ArcticGRO

ARCTIC GREAT RIVERS OBSERVATORY

Discharge metadata

updated 2023-02-27

The ArcticGRO project provides discharge data, which are collected by national hydrological institutions in Russia (Roshydromet), the United States (the US Geological Survey; USGS) and Canada (the Water Survey of Canada; WSC).

Discharge data for the Mackenzie, Yukon, and Ob' Rivers are collected at the same location as ArcticGRO biogeochemistry data. For the Yenisey, Lena, and Kolyma Rivers, discharge data are provided for the site closest to the ArcticGRO sampling location (Table 1). Many publications using ArcticGRO biogeochemistry data have corrected for the offset between the discharge and chemistry sampling locations using the approach outlined in Holmes et al. (2012).

Table 1. Discharge station information for core ArcticGRO rivers.

River	Collection agency	Sampling location	Station ID	Latitude	Longitude
Yukon	US Geological Survey	Pilot Station	15565447	61.93 N	162.88 W
Mackenzie	Water Survey of Canada	Arctic Red River	10LC014	67.45 N	133.74 W
Ob’	Roshydromet	Salekhard	11801	66.63 N	66.60 E
Yenisey	Roshydromet	Igarka	9803	67.43 N	86.48 E
Lena	Roshydromet	Kyusyur	3821	70.68 N	127.39 E
Kolyma	Roshydromet	Srednekolymsk	1801	67.47 N	153.59 E

Kolyma	Roshydromet	Kolymskoe	1802	68.73 N	158.72 E
Kolyma	Roshydromet	Kolymsk-1	1803	68.73 N	158.72 E

Table 2. Discharge station information for additional rivers.

River	Collection agency	Sampling location	Station ID	Latitude	Longitude
Onega	Roshydromet	Porog	70842	63.82 N	38.47 E
Northern Dvina	Roshydromet	Ust' Pinega	70801	64.13 N	41.92 E
Mezen'	Roshydromet	Malonisogorskoye	70844	65.01 N	45.62 E
Pechora	Roshydromet	Ust' Tsilma	70850	65.42 N	52.28 E
Pechora	Roshydromet	Oksino	70827	67.63 N	52.18 E
Nadym	Roshydromet	Nadym	11805	65.62 N	72.67 E
Pur	Roshydromet	Samburg	11807	67.01 N	78.22 E
Olenek	Roshydromet	7.5 km down of Buur's mouth	3811	71.85 N	123.65 E
Yana	Roshydromet	Yubileinaya	3861	70.77 N	136.08 E
Indigirka	Roshydromet	Indigirsky	3489	64.53 N	143.12 E

In 2019 ArcticGRO added discharge data for 9 additional rivers: Onega, Northern Dvina, Mezen', Pechora, Nadym, Pur, Olenek, Yana and Indigirka (Table 2). In 2020, ArcticGRO added archival discharge data for the period of record for all rivers.

All data that have been certified by the various hydrological institutions are indicated “A” in a flag column. In addition to certified records, we also provide provisional data to update our discharge record as soon as data become available. Provisional data are indicated with letter “P” in a flag column.

The provisional data for Yukon River are obtained from the USGS water data portal at https://waterdata.usgs.gov/nwis.

The provisional daily discharge data for Mackenzie River are calculated using near real-time transmissions from hydrometric gauging station operated by the WSC.

The provisional data for Russian gauges are estimated by the Arctic and Antarctic Research Institute (AARI), St. Petersburg, Russia, based on near-real time information for water stage, river ice thickness and ice conditions, and historical data for stage-discharge relationships and dependencies of winter correction coefficients from water stage and ice thickness. Usually, the provisional data for the winter period are updated at the end of ice conditions (June-July).

All data are provided as mean daily discharge, in units of m^3 sec^{-1}, to ensure consistency across sites.