

Icelandic Meteorological Office

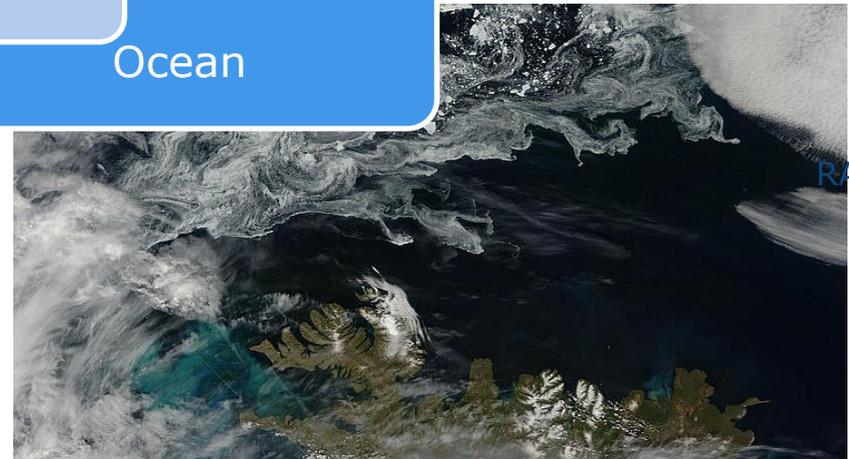
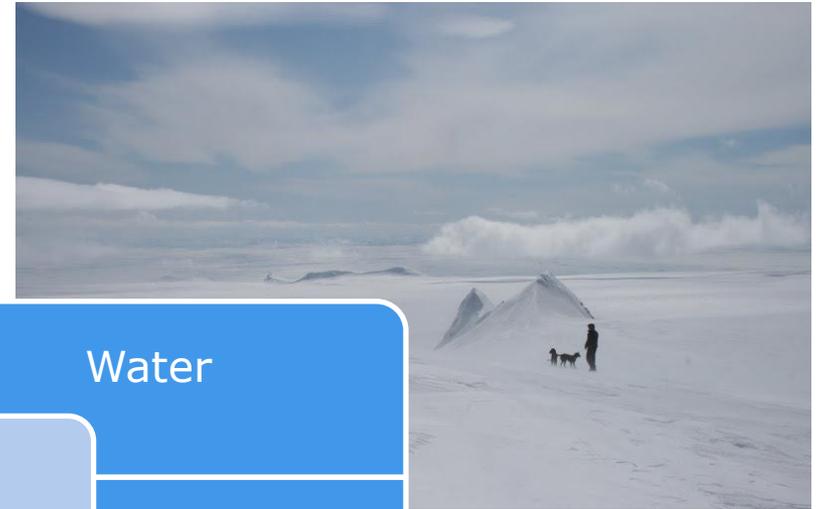
Gerður Stefánsdóttir

