

Lake Lacawac, Bruce R. Hargreaves, Lehigh University (brho@lehigh.edu, http://www.lehigh.edu/~brho) 41° 22.5'N 75° 17.3'W elevation 428m

17 April 2011; platform moved to lake center, 1-2pm

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.

Adjusted Tw sensors 13Nov07 based on comparison of depths and vs PUV & YSI sonde profiles (note that Tw at 11.3m matches PUV Tw at 12.5, probably within sediment boundary layer)

Tw12 adjusted to match others on bottom after moved to dock

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 psi/m)

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)

		5280 ft/mile 1609.3 m/mile										Std pressure at sea level = 1 atm=760 mm Hg=29.92132 mbars Std pressure at 428m elevation =724 mm Hg, 29.61 in Hg, (965.2 mbars)																																																	
		Tair max F		Tair min F		Rain-in		WS-mph		WS Max mph				Tw 0.1m F		Tw 0.5m		Tw 1m F		Tw 2m F		Tw 3m		Tw 4m F		Tw 5m F		Tw 6m F		Tw 8m F		Tw 10m F		Tw 12m F																											
		67.6		83.0		48.7		10.72		3.8		40		75.2		74.9		74.9		74.2		69.9		60.4		52.2		47.9		44.7		44.0		44.2																											
Month sum		avg Tw		Tair avg-C		Tair Hi-C		Tair Mi-C		RHair-%		Rain-mm		WS-Max		WS-Min		WDIR-deg		Barom-mb		Sum Rad W/m2		Sum PAR		μM/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_z (m)		Lakelevel-mm (40C)		cumul. rain-mm		Batt min-V		RH% CR10		RH% MUX	
month		(All)		14.8		19.8		28.3		9.3		88.2		272.3		1.7		18.1		231.8		961.9		528792124		1104		24.0		23.9		23.8		23.5		21.8		15.8		11.2		8.8		7.0		6.7		6.8		9.7		31.1		272.3		12.5		17.3		35.2	

