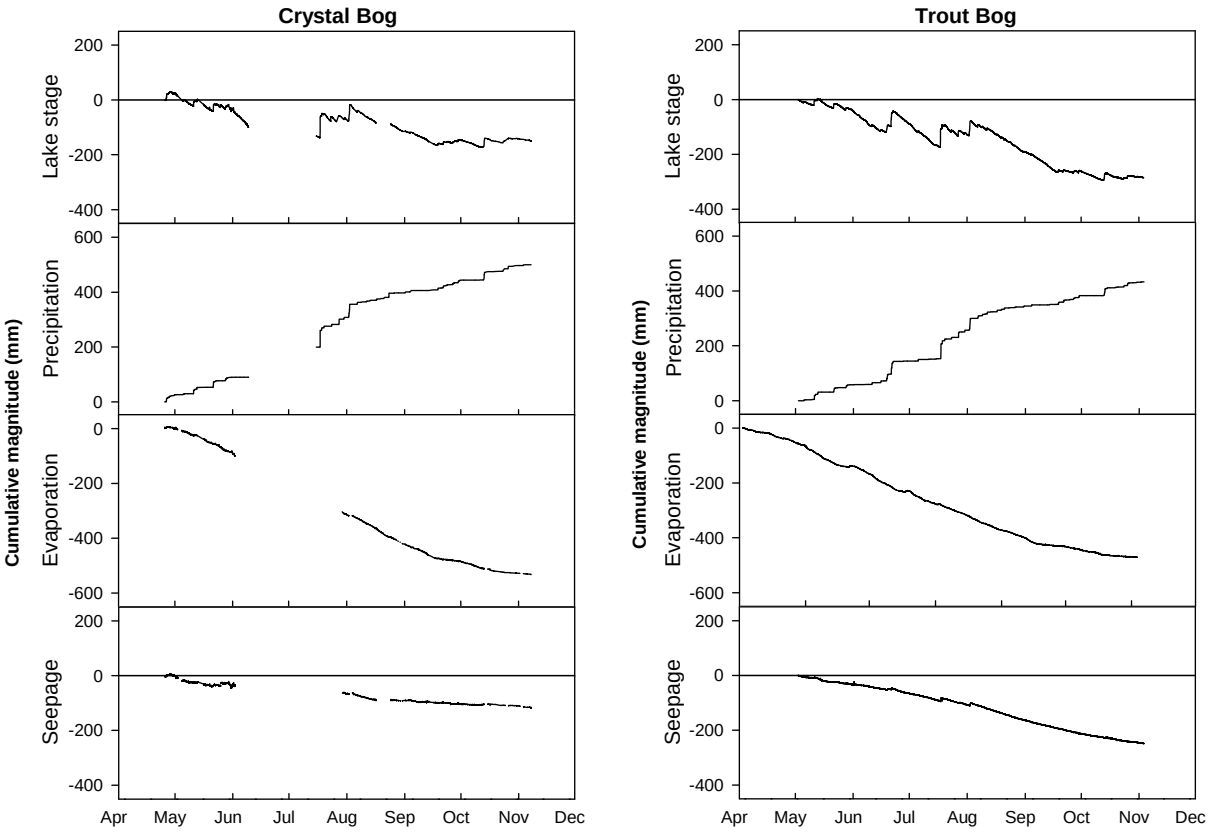
Data from 2011

Water Budgets and Water Table Data – 2011. The continuous monitoring of lake levels, wetland water tables, precipitation and evaporation with embedded sensors began during April in Trout Bog and Crystal Bog. Monitoring ended in early November. Over this time period, data were collected at 15 to 30 minute time intervals, except for precipitation which was monitored on an event basis (0.25 mm per event). In Crystal Bog, the WSN malfunctioned during June and July, so there is a gap in data. Comparative water budgets for the two wetland-dominated lakes (below) indicate that water levels declined throughout the sampling period except during precipitation events. The flowpath for both systems was consistently from the lake into the wetland except for small reversals associated with precipitation events. As in 2010, direct precipitation was by far the dominant source of water for both lakes, and evaporation back to the atmosphere was the dominant loss process.

Comparative Water Budgets 2011



Monthly Water Budget: Trout Bog 2011

Monthly Totals (mm)

Month	# days	Δ Storage	Precipitation	Evaporation	net Seepage
May	29	-41.3	58.4	-65.3	-34.4
June	30	-47.5	85.6	-101.7	-31.4
July	31	-39.1	112.8	-110.2	-41.7
August	31	-62.5	88.1	-94.4	-56.2
September	30	-71.1	38.4	-60.3	-49.2
October	31	-20.9	48.8	-36.9	-32.8
November	3	-3.0	1.3	-1.5	-2.8
Total	**185**	**-285.4**	**433.3**	**-470.2**	**-248.5**

Daily mean (mm/d)

Month	# days	Δ Storage	Precipitation	Evaporation	net Seepage
May	29	-1.4	2.0	-2.2	-1.2
June	30	-1.6	2.9	-3.4	-1.0
July	31	-1.3	3.6	-3.6	-1.3
August	31	-2.0	2.8	-3.0	-1.8
September	30	-2.4	1.3	-2.0	-1.6
October	31	-0.7	1.6	-1.2	-1.1
November	3	-1.2	0.5	-0.6	-1.1
Total	**185**	**-1.5**	**2.3**	**-2.5**	**-1.3**

