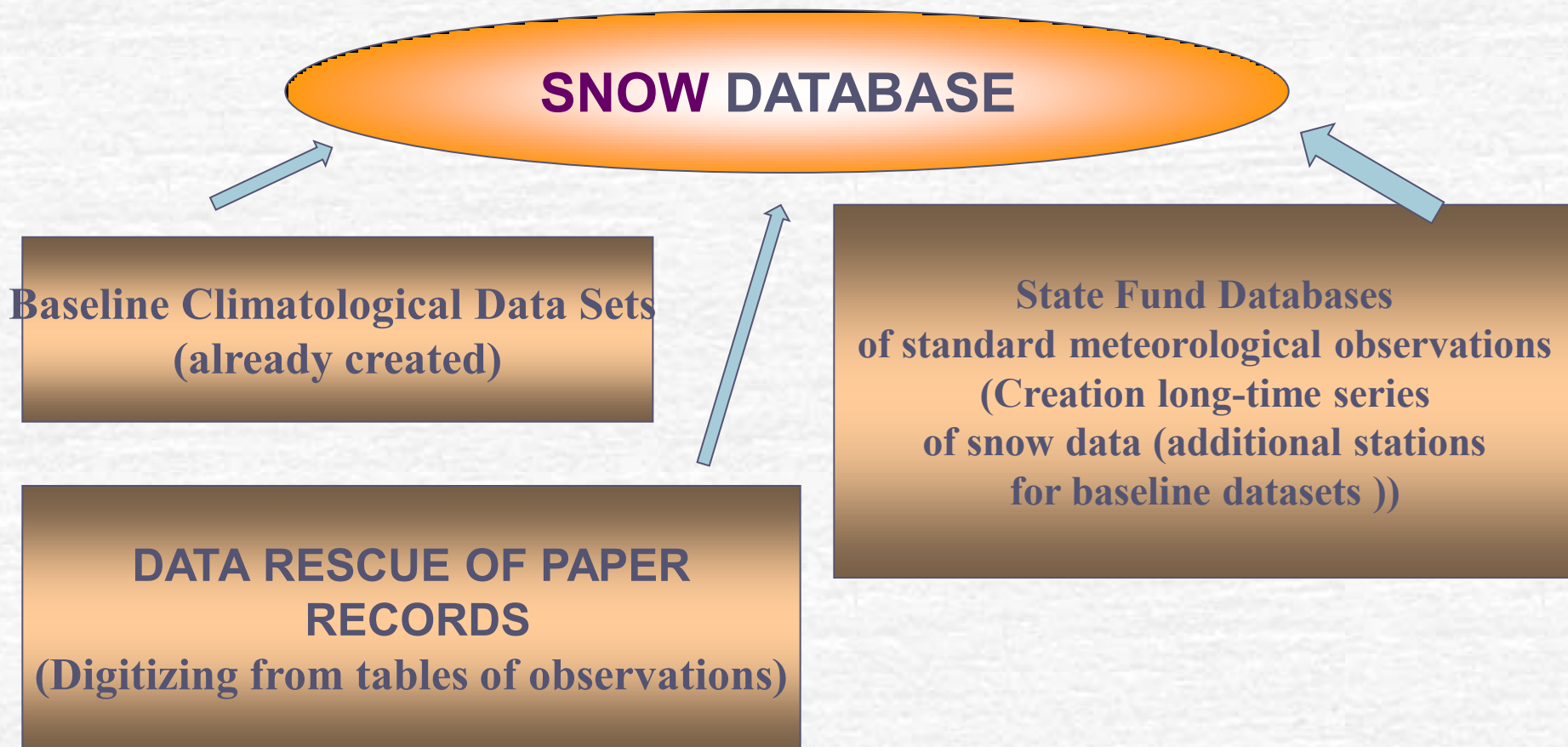


# **SNOW DATA ACCESS AT RSHYDROMET**

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# Main sources of SNOW DATA information: Three sources of Roshydromet





## Baseline Climatological Data Sets

In open and free access at:  
<http://www.meteo.ru/climate/>

- 1. Data Set “Snow Cover Characteristics From Russian Meteorological Stations and from some meteorological station Over The Former USSR Territory” – 600 station**
- 2. Data Set “Routine snow surveys” – 517 Russian meteorological station**

## State Fund Databases of standard meteorological Observations (Creation long-time series of snow data (additional stations for baseline datasets ))

➤ Creation of long-time series of meteorological observations on computer-readable media from different State Fund Databases (problem of OBS time!!!!!!)

| Years       | Times\day                         | Format |
|-------------|-----------------------------------|--------|
| 1891 - 1935 | Three (7, 13, 21 Local Time)      | A      |
| 1936 - 1965 | Four (1, 7, 13, 19 LT)            | B      |
| 1966 - 1976 | Eight (3, 6, 9... Moscow Time)    | C      |
| 1977 - 1984 | Eight (3, 6, 9... Moscow Time)    | D      |
| 1985 - 1992 | Eight (3, 6, 9... Moscow Time)    | E      |
| 1993 - now  | Eight (3, 6, 9... Greenwich Time) | E      |

# The contents and format of data set of snow cover characteristics for stations site observations

| Field number | Field contents                          | Notes  |
|--------------|---|--|
| 1            | WMO index of station                    |  |
| 2            | Year                                    |  |
| 3            | Month                                   |  |
| 4            | Day                                     |  |
| 5            | Snow depth                              | In cm  |
| 6            | Extent of snow cover around the station | In numbers on ten-number scale, see Table 2 on next slides |
| 7            | Q- Complementary flag of snow depth     | See Table 3 on next slides                                 |

