

Lake Lacawac, Bruce R. Hargreaves, Lehigh University (brho@lehigh.edu, http://www.lehigh.edu/~brho) 41°25.2'N 75°17.3'W elevation 428m  
 18 Apr 2014, 10:40-11:40am EDT: platform moved to lake center 10Nov 2014: platform move to dock 11:05-11:55 EDT  
 The water level sensor (referenced to dock) settles for several days after moving platform to lake center and thus underestimates water level during this period.

H310 sensor depth & Lake level are based on differential pressure sensor with ca 0.1mm resolution & vertical position referenced to bottom of lake.  
 Sensor PSIG converted to depth using density of water at 40C (1.43321 psim)  
 Lake level is referenced also to lower frame of dock at SE corner (2003-May2005)  
 (Actual water level at dock varies seasonally with density of water column and hourly from precip. runoff, evaporation, seepage & outflow. Outflow also varies with status of beaver dam).

Month	avg Tw	Tair avg C	Tair Hi-C	Tair Min-C	RH%ave	Rain-mm	WS Max-mph	WS Min-mph	WDIR-deg	Barom-mb	Sum Rad W/m2	Sum PAR μMol/m2/s	Tw 0.1m	Tw 0.5m	Tw 1m	Tw 2m	Tw 3m	Tw 4m	Tw 5m	Tw 6m	Tw 8m	Tw 10m	Tw 12m	Lakelevel-mm (40C)	cumul. rain-mm	Batt min-V	RH% CR10	RH% MUX		
month	(All)	3.3	-6.9	2.9	-23.8	69.1	16.0	1.9	12.9	229.4	963.9	289831084	552	-0.5	2.4	3.1	3.3	3.5	3.4	3.2	3.4	3.6	3.4	3.5	2.1	11.0	16.0	12.3	15.4	15.6

