

Lake Lacawac, Bruce R. Hargreaves, Lehigh University (brho@lehigh.edu, http://www.lehigh.edu/~brhd)

4Apr2010: Station moved from dock from 12-2:30pm (new NE anchor installed)

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 ps/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																																													
		Fair avg F		Fair max		Fair min		Rain-in		WS-mph		WS Max-mph																																													
		87.8		75.3		59.5		3.20		4.4		26																																													
Month summary		Fair avg-C		Fair H-C		Fair Min-C		RHair-%		Rain-mm		WS-ms		WS Max-ms		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 enc		RH% MUX enc	
month		19.9		24.1		15.3		82.5		81.4		2.0		11.5		234.6		962.7		634082347		1334		23.6		23.6		22.6		21.1		16.4		13.0		10.5		8.9		6.7		6.5		6.0		10.1		9.5		81.4		12.5		64.6		34.6	

		Data																																																	
		Day of		Fair Min-		Rain-		WS-m/s		WS Max		WDIR-		Barom-mb		Sum Rad		Sum PAR		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-m (40C)		Lakelevel-cumul. rain-mm (40C)		Batt min-V		RH% CR10 enc		RH% MUX enc	
Location/records		Date		Fair avg-C		Fair H-C		RHair-%		WS-m/s		WS Max-deg		Barom-mb		Sum Rad J/m2/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-C		Lakelevel-mm		Batt min-V		RH% CR10 enc		RH% MUX enc	
ND 100%	6/1/2010	152	21.4	24.4	17.7	90.6	2.0	1.9	9.2	220	959.7	17810025	38	24	24	23.6	17.6	13.9	12.1	10.2	8.7	6.6	6.3	5.8	10.1	37.5	2,000	12.8	63.3	27.0																					
ND 100%	6/2/2010	153	20.6	26.7	12.2	71.2	0.2	1.5	6.6	218	960.2	29298771	61	24	24	23.8	18.0	14.0	12.1	10.2	8.7	6.5	6.3	5.8	10.1	32.1	2,200	12.8	61.7	25.7																					
ND 100%	6/3/2010	154	22.5	25.7	19.7	79.3	0.0	2.0	8.8	268	956.5	21457096	46	25	25	24.4	18.3	14.1	12.2	10.2	8.7	6.5	6.3	5.8	10.1	24.3	2,200	12.8	62.3	26.7																					
ND 100%	6/4/2010	155	21.8	26.6	17.3	81.5	0.0	1.5	5.3	240	959.6	22383496	47	25	25	24.6	18.7	14.2	12.2	10.2	8.7	6.5	6.3	5.8	10.1	18.4	2,200	12.8	61.9	26.7																					
ND 100%	6/5/2010	156	22.8	26.9	19.2	83.3	2.3	2.4	8.1	233	956.5	23292532	49	25	25	25.0	19.0	14.3	12.2	10.2	8.7	6.5	6.3	5.8	10.1	12.4	4,500	12.8	63.0	28.2																					
ND 100%	6/6/2010	157	19.0	24.5	11.3	90.3	19.2	3.3	11.5	238	951.1	13799716	30	24	25	24.6	19.9	14.5	12.3	10.3	8.8	6.6	6.4	5.9	10.1	19.1	23,700	12.8	65.2	35.8																					
ND 100%	6/7/2010	158	14.2	18.7	9.3	69.3	0.0	3.0	9.8	298	960.2	28090668	57	22	22	22.3	21.7	14.7	12.4	10.3	8.8	6.6	6.4	5.9	10.1	23.2	23,700	12.8	62.7	30.2																					
ND 100%	6/8/2010	159	13.7	18.0	9.2	68.4	0.0	2.7	10.3	287	967.4	26622601	54	21	21	21.4	21.4	14.9	12.4	10.3	8.8	6.6	6.4	5.9	10.1	15.1	23,700	12.8	61.9	25.7																					
ND 100%	6/9/2010	160	11.4	14.5	7.5	93.9	23.3	1.4	8.7	164	965.6	3719957	9	20	20	20.3	20.3	15.1	12.4	10.3	8.8	6.6	6.4	5.9	10.1	17.0	47,000	12.8	62.2	30.7																					
ND 100%	6/10/2010	161	17.1	22.3	12.9	83.3	0.0	2.4	10.5	265	960.9	25043179	53	20	20	20.1	19.7	15.5	12.5	10.4	8.8	6.6	6.4	5.9	10.1	30.0	47,000	12.7	62.6	37.2																					
ND 100%	6/11/2010	162	15.8	21.5	9.7	85.0	0.0	1.0	5.2	216	969.1	20089999	42	21	20	20.3	20.0	15.9	12.6	10.4	8.8	6.7	6.4	5.9	10.1	24.7	47,000	12.8	63.6	31.2																					
ND 100%	6/12/2010	163	21.5	27.2	15.0	86.7	0.0	2.0	7.8	202	966.0	22112775	47	21	21	20.8	20.1	16.1	12.6	10.4	8.9	6.6	6.4	5.9	10.1	20.4	47,000	12.8	62.7	32.0																					
