

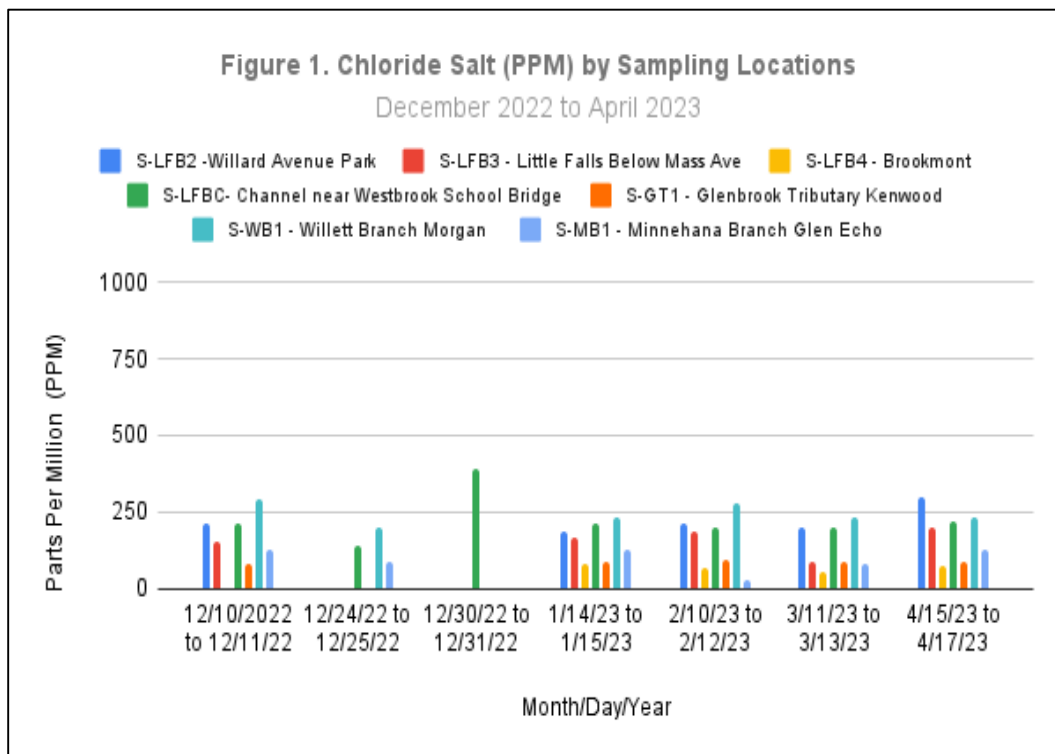


LITTLE FALLS WATERSHED ALLIANCE

EDUCATION - ACTION - STEWARDSHIP

Little Falls Watershed 2022-2023 Salt Monitoring Report

The results for winter salt monitoring in the Little Falls watershed are shown in Figure 1 below. A total of 45 readings were taken at 9 different locations, on five different streams, between December 2022 and April 2023. Chloride (i.e., salt) concentration levels are reported in parts-per-million (PPM) on the vertical or y-axis. The month and week in which the samples were collected is shown on the horizontal or x-axis. As noted, the readings were typically collected over a span of 2 to 3 days during each reporting period.



The weather was milder than usual this winter and there was no significant snow accumulation in the watershed area. Small amounts of brine and road salt were put in a few traditional trouble spots in advance of snow events that never materialized. Most of the salt readings were significantly lower than last winter and below the chronic exposure level of 230 PPM. A

new sampling site – the concrete channel near Westbrook School Bridge (S-LFBC) – was added. The highest reading of the season was recorded at this site on December 30.

Despite the lower salt concentration levels, surveys of benthic life at LFB-3 show that the watershed remains unable to support a variety of biological life.¹ In addition, a spill from a construction site upstream deposited a huge amount of sediment into the main branch the same day volunteers were conducting the fall survey at LFB-3 in October.