Environmental research, group leader

Division of Processing and research

IMO – tasks and responsibility

<http://en.vedur.is/>

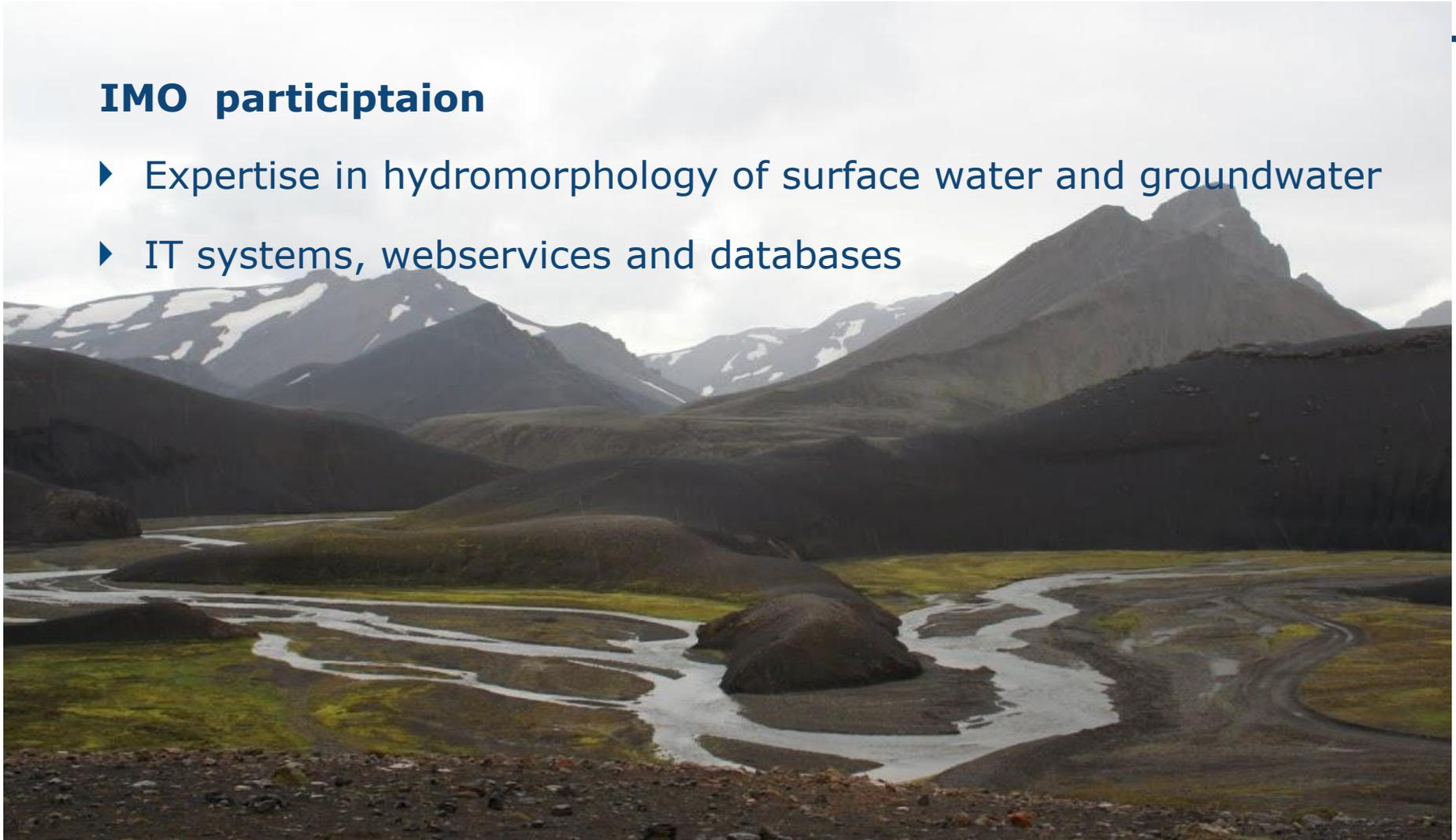


IMO and the WFD

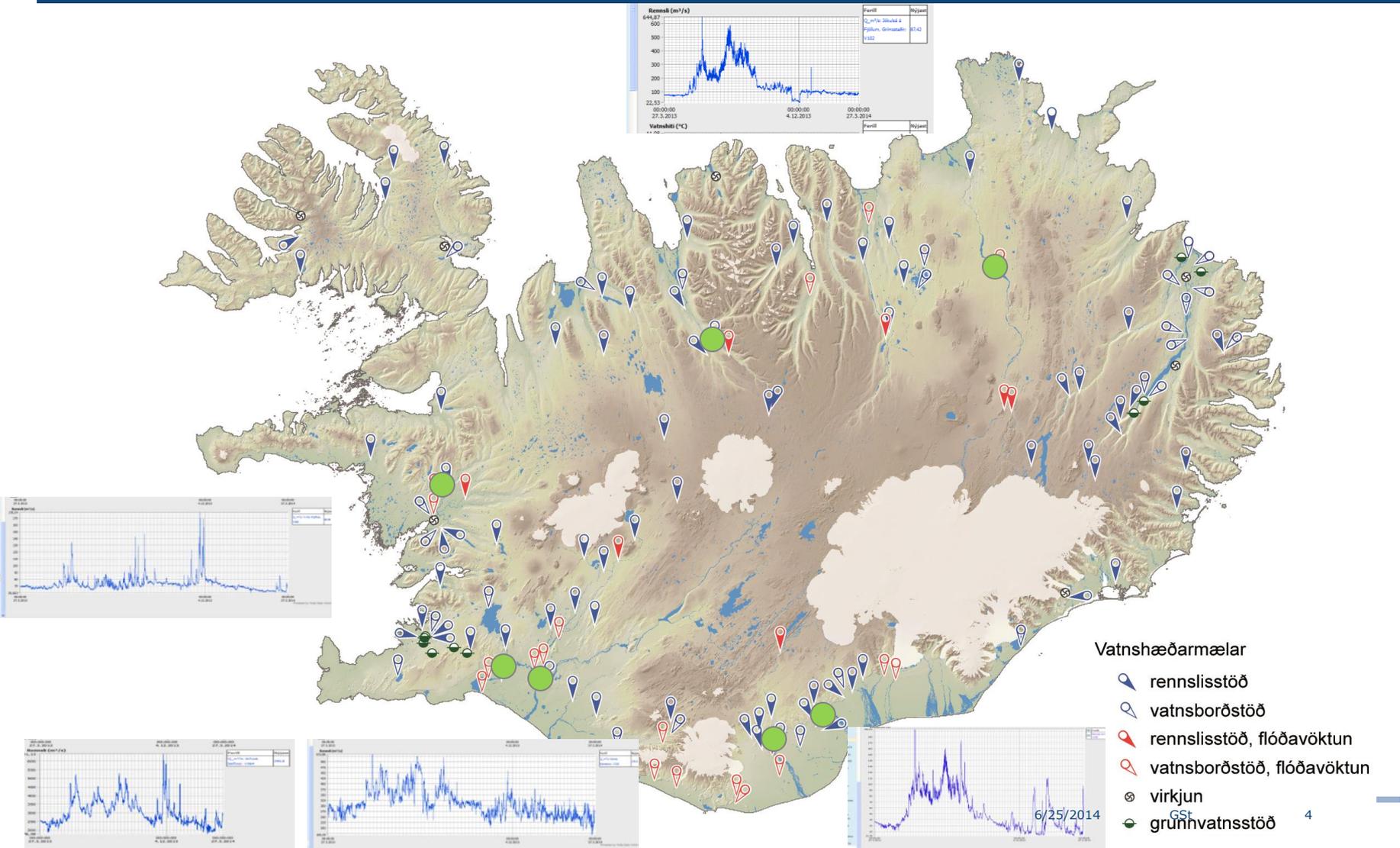
WFD implemented in Iceland in 2011

IMO participation

- ▶ Expertise in hydromorphology of surface water and groundwater
- ▶ IT systems, webservices and databases



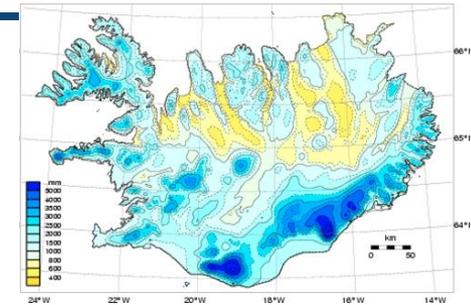
Hydrological Monitoring Network - 145 gauging stations



Monitoring - supporting water research

