

AquaNet

Standardized infrastructure for Lake Mesocosm studies

[AquaNet](#) is a unique infrastructure that is part of [SITES](#) to which international and national researchers can apply to run mesocosms and other experiments at five radically different Swedish lakes located from 57°N to 64°N.

The intention is to have a standardized set-up at each lake that consists of a raft with 16-20 mesocosms. Real time environmental data such as dissolved oxygen, temperature, photosynthetic active radiation, chlorophyll, phycocyanin and turbidity are available in each mesocosm at a 1-minute interval.

The infrastructure was established in 2017 and used in experiments. The experiments investigated the interactive effects of bottom-up, a reduction in light availability (figure 2), and top-down, fish predation, disturbances on the stability of plankton community composition (bacterio-, phyto- and zoo-plankton) and ecosystem functioning.

Aanderaa delivered [Oxygen Optodes](#) (model 4531) for the project with 100 of them used in last year's fieldwork. Loggers from [Campbell Scientific](#) recorded data from all sensors. At one station the serial signals (RS232) from the optodes were registered, passing through a [MOXA multiplexer](#). At the other 4 stations the analog outputs were logged in 2 channels, one for oxygen and the other for temperature.

For more information and questions please contact us at aanderaa@xylem.com.

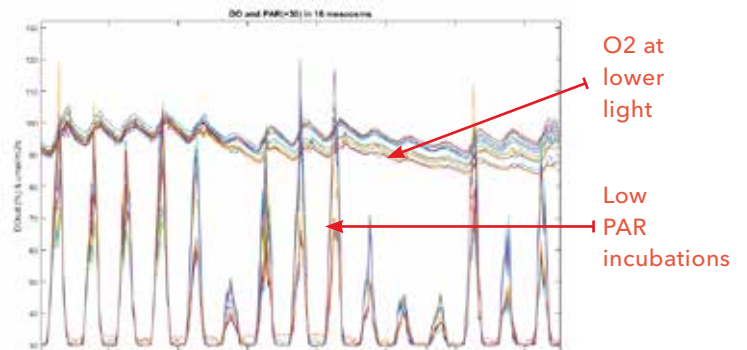
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Δ Fig 3: Test site



Δ Fig 1: Mesocosm with sensors out



Δ Fig 2: Example of O2 & PAR from one of the sites

Aanderaa plays an active role in AquaNet advising on how to maximise the data quality of the oxygen measurements, summarised in a project specific Best Practice document.

- Rafts in 5 lakes
- 16-20 mesocosms on each raft
- In each mesocosm, O2, PAR, Turb, Chla, Blue Green algae
- Other measurements available

