Swedish Monitoring of Freshwater in a Source to Sea Perspective

Workshop for Monitoring and Assessment

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Swedish Water Management
– administrative and natural borders

Population, ca. 9 mill.
Counties, 21
Municipalities, 290
Major river basins, 119
River basin districts, 5
The Water Framework Directive

1. Perform an impact analysis
2. Draw up representative monitoring programmes
   - Surveillance monitoring
   - Operational monitoring
   - Quantitative monitoring
3. Decide the objective for each water body
4. Determine ecological status
5. Establish a programme of measures
6. Use monitoring data to follow up on the measures
Time series in 108 lakes: monitoring to follow diffuse trends

Water chemistry incl. metals
Fish, benthic fauna, zooplankton, phytoplankton, macrophytes

Samplings since 1980, a few older, about 20 more recent

Rotation cycle in 4800 lakes: spatial monitoring
Water chemistry once a year in 800 lakes
Programme started 2007
Time series in 69 water courses
- water chemistry and heavy metal pollutants
- biology

Time series in 47 river mouths
- water chemistry
- heavy metals and organic pollutants
Torne River Basin: a system of several rivers, the largest are Torne and Muonio
Torne and Muonio Rivers

- Shared between Sweden and Finland
- A joint body: a commission with a permanent secretariat
- Very low anthropogenic impact from:
  - Atmospheric deposition
  - Agriculture adding nutrients
  - Metal deposition from mining in both countries
- Monitoring water flow; shared data
- Agreement from 2013 particularly detailed on transboundary impact and fishing regulations
River Klarälven - Göta älv

- Shared between Sweden and Norway
- No permanent joint body but regular cooperation between water authorities
- Anthropogenic impact from:
  - Forestry
  - Hydropower
  - Agriculture in the lower end
  - Atmospheric deposition of S and N
- Monitoring in both countries; shared and open data
Influx of Nitrogen and Phosphorus from the drainage area to the river
Monitoring responsibility: a question of scale and purpose

- SwAM and SEPA (national programs)
- County Administrative Boards (regional programs)
- Municipalities (monitoring of recipients, drinking water, follow-up of measures)
- Operators (via water organisations)
Example: 24 sampling stations from the sources (mountain springs and lakes) to the sea.
Total phosphorus

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Map showing regions with varying levels of total phosphorus.
Quality system for monitoring

• Governmental agencies publish approved and standardised methods on their web-sites
• All laboratories and personnel engaged in sampling, chemical analyses, biological species determination, etc, are accredited and/or certified
• All data produced by these methods and labs is managed by data hosts
• The data hosts provide websites where the data is open and free for all to use.
SE data and information infrastructure and public participation

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Thank you!

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