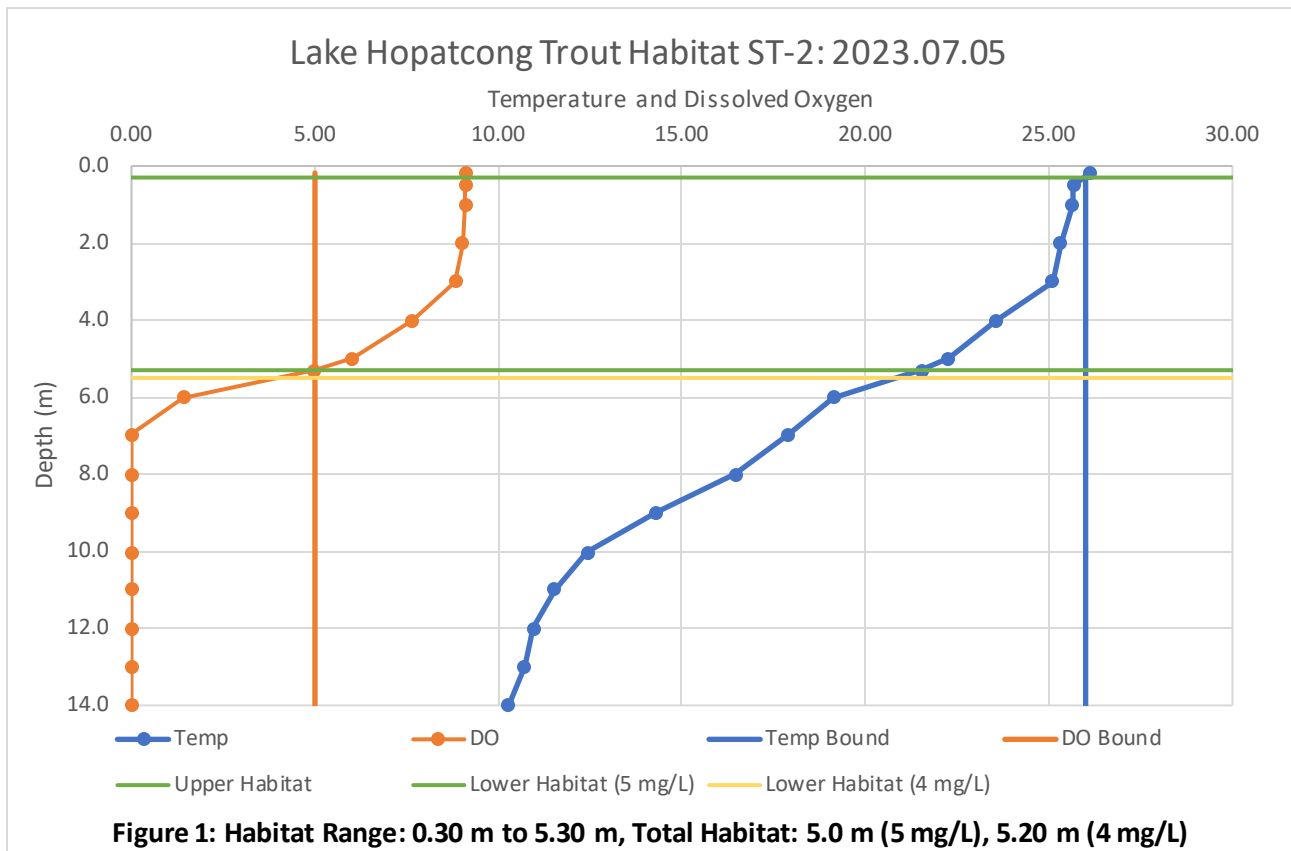


Lake Hopatcong Commission  
Trout Committee  
NOT FOR EXTERNAL DISTRIBUTION

**RE: Preliminary Trout Habitat Data July 5, 2023**

July 7, 2023

This memorandum presents the preliminary trout habitat data collected on July 5, 2023. The data includes both the in-situ water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.0 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.



Lake Hopatcong In-Situ Monitoring Data 2023.07.05

Station	Depth (m)		Sample	Temperature	Specific Conductance	Dissolved Oxygen		pH
	Total	Secchi		°C	µS/cm	Conc. (mg/L)	Sat. (%)	s.u.
Byram Bay	10.5	1.4	0.2	26.89	447.9	8.87	114.5	7.92
			1.0	26.18	447.6	9.07	115.6	7.98
			1.3	25.90	447.6	9.15	115.9	7.98
			2.0	25.47	448.1	9.18	115.6	7.98
			3.0	25.27	451.3	8.43	105.6	7.66
			4.0	22.76	456.9	5.68	67.9	7.38
			4.3	22.33	458.7	5.32	62.4	7.21
			4.6	21.84	460.9	4.16	48.8	7.14
			5.0	21.84	459.4	4.69	54.9	7.12
			6.0	19.72	464.2	1.88	21.2	6.99
			7.0	18.14	464.0	0.00	0.0	6.90
			8.0	15.27	465.7	0.00	0.0	6.92
9.0	12.52	471.9	0.00	0.0	6.99			
10.0	11.38	473.9	0.00	0.0	7.06			
Halsey Island	10.3	1.4	0.1	26.36	442.4	9.02	115.2	8.02
			0.4	26.30	442.6	9.04	115.1	8.02
			0.7	26.17	443.4	9.08	115.8	8.02
			1.0	25.95	444.3	9.13	115.9	8.03
			2.0	25.30	451.3	9.06	113.5	7.97
			3.0	24.68	457.1	8.71	108.2	7.86
			4.0	23.96	457.4	7.86	96.2	7.69
			5.0	22.60	460.1	6.36	75.9	7.41
			5.3	21.41	461.9	4.57	52.9	7.24
			6.0	19.43	463.1	1.61	18.0	7.03
			7.0	18.04	461.7	0.00	0.0	6.94
			8.0	15.09	466.3	0.00	0.0	6.94
9.0	13.37	470.3	0.00	0.0	7.01			
10.0	12.42	470.3	0.00	0.0	7.04			
Mid-Lake	14.5	1.6	0.2	26.11	432.1	9.10	115.8	8.10
			0.5	25.67	433.7	9.09	114.8	8.06
			1.0	25.63	434.2	9.09	114.9	8.05
			2.0	25.31	436.1	9.03	113.3	7.99
			3.0	25.11	439.8	8.84	110.3	7.97
			4.0	23.57	456.3	7.67	93.1	7.60
			5.0	22.27	458.1	6.01	71.9	7.37
			5.3	21.54	459.9	5.00	57.8	7.20
			6.0	19.14	462.9	1.43	15.3	6.96
			7.0	17.91	463.7	0.00	0.0	6.87
			8.0	16.45	464.0	0.00	0.0	6.89
			9.0	14.30	463.0	0.00	0.0	6.92
			10.0	12.43	467.3	0.00	0.0	6.96
			11.0	11.52	471.7	0.00	0.0	7.03
12.0	10.96	477.4	0.00	0.0	7.07			
13.0	10.70	479.8	0.00	0.0	7.11			
14.0	10.28	485.2	0.00	0.0	7.15			
Great Cove	7.3	1.7	0.1	26.26	455.0	9.24	118.2	8.35
			0.4	26.26	455.2	9.27	118.3	8.35
			0.7	26.29	455.1	9.25	118.2	8.35
			1.0	25.85	454.7	9.27	117.7	8.34
			2.0	25.51	452.7	9.36	117.8	8.29
			3.0	25.27	453.5	8.66	108.5	7.98
			4.0	23.75	457.6	7.53	91.8	7.65
			5.0	21.99	460.7	5.24	61.7	7.33
6.0	20.44	463.7	3.35	38.3	7.15			
7.0	17.40	461.7	0.00	0.0	6.98			
King's Cove	3.2	1.2	0.2	26.19	459.9	8.70	111.1	7.97
			1.0	25.74	459.3	8.93	113.1	8.03
			2.0	25.24	457.9	8.58	107.6	7.80
			2.3	24.94	459.6	8.08	100.8	7.55
			2.6	24.00	460.6	4.93	60.1	7.15
			3.0	23.34	463.1	2.52	30.5	7.01

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)

