



Environmental Health Services
3010 Grand Avenue
Waukegan, IL 60085-2399

1/9/2009

To: Mike Kalstrup
21820 Washington
Grayslake, IL 60030

Mike,

On 1/8/2009 the Lakes Management Unit visited Highland Lake to investigate reports of a fish kill. The only fish species noted by the LMU were Yellow Bass in the 3-4" range. However, some pictures were sent to the LMU via e-mail showing Common Carp and some type of panfish. While at Highland Lake the LMU collected water quality data from the entire water column at 2 locations (see map). Location one was where dead fish were found and location two was at the deep hole. It was determined that the dissolved oxygen levels were adequate at that time (see table). However, since there were multiple dead species reported, the LMU does believe that this die off may have been a result of low oxygen levels in the lake. From our conversation you mentioned the lake was frozen over, then had opened up for a brief time, and then froze over again. During the time the lake was completely frozen, there was a significant amount of snow on the ice allowing very little or no light penetration. Without the light penetration, algae and plants can not photosynthesize and release oxygen. In fact, under these conditions they consume oxygen. This is what could have lead to a depletion in dissolved oxygen and the die off of the fish found frozen in the ice. It is suggested that upon ice out a survey of the perimeter of the lake be conducted to determine the extent of the die off. If you have any further questions of concerns, feel free to contact me.

Sincerely,

Leonard Dane

A handwritten signature in black ink that reads "Leonard Dane". The signature is written in a cursive, flowing style.

Water Quality Specialist II
LCHD – Lakes Management Unit
847-377-8007
ldane@lakecountyil.gov

Dissolved Oxygen Profile Locations on Highland Lake, January 8, 2009



Highland Lake 2009 profile data**Site 1**

Date MMDDYY	Text Depth feet	Temp øC	DO mg/l	DO% Sat	SpCond mS/cm	pH Units
01/08/2009	0.25	1.97	13.99	101.4	0.6950	8.37
01/08/2009	2	3.25	13.09	97.7	0.6830	8.30
01/08/2009	4	3.38	12.6	94.8	0.7100	8.28
01/08/2009	6	3.41	11.84	89.1	0.7120	8.28
01/08/2009	8	3.49	11.47	86.3	0.7110	8.28
01/08/2009	10	3.88	10.57	80.6	0.7110	8.21

Site 2

Date MMDDYY	Text Depth feet	Temp øC	DO mg/l	DO% Sat	SpCond mS/cm	pH Units
01/08/2009	0.25	2.18	15.10	109.9	0.6770	8.22
01/08/2009	2	2.95	13.45	99.7	0.6790	8.23
01/08/2009	4	3.28	12.25	91.6	0.6990	8.24
01/08/2009	6	3.34	11.37	85.3	0.7070	8.26
01/08/2009	8	3.28	11.13	83.6	0.7110	8.25
01/08/2009	10	3.26	10.91	82.1	0.7120	8.23
01/08/2009	12	3.29	10.76	80.5	0.7120	8.22
01/08/2009	14	3.31	10.6	79.7	0.7130	8.20
01/08/2009	16	3.37	10.43	78.2	0.7120	8.19
01/08/2009	18	3.38	10.29	77.6	0.7130	8.16
01/08/2009	20	3.41	10.11	75.8	0.7170	8.11
01/08/2009	22	3.26	9.61	71.0	0.7250	8.07
01/08/2009	24	3.24	9.05	65.0	0.7330	8.01
01/08/2009	26	3.26	7.99	52.9	0.7590	7.59
01/08/2009	28	3.42	5.27	41.7	0.8180	7.77
01/08/2009	30	3.98	3.07	26.5	0.8570	7.33