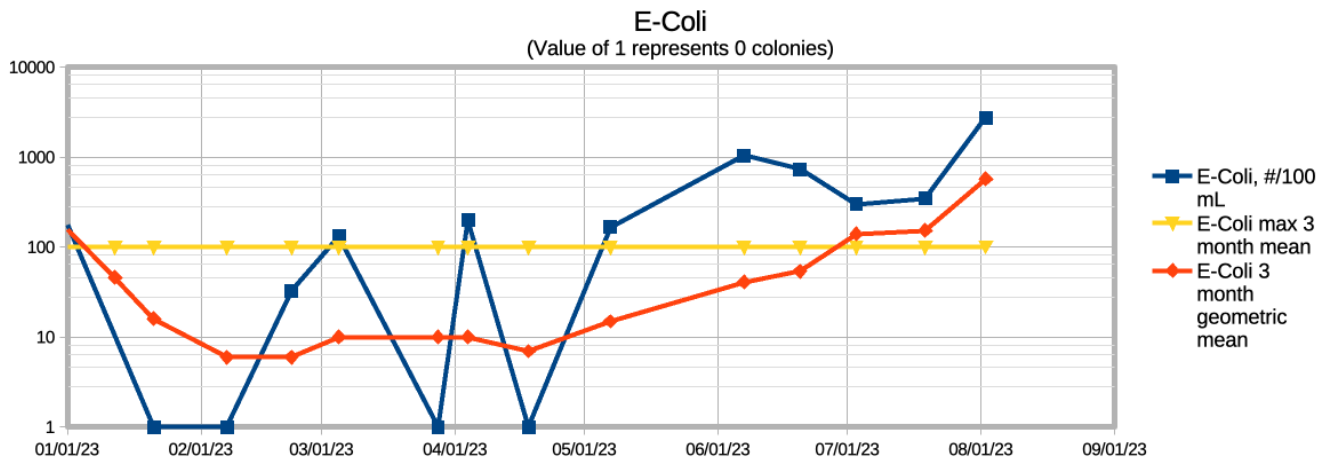
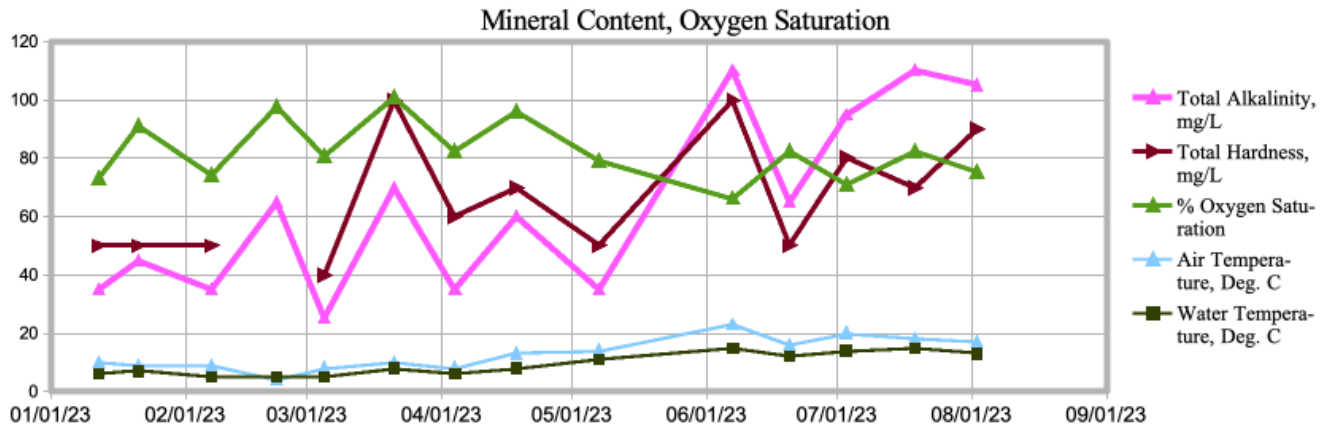
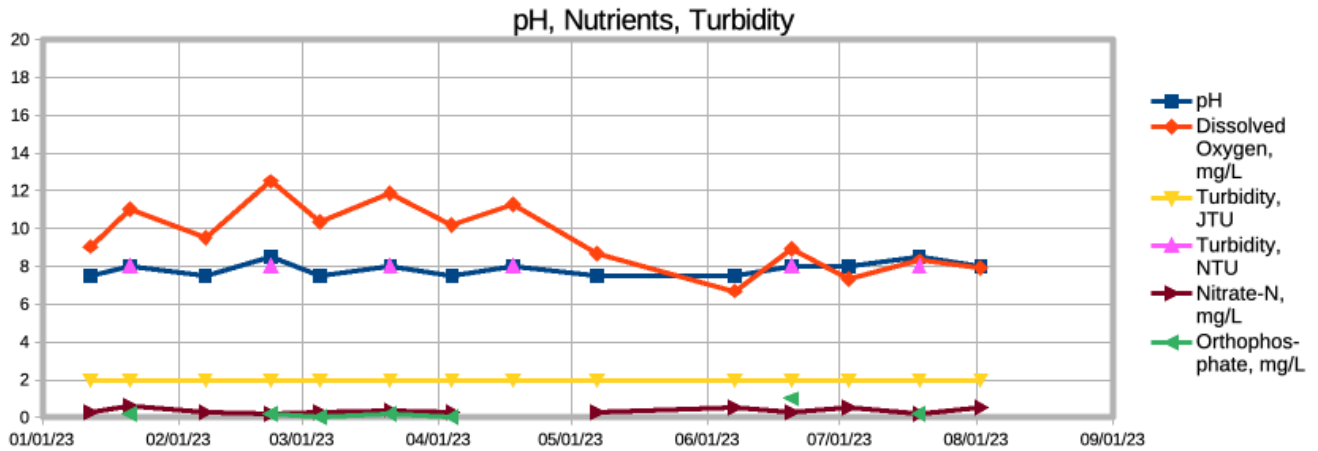


McSorley Creek Water Monitoring Results

Attached are the year-to-date results