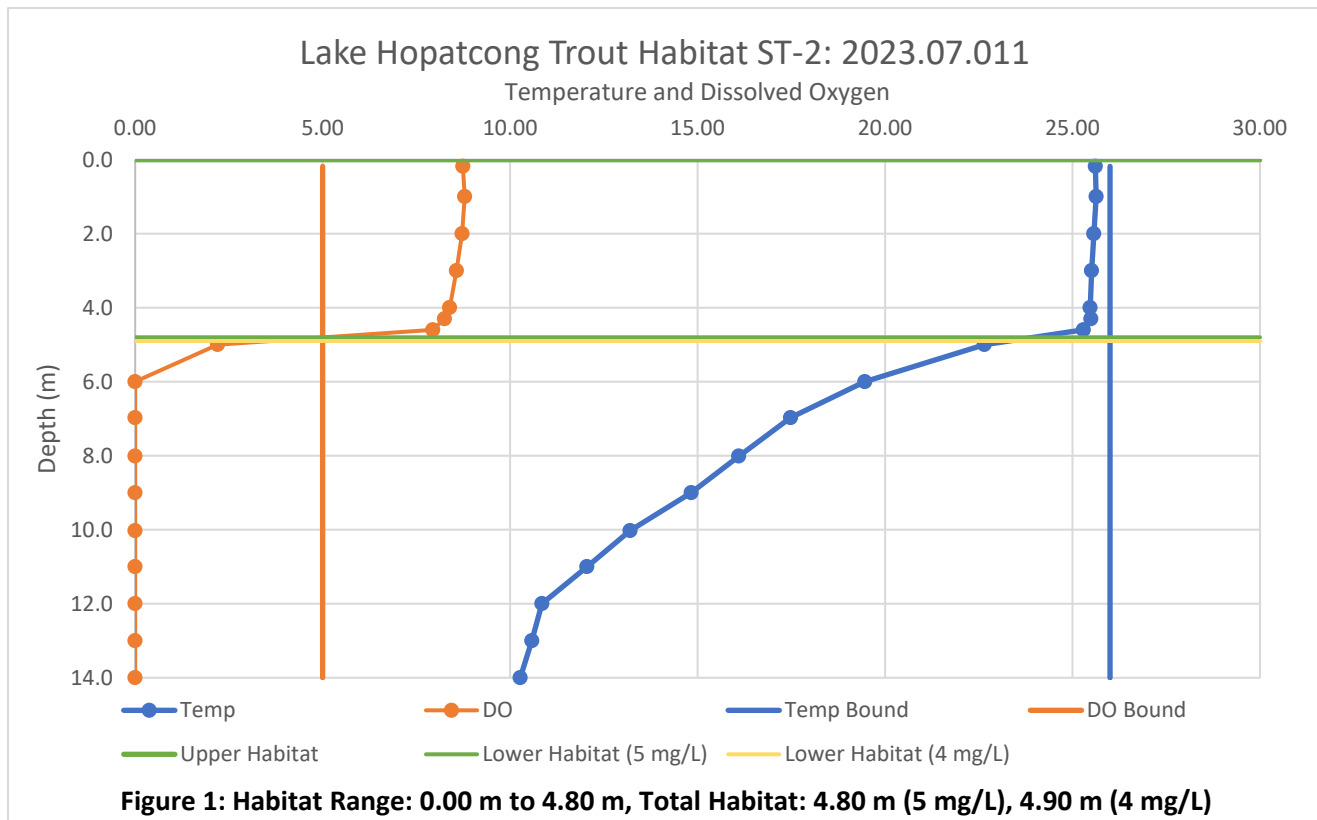
Lake Hopatcong Commission  
Trout Committee  
NOT FOR EXTERNAL DISTRIBUTION

**RE: Preliminary Trout Habitat Data 11 July 2023**

July 12, 2023

This memorandum presents the preliminary trout habitat data collected on 11 July 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.0 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.

Surface water temperatures decreased slightly at all stations following the extreme precipitation event over the weekend. However, epilimnetic waters mixed following the rain, resulting in relatively uniform temperatures in the upper 4.60 meters at ST-2. This mixing of these upper water resulted in a more defined epilimnion, which prevented the mixing of atmospheric oxygen below this depth. In terms of trout habitat, this resulted in a slight reduction in available habitat at ST-2, from 5.00 meters on 5 July to 4.80 meters on 11 July.



Lake Hopatcong *In-Situ* Monitoring Data 2023.07.11

Station	Depth (m)		Sample	Temperature	Specific Conductance	Dissolved Oxygen		pH s.u.
	Total	Secchi		°C	µS/cm	Conc. (mg/L)	Sat. (%)	
Byram Bay	10.5	1.6	0.2	26.22	416.6	9.34	119.5	8.55
			1.0	26.05	418.7	9.37	119.6	8.54
			1.3	25.77	419.6	9.36	118.9	8.51
			2.0	25.55	421.9	8.79	111.2	8.24
			3.0	25.38	422.7	7.92	99.8	7.85
			4.0	24.88	430.2	6.28	75.7	7.43
			4.3	23.86	436.8	3.45	43.2	7.20
			5.0	22.88	440.2	2.36	28.9	7.06
			6.0	21.38	441.9	0.00	0.0	6.97
			7.0	19.10	446.3	0.00	0.0	6.93
			8.0	15.95	447.0	0.00	0.0	6.97
Halsey Island	10.3	1.6	0.1	25.99	423.8	9.19	117.2	8.49
			1.0	25.77	423.4	9.26	117.8	8.48
			2.0	25.48	422.9	8.53	107.7	8.22
			3.0	25.42	409.0	7.92	99.5	7.86
			4.0	25.36	409.6	7.71	97.2	7.75
			4.6	25.28	408.9	7.48	94.1	7.61
			5.0	24.35	426.6	4.52	55.6	7.30
			6.0	19.56	446.7	0.00	0.0	6.92
			7.0	17.85	448.0	0.00	0.0	6.95
			8.0	15.89	449.6	0.00	0.0	69.80
			9.0	14.89	451.8	0.00	0.0	7.02
Mid-Lake	14.5	1.6	0.2	25.61	440.9	8.74	110.6	8.28
			1.0	25.63	441.2	8.79	111.3	8.30
			2.0	25.57	440.8	8.72	110.2	8.23
			3.0	25.51	440.3	8.57	108.1	8.15
			4.0	25.47	439.1	8.39	105.4	8.08
			4.3	25.49	439.4	8.25	104.1	7.95
			4.6	25.29	438.9	7.94	100.2	7.86
			5.0	22.65	452.7	2.20	26.2	7.15
			6.0	19.46	456.1	0.00	0.0	6.96
			7.0	17.48	457.1	0.00	0.0	6.97
			8.0	16.10	459.2	0.00	0.0	7.00
			9.0	14.83	259.4	0.00	0.0	7.03
			10.0	13.20	257.9	0.00	0.0	7.06
			11.0	12.05	263.5	0.00	0.0	7.09
12.0	10.85	470.8	0.00	0.0	7.17			
13.0	10.58	474.9	0.00	0.0	7.22			
14.0	10.27	480.5	0.00	0.0	7.25			
Great Cove	7.3	1.5	0.1	25.77	479.3	8.14	103.2	8.00
			1.0	25.64	429.8	8.10	102.5	7.95
			2.0	25.51	428.0	7.85	99.1	7.84
			3.0	25.48	427.8	7.61	96.0	7.73
			4.0	25.44	433.9	7.41	93.3	7.68
			4.3	25.44	434.9	7.42	93.6	7.67
			4.6	25.39	435.2	7.29	91.8	7.64
			5.0	25.23	439.3	6.98	87.6	7.59
			5.3	23.98	437.8	4.05	57.1	7.18
			5.6	21.76	452.5	0.00	0.0	7.00
			6.0	20.60	454.8	0.00	0.0	6.89
7.0	17.68	459.7	0.00	0.0	6.94			
King's Cove	3.2	1.4	0.2	25.51	443.2	8.56	108.1	8.20
			1.0	25.47	442.7	8.47	106.1	8.14
			2.0	25.40	442.5	8.29	104.6	8.01
			3.0	25.04	442.5	7.18	89.8	7.73

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)