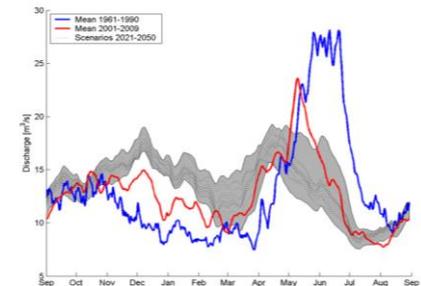
Meteorology and climatology

- ▶ Weather stations, Weather radars, Radio-sonde, Ozone, LRTP.....



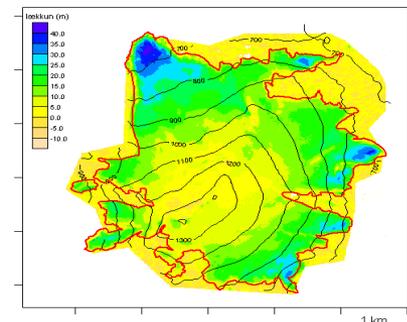
Volcanic activity

- ▶ Seismometers, GPS measurements, strain meters, Ash LIDAR, Gas measurements.....



Glaciology and snow measurements

- ▶ Glacier mass-balance models, glacier-flow models, variations of outlet glaciers, hydrology of glaciers, river channel changes....
- ▶ Snow mapping, avalanche mapping, avalanche forecasts...