**Table 2**

## **Extent of snow cover around the station**

| <b>Observation period</b>                     | <b>Extent of snow cover around the station</b>  | <b>Value Q</b>      |
|---|---|---------------------|
| <b>Before July 1959</b>                       | <b>50% and less than 50% of the area around the station</b>   | <b>0</b>            |
|   | <b>More than 50% of the area around the station</b>   | <b>1</b>            |
| <b>From August 1959 up to the present day</b> | <b>Extent of snow cover around the station is estimated from ten-number scale. For example, the lack of snow is 0, 20% of the area around the station covered with snow is 2, 50% of the area around the station covered with snow is 5, etc.</b> | <b>From 0 to 10</b> |

**Table 3**

## **Complementary flag of snow depth**

| <b>SITUATION</b>   | <b>FLAG</b> |
|--|-------------|
| <b>Value of snow depth is correct</b>  | <b>0</b>    |
| <b>Continuous snow melting</b>   | <b>1</b>    |
| <b>Snow cover absent at site, however there is snow in the neighbor vicinity and a state of it is specified.</b> | <b>2</b>    |
| <b>Snow cover is less than 0.5 cm</b>  | <b>3</b>    |
| <b>Observations were not made or value is rejected</b>   | <b>9</b>    |



## The format of data set of snow cover state characteristics

| N  | Field contents   |
|----|--|
| 1  | Index WMO  |
| 2  | Latitude   |
| 3  | Longitude  |
| 4  | Year   |
| 5  | Month  |
| 6  | Day  |
| 7  | Route ( Path ) type<br>1 - field environment; 2 - forest environment; 3 – ravine (canions) |
| 8  | Extent of snow cover over route surroundings (0 -10)                                       |
| 9  | Extent of snow cover along a route (0-10)  |
| 10 | Extent of crust along a route (0-10)   |

| N  | Field contents                               |
|----|--|
| 11 | Snow cover depth average (sm)                |
| 12 | Snow cover depth maximum (sm)                |
| 13 | Snow cover depth minimum (sm)                |
| 14 | Snow density (g/sm <sup>3</sup> )            |
| 15 | Thickness of crust layer (mm)                |
| 16 | Thickness of water-inundated snow cover (sm) |
| 17 | Thickness of pure water (sm)                 |
| 18 | Water equivalent of snow cover (mm)          |
| 19 | General water amount (mm)                    |
| 20 | Snow covering type                           |
| 21 | Snow cover type                              |

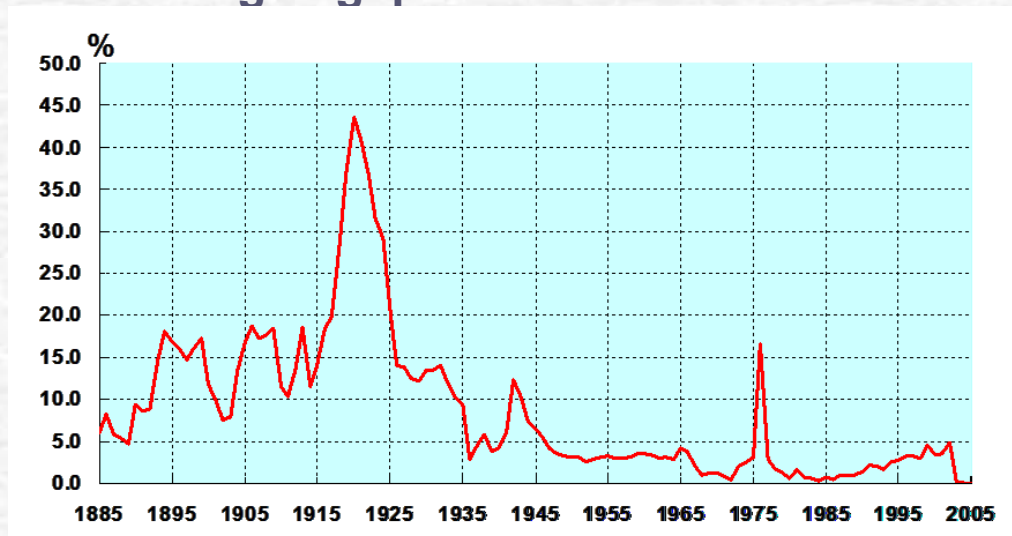
Core-Climax Coordination Meeting

The data set contains data for 1966-2013  
03.12.2014

Global Archive of  
Historical In Situ Snow Data



## ➤ Data rescue and filling in gaps in databases



*The missing data in standard meteorological observations  
( On computer-readable media in RIHMI-WDC )*

## ➤ Formation of metadata sets;

➤ Elimination of inhomogeneity in meteorological data series that is caused by the change in observation and processing procedures, instrumental change, etc.

➤ Ensuring the opportunity of regular update of data sets with current information.

Core-Climax Coordination Meeting  
Towards a Global Archive of  
Historical In Situ Snow Data

# Some remarks for discussion

- The future steps can be planned depending on priorities. They can be oriented to:
  - Data rescue and extended wider data collection
  - Reanalysis projects (we need to put every value to a proper place in 4D space)
  - Monitoring
  - Research
  - Climate applications and services
  - What else?

# Some remarks for discussion

- The existing snow in situ data are hardly to be acceptable for integration to a single database “as is”, without transformations, variable selection, and so on
- To preserve pluses of existing datasets, they can be left disseminated but connected by a good metadata database
- For reanalysis, NEW (!) database should be created as a derivative, oriented to reanalysis data requirements (easier than directly integrate to reanalysis the set of existing databases)
- For other needs – depends on the priorities...
-



**THANK YOU!**