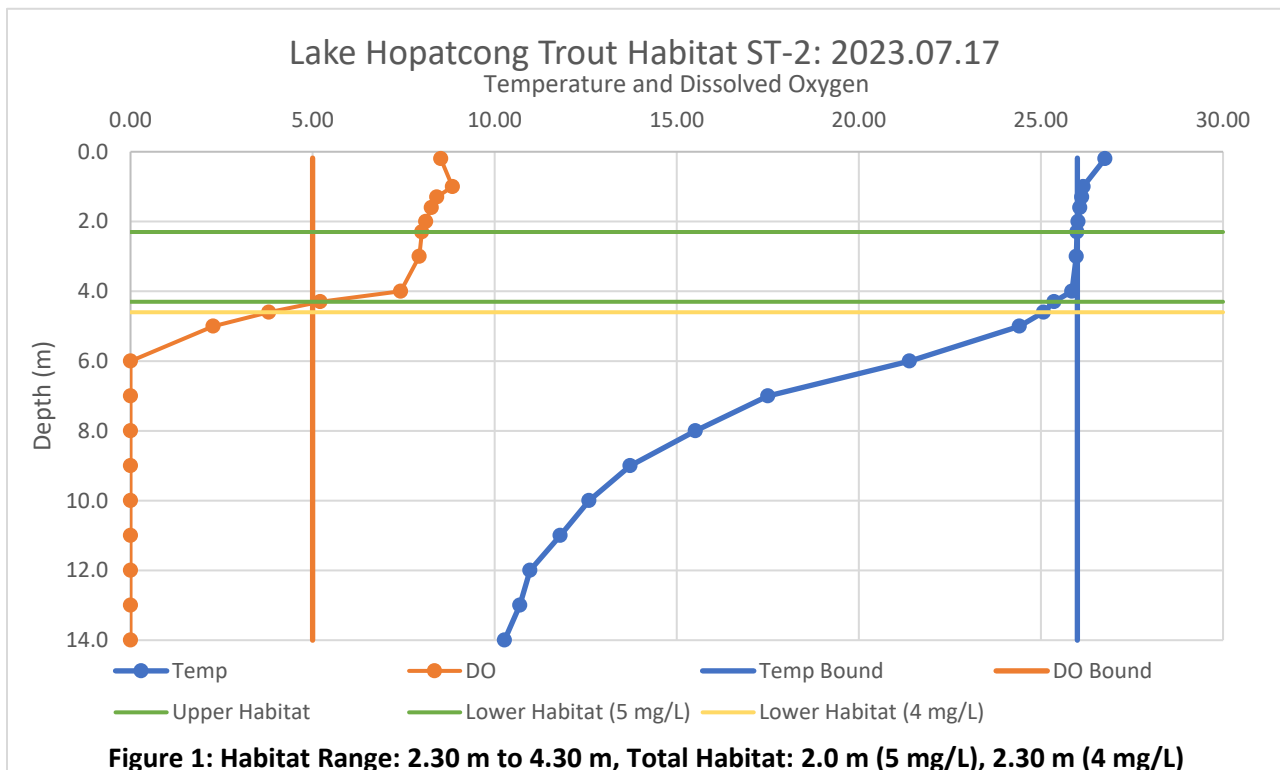
Lake Hopatcong Commission  
Trout Committee  
NOT FOR EXTERNAL DISTRIBUTION

**RE: Preliminary Trout Habitat Data 17 July 2023**

July 20, 2023

This memorandum presents the preliminary trout habitat data collected on 17 July 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.0 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.

This sampling event was conducted under a lakewide wake restriction following additional rain over the weekend. Surface water temperatures increased at all stations relative to the previous monitoring event on 11 July. The depth of the epilimnion remained consistent with the previous monitoring event at ST-2, extending down to a depth of approximately 4.60 meters. However, trout habitat was lost at the surface at all stations due to temperatures exceeding 26.0 °C. Available trout habitat was also compressed from the lower portion of the water column, as DO concentrations decreased slightly in the lower epilimnion. Trout habitat was reduced for the third consecutive week at ST-2, from 4.80 meters on 11 July to 2.0 meters on 17 July.



Lake Hopatcong *In-Situ* Monitoring Data 2023.07.17

Station	Depth (m)		Sample	Temperature	Specific Conductance	Dissolved Oxygen		pH
	Total	Secchi		°C	µS/cm	Conc. (mg/L)	Sat. (%)	
Byram Bay	10.5	1.5	0.2	27.78	438.2	9.39	123.2	8.65
			1.0	27.19	435.6	9.75	126.6	8.77
			2.0	26.66	431.9	9.08	116.9	8.50
			3.0	26.56	432.2	8.90	114.0	8.44
			3.6	26.47	429.5	8.48	108.8	8.25
			4.0	26.43	431.5	8.07	103.1	8.05
			4.3	26.10	449.6	6.99	89.5	7.62
			4.6	24.46	434.1	3.28	40.6	7.36
			5.0	23.11	453.1	0.00	0.0	7.14
			6.0	20.80	465.7	0.00	0.0	6.96
			7.0	19.15	468.8	0.00	0.0	6.91
			8.0	17.13	471.1	0.00	0.0	6.84
			9.0	15.43	470.4	0.00	0.0	6.82
10.0	13.38	475.8	0.00	0.0	6.83			
Halsey Island	10.3	1.3	0.2	27.25	431.5	8.57	111.6	8.19
			1.0	26.91	429.5	8.54	110.9	8.17
			2.0	26.41	434.9	8.01	102.7	8.01
			3.0	26.26	438.1	7.84	100.1	7.90
			3.3	26.14	441.6	7.58	96.9	7.85
			3.6	25.82	447.0	6.43	81.5	7.60
			4.0	25.71	441.9	5.98	75.9	7.46
			4.3	25.33	450.7	4.55	57.2	7.33
			5.0	24.37	431.9	3.54	43.7	7.16
			6.0	20.69	468.5	0.00	0.0	6.98
			7.0	18.92	469.2	0.00	0.0	6.90
			8.0	16.72	471.6	0.00	0.0	6.83
			9.0	13.74	472.2	0.00	0.0	6.82
10.0	12.57	475.8	0.00	0.0	6.84			
Mid-Lake	14.5	1.5	0.2	26.76	441.9	8.52	109.9	8.20
			1.0	26.16	441.7	8.84	112.6	8.36
			1.3	26.12	442.9	8.41	107.3	8.17
			1.6	26.07	443.2	8.26	105.1	8.10
			2.0	26.02	443.4	8.11	103.1	8.01
			2.3	25.99	443.4	8.00	101.7	7.97
			3.0	25.97	443.7	7.93	100.9	7.93
			4.0	25.85	444.1	7.42	93.3	7.81
			4.3	25.36	441.3	5.21	65.3	7.41
			4.6	25.07	448.8	3.80	47.6	7.29
			5.0	24.41	456.1	2.27	28.3	7.08
			6.0	21.39	463.2	0.00	0.0	6.92
			7.0	17.50	467.9	0.00	0.0	6.88
			8.0	15.51	468.6	0.00	0.0	6.78
9.0	13.72	471.4	0.00	0.0	6.79			
10.0	12.59	472.8	0.00	0.0	6.79			
11.0	11.80	476.9	0.00	0.0	6.80			
12.0	10.97	484.2	0.00	0.0	6.81			
13.0	10.69	487.0	0.00	0.0	6.84			
14.0	10.27	492.7	0.00	0.0	6.84			
Great Cove	7.3	1.5	0.2	27.15	429.1	8.81	114.3	8.40
			1.0	26.29	437.5	8.87	113.5	8.45
			2.0	26.20	437.8	8.57	109.5	8.33
			2.3	26.17	437.7	8.40	107.2	8.26
			2.6	26.13	437.0	8.15	103.9	8.14
			3.0	26.12	436.7	8.04	102.5	8.07
			3.3	26.09	436.9	7.96	101.4	8.02
			3.6	26.08	437.5	7.93	101.1	8.00
			4.0	25.50	434.0	5.80	73.1	7.62
			4.3	24.93	447.8	3.76	46.8	7.57
			5.0	24.22	452.2	2.19	26.7	7.22
			6.0	22.80	458.7	0.00	0.0	6.99
			7.0	18.02	467.0	0.00	0.0	6.98
King's Cove	2.8	1.3	0.2	26.69	455.3	8.04	104.3	7.92
			1.0	26.00	444.8	8.01	101.8	7.89
			1.3	25.79	444.8	7.84	99.3	7.78
			2.0	25.66	444.8	7.27	91.8	7.69
			2.5	25.56	445.9	6.23	78.3	7.49

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)

