and geophysical rockets   |
| 1956 | First Antarctic stations Mirnyi, Pionerskaya and Oasis that laid foundation for systematic Antarctic research came into operation  |
| 1959 | First numerical weather forecast was made  |
| 1959 | First large R/V A.I. Voeikov of the Hydrometeorological Service was set afloat   |
| 1961 | Environmental pollution monitoring started. National radiometric observation and information service was established   |
| 1964 | World Meteorological Centre "Moscow" was created under the USSR Main Administration of the Hydrometeorological Service   |
| 1966 | First meteorological satellite Kosmos-122 was launched   |
| 1978 | USSR State Committee for Hydrometeorology and Environmental Monitoring was established   |
| 1992 | Federal Service of Russia for Hydrometeorology and Environmental Monitoring (Roshydromet) was established  |
| 1996 | New technologies of numerical weather forecasts based on supercomputer Cray were introduced  |
| 1998 | Law of the Russian Federation "On the Hydrometeorological Service" was passed  |
| 2008 | The Russian Meteorologist Day was established by RF Presidential Edict   |
| 2010 | Strategy of Actions in Hydrometeorology and Related Fields for the Period of up to 2030  |

Significant contribution to the formation and development of the Russian Hydrometeorological Service was made by A.Ya. Kupfer, who founded the Normal Magnetic and Meteorological Observatory in 1834; G.I. Vild, the head of the Main Physical Observatory (1868–1895); E.K. Fyodorov, the head of the USSR Hydrometeorological Service (1939–1947 and 1962–1974); Yu.A. Izrael, the head of the USSR Hydrometeorological Service (1974–1991); and A.I. Bedritsky, the head of the Hydrometeorological Service of the Russian Federation (1993–2009).



*A.Ya. Kupfer*



*G.I. Vild*



*E.K. Fyodorov*



*Yu.A. Izrael*



*A.I. Bedritsky*

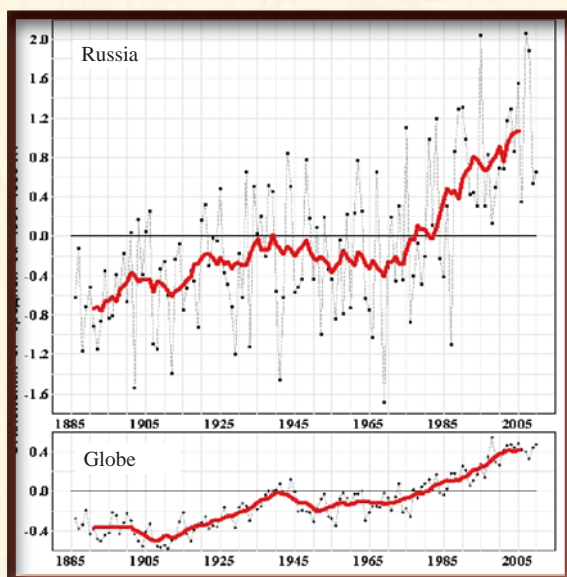
# Main functions and structure of Roshydromet

- ◆ provision of public authorities and population with information on the actual and predicted state of the environment and environmental pollution, including urgent information;
- ◆ formation and support of the operation of the State Observation Network and the system of obtaining, acquisition and dissemination of hydrometeorological information;
- ◆ state monitoring of the atmosphere and water bodies, in so far as they relate to surface water bodies, including the ecological system of Lake Baikal, continental shelf and exclusive economic zone (within the limits of its competence);
- ◆ control, evaluation and forecast of radiation situation over the country from in situ measurements and laboratory analyses of soil samples, surface atmospheric aerosols, atmospheric precipitation, and surface sea and continental waters, including these at radiation hazardous sites;
- ◆ investigations of hydrometeorological and geophysical processes in the atmosphere, on the land surface, in the World Ocean, the Arctic and Antarctic, as well as in the near-Earth space, in so far as these relate to the study and forecasting of radiation situation, ionosphere and magnetic field of the Earth;
- ◆ maintenance of the Unified State Environmental Data Fund;
- ◆ national surface water record and maintenance of state water cadastre applicable to surface water bodies (within the limits of its competence);
- ◆ meteorological support of civil and experimental aviation;
- ◆ leadership and supervision of the operation of the Russian Antarctic expedition;
- ◆ operational support of the anti-avalanche service;
- ◆ implementation of operations related to modification of meteorological and other geophysical processes (hail protection of crops, precipitation control, fog dispersion).