		Data																																															
		Date		Day of Yr		Tair Min-		Rain-		WS Max WDIR-		Barom-mb		Sum PAR		Tw 0.1m		Tw 0.5m		Tw 1m		Tw 2m		TW3m		TW4m		TW5m		TW6m		TW8m		TW H310-C		TW12m		H310 depth-m		Lakelevel-cumul. rain-		Batt min-V		RH% CR10		RH% MUX			
		Tair avg-C		Tair Hi-C		Tair C		R-Hair-%		WS-m/s		m/s		deg		Sum PAR		Tw 0.1m		Tw 0.5m		Tw 1m		Tw 2m		TW3m		TW4m		TW5m		TW6m		TW8m		TW H310-C		TW12m		H310 depth-m		Lakelevel-cumul. rain-		Batt min-V		RH% CR10		RH% MUX	
LC 100%	8/1/2011	213	23.1	28.3	18.0	83.9	0.1	1.7	6.0	274	962.6	23597548	50	26.72	26.65	26.42	25.85	19.83	14.08	10.50	8.46	6.94	6.6	6.56	9.7	12.1	0.100	12.5	15.3	21.1																			
LC 100%	8/2/2011	214	22.1	27.3	17.2	75.8	3.5	1.9	7.8	295	958.7	26357966	54	26.53	26.55	26.62	25.92	19.94	14.17	10.49	8.47	6.94	6.6	6.57	9.7	8.4	3.600	12.6	13.8	22.1																			
LC 100%	8/3/2011	215	19.4	26.3	15.6	91.0	8.7	1.2	5.4	176	957.0	10321197	22	26.05	26.03	26.14	25.99	20.07	14.21	10.54	8.49	6.94	6.6	6.56	9.7	2.8	12.300	12.6	12.3	20.1																			
LC 100%	8/4/2011	216	20.06	25.44	25.39	25.43	25.29	20.20	14.28	143	962.5	12683049	27	25.44	25.39	25.43	25.29	20.20	14.28	14.28	10.95	8.51	6.93	6.6	6.58	9.7	8.3	14.100	12.5	14.2	23.5																		
LC 100%	8/5/2011	217	21.0	24.5	15.2	88.1	0.1	1.3	6.0	252	957.7	19239803	40	25.35	25.32	25.28	25.01	20.32	14.33	10.61	8.53	6.93	6.6	6.58	9.7	3.7	14.600	12.5	14.3	22.4																			
LC 100%	8/6/2011	218	20.7	22.2	19.8	96.5	60.0	1.6	6.9	183	964.8	4941391	11	24.87	24.92	25.04	24.88	20.51	14.45	10.66	8.55	6.94	6.6	6.60	9.7	14.9	74.200	12.5	14.1	29.7																			
LC 100%	8/7/2011	219	22.7	27.1	19.6	95.2	12.5	1.4	8.4	240	958.8	17106956	36	25.06	24.79	24.65	24.41	21.01	14.71	10.92	8.67	6.97	6.6	6.66	9.8	66.0	86.700	12.5	17.7	42.2																			
LC 100%	8/8/2011	220	22.2	26.1	19.4	91.5	1.5	1.9	7.1	293	953.7	19869206	42	25.14	25.16	25.20	24.47	21.11	14.90	10.93	8.73	7.03	6.6	6.67	9.8	62.9	88.200	12.5	17.8	39.5																			
LC 100%	8/9/2011	221	20.2	23.8	17.5	96.4	8.7	1.3	5.9	208	952.6	11923444	26	25.04	25.04	25.14	24.69	21.16	14.91	10.98	8.69	6.99	6.6	6.68	9.8	54.8	96.900	12.6	16.5	36.1																			
LC 100%	8/10/2011	222	20.9	24.8	17.5	83.6	0.0	2.0	8.2	275	953.5	21720161	45	24.73	24.81	24.91	24.63	21.24	14.98	10.95	8.71	7.01	6.6	6.67	9.8	48.5	96.900	12.5	16.7	33.9																			
LC 100%	8/11/2011	223	18.3	22.3	13.5	77.5	0.0	1.9	8.7	294	960.3	25052126	51	24.49	24.53	24.63	24.50	21.52	15.01	11.00	8.72	6.99	6.6	6.68	9.7	37.6	96.900	12.6	14.2	31.9																			
LC 100%	8/12/2011	224	17.9	24.3	11.8	78.5	0.0	1.6	7.4	284	965.9	26396461	55	24.41	24.39	24.28	23.90	21.71	15.05	11.00	8.73	7.00	6.6	6.68	9.7	28.2	96.900	12.6	13.6	30.4																			
LC 100%	8/13/2011	225	19.1	23.6	14.8	89.1	9.2	1.3	5.8	209	966.5	11987283	25	24.16	24.10	24.19	23.90	21.72	15.09	11.02	8.75	7.02	6.7	6.69	9.7	23.6	106.100	12.6	14.1	32.7																			
LC 100%	8/14/2011	226	18.8	19.8	18.3	100.4	6.5	1.5	5.2	117	960.5	3796745	9	23.38	23.43	23.55	23.55	21.61	15.20	11.07	8.77	7.01	6.6	6.71	9.7	28.5	116.800	12.5	16.1	36.9																			
LC 100%	8/15/2011	227	18.8	20.7	17.8	100.3	3.4	1.2	4.9	240	956.0	4632141	10	22.91	22.96	23.08	23.07	21.55	15.28	11.10	8.78	7.00	6.6	6.72	9.7	30.4	116.000	12.5	18.2	37.0																			