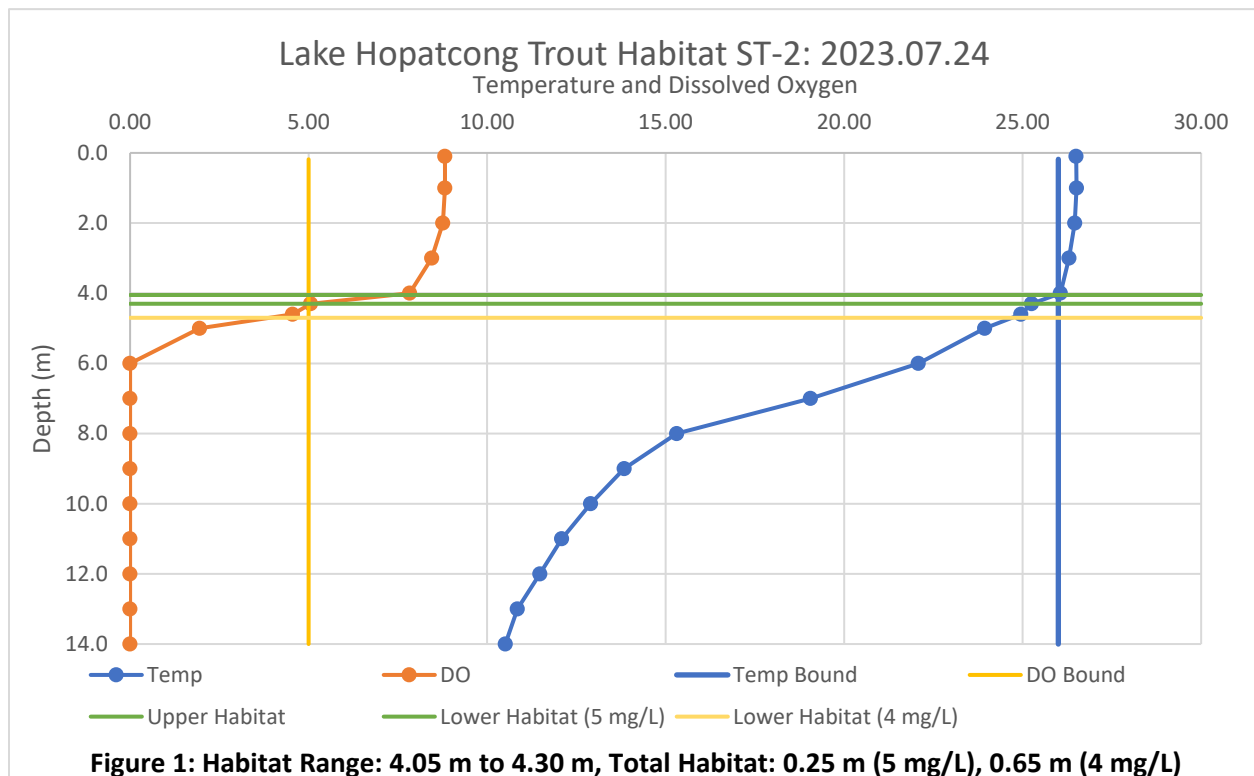
Lake Hopatcong Commission  
Trout Committee  
NOT FOR EXTERNAL DISTRIBUTION

**RE: Preliminary Trout Habitat Data 24 July 2023**

July 28, 2023

This memorandum presents the preliminary trout habitat data collected on 24 July 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.0 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.

This sampling event was conducted under the long-term water quality monitoring program. Surface water temperatures remained relatively consistent to the previous monitoring event on 17 July, with a temperature of 26.50 °C at ST-2. The depth of the epilimnion shrunk slightly over the past week at ST-2, extending down to a depth of approximately 4.00 meters; the lower bound of the epilimnion was approximately 4.60 meters on 17 July. This resulted in the loss of DO at a shallower depth than the previous week, leaving only a narrow band of available trout habitat. Trout habitat was reduced for the fourth consecutive week at ST-2, from 2.00 meters on 17 July to 0.25 meters on 24 July.



In-Situ Monitoring for Lake Hopatcong 7/24/2023									
Station	Depth (meters)		Temperature		Specific Conductance	Dissolved Oxygen		pH	
	Total	Secchi	Sample	°C	mS/cm	mg/L	% Sat.	S.U.	
STA-1	2.30	0.70	0.1	26.64	0.316	7.96	101.8	7.47	
			1.0	26.64	0.351	7.91	101.2	7.45	
			1.5	26.51	0.352	7.31	93.3	7.38	
	STA-2	14.20	1.10	0.1	26.50	0.432	8.82	112.7	8.30
				1.0	26.51	0.431	8.82	112.7	8.31
				2.0	26.46	0.432	8.76	111.7	8.25
				3.0	26.30	0.430	8.45	107.6	8.11
				4.0	26.06	0.430	7.83	99.0	7.86
				4.3	25.25	0.435	5.06	63.9	7.45
				4.6	24.95	0.443	4.55	56.5	7.36
5.0				23.94	0.445	1.95	23.2	7.14	
6.0				22.08	0.456	0.00	0.0	6.98	
7.0				19.06	0.469	0.00	0.0	6.93	
8.0	15.31	0.469	0.00	0.0	6.88				
9.0	13.84	0.472	0.00	0.0	6.90				
10.0	12.90	0.470	0.00	0.0	6.90				
11.0	12.09	0.475	0.00	0.0	6.89				
12.0	11.48	0.477	0.00	0.0	6.89				
13.0	10.85	0.484	0.00	0.0	6.84				
14.0	10.51	0.488	0.00	0.0	6.89				
STA-3	2.30	0.60	0.1	27.14	0.576	10.45	135.1	8.49	
			1.0	27.07	0.578	10.40	134.1	8.51	
			2.0	26.39	0.601	9.00	114.6	8.12	
STA-4	2.80	1.00	0.1	26.93	0.376	8.60	110.8	8.03	
			1.0	26.74	0.418	8.51	109.3	8.00	
			2.0	25.86	0.411	6.80	86.0	7.67	
2.5	25.50	0.411	5.54	69.1	7.49				
STA-5	2.80	0.80	0.1	27.55	0.500	9.15	118.8	8.13	
			1.0	26.86	0.417	9.24	118.5	8.18	
			2.0	26.32	0.426	7.42	92.5	7.76	
			2.5	26.22	0.427	6.35	80.5	7.54	
STA-6	2.90	1.00	0.1	26.94	0.361	8.10	104.2	7.22	
			1.0	26.77	0.373	8.00	102.6	7.37	
			2.0	26.56	0.378	7.39	94.7	7.38	
			2.7	26.29	0.381	6.48	81.0	7.27	
STA-7	1.80	0.90	0.1	26.26	0.132	7.04	89.5	7.22	
			1.0	25.84	0.190	6.24	77.8	7.09	
			1.5	24.74	0.159	4.85	59.9	6.90	
STA-8	5.50		0.1	27.07	0.382	9.05	116.5	8.29	
			1.0	27.01	0.414	9.04	116.5	8.31	
			2.0	26.93	0.415	9.01	116.0	8.29	
			3.0	26.85	0.416	8.82	113.1	8.19	
			4.0	26.64	0.420	8.03	102.8	7.90	
			5.0	26.01	0.421	6.41	80.8	7.54	
			5.3	24.77	0.425	3.86	47.8	7.33	
			6.0	22.18	0.448	0.00	0.0	7.11	
STA-9	8.20	1.10	0.1	26.78	0.427	8.88	113.9	7.92	
			1.0	26.72	0.424	8.89	114.0	7.97	
			2.0	26.26	0.427	8.49	107.9	7.86	
			3.0	26.04	0.427	7.43	94.6	7.64	
			4.0	25.74	0.432	6.41	80.7	7.47	
			5.0	25.33	0.439	4.64	57.9	7.26	
			6.0	21.67	0.462	0.00	0.0	7.08	
			7.0	17.83	0.470	0.00	0.0	6.89	
STA-10	1.30	0.60	0.1	26.53	0.363	9.27	118.4	7.78	
			1.0	24.88	0.402	8.66	107.3	7.74	
STA-11	1.30	1.30+	0.1	24.79	0.132	4.21	52.1	6.72	
			1.0	24.13	0.177	3.62	43.7	6.63	
STA-12	2.00	0.60	0.1	27.69	0.412	9.08	118.4	7.93	
			1.0	27.29	0.421	8.84	114.1	7.85	
			1.8	26.74	0.423	7.24	92.2	7.65	

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)