As shown in Table A, the readings that most frequently exceeded 230 PPM were at S-WB1- Willett Branch Morgan. Higher readings were also recorded at S-LFB-1 Little Falls Branch at Somerset Pool and S-LFB-2 Little Falls Branch in the Willard Avenue Park. However, a number of readings were below 230 PPM and readings below 100 PPM (not shown in table) were recorded at several sites including at S-LFB-4 Little Falls Branch in Brookmont and S-GT1 - Glenbrook Tributary in Kenwood.

Table A. Percent (%) of samples chloride salt levels greater than 230 PPM by sample location (based on a total number of readings at each site)

Sample Location	#Readings	Count < 230 PPM	Count > 230 PPM	Percent of Readings > 230 PPM
S-LFB1- Somerset Pool	4	3	1	25%
S-LFB2 -Willard Avenue Park	5	4	1	20%
S-LFB3 - Little Falls Below Mass Ave	5	5	0	0%
S-LFB4 - Brookmont	4	4	0	0%
S-LFBC- Channel near Westbrook School Bridge	7	7	0	0%
S-GT1 - Glenbrook Tributary Kenwood	5	5	0	0%
S-WB1 - Willett Branch Morgan	6	1	5	83%
S-MB1 - Minnehana Branch Glen Echo	6	3	0	0%
S-RC1 - Rock Creek	3	3	0	0%

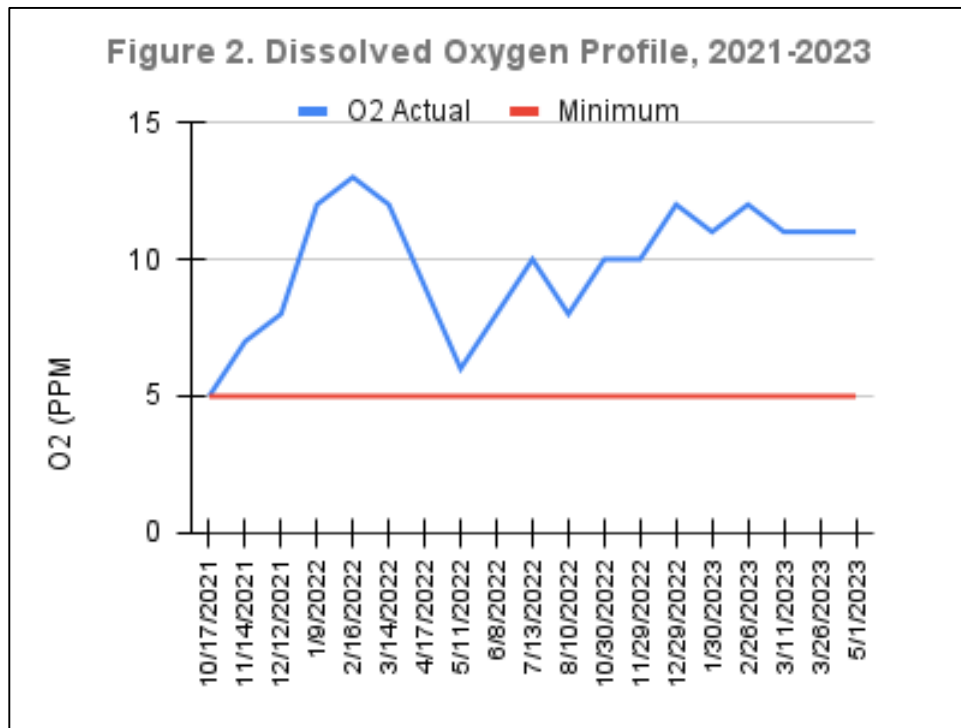
In addition, we monitored other water quality parameters (i.e., pH, dissolved oxygen) and air/water temperature at a single location – LFB3 – at the same time as the salt readings on a monthly basis. Based on the same water quality standards, pH should remain between 6.5 and 8.0. Dissolved oxygen should be maintained at 5.0 ppm or greater at all times. The results are shown in Table B.

¹ See <https://www.lfwa.org/macrobenthos>

Table B. Results for water quality parameters at LFB-3, June 1 2021 to May 1 2023.