LC 100%	8/16/2011	228	19.0	24.0	16.3	93.3	4.7	2.0	7.7	203	961.9	16312433	34	22.77	22.80	22.82	22.82	21.68	15.36	11.13	8.80	7.01	6.6	6.73	9.7	32.2	120.700	12.5	19.7	39.8																			
LC 100%	8/17/2011	229	19.9	26.5	13.1	81.0	0.1	1.1	6.0	264	968.9	26575890	55	23.99	23.18	22.91	22.69	21.60	15.21	11.18	8.82	7.02	6.7	6.73	9.7	27.8	120.800	12.6	18.0	34.5																			
LC 100%	8/18/2011	230	22.3	26.6	17.7	81.6	0.0	1.6	7.2	237	965.4	22738477	47	24.46	24.35	23.51	22.80	21.42	15.57	11.19	8.84	7.03	6.7	6.73	9.7	21.7	120.800	12.6	17.8	35.1																			
LC 100%	8/19/2011	231	19.6	25.7	16.0	93.0	1.7	1.3	6.1	221	963.2	13177862	27	24.43	24.24	24.15	22.95	21.32	15.62	11.23	8.86	7.04	6.7	6.73	9.7	16.9	122.600	12.6	16.9	36.4																			
LC 100%	8/20/2011	232	20.1	26.9	14.1	86.5	0.1	0.9	3.8	239	964.7	22898856	48	24.69	23.68	23.56	23.13	21.23	15.73	11.29	8.87	7.04	6.7	6.76	9.7	13.3	122.600	12.5	18.1	35.8																			
LC 100%	8/21/2011	233	21.3	26.5	17.1	92.1	0.0	1.7	7.8	232	961.8	14928324	32	24.35	24.28	24.12	23.21	21.15	15.79	11.33	8.88	7.06	6.7	6.78	9.7	8.3	122.600	12.6	18.2	36.5																			
LC 100%	8/22/2011	234	17.4	21.0	13.9	79.9	0.6	2.5	9.4	308	961.1	20093100	41	23.43	23.47	23.63	23.39	21.22	15.91	11.35	8.97	7.06	6.7	6.79	9.7	2.5	123.200	12.5	17.0	35.4																			
LC 100%	8/23/2011	235	16.7	22.1	10.8	78.9	0.0	1.5	6.2	196	963.0	22956769	47	23.02	23.02	23.07	22.72	21.44	15.86	11.34	8.89	7.07	6.7	6.80	9.7	3.1	123.200	12.6	16.1	34.6																			
LC 100%	8/24/2011	236	19.7	23.6	14.4	75.8	0.0	2.5	8.5	207	965.1	22935581	47	22.78	22.81	23.07	22.70	21.45	16.02	11.40	8.91	7.07	6.7	6.83	9.7	-9.0	123.200	12.6	16.6	34.8																			
LC 100%	8/25/2011	237	21.0	23.9	19.1	94.0	3.4	2.2	8.5	211	961.2	8339475	18	22.42	22.46	22.91	22.53	21.56	16.11	11.40	8.92	7.06	6.7	6.84	9.7	-12.0	126.600	12.6	18.9	37.4																			
LC 100%	8/26/2011	238	21.2	26.1	16.7	89.3	0.0	0.8	3.9	205	965.1	20628503	43	23.84	22.77	22.99	22.47	21.57	16.20	11.46	8.94	7.04	6.7	6.83	9.7	-13.5	126.600	12.6	20.5	36.3																			
LC 100%	8/27/2011	239	20.7	23.2	19.5	100.3	21.0	1.8	8.5	100	960.4	6210824	14	23.53	23.45	23.32	22.57	21.55	16.37	11.51	8.97	7.07	6.7	6.83	9.7	-12.5	147.600	12.6	31.5	38.7																			
LC 100%	8/28/2011	240	17.6	19.6	14.7	96.6	124.5	6.2	8.1	195	943.6	4935295	12	21.54	21.57	21.76	21.70	21.33	19.50	12.31	9.37	7.20	6.7	6.95	9.9	150.6	272.100	12.5	25.7	58.1																			
LC 100%	8/29/2011	241	15.3	20.7	9.9	83.5	0.1	1.7	7.2	294	963.0	23955675	49	20.74	20.74	20.82	20.46	20.17	19.82	11.37	9.18	6.7	7.10	9.7	10.2	138.7	272.200	12.5	19.3	68.2																			
LC 100%	8/30/2011	242	16.6	23.8	9.3	82.2	0.1	1.3	5.9	292	969.1	24089315	50	21.28	21.18	20.91	20.51	20.08	19.43	12.36	9.26	7.15	6.7	7.17	9.8	96.0	272.300	12.6	17.2	73.4																			
LC 100%	8/31/2011	243	18.2	24.0	11.8	84.8	0.0	0.7	4.8	220	971.7	18152667	38	22.20	21.45	21.20	20.63	20.08	19.22	12.41	9.24	7.14	6.7	7.19	9.8	76.1	272.300	12.6	16.7	69.4																			

Lake water & energy budget daily summary from hourly data (negative values: loss from lake; runoff & seepage term is residual after adjusting lake level change for all others)

Ratio of lake watershed to lake area: 2.61767578		Runoff & seepage as % of watershed area precip: 30.6%											
Grand sum/avg		19.76		23.99		23.88		23.85		23.46		21	