ND 100%	6/13/2010	164	22.2	26.9	19.5	96.6	6.3	1.4	7.4	215	961.4	12682401	27	23	23	22.0	20.3	16.3	12.7	10.4	8.8	6.7	6.4	5.9	10.1	20.1	53,300	12.8	65.0	34.9																					
ND 100%	6/14/2010	165	19.6	26.0	17.7	93.1	0.0	1.7	6.6	259	961.4	13069726	28	23	23	22.7	20.4	16.4	12.7	10.4	8.9	6.7	6.5	6.0	10.1	20.9	53,300	12.8	66.1	35.7																					
ND 100%	6/15/2010	166	19.7	24.4	15.7	72.3	0.0	1.6	5.6	174	967.6	30424508	63	24	23	22.7	20.7	16.5	12.8	10.5	8.8	6.7	6.5	6.0	10.1	15.9	53,300	12.8	64.5	34.0																					
ND 100%	6/16/2010	167	18.5	20.4	16.3	84.9	10.5	2.0	6.8	178	966.3	6420111	14	23	23	22.6	20.9	16.6	12.9	10.5	8.9	6.7	6.5	6.0	10.1	13.2	63,800	12.8	64.5	36.3																					
ND 100%	6/17/2010	168	16.3	17.7	13.4	91.5	0.1	2.9	10.5	282	962.7	11239680	24	21	21	21.5	21.3	16.8	13.0	10.5	8.9	6.7	6.5	6.0	10.1	17.9	63,800	12.7	66.9	40.2																					
ND 100%	6/18/2010	169	18.8	26.0	11.3	78.2	0.1	1.1	5.2	212	968.5	30494039	63	22	21	20.9	20.7	17.1	13.1	10.5	8.9	6.7	6.5	6.0	10.1	13.1	64,000	12.5	64.8	35.3																					
ND 100%	6/19/2010	170	22.3	27.1	15.4	78.4	0.0	1.7	7.3	198	966.6	26717968	56	23	23	21.8	20.9	17.3	13.1	10.6	8.9	6.7	6.5	6.0	10.1	8.4	64,000	12.6	64.4	34.8																					
ND 100%	6/20/2010	171	24.0	27.8	19.5	78.4	0.0	2.0	7.5	257	963.2	25980831	55	24	24	23.3	21.2	17.4	13.3	10.6	8.9	6.8	6.5	6.0	10.1	3.7	64,000	12.6	66.1	36.1																					
ND 100%	6/21/2010	172	21.2	25.4	16.2	78.2	0.0	2.1	7.6	283	967.4	28383994	60	25	25	24.8	21.5	17.6	13.4	10.6	8.9	6.8	6.5	6.0	10.1	-1.8	64,000	12.6	65.5	35.4																					
ND 100%	6/22/2010	173	19.7	23.3	15.3	91.3	0.1	1.0	4.5	174	968.3	10415875	22	25	25	24.7	21.8	17.7	13.4	10.7	9.0	6.8	6.5	6.0	10.1	-3.7	74,100	12.6	65.2	39.4																					
ND 100%	6/23/2010	174	23.5	28.3	19.8	85.7	0.0	2.1	7.9	256	964.7	26458447	56	25	25	24.6	22.1	17.9	13.5	10.7	9.0	6.8	6.5	6.0	10.1	1.2	74,100	12.6	66.0	42.3																					
ND 100%	6/24/2010	175	23.9	26.4	20.5	81.3	1.8	2.6	9.1	257	960.1	23312236	50	25	25	25.4	22.8	18.0	13.6	10.7	9.0	6.8	6.6	6.0	10.1	-2.6	75,900	12.6	66.8	39.9																					
ND 100%	6/25/2010	176	20.9	24.7	17.6	80.4	0.0	1.9	6.5	275	965.7	27302720	56	25	25	25.4	23.4	18.2	13.8	10.8	9.0	6.8	6.6	6.0	10.1	-6.9	75,900	12.6	66.4	38.7																					
ND 100%	6/26/2010	177	22.5	25.7	15.0	80.4	0.9	1.3	6.7	203	963.3	22092689	46	26	26	25.5	23.8	18.3	13.8	10.8	9.0	6.8	6.5	6.0	10.1	-11.7	76,800	12.6	65.3	38.4																					
ND 100%	6/27/2010	178	22.9	28.3	17.1	86.9	1.5	1.6	7.4	225	957.9	22048809	47	26	26	25.7	24.1	18.4	13.9	10.8	9.0	6.8	6.6	6.0	10.1	-14.1	78,300	12.6	65.8	40.2																					
ND 100%	6/28/2010	179	23.7	26.3	21.7	89.5	2.8	2.1	7.9	214	968.3	13488798	29	26	26	25.9	24.4	18.5	14.0	10.9	9.1	6.8	6.6	6.0	10.1	-16.0	81,100	12.6	67.2	41.7																					
ND 100%	6/29/2010	180	21.2	24.5	14.8	78.5	0.3	2.2	8.3	274	960.8	20515597	43	25	26	25.6	24.7	18.6	14.1	10.9	9.1	6.8	6.6	6.1	10.1	-19.2	81,100	12.6	67.7	41.7																					
ND 100%	6/30/2010	181	15.2	19.1	10.0	66.6	0.0	2.4	8.5	280	968.1	29494104	61	24	24	24.4	24.4	18.8	14.2	10.9	9.1	6.9	6.6	6.1	10.1	-26.7	81,400	12.6	66.0	38.9																					

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		3.88										Runoff & seepage as % of watershed area precip										2.4%									
Grand sum/avg		19.86		23.63		23.58		23.35		21.13		16.45		12.98		1.8															