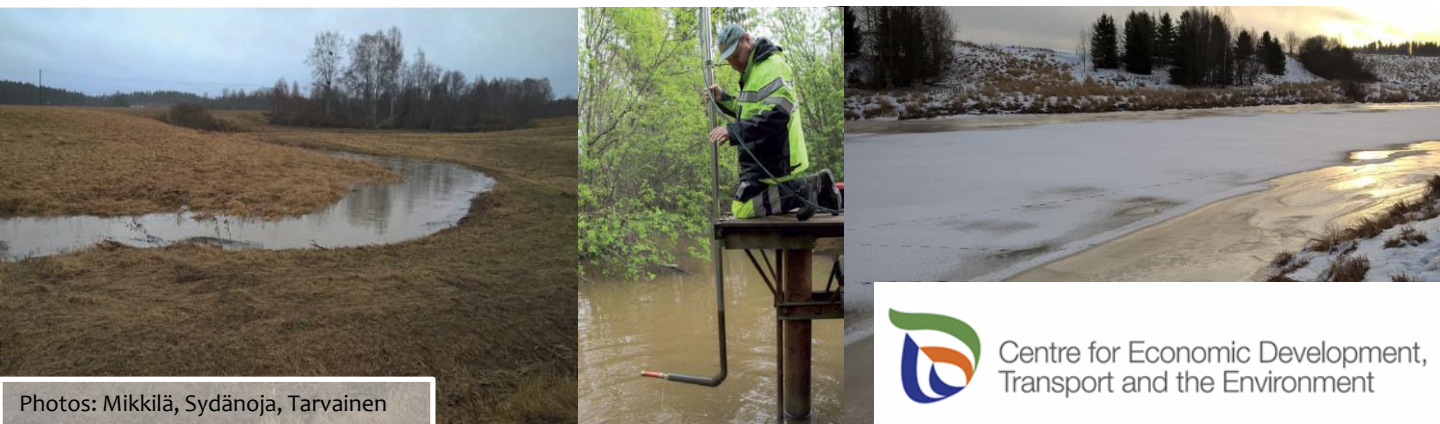


Nutrient monitoring network in Southwest Finland; Centre for Economic Development, Transport and the Environment



Photos: Mikkilä, Sydänoja, Tarvainen



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Transport and the Environment

- Over the years, a network of continuous water quality monitoring stations has been established in the area of the ELY Center of Southwest Finland, comprising eight (8) water quality stations in the rivers.
- The main source of external nutrient loading is agriculture.
- The main purpose of the measurements is to monitor the water quality and to define the nutrient and suspended solids loading from the rivers into the sea.
- On-line water quality monitoring is already in use for most of the significant rivers in the area.
- On-line systems produce information on water turbidity and nutrient concentrations every half an hour. Total nutrients and suspended solids are calculated from functions of turbidity using regression equations.
- These systems give a better picture of the quality of water and its variation than traditional laboratory analyses from water samples, which can not be used very often because of costs.
- The system provides more frequent information of water quality, the amount of nutrients transported into the sea and the effectiveness of water protection measures.
- In order to calibrate the on-line results, water samples are also analyzed in the laboratory from each measuring station.
- Good experience has been gained from continuous measurement.

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Measurement

- ◆ Measurable variables:
 - oxygen,
 - electrical conductivity,
 - temperature,
 - turbidity,
 - nitrate,
 - organic carbon compounds (TOC + DOC)
- ◆ In addition to permanent water quality stations, ELY has mobile field gauges. Currently there is a CastAway CTD probe that measures water conductivity, temperature and depth of water. Another moveable field meter measuring water quality is YSI's ProOdo, which can measure temperature, electrical conductivity, dissolved oxygen, pH and nitrate.
- ◆ Measuring devices: Mainly S::can and also YSI probe in one spot
- ◆ Electricity is taken from the grid
- ◆ Conversion equations calculate the concentration of solids, total phosphorus and total nitrogen
- ◆ Optical probes
- ◆ All stations are located in the rivers
- ◆ Measurements all year round
- ◆ Measuring in water (water is not pumped to the beach)

Measuring place	Variables	Founded
Kokemäenjoki	T, tu, N, DOC, TOC, sl	2016
Eurajoki 1	T, tu, N	2009
Eurajoki 2	T, tu, N, O2, EC, sl	2013
Loimijoki	T, tu, N, sl	2009
Yläneenjoki	T, tu, N, sl	2012
Paimionjoki	T, tu, N, sl	2016
Aurajoki	T, tu, N, sl	2009
Uskelanjoki	T, tu, N, sl, EC	2016

MORE INFORMATION

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T= Temperature, tu= turbidity, N=Nitrate, sl=surface level, EC = electrical conductivity



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