PAR & PYR Integration period=15min instead of 60min after 11am on 9/11/2013

Location	% records	Date	Tair avg-C	Tair Hi-C	Tair Min-C	RH%ave	Rain-mm	WS Max-mph	WS Min-mph	WDIR-deg	Barom-mb	Sum Rad J/m2	Sum PAR μMol/m2/s	Tw 0.1m	Tw 0.5m	Tw 1m	Tw 2m	Tw 3m	Tw 4m	Tw 5m	Tw 6m	Tw 8m	Tw 10m	Tw 12m	H310 depth-mm (40C)	Lakelevel-cumul. rain-mm (40C)	Batt min-V	RH% CR10	RH% MUX		
ND	100%	2/1/2015	32	-5.7	-2.2	-16.8	78.5	0.1	1.5	5.2	232	966.2	5842735	11.9	-0.29	2.67	3.25	3.26	3.52	3.30	3.18	3.39	3.47	3.5	3.67	2.1	7.9	0.100	12.5	14.4	15.7
ND	100%	2/2/2015	33	-7.6	-3.2	-14.4	97.0	0.0	3.0	6.2	170	950.9	1925956	4.5	-0.23	2.65	3.25	3.26	3.47	3.25	3.16	3.35	3.46	3.5	3.60	2.1	23.5	0.100	12.3	14.6	14.9
ND	100%	2/3/2015	34	-11.3	-5.9	-14.2	68.2	0.0	2.2	11.0	289	987.0	11305762	21.3	-0.14	2.74	3.25	3.26	3.46	3.25	3.16	3.33	3.48	3.5	3.60	2.1	26.7	0.100	12.3	15.8	15.4
ND	100%	2/4/2015	35	-3.6	2.9	-13.3	66.7	1.6	0.9	5.7	255	985.5	4760194	9.8	-0.14	2.70	3.24	3.26	3.50	3.30	3.17	3.39	3.53	3.5	3.50	2.1	23.5	1.700	12.5	14.1	14.8
ND	100%	2/5/2015	36	-8.2	0.7	-15.4	67.0	0.0	3.6	11.8	320	963.4	10434772	19.4	-0.16	2.69	3.23	3.27	3.45	3.25	3.17	3.34	3.50	3.4	3.45	2.1	21.2	1.700	12.4	14.8	14.9
ND	100%	2/6/2015	37	-12.7	-6.6	-11.6	61.3	0.0	1.7	8.9	272	965.7	10211531	19.1	-0.12	2.66	3.22	3.27	3.49	3.27	3.17	3.36	3.53	3.4	3.49	2.1	19.0	1.700	12.4	16.2	16.1
ND	100%	2/7/2015	38	-3.6	1.9	-9.6	60.3	1.6	1.0	5.0	251	963.4	5510123	11.6	-0.11	2.60	3.19	3.27	3.52	3.31	3.17	3.31	3.57	3.5	3.46	2.1	17.4	3.300	12.5	13.9	14.7
ND	100%	2/8/2015	39	-0.1	2.5	-2.3	75.1	3.9	0.7	4.1	80	958.5	4066330	8.8	-0.11	2.57	3.17	3.28	3.56	3.35	3.17	3.34	3.65	3.5	3.51	2.1	16.1	7.200	12.4	13.1	14.1
ND	100%	2/9/2015	40	-5.2	-0.6	-7.0	97.5	0.2	1.8	4.1	95	961.0	1688822	3.8	-0.05	2.53	3.16	3.29	3.55	3.37	3.17	3.35	3.50	3.5	3.50	2.1	21.5	7.400	12.3	14.0	14.4
ND	100%	2/10/2015	41	-4.7	-2.0	-7.0	90.8	0.0	1.4	5.1	161	964.6	5969165	13.0	-0.10	2.49	3.13	3.28	3.50	3.37	3.16	3.41	3.64	3.5	3.47	2.1	20.5	7.400	12.3	14.0	14.5
ND	100%	2/11/2015	42	-6.0	0.6	-13.7	80.6	4.2	0.5	3.1	160	962.6	12505837	25.0	-0.09	2.46	3.12	3.29	3.45	3.40	3.18	3.43	3.65	3.5	3.55	2.1	17.9	11.600	12.3	15.0	15.0
ND	100%	2/12/2015	43	-5.0	-2.1	-15.6	80.6	0.0	2.2	11.0	286	955.8	4509900	9.1	-0.07	2.43	3.10	3.30	3.47	3.41	3.20	3.49	3.68	3.4	3.56	2.1	17.0	11.600	12.4	14.1	14.4
ND	100%	2/13/2015	44	-16.6	-12.0	-19.8	61.0	0.0	3.2	10.7	300	963.9	14190487	27.1	-0.05	2.42	3.09	3.29	3.46	3.39	3.19	3.36	3.56	3.4	3.58	2.1	15.5	11.600	12.4	16.9	16.1
ND	100%	2/14/2015	45	-11.3	-7.5	-19.9	75.3	0.0	0.9	10.5	222	953.1	4222404	8.7	-0.08	2.38	3.07	3.29	3.47	3.43	3.20	3.44	3.66	3.4	3.62	2.1	14.0	11.600	12.4	15.7	15.7
ND	100%	2/15/2015	46	-16.9	-11.1	-21.4	69.1	0.0	5.5	12.9	318	957.1	13798444	25.1	-0.12	2.37	3.07	3.28	3.46	3.36	3.19	3.34	3.54	3.4	3.58	2.1	14.0	11.600	12.4	16.8	15.9
ND	100%	2/16/2015	47	-17.3	-12.3	-22.3	58.9	0.0	2.9	9.7	309	965.2	12742834	23.4	-0.07	2.35	3.06	3.31	3.48	3.43	3.19	3.38	3.60	3.4	3.57	2.1	14.0	11.600	12.4	17.0	16.6
ND	100%	2/17/2015	48	-12.0	-5.3	-16.9	70.3	0.9	0.9	4.8	158	957.9	13392659	24.6	-0.08	2.33	3.05	3.32	3.47	3.42	3.19	3.43	3.67	3.4	3.59	2.1	10.7	12.500	12.4	15.8	15.4
ND	100%	2/18/2015	49	-11.5	-3.0	-21.3	65.7	0.2	0.6	7.3	180	954.8	14212909	26.2	-0.09	2.30	3.05	3.32	3.48	3.43	3.23	3.49	3.68	3.4	3.55	2.1	9.2	12.700	12.5	16.1	16.0
ND	100%	2/19/2015	50	-14.1	-10.6	-19.3	62.5	0.0	3.9	10.8	306	955.5	12488847	23.2	-0.07	2.30	3.05	3.32	3.49	3.42	3.20	3.36	3.60	3.4	3.57	2.1	7.9	12.700	12.5	16.1	15.8
ND	100%	2/20/2015	51	-18.6	-12.9	-22.5	55.1	0.0	3.3	12.0	297	967.2	16315604	29.2	-0.07	2.28	3.04	3.34	3.50	3.44	3.23	3.39	3.60	3.4	3.60	2.1	5.5	12.700	12.4	17.4	16.9
ND	100%	2/21/2015	52	-11.9	-5.5	-19.8	68.6	0.0	0.9	5.8	228	969.9	4364397	9.3	-0.07	2.25	3.02	3.33	3.50	3.45	3.22	3.48	3.65	3.4	3.56	2.1	4.2	12.700	12.4	15.8	15.2
ND	100%	2/22/2015	53	-18.8	-2.9	-5.4	81.0	3.3	1.3	6.1	280	967.1	10870413	21.2	-0.10	2.22	2.99	3.34	3.49	3.44	3.21	3.57	3.70	3.4	3.59	2.1	5.3	16.000	12.4	13.8	14.4
ND	100%	2/23/2015	54	-11.7	-2.6	-20.4	55.7	0.0	3.6	10.8	305	971.3	16110416	29.6	-0.08	2.21	3.00	3.33	3.51	3.44	3.21	3.50	3.63	3.4	3.59	2.1	3.3	16.000	12.5	15.6	15.6
ND	100%	2/24/2015	55	-14.6	-6.5	-23.8	48.0	0.0	0.9	6.1	214	964.7	16461999	29.9	-0.09	2.19	3.00	3.34	3.51	3.48	3.25	3.61	3.71	3.4	3.54	2.1	1.8	16.000	12.5	16.5	16.8
ND	100%	2/25/2015	56	-6.9	-0.8	-13.8	55.2	0.0	1.7	8.6	252	955.9	16749370	31.6	-0.10	2.18	3.00	3.33	3.51	3.47	3.23	3.59	3.68	3.4	3.53	2.1	-0.2	16.000	12.5	14.8	15.4
ND	75%	2/26/2015	57	-9.6	-5.9	-11.7	64.2	0.0	1.7	5.2	164	961.4	8630343	17.9	-0.12	2.15	2.98	3.34	3.51	3.45	3.23	3.63	3.71	3.4	3.51	2.1	-2.0	16.000	12.5	14.9	15.5
ND	100%	2/27/2015	58	-11.9	-7.1	-15.9	63.2	0.0	1.8	7.3	295	973.1	17965400	33.3	-0.12	2.13	2.97	3.34	3.52	3.44	3.24	3.63	3.71	3.4	3.56	2.1	-3.4	16.000	12.5	15.7	16.1
ND	100%	2/28/2015	59	-12.5	-5.2	-18.4	55.2	0.0	1.2	4.9	246	984.8	18475518	34.1	-0.12	2.12	2.97	3.36	3.54	3.45	3.26	3.66	3.75	3.4	3.53	2.1	-6.0	16.000	12.5	15.0	15.7
NA	0%	3/1/2015	60	-15.7	-15.7	-15.7	73.4	0.0	0.0	0.0	0	984.6	90	0.0	-0.15	2.12	2.95	3.40	3.58	3.44	3.29	3.68	3.74	3.4	3.49	2.1	-5.6	16.000	12.6	17.4	17.4