The Russian Hydrometeorological Service is structured with regard to administrative division of the Russian Federation and the "basin" principle of the arrangement of territorial bodies. Roshydromet comprises 23 territorial administration bodies.

Scientific and methodical support of hydrometeorological activity is provided by 18 research institutes and a number of other production and subsidiary organizations. Six hydrometeorological technical schools and the Advanced Training Institute of Roshydromet are involved in staff training.

The number of employees in the Russian Hydrometeorological Service is over 36 thousand. Majority of these are engaged in making 30 types of observations at the network that comprises 1878 stations and 3110 posts of all kinds.



## Climate Doctrine

The climate policy of the Russian Federation is developed and implemented on the basis of the Climate Doctrine confirmed by the president of the Russian Federation in 2009. In 2011, the RF government adopted the Integrated Plan for Climate Doctrine Implementation for the period to 2010.

The Doctrine is a system of views of the goal, principles, content and ways of the implementation of the common national policy of the Russian Federation concerning climate change. In addition, the Doctrine determines the actions that are to be taken by Russia in the field of climate.



# *Priorities of the development of the Russian Hydrometeorological Service for the years immediately ahead*

Priorities of the development of the Russian Hydrometeorological Service are determined in the Strategy of Actions in Hydrometeorology and Related Fields for the Period of up to 2030 that was ratified by the RF government in 2010.

The aim of the Strategy is to create the effective hydrometeorological service based on the upgrade and re-equipment of all systems of environmental information acquisition, collection, analysis, archiving and dissemination.

Implementation of the Strategy will make it possible to reduce significantly the economic losses from natural hydrometeorological and helio-geophysical hazards, derive additional benefits from a favourable development of weather and climate processes, and improve substantially the economic effect due to the use of environmental information.

Below are the current priorities of the Service development.



◆ **Development of observational network:** upgrading of instrumentation pool and increase in observation points with a substantially greater part of automatic stations. It is supposed to increase the number of meteorological observation points to 2300, with 600 of these being automatic meteorological stations, to open 800 hydrological

observation points and 80 mobile hydrological laboratories, and to increase the number of upper-air stations to 129.

◆ **Creating a unified network of ground-based meteorological Doppler radars** that is to comprise more than 150 stations to cover the whole area of the Russian Federation. This will make storm warnings much more reliable and timely and provide safety for people, municipal facilities and transport.

◆ **Reconstruction of the Russian space observation system** is supposed to recover the space hydrometeorological system that is to consist of seven satellites (3 geostationary satellites of series Elektro, 3 polar orbiting satellites of series Meteor and one oceanographic satellite) and space system Arctic (4 high-elliptical and low polar orbit meteorological satellites of Molnia type).



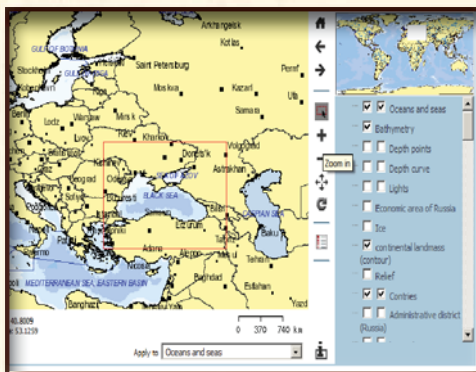
◆ **Introduction of present-day models and super-computer technologies of weather forecasts,** forecasts of pollutant distribution in the environment, as well as hydrometeorological data processing and dissemination systems. Specifically, it is planned to increase the space resolution of global and regional (for Central Russia) atmospheric models to 50 km or less.