Parameter	6/1	6/8	7/13	8/10	10/30	11/29	12/29	1/30	2/26	3/11	3/26	5/1
pH	7.0	7.0	7.0	6.5	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Dissolved O2		7	10	8	10	10	12	11	12	11	11	11
Air Temp	22	24	20	28	13	12	8	14	11	8	18	14
Water Temp	20	19	20	24	11	9	5	8	9	8	14	12

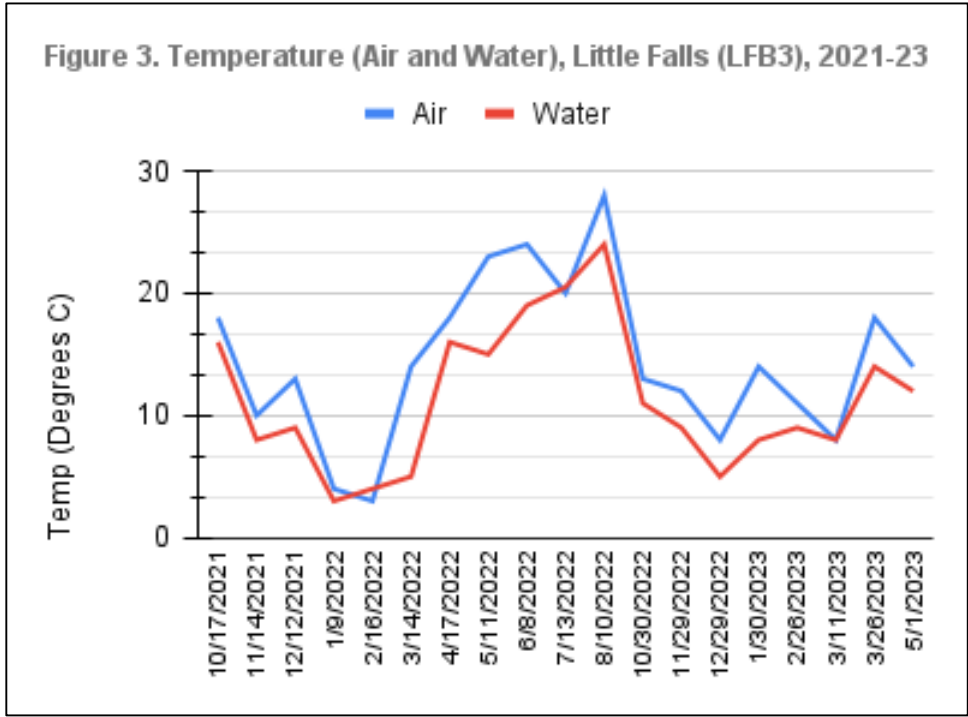
Trends in dissolved oxygen and air and water temperature for the past two seasons - from 10/17/21 to 5/1/23 - are shown in Figures 2 and 3. As shown in Figure 2, dissolved oxygen is highest in the winter months (i.e., supersaturated) due to low water temperatures and less biological activity. As expected, dissolved oxygen levels drop as the water temperature increases and more biological activity occurs.² To date, levels below 5 ppm have not been observed.



As shown in Figure 3, air temperature typically exceeded water temperature, except on one occasion; and the differences were more pronounced in the fall and spring.³ Minerals are more soluble in water in warmer temperatures, which helps to explain why there is always some amount of measurable salt in a stream even during the summer months. Monitoring of all water quality parameters will continue during the summer.

² See <https://www.usgs.gov/special-topics/water-science-school/science/dissolved-oxygen-and-water>

³ See <https://www.usgs.gov/special-topics/water-science-school/science/temperature-and-water>



For the second straight year, we posted the readings using the Water Reporter software app after which they were quickly uploaded to the [LFWA website](#). Because we were using this app, our results were also posted at Isaak Walton League’s [Winter Salt Watch](#) page.

LFWA Volunteers

- David Batson
- Emily Cordas
- Luca Grifo-Hahn
- Lynn Huang
- Dave Kathan
- Elle Laycox
- Alice Mayo
- Judy & Martin McLean
- Sarah Morse
- Bobby Pestronk
- Sienna, Marissa, and Jennifer Rancilio
- Frank Sanford
- Stella & Amelia Schreiber
- Pauline Smith
- Woody Stanley
- Julie Steinberg

Report by Woody Stanley, May 2, 2023.