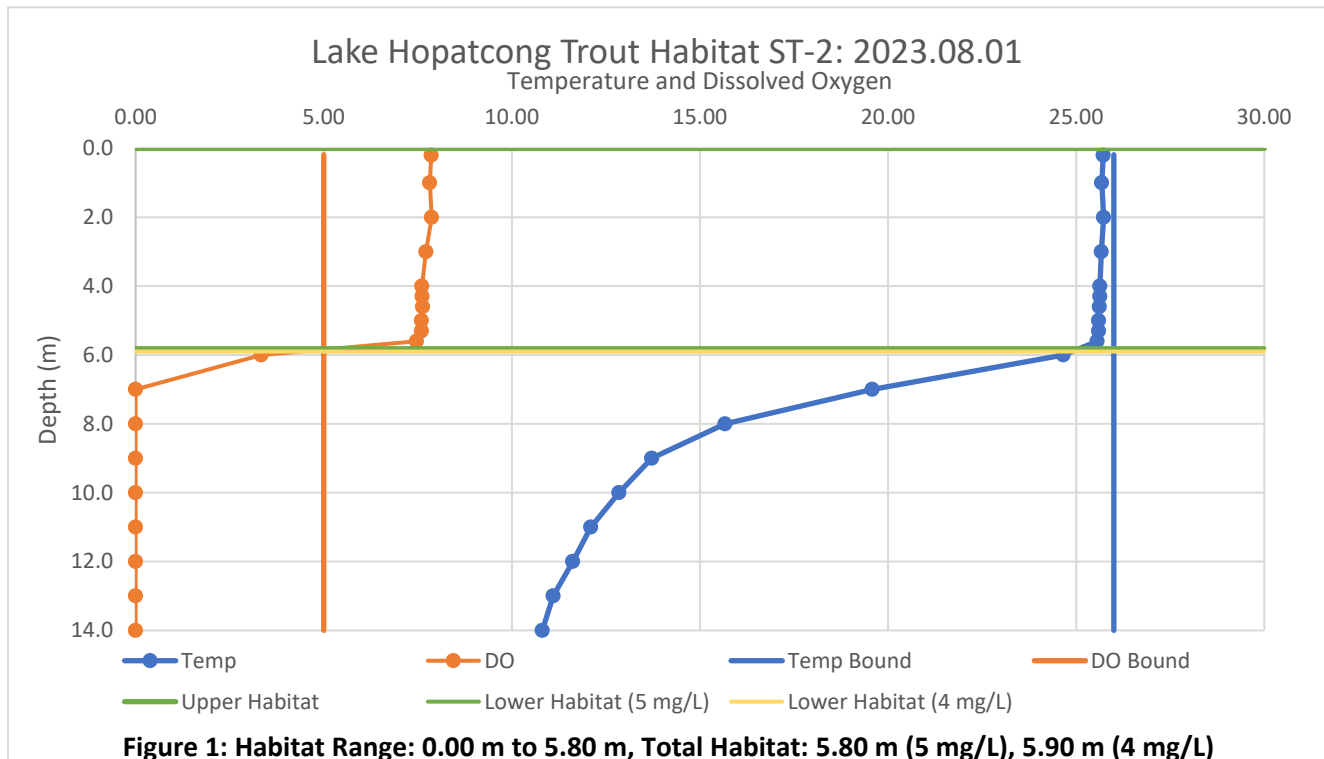
Lake Hopatcong Commission  
Trout Committee  
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**RE: Preliminary Trout Habitat Data 1 August 2023**

August 2, 2023

This memorandum presents the preliminary trout habitat data collected on 1 August 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.0 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.

Surface water temperatures decreased relative to the previous monitoring event on 24 July, with a temperature of 25.72 °C at ST-2. The epilimnion expanded significantly over the past week at ST-2, extending down to a depth of approximately 5.60 meters; the lower bound of the epilimnion was approximately 4.00 meters on 24 July. The larger epilimnion resulted in a larger volume of water with DO above 5.0 mg/L. Additionally, the entire epilimnion remained under 26.0 °C. The available trout habitat increased over the past week, from 0.25 meters on 24 July to 5.80.25 meters on 1 August; this was the largest volume of available trout habitat in Lake Hopatcong since the 2023 trout water quality habitat sampling began on 5 July.



Lake Hopatcong *In-Situ* Monitoring Data 2023.08.01

Station	Depth (m)		Sample	Temperature	Specific Conductance	Dissolved Oxygen		pH
	Total	Secchi		°C	µS/cm	Conc. (mg/L)	Sat. (%)	s.u.
Byram Bay	10.5	1.2	0.2	25.84	420.3	7.94	99.9	7.80
			1.0	25.82	420.6	7.92	99.9	7.80
			2.0	25.81	420.2	7.92	99.6	7.75
			3.0	25.54	420.7	7.61	95.3	7.65
			4.0	25.48	421.7	7.25	90.7	7.58
			5.0	25.42	422.7	7.03	87.9	7.55
			5.3	25.22	423.3	5.81	72.4	7.32
			5.6	23.19	428.1	0.00	0.0	6.75
			6.0	21.84	445.2	0.00	0.0	6.79
			7.0	18.58	470.2	0.00	0.0	6.99
			8.0	15.73	469.9	0.00	0.0	7.13
			9.0	14.04	478.8	0.00	0.0	7.18
			10.0	12.93	476.2	0.00	0.0	7.23
Halsey Island	10.3	1.1	0.2	25.91	425.8	8.08	101.9	7.91
			1.0	25.87	425.5	8.10	102.1	7.91
			2.0	25.75	425.6	7.90	99.2	7.78
			3.0	25.68	422.2	7.45	93.0	7.67
			4.0	25.65	419.8	7.41	93.0	7.63
			5.0	25.53	416.6	7.08	88.6	7.60
			5.3	24.18	434.0	2.42	29.7	7.12
			6.0	21.58	450.4	0.00	0.0	6.99
			7.0	19.13	470.1	0.00	0.0	7.13
			8.0	16.62	468.2	0.00	0.0	7.16
			9.0	13.36	470.5	0.00	0.0	7.19
						10.0	11.79	476.4
Mid-Lake	14.5	1.2	0.2	25.72	422.3	7.86	99.0	7.81
			1.0	25.68	422.3	7.82	98.3	7.75
			2.0	25.73	422.3	7.87	98.6	7.72
			3.0	25.67	421.8	7.72	97.0	7.70
			4.0	25.63	421.3	7.61	95.5	7.68
			4.3	25.63	421.4	7.62	95.6	7.69
			4.6	25.62	421.5	7.63	95.8	7.70
			5.0	25.60	421.5	7.60	95.4	7.71
			5.3	25.60	421.6	7.60	95.4	7.73
			5.6	25.56	422.1	7.47	93.0	7.73
			6.0	24.66	435.9	3.34	41.2	7.21
			7.0	19.58	468.9	0.00	0.0	7.15
			8.0	15.67	468.7	0.00	0.0	7.18
			9.0	13.72	470.4	0.00	0.0	7.21
			10.0	12.85	470.5	0.00	0.0	7.23
			11.0	12.10	473.8	0.00	0.0	7.23
12.0	11.62	477.6	0.00	0.0	7.23			
13.0	11.10	481.3	0.00	0.0	7.22			
14.0	10.81	483.3	0.00	0.0	7.23			
Great Cove	7.3	1.3	0.2	26.27	423.4	8.04	102.2	7.90
			1.0	26.17	423.1	8.05	102.1	7.93
			2.0	26.04	423.5	8.02	101.4	7.87
			2.3	25.85	424.3	7.81	98.4	7.77
			3.0	25.73	423.1	7.51	94.5	7.69
			4.0	25.71	422.6	7.44	94.3	7.66
			5.0	25.12	428.5	5.01	62.9	7.32
			6.0	23.37	433.8	0.00	0.0	6.96
7.0	19.09	464.7	0.00	0.0	6.96			
King's Cove	2.8	0.7	0.2	25.51	440.0	7.33	91.3	7.66
			1.0	25.50	440.0	7.30	91.4	7.63
			2.0	25.44	439.7	6.62	82.7	7.49
			2.5	25.37	439.9	6.33	79.0	7.38

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)