Ratio of lake watershed to lake area	2.6176758	Runoff & seepage as % of watershed area precip	2%													
Grand sum/avg	-9.94	-0.11	2.40	3.09	3.31	3.50	3.39	1.7	289831084	-30186	-14.1	16.0	27.6	-41.0	0.0	0.0

DATE	DOY	AvgTair 0.1m	AvgTw	Avg Rain	Avg WS	Avg WDIR	Avg WS CSI	SumRad J/m2	SumHk Evap (kg/m2)	Sum Lk M Rain	Sum Runoff	Sum seepage	Sum Lake	Sum Terrepap2	Solar Heat input (KJ/m2)	Sum H evap (KJ/m2)	solar heat absorbed - evap loss (KJ/m2)	% of absorbed solar heat lost via evap	Solar Heat input (solar rad), Tw 0-6m	starting Tw (0-6m)	ending Tw (0-6m)	actual dTw (0-6m)	RESID: NON-SOLAR FLUX (heat flux to offset absorbed solar to reach 0C)	SOLAR FLUX to solar to match to LESS EVAP (deg-C*cm)	
2/1/2015	32	-6.13	-0.30	2.67	3.25	3.26	3.32	3.30	1.4	5842471	-582	-0.210	0.1	1.0	5433	-524	4909	9.6%	0.22	3.21	3.21	0.00	(0.22)	-0.02	(0.20)
2/2/2015	33	-7.24	-0.23	2.65	3.25	3.26	3.47	3.25	2.7	1925956	-954	19.448	0.0	21.3	1791	-858	933	47.9%	0.07	3.21	3.14	(0.07)	(0.14)	-0.03	(0.10)
2/3/2015	34	-11.33	-0.14	2.74	3.25	3.26	3.46	3.24	2.1	11395830	-1300	-2.698	0.0	-0.3	10598	-1170	948	11.0%	0.42	3.14	3.20	0.06	(0.36)	-0.05	(0.32)
2/4/2015	35	-4.04	-0.14	2.70	3.24																				