



# **GRDC**

## **Global Runoff Data Centre**

### **GEO**

## **User Interface Committee Meeting**

21 – 24 September 2008  
Boulder, Colorado

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Ulrich Looser





## GRDC

... the world-wide repository for river discharge data and associated metadata

...in support of Global Change Research and Integrated Water Resources Management.

Operates under the auspices of the

World Meteorological Organisation (WMO)



on the advice of an

International Steering Committee

with the financial support of the

Federal Republic of Germany



within the

Federal Institute of Hydrology



# GRDC Main functions



- Acquisition and storage of global historical and near real-time discharge data and associated metadata
- Dissemination of currently mainly historical discharge data and derived products from 7332 stations in 156 countries (“One-stop shop”)
- Support to the water and climate related programmes and projects of the United Nations and their specialised agencies
- Service to the international research community on global change
- Cooperation and participation in international projects and programmes such as:
  - GEWEX-CEOP (Global Energy and Water Cycle Experiment-Coordinated Energy and Water Cycle Observations Project)
  - GCOS (Global Climate Observing System)
  - GTOS (Global Terrestrial Observing System)
  - TOPC (Terrestrial Observation Panel for Climate)
  - **GEO (Group on Earth Observations)**

The GRDC is **not** substituting the functions of the National Hydrological Services  
Ownership of the data remains with the original Data Provider