Lake Hopatcong Commission  
Trout Committee  
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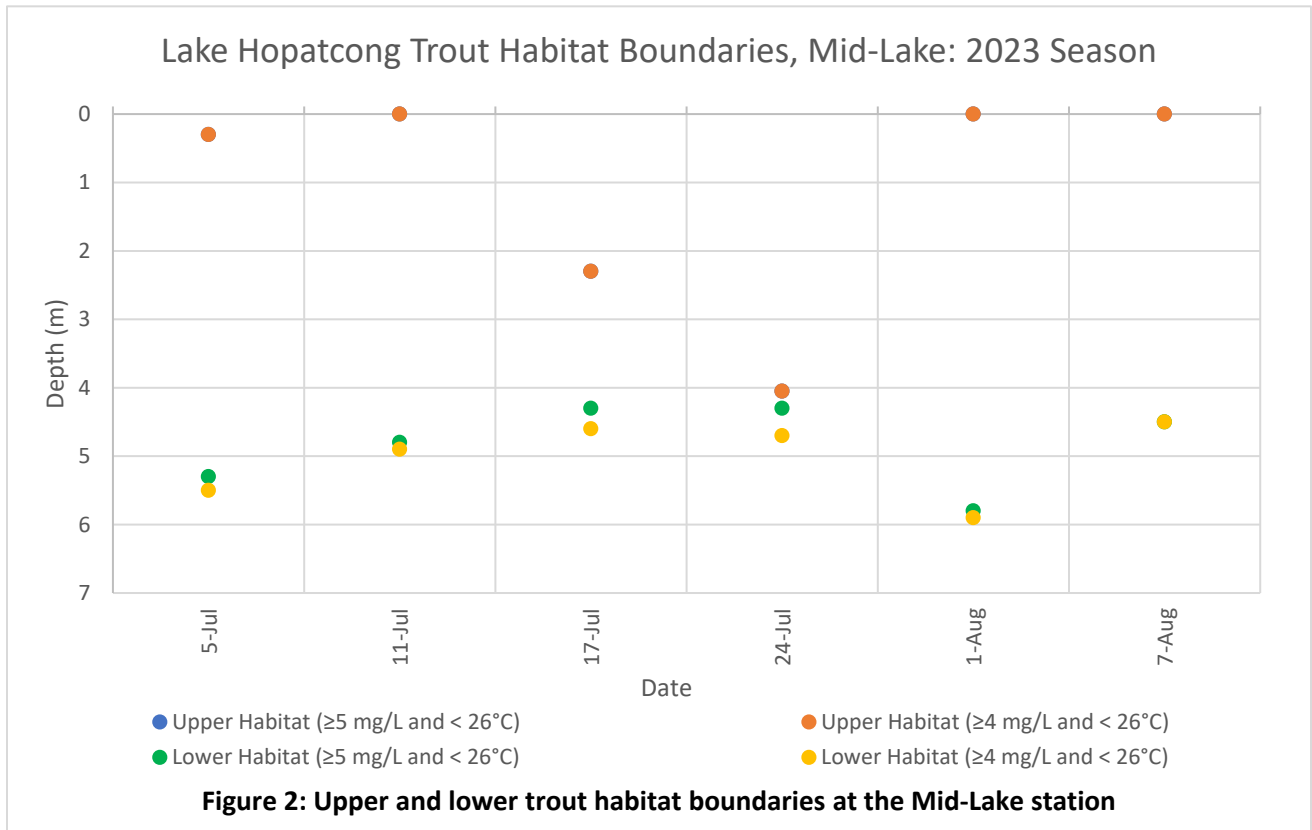
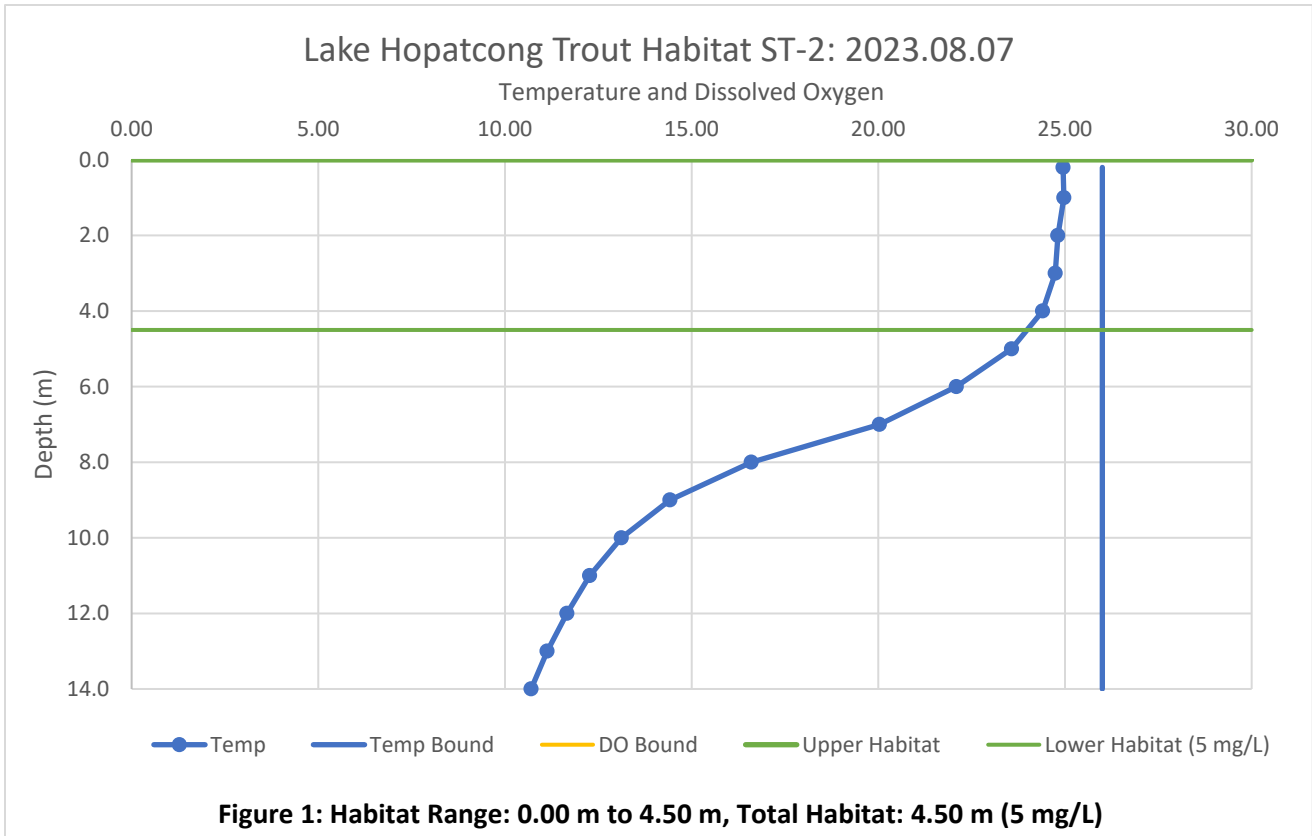
**RE: Preliminary Trout Habitat Data 7 August 2023**

August 11, 2023

This memorandum presents the preliminary trout habitat data collected on 7 August 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) profile. In addition to the profile, the figures shows the upper temperature bound (26.0 °C) as a vertical line. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds. Please note that there is no dissolved oxygen (DO) data on the figure, and no DO concentrations or specific conductance data provided in the table. There was a technical issue with the specific conductance probe during the sampling effort which resulted in erroneous DO concentrations. However, the DO percent saturation was working correctly, and this data was used to define the available trout habitat. Princeton Hydro will be able to calculate the correct DO concentrations based on the temperature and DO saturation data for the final report. Thus, the available trout habitat provided below is approximate, and may change slightly when the final report is prepared; however, the anticipated change in habitat will be extremely small.

Surface water temperatures decreased relative to the previous monitoring event on 1 August, with a temperature of 24.95 °C at ST-2. This represents the first monitoring event since the 2023 trout habitat monitoring began on 5 July that surface water temperatures were below 25.00 °C. The decrease in temperature did result in a less defined and smaller epilimnion relative to the previous week. This led to some of the anoxic water that was previously confined to the hypolimnion on 1 August to mix with water in the upper thermocline on 7 August. This resulted in a slight shrinking of available trout habitat over the past week, from 5.80 meters on 1 August to 4.50 meters on 7 August. It is important to note that although the trout habitat in the epilimnion shrunk over the past week, the water was cooler than the previous week, resulting in more favorable conditions for trout.

In addition to the figure and table that are provided for the data collected on 8 August, a figure is also provided that includes the upper and lower boundaries of available carryover brown trout habitat during each monitoring event from 5 July through 8 August.



Lake Hopatcong *In-Situ* Monitoring Data 2023.08.07

Station	Depth (m)		Temperature			pH s.u.
	Total	Secchi	Sample	°C	Sat. (%)	
Byram Bay	10.5	1.1	0.2	24.73	100.9	7.64
			1.0	24.74	100.9	7.65
			2.0	24.75	100.4	7.63
			3.0	24.65	98.2	7.52
			4.0	24.60	96.7	7.52
			5.0	24.54	95.6	7.53
			6.0	23.96	68.3	7.43
			7.0	22.78	28.8	7.23
			8.0	16.06	0.0	7.16
			9.0	13.74	0.0	7.22
		10.0	12.94	0.0	7.24	
Halsey Island	10.3	1.1	0.2	24.79	95.3	7.56
			1.0	24.74	95.5	7.56
			2.0	24.73	94.9	7.47
			3.0	24.73	95.1	7.47
			4.0	24.72	94.9	7.50
			5.0	24.70	93.7	7.53
			6.0	24.48	84.6	7.54
			7.0	18.40	0.0	7.37
			8.0	16.07	0.0	7.30
			9.0	14.70	0.0	7.29
		10.0	13.50	0.0	7.28	
Mid-Lake	14.5	1.1	0.2	24.95	101.2	7.17
			1.0	24.97	100.7	7.63
			2.0	24.81	98.7	7.57
			3.0	24.74	98.5	7.59
			4.0	24.40	88.7	7.56
			5.0	23.57	55.8	7.30
			6.0	22.09	8.7	6.98
			7.0	20.03	0.0	7.01
			8.0	16.60	0.0	7.18
			9.0	14.42	0.0	7.39
			10.0	13.12	0.0	7.48
			11.0	12.27	0.0	7.50
			12.0	11.66	0.0	7.47
			13.0	11.13	0.0	7.43
14.0	10.70	0.0	7.34			
Great Cove	7.3	1.0	0.2	25.18	105.4	7.80
			1.0	25.09	105.1	7.79
			2.0	15.15	104.5	7.75
			3.0	15.12	104.5	7.66
			4.0	24.96	99.2	7.65
			5.0	24.60	90.9	7.58
			6.0	22.55	29.1	7.25
7.0	19.83	0.0	7.13			
King's Cove	2.8	0.8	0.2	24.61	90.2	7.31
			1.0	24.70	89.3	7.30
			2.0	24.70	88.4	7.29
			2.7	24.64	87.1	7.30