◆ **Development of the Russian tsunami warning system** allows people to be informed of the tsunami threat within ten or eleven minutes after the hazard was detected, while the older technologies required 23–25 minutes. The operational tsunami warning system in the Far East receives information from 11 automatic seismic stations, deep-sea buoy stations in the open ocean, 37 marine hydrometeorological stations and 23 automated stations of sea-level measurements. The system comprises three tsunami warning centres in Yuzhno-Sakhalinsk, Petropavlovsk-Kamchatski and Vladivostok.



◆ **Support of the Situation Centre** that was created to make quicker decisions as to preventing and eliminating emergencies. The objective of the Centre is to identify a critical state of the environment and to detect global and local environmental pollution, with the subsequent information and analytical support of making managerial decisions based on the interactive access to on-line information and visualization of information derivatives. The Centre is responsible for the routine management of the Roshydromet operational subsystem under the Universal State System of Prevention and Response to Emergencies STORM.





◆ **Creation of the system of hydrometeorological support and environmental monitoring for the winter Olympic Games Sochi-2014** in different regions of Sochi, Krasnaya Polyana settlement and construction zones, where automatic stations that make measurements and transmit real-time data are located. The data are available from Internet (<http://pogodasochi.ru/>).

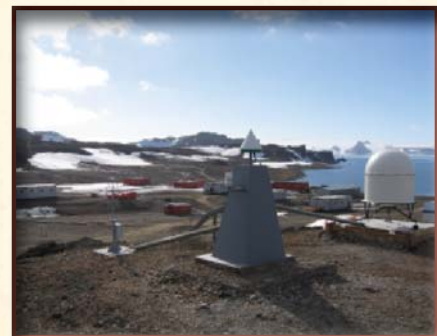
◆ **Development of the Unified State Environmental Data Fund** implies introduction of new technical means and technologies and regular upgrading of data accumulation, archiving and processing systems that allow a complete collection of all types of data, data quality, dead storage of data and their provision to users.

◆ **International cooperation of the Russian Federation in hydrometeorology and related fields** is based on the strict fulfillment of the commitments assumed, active participation in international bodies, and strengthening of bilateral cooperation with foreign countries.

Since 1956, the activity and research of the Russian Federation in Antarctica and the surrounding Southern Ocean have been provided by the infrastructure of the Russian Antarctic Expedition whose operation is managed by Roshydromet. In 2010, the Government of the Russian Federation ratified the Strategy of Actions in Hydrometeorology and Related Fields for the Period to 2020 and Longer-Term Prospective that was prepared by Roshydromet, federal executive authorities concerned and the Russian Academy of Sciences.

Roshydromet is the national coordinator of the fulfillment of the RF commitments for the UN Framework Convention on Climate Change (UN FCCC) and the Kyoto Protocol. Roshydromet is responsible for: (1) conducting regular observations and investigations of the climate system; (2) accumulation, processing and dissemination of the appropriate data; (3) taking measures to adapt to climate change; and (4) preparation of national greenhouse gas emissions inventories and national reports for the FCCC Secretariat.

Roshydromet is actively involved in the implementation of programmes and projects of WMO, UNESCO, UNEP, IAEA, ICAO, ECE, Arctic Council, International Committee for Satellite Observations of the Earth, EUMETSAT, and CIS Interstate Council for Hydrometeorology. Again, Roshydromet is responsible for the fulfillment of commitments of the Russian Federation for international environmental monitoring programmes.



#### **Major hydrometeorological information resources available from Internet:**

Website of Roshydromet <http://www.meteorf.ru/>,  
<http://росгидромет.рф/>

Weather forecasts <http://meteoinfo.ru/>

Hydrometeorological support of the Olympic Games Sochi-2014 <http://pogodasochi.ru/>,  
[http://www.feerc.obninsk.org/monit\\_data/](http://www.feerc.obninsk.org/monit_data/)

Unified State Environmental Data Fund <http://www.meteo.ru/>

Unified State System of Information on the Global Ocean <http://www.esimo.ru/>

Unified State Radiation Situation Monitoring System <http://www.feerc.obninsk.org/>

North Eurasian Regional Climate Centre (NERCC) <http://seakc.meteoinfo.ru/>