Monthly Water Budget: Crystal Bog 2011

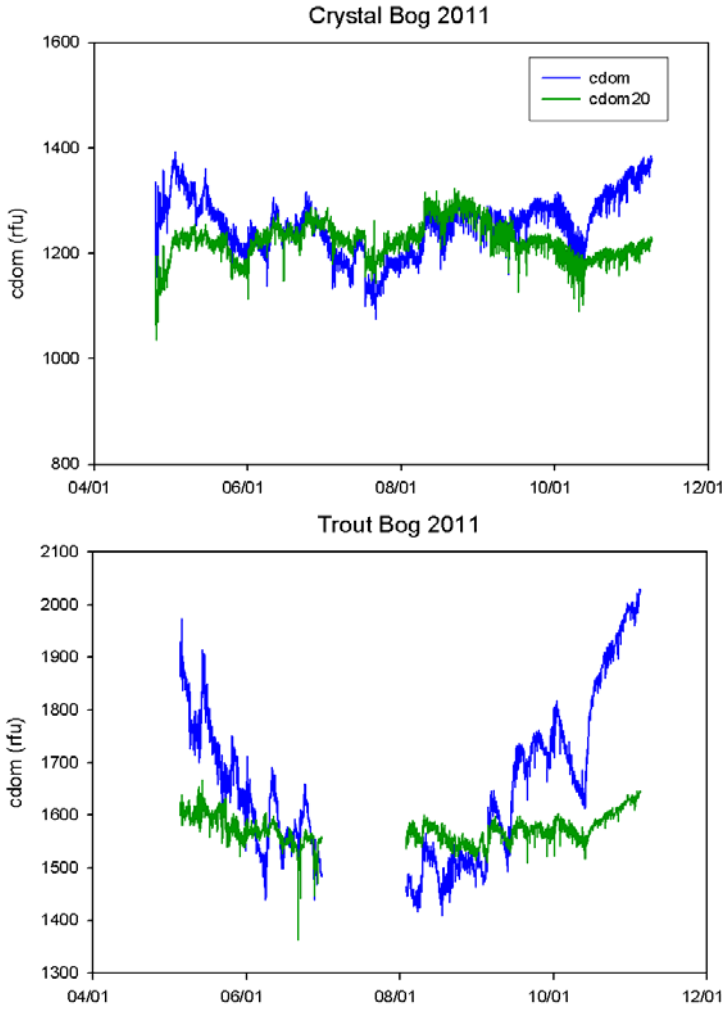
Monthly Totals (mm)

Month	# days	Δ Storage	Precipitation	Evaporation	net Seepage
April	5	24.3	25.9	0.2	-1.8
May	31	-56.5	63.8	-91.1	-29.1
June	1	-14.7	0.0	-8.7	-6.0
July	3	-7.7	6.1	-11.0	-2.8
August	31	-40.5	89.2	-105.9	-23.8
September	30	-31.9	46.5	-64.2	-14.2
October	31	4.6	53.6	-43.0	-6.0
November	6	-7.4	2.5	-4.7	-5.2
Total	**196**	**-149.3**	**499.7**	**-532.8**	**-116.1**

Daily mean (mm/d)

Month	# days	Δ Storage	Precipitation	Evaporation	net Seepage
April	5	4.5	4.8	0.0	-0.3
May	31	-1.8	2.1	-2.9	-0.9
June	1	-11.0	0.0	-6.5	-4.5
July	3	-2.9	2.3	-4.2	-1.1
August	31	-1.3	2.9	-3.4	-0.8
September	30	-1.1	1.6	-2.1	-0.5
October	31	0.1	1.7	-1.4	-0.2
November	6	-1.2	0.4	-0.7	-0.8
Total	**196**	**-0.8**	**2.5**	**-2.7**	**-0.6**

CDOM Data - 2011. Sensors deployed in the open waters of Crystal Bog (CB) and Trout Bog (CB) monitor CDOM fluorescence (chromophoric dissolved organic carbon) at 30 minute intervals. The sensors are suspended from the GLEON buoy (www.gleon.org) in the center of each bog at a depth of 0.5 m below the water surface. The CDOM sensor in CB is a TurnerDesigns C3, and the sensor in TB is a SeaPoint UV Fluorometer. The SeaPoint sensor is configured with a flowcap through which water is pumped using a SeaBird 12v submersible pump. The sensors were calibrated in TB water prior to deployment to ensure comparability. The raw data (CDOM in blue) and temperature compensated data (Watras *et al.*, 2011) (CDOM20 in green) from both sensors are shown below.



CJ Watras, PC Hanson, TL Stacy, KM Morrison, J. Mather, Y-H Hu and P Milewski. 2011. A temperature compensation method for CDOM fluorescence sensors in freshwater. *Limnology and Oceanography: Method*s 9:296-301. (DOI 10.4319/lom.2011.9.296)