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)

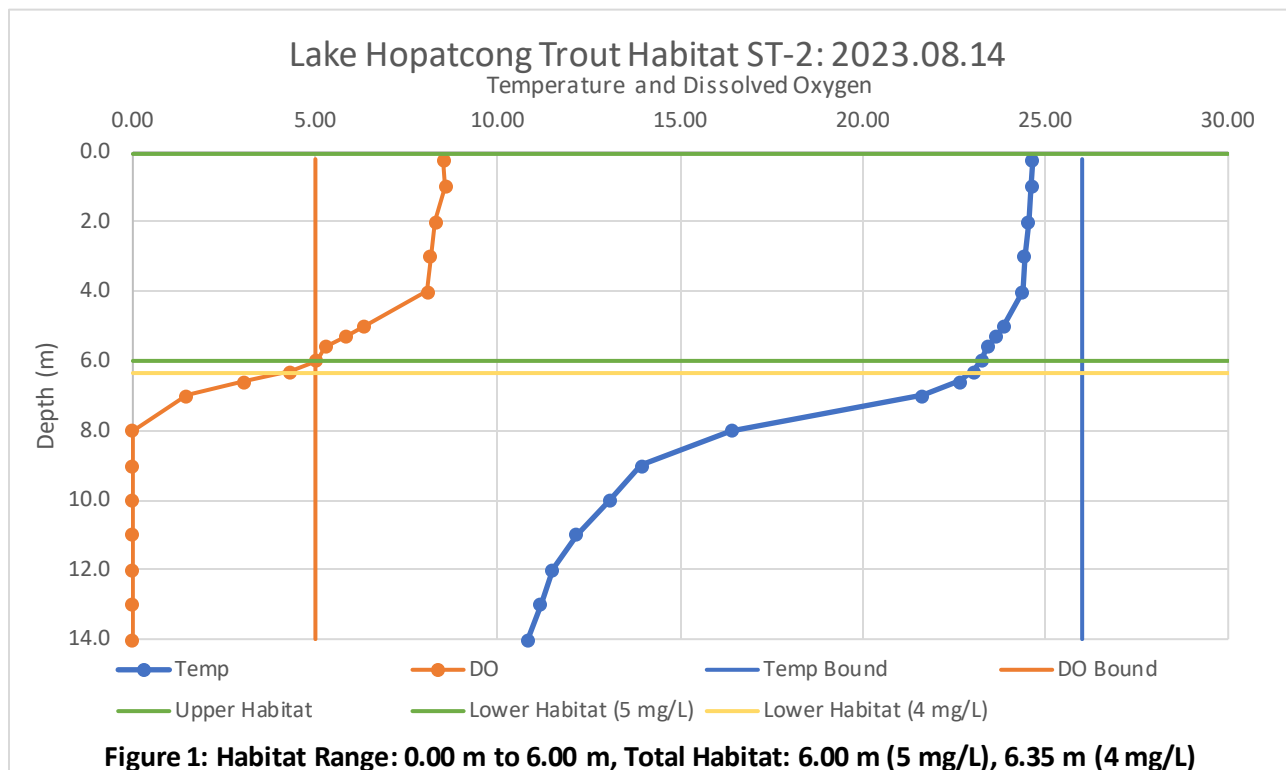
Lake Hopatcong Commission  
Trout Committee  
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**RE: Preliminary Trout Habitat Data 14 August 2023**

August 16, 2023

This memorandum presents the preliminary trout habitat data collected on 14 August 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.00 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.

Surface water temperatures decreased slightly relative to the previous monitoring event on 7 August, with a temperature of 24.65 °C at ST-2. This marks the second consecutive sampling event in which surface temperatures were below 25.00 at ST-2. The epilimnion expanded over the past week at ST-2, extending down to a depth of approximately 6.00 meters. The larger epilimnion resulted in a larger volume of water with DO above 5.0 mg/L. Additionally, the upper 4.0 meters remained below 25.00 °C and the lower 2.0 meters of the epilimnion remained below 24.00 °C, resulting in more favorable conditions for trout. The available trout habitat increased over the past week, from approximately 4.50 meters on 24 July to 6.00 meters on 14 August; this was the largest volume of available trout habitat in Lake Hopatcong since the 2023 trout water quality habitat sampling began on 5 July.



Lake Hopatcong *In-Situ* Monitoring Data 2023.08.14

Station	Depth (m)		Sample	Temperature	Specific Conductance	Dissolved Oxygen		pH
	Total	Secchi		°C	µS/cm	Conc. (mg/L)	Sat. (%)	
Byram Bay	10.5	1.0	0.2	24.78	428.5	8.65	107.4	7.82
			1.0	24.60	428.2	8.34	103.3	7.78
			2.0	24.52	428.5	8.19	101.2	7.65
			3.0	24.49	428.8	8.18	100.9	7.62
			4.0	24.43	429.0	8.06	99.5	7.62
			5.0	23.98	429.2	6.68	81.7	7.51
			5.3	23.64	429.6	6.37	77.5	7.37
			5.6	23.47	430.1	5.72	69.3	7.30
			6.0	22.75	431.6	3.95	46.9	7.12
			7.0	21.41	431.6	0.00	0.0	6.92
			8.0	18.31	481.7	0.00	0.0	7.04
9.0	14.64	482.9	0.00	0.0	7.17			
10.0	13.72	484.4	0.00	0.0	7.22			
Halsey Island	10.3	0.9	0.2	24.82	425.5	8.53	106.0	7.73
			1.0	24.70	427.7	8.59	106.5	7.76
			2.0	24.61	428.5	8.26	102.0	7.64
			3.0	24.54	428.9	8.22	101.6	7.61
			4.0	24.47	430.8	7.99	98.6	7.61
			5.0	23.87	432.2	6.87	84.1	7.45
			5.3	23.66	433.9	4.57	54.9	7.18
			5.6	22.85	435.0	4.06	46.7	7.12
			6.0	22.65	435.1	3.59	43.0	7.08
			7.0	21.75	436.9	1.38	16.1	6.98
			8.0	17.57	489.8	0.00	0.0	7.15
9.0	15.16	482.1	0.00	0.0	7.25			
10.0	12.83	484.2	0.00	0.0	7.21			
Mid-Lake	14.5	1.3	0.2	24.65	435.2	8.52	105.6	7.86
			1.0	24.62	435.2	8.55	105.8	7.82
			2.0	24.54	433.9	8.30	102.5	7.76
			3.0	24.43	433.5	8.14	100.4	7.69
			4.0	24.36	435.6	8.08	99.5	7.68
			5.0	23.84	435.4	6.33	77.2	7.48
			5.3	23.66	435.6	5.83	71.1	7.42
			5.6	23.42	435.8	5.27	63.6	7.35
			6.0	23.24	434.2	5.03	60.7	7.31
			6.3	23.01	435.4	4.31	51.8	7.23
			6.6	22.64	436.7	3.07	36.5	7.08
			7.0	21.62	438.2	1.46	17.0	7.62
			8.0	16.39	491.2	0.00	0.0	7.24
			9.0	13.94	482.0	0.00	0.0	7.17
10.0	13.06	479.8	0.00	0.0	7.18			
11.0	12.16	480.6	0.00	0.0	7.18			
12.0	11.48	484.2	0.00	0.0	7.18			
13.0	11.16	488.8	0.00	0.0	7.17			
14.0	10.82	493.1	0.00	0.0	7.16			
Great Cove	7.3	1.1	0.2	24.93	432.9	8.74	108.8	8.00
			1.0	24.84	432.7	8.77	109.1	8.03
			2.0	24.71	432.3	8.54	105.8	7.87
			3.0	24.62	432.4	8.38	103.7	7.78
			4.0	24.52	432.6	7.95	98.3	7.65
			5.0	23.69	433.9	5.44	66.2	7.40
			5.3	23.42	433.5	5.16	62.5	7.29
			5.6	23.23	433.1	4.98	60.1	7.23
			6.0	22.84	434.8	3.82	45.8	7.15
7.0	22.63	435.8	2.05	24.1	7.05			
King's Cove	2.8	0.9	0.2	24.70	440.9	7.57	93.9	7.59
			1.0	24.70	440.9	7.55	93.5	7.55
			2.0	24.61	440.2	7.35	91.0	7.45
			2.6	24.50	439.8	7.21	88.2	7.41