IMO Hydrology

– data and deliverables

IMO knowledge and expertise beneficial for the WFD are numerous e.g:

- ▶ Experience in realtime-monitoring and dissemination of hydrological data
- ▶ Data acquisition, data processing for effective forecasts and warning system
- ▶ Modelling of diverse hydrological circumstances based on long term monitoring, floods, climate changes
- ▶ ArcGIS expertise
- ▶ Calculation of transport of suspended sediments and chemical characteristics of running waters.



Hydrological characteristics in Icelandic rivers

60% Direct runoff rivers (blue)

20% Glacier fed rivers (red)

20% Groundwater fed rivers (green)

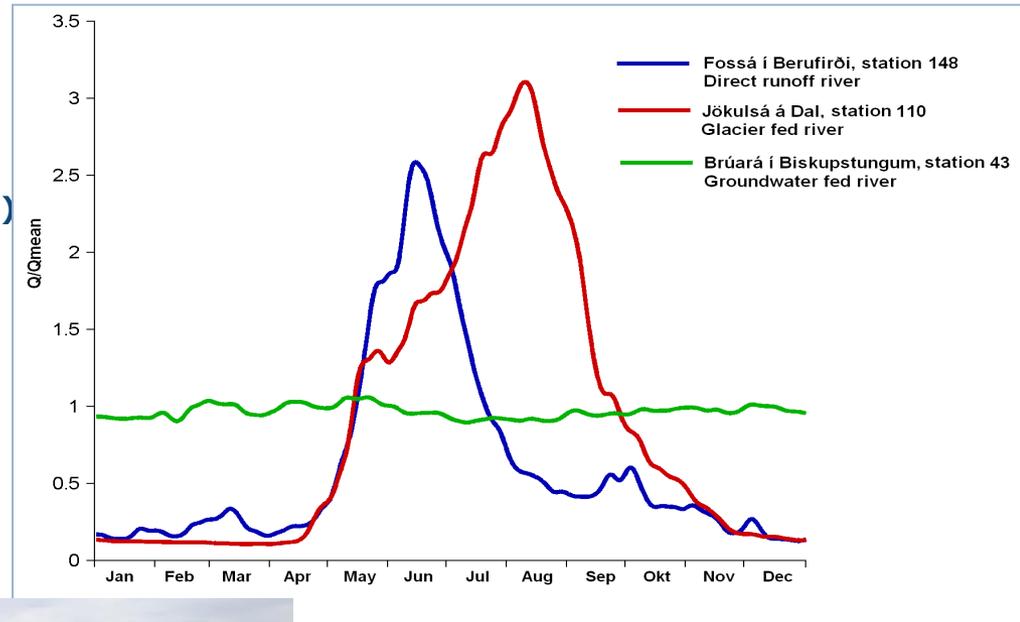


Fig. Gerður Stefánsdóttir

In Iceland one of the main pressure on waters is hydroelectrical power plants.

It is of importance to understand the key hydrological variables influencing ecosystem function and internal stability

- ▶ Impact of water source (groundwater, direct runoff)
- ▶ Discharge fluctuation, max and min, time of year
- ▶ Waterlevel fluctuation, max and min
- ▶ Impact of catchment characteristics on the ecosystem e.g.
 - ▲ Beadrock, age, type
 - ▲ Wetlands
 - ▲ Terrestrial ecosystems



Thank you

IMO homepage: <http://en.vedur.is/>



Coldwater well in the highland of Iceland

Fig Gerður Stefánsdóttir

National and international collaboration

IMO leads and/or is involved in many national, Nordic, and international research projects in IMO's fields of research, e.g.,

- ▶ Futurevolc, NERA & REAKT (EU-FP7 programs), EPOS
- ▶ SVALI & ICEWIND (Nordic Top-Research Initiatives)
- ▶ SNAPS (Northern Periphery Program)
- ▶ Several smaller research projects funded by e.g. Rannís, Iceland Power Company, Icelandic Road and Coastal Administration

IMO collaborates with many national and international institutes both in the field of research, monitoring, and forecasts, with special emphasis on natural hazards

IMO is the Icelandic contact point for WMO, ECMWF, EUMETSAT