## GRDC: Data acquisition

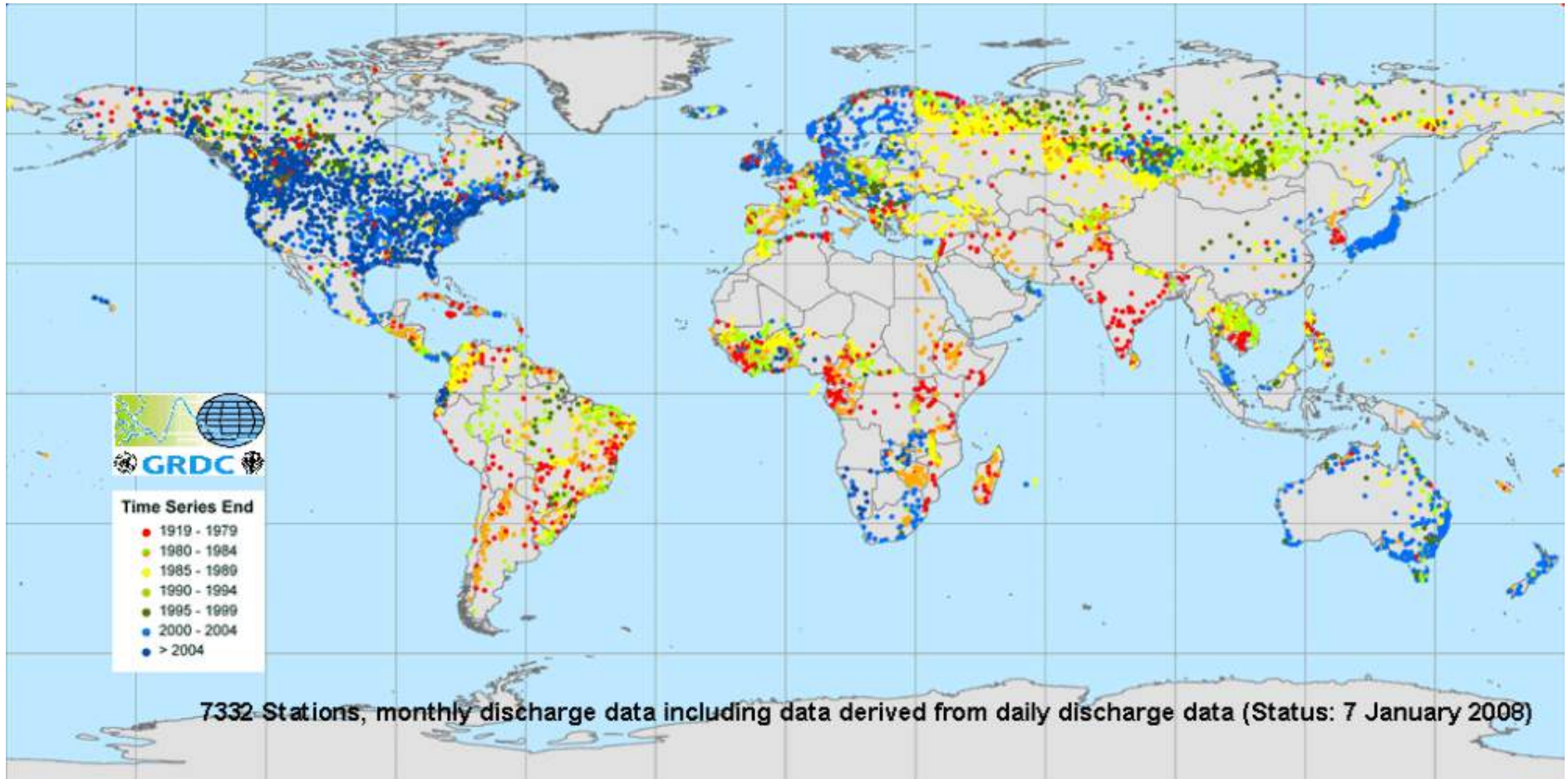


- Governed by WMO Resolutions on free and unrestricted exchange of hydro-meteorological data and support to the GRDC
- Opportunity driven
  - Maintenance of contacts with the National Hydrological Services and especially with the people within the organisations
  - In many cases not one point of contact
  - Difficulties due to changing staff and functions
- Downloads form Internet websites
  - Only a limited number of countries
  - Labour intensive process
  - Easy and reliable
- No formalised processes
  - Cooperation and resolutions are not legally binding
  - Dependent on good will and voluntary cooperation
- Different formats and standards
  - Labour intensive to incorporate data into database and ensure data quality

## GRDC: Current stations in historical database indicated by **time series end**



(monthly discharge data including data derived from daily discharge data)



# GRDC Additional Databases



- **ARDB**            **Arctic Runoff Data Base**, a GRDC contribution to ACSYS, Arctic Climate System Study (WMO – WCRP)
- **ETN-R**            **European Terrestrial Network for River Discharge**, a GRDC contribution to the European Flood Alert System (EFAS), funded by the European Commission
- **EWA**              **European Water Archive**, a GRDC contribution to the UNESCO European FRIEND research community
- **GTN-R**            **Global Terrestrial Network for River Discharge**, a GRDC contribution to the Implementation Plan for the Global Observing System for Climate and to GTN-H, sponsored by GCOS, GTOS and WMO

## **Aim:**

Access to near real-time river discharge data for selected stations around the world to capture the majority of the freshwater flux into the oceans.

## **Beneficiaries:**

Baseline river discharge network supported by the Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC (GCOS-IP)

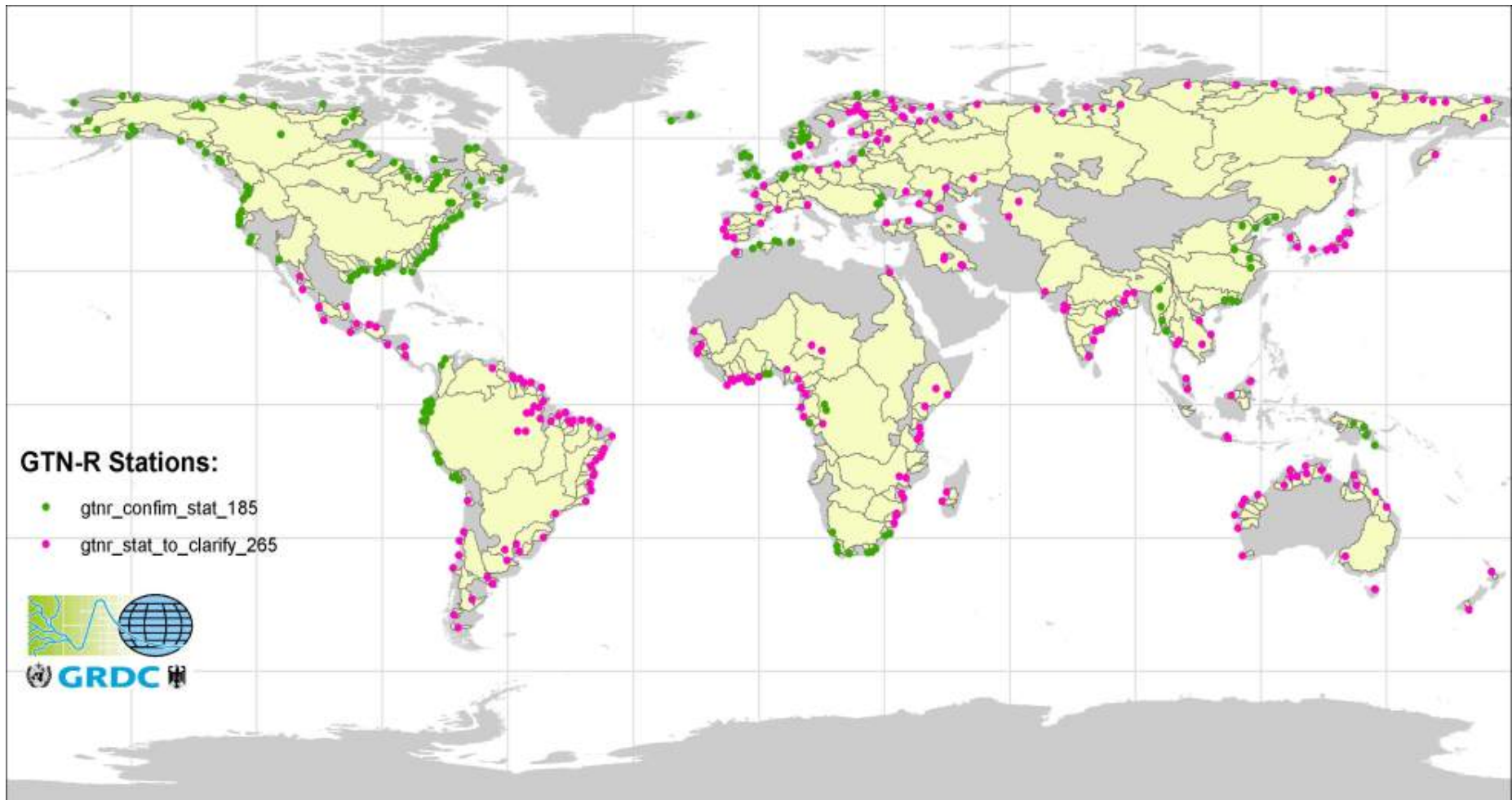
Global Terrestrial Network for Hydrology (GTN-H)

Climate and hydrological research and monitoring...

## **Network:**

Initial proposal of 380 near real-time river discharge stations by the GRDC for verification by the National Hydrological Services.

GTN-R is a GRDC contribution to the Implementation Plan for the Global Observing System for Climate and to GTN-H, sponsored by GCOS, GTOS and WMO



# GTN-R: Future Activities



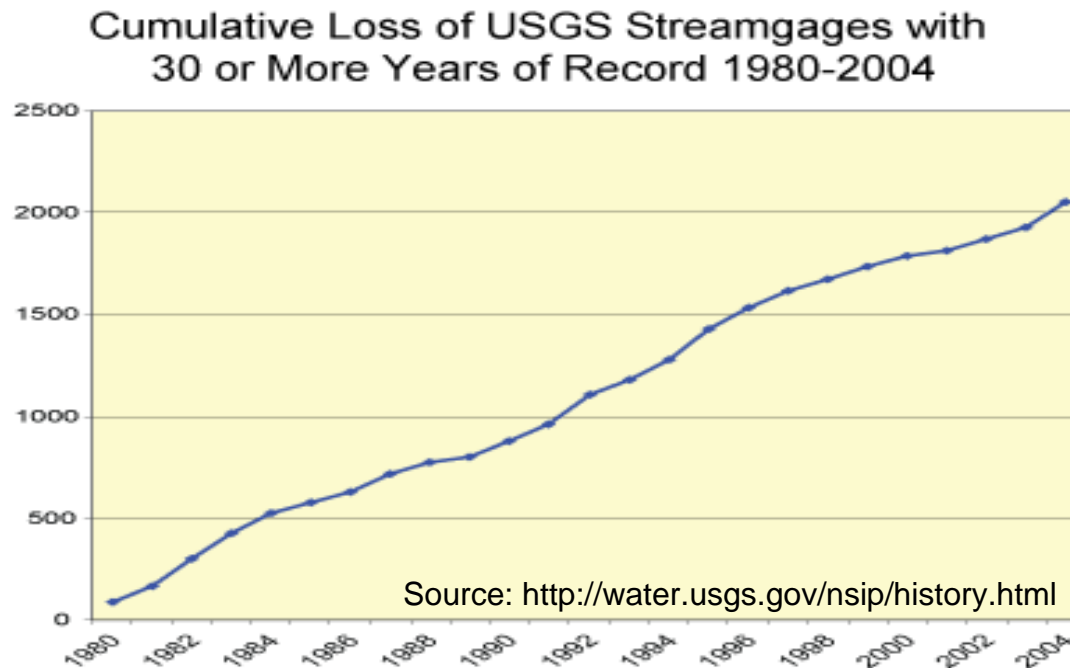
Next steps:

- Approach participating countries to inform on status and request additional metadata, time series data and access to near real-time data.
- Re-approach not participating countries to reconsider their position and to participate in the GTN-R project.
- Finalise river discharge station selection together with participating countries.
- Adopt real-time data collection software currently developed within the ETN-R project for utilisation of GTN-R data collection by December 2008.
- Investigate linkages to the HARON initiative to obtain funding

## GRDC: Growing concerns



- Outdated information on database
- Declining Hydrological Networks – example USGS



From 1980 to 2004, 2051 stream gauges with 30 or more years of stream flow record were discontinued.

At the end of 2005, 7360 stations were active

## GRDC: Partner Data Centres



### Precipitation: GPCC

**Global Precipitation Climatology Centre**

Tel.:+49-69-8062-2872

Offenbach, Germany

[gpsc@dwd.de](mailto:gpsc@dwd.de)



### Water Quality: GEMS/Water

**Global Environment Monitoring System /  
Water Programme Office of UNEP DEWA**

Tel.:+1-306-975-6047

Burlington, Ontario, Canada

<http://www.gemswater.org>



### Groundwater: IGRAC

**International Groundwater Resources Assessment Centre**

Tel.:+31-30-256-4270

Utrecht, The Netherlands

<http://www.igrac.nl>



### Lakes and Reservoirs: HYDROLARE

(almost operational)

**International Centre on the Hydrology of Lakes and Reservoirs**

Tel.:+7-812-323-1261

St. Petersburg, Russia



Thank you for your attention:

Please visit GRDC at  
<http://grdc.bafg.de>

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