



GRDC station selection criteria

Information note on GRDC station selection criteria, data format and data transfer

I. Which information the GRDC is interested in?

The GRDC aims to maintain an up-to-date collection of world-wide data on discharge that comprehensively represents the runoff situation at a global scale. However, given the many conceivable scientific questions and applications of such data, it is not easy to define unambiguous, crisp criteria for what should go into the database and what should stay outside. On the contrary, some criteria may even be contradictory which results from different potential uses. For illustration imagine e.g. the following three examples:

- * Trend analysis for climate change which relies on long-term records of preferably undisturbed catchments, which usually implies small catchments.
- * On the other hand, the estimation of the annual freshwater flux into the oceans in the first place requires information of the large streams.
- * Forecasting tasks require up-to-date, so-called Near-Real-Time (NRT) information.

In section III of this note we therefore list criteria, which should be regarded as guidelines rather than as strict rules. We consequently ask for the provision of data which meet a few of the criteria stated there, but not necessarily all, as such stations are hardly available.

II. Metadata

Apart from the actual data, in any case the GRDC appreciates to be provided with a complete METADATA list of ALL gauging stations in a country or region as to be able to oversee and analyse the situation itself. Furthermore, on request the GRDC could thus serve the data provider as a free-of-charge advertiser and directory for his data, e.g. by putting the metadata table on the GRDC-homepage and linking to the provider.

A metadata table features row-wise all interesting information about the stations, ideally providing information under the following column heads (of which the 5 most important ones are marked by **):

(1) Basic Station Information

- station no
- station name **
- river name **
- basin name
- country name
- latitude **
- longitude **
- altitude
- catchment size **
- daily data available from
- daily data available until

GRDC operates under the auspices of the
World Meteorological Organization (WMO)
with the support of the Federal Republic of Germany
within the Federal Institute of Hydrology (BfG)

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- percentage of missing values (daily data)
- monthly data available from
- monthly data available until
- percentage of missing values (monthly data)
- mean annual streamflow

For those stations whose data series' are delivered to the GRDC we ask to be provided with a few further metadata entries:

- main stream or main basin name
- date when measurement started (YYYY-MM-DD)
- date when measurement stopped (YYYY-MM-DD)
- name or ID of succeeding station
- date of station reactivation (YYYY-MM-DD)
- information on method of measurement
- information on data quality check
- additional parameters measured?
 - + water level (y/n)
 - + water temperature (y/n)
 - + sediments (y/n)
 - + water quality parameters (y/n)

(2) Information about the Data Supplier: To establish a closer collaboration and to give feedback about the data use the GRDC needs to know your co-ordinates. (This information is only needed once per consignment!)

- The full postal address of the or-organisation handling and delivering the data **
- The name and email address of a focal point in your country **

III. Guiding criteria

The guiding criteria for the selection of a station for provision to the GRDC (only a few are sufficient to select a station) are:

- stations at rivers which reflect the hydrological regime of a region or part of a country best
- stations at rivers which are economically important in terms of population density and/or agro-based or industrial production
- last downstream stations at rivers which drain into the oceans or have an internal drainage
- stations with annual average discharge
 - greater than around 100 cbm/s
 - among the 10-50 highest in a region or country
- stations with basin sizes
 - greater than around 25.000 sqkm, if next station to the sea
 - greater than around 50.000 - 100.000 sqkm
 - among the 10-50 largest in a region or country

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- stations at rivers where the basin population is greater than 1.000.000 inhabitants
- stations of rivers in pristine basin (often very small ones)
- stations with long records, i.e. longer than 30-40 years, ideally covering the WMO periods 1931-60 and 1961-90.
- stations with up-to-date information (1990-now)
- stations which provide Near-Real-Time (NRT) access to current data, preferably via internet

IV. Method of data transfer

The favourable way of transferring data to the GRDC is email. Please note: When sending us the data by email there is a limitation of size (5 MB) for attachments in our institute. When the file size exceeds this limitation it will be possible to use FTP instead. Of course CDs, diskettes or even printed media send by postal mail are welcome, too.

V. GRDC's preferred data file format

Below we describe our preferred data and file format that will facilitate our data processing largely. However, if there are problems in generating this format, the GRDC accepts different formats, too. In this case, of course, we need a comprehensive file description.

Preferred File Format

- The file should be delivered in standard text (DOS ASCII) or MS-Excel format (*.xls).
- It is recommended to use spaces instead of tabs as column separator.
- Ideally there should be one file per station for either daily and for monthly data.
- The discharge values should be given in cbm/s.

Preferred Data Format

- Line 1: International river name in uppercase letters.
- Line 2: Station name in uppercase letters
- Line 3 to end: YYYY-MM-DD, Value (10 digits)

- Missing discharge values should be marked as -999.000.
- For monthly values please use 00 for DD.
- For daily data, please expand each month to 31 days using -10.000 or -999.000 as non-available value.

Example for a daily data file:

```
CONGO
BRAZZAVILLE
1978-01-01 1860.000
1978-01-02 1865.000
1978-01-03 -999.000
:
1978-02-30 -10.000
```

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