

Supplementary Material

1 SUPPLEMENTARY TEXT

1.1 gas chromatography

A 10mL sample was injected into a sample loop and separated on to the detector by nitrogen as carrier gas. To separate methane and carbon dioxide a PoraPakQ column was used and carbon dioxide was methanized with an nickel catalyst. Before each use the gas chromatograph was calibrated using three control concentrations per measured gas.

2 SUPPLEMENTARY FIGURES AND TABLES

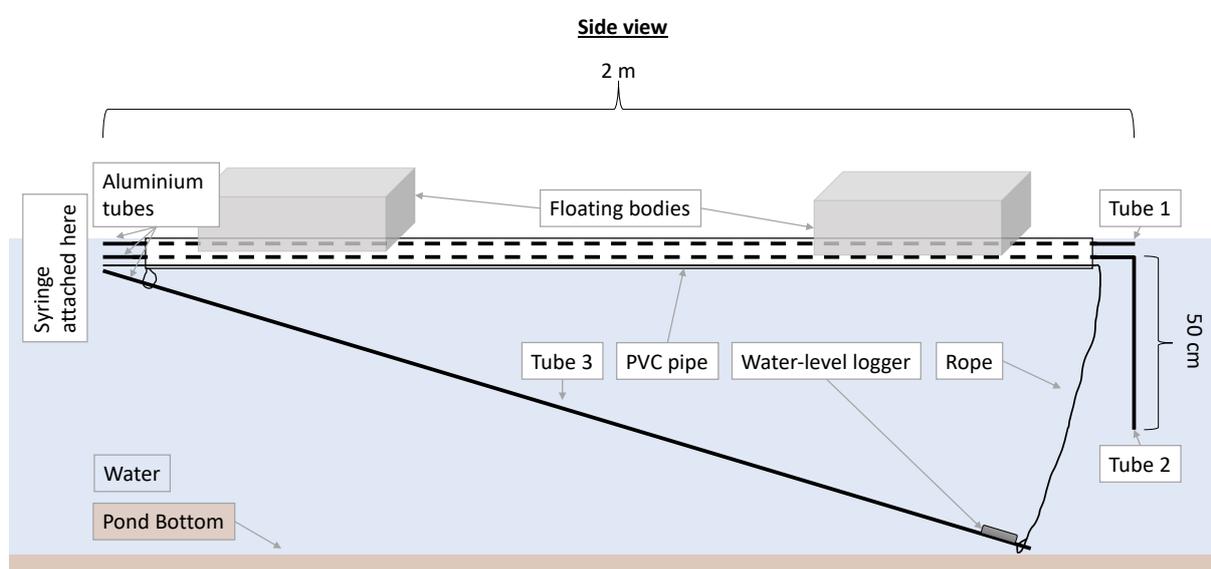


Figure S1. Sketch of water sampling device. Water samples are taken through three aluminum tubes, which is fixed to a larger 2 m pipe. Two tubes are within the pipe (Tube 1 and 2) and one attached to the outside of the pipe (Tube 3). Tube 1 is used to sample the surface water and is located at 5 cm below the water surface. Tube 2 is used to sample water at 50 cm depth. Tube 3 can be lowered to the bottom of the pond by releasing the rope. A water-level logger Mini-Diver (DI501, Schlumberger Water Services, Netherlands) is attached to the end of this tube, to measure the depth at which the sample was taken. To keep the pipe afloat, two floating bodies are attached.

Table S1. Quality control of a selection of small and round ponds. Diameter was measured several times along different section over each pond. Using the mean diameter and the assumption that the pond is a perfect circle, the approximated area was computed. The relative difference between approximated area and the area retrieved from the orthophoto map differ between 20% and 2% indicating that both methods provide comparable results.

Pond	Mean measured diameter [m]	Approx. area [m ²]	Area from imagery [m ²]	Relative difference [frac.]
2	8.2	53.0	44.6	-0.19
3	11.3	99.8	93.7	-0.06
13	6.7	34.7	31.1	-0.12
16	13.4	140.3	127.9	-0.10
22	12.4	120.8	117.9	-0.02
27	9.8	74.9	78.1	0.04

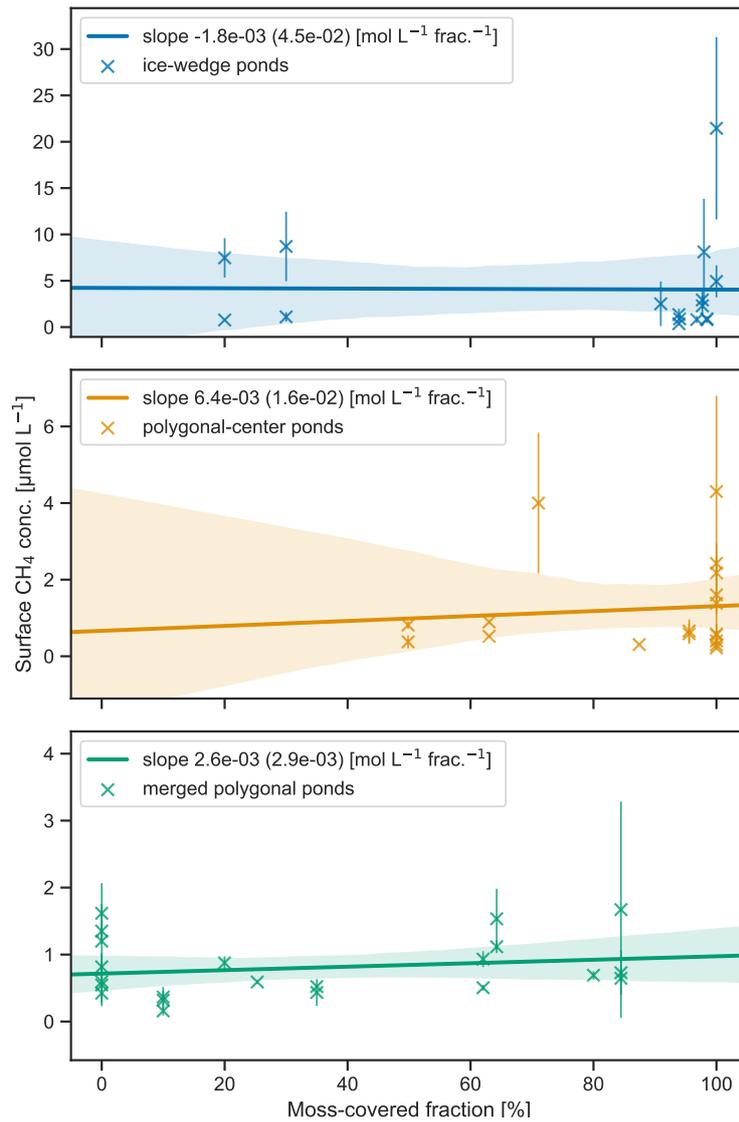


Figure S2. Methane surface concentrations in each pond type as a function of the moss-covered fraction of each pond. Shaded area indicates the 95% confidence bands.