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)

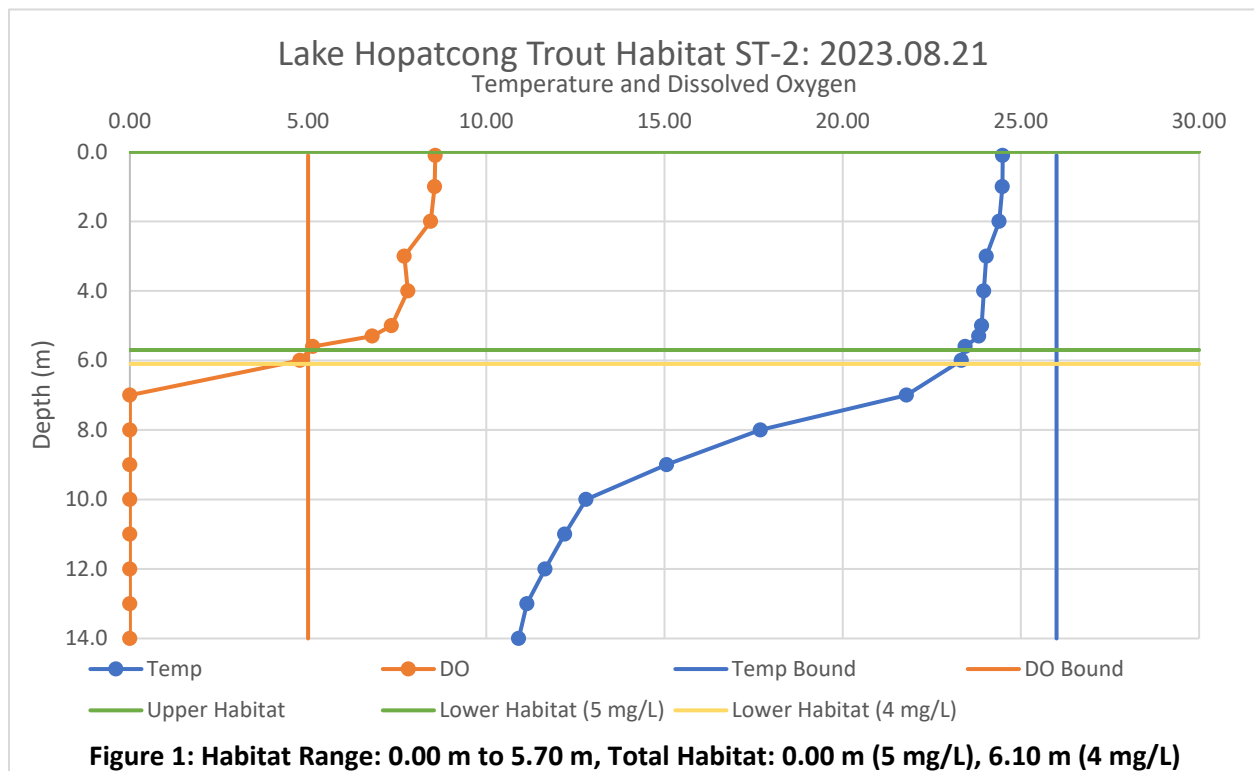
Lake Hopatcong Commission  
Trout Committee  
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**RE: Preliminary Trout Habitat Data 21 August 2023**

August 31, 2023

This memorandum presents the preliminary trout habitat data collected on 21 August 2023. The data includes both the *in-situ* water quality table for the event (including highlighting viable trout habitat in blue) and figures showing the ST-2 (Mid-Lake) temperature and dissolved oxygen (DO) profiles. In addition to the profiles, the figures show various habitat thresholds including the upper temperature bound (26.00 °C) and the lower dissolved oxygen bound (4.0 mg/L and 5.0 mg/L) as vertical lines. It also presents horizontal lines representing the upper and lower trout habitat bounds in the lake as determined by the intersection of the collected data and the habitat threshold bounds.

Surface water temperatures remained relatively consistent to the previous monitoring event on 14 August, with a temperature of 24.49 °C at ST-2. This marks the third consecutive sampling event in which surface temperatures were below 25.00 at ST-2. The epilimnion also remained relatively consistent over the past week at ST-2, extending down to a depth of approximately 6.00 meters. The extent of available trout habitat also remained relatively consistent, and the upper 3.0 meters remained below 25.00 °C and the lower 3.0 meters of the epilimnion remained below 24.00 °C. The available trout habitat decreased slightly over the past week, from approximately 6.00 meters on 14 August to 5.70 meters on 21 August. This event marks the completion of the weekly sampling schedule that initiated at the beginning of July.





In-Situ Monitoring for Lake Hopatcong 8/21/2023								
Station	Depth (meters)		Sample	Temperature	Specific Conductance	Dissolved Oxygen		pH
	Total	Secchi		°C	mS/cm	mg/L	% Sat.	S.U.
STA-1	2.30	0.70	0.1	25.79	343	8.94	112.9	7.56
			1.0	25.34	347	8.54	107.2	7.53
			1.5	24.80	348	7.46	92.1	7.44
STA-2	14.20	1.50	0.1	24.49	427	8.57	105.9	7.79
			1.0	24.48	427	8.55	105.4	7.74
			2.0	24.39	427	8.44	103.9	7.71
			3.0	24.03	427	7.70	94.1	7.60
			4.0	23.96	428	7.80	95.1	7.63
			5.0	23.90	427	7.34	89.5	7.63
			5.3	23.82	427	6.80	82.8	7.45
			5.6	23.44	425	5.13	61.9	7.29
			6.0	23.33	426	4.77	57.6	7.22
			7.0	21.79	417	0.00	0.0	6.80
STA-3	2.30	0.70	0.1	24.80	532	8.37	103.2	7.92
			1.0	24.58	533	7.90	98.1	7.74
			2.0	24.42	531	7.36	90.4	7.66
STA-4	2.80	1.00	0.1	24.39	433	8.39	103.3	7.74
			1.0	24.35	433	8.37	102.9	7.69
			2.0	24.15	433	7.54	92.2	7.58
STA-5	2.80	0.90	2.7	24.06	432	6.48	79.8	7.44
			0.1	24.58	434	8.56	105.7	7.88
			1.0	24.25	434	7.91	96.9	7.78
STA-6	2.90	1.20	2.0	24.09	434	7.67	93.9	7.59
			2.5	24.02	434	7.28	88.7	7.54
			0.1	25.60	419	8.40	112.9	7.84
STA-7	2.00	0.90	1.0	25.17	419	8.77	109.8	7.73
			2.0	24.42	420	8.15	100.5	7.60
			2.7	24.25	421	6.59	80.4	7.49
STA-8	7.30	1.40	0.1	25.10	252	7.75	96.6	7.31
			1.0	24.38	257	6.82	82.8	7.17
			1.8	23.62	249	6.04	73.1	7.64
STA-9	8.20	1.30	0.1	24.91	421	8.80	109.1	7.95
			1.0	24.59	422	8.87	109.5	7.90
			2.0	24.38	424	8.56	105.3	7.74
			3.0	24.31	424	8.05	98.8	7.69
			4.0	24.24	423	8.02	98.4	7.68
			5.0	23.98	433	7.35	89.7	7.66
			6.0	23.29	423	5.00	60.2	7.45
7.0	22.00	413	0.00	0.0	7.04			
STA-10	1.30	0.60	0.1	25.17	426	9.03	112.7	7.97
			1.0	24.52	425	9.02	111.0	7.97
			2.0	24.30	425	8.80	108.3	7.92
			3.0	24.16	426	7.99	98.0	7.77
			4.0	24.05	426	7.63	93.0	7.71
			5.0	23.76	431	6.72	81.5	7.64
			6.0	22.96	427	2.66	31.9	7.32
7.0	20.49	441	0.00	0.0	7.17			
8.0	17.27	491	0.00	0.0	7.31			
STA-11	1.30	1.30+	0.1	25.84	361	9.59	120.7	8.04
			1.0	24.83	368	9.26	114.9	7.89
STA-12	1.80	0.90	0.1	24.61	191	5.48	67.9	6.99
			1.0	23.52	189	4.95	59.8	6.76
STA-12	1.80	0.90	0.1	24.66	438	8.09	99.9	7.70
			1.0	24.65	438	7.97	98.5	7.66
			1.5	24.44	442	6.85	84.3	7.49

Trout Habitat Highlighted in Pale Blue (5 mg/L) and Gray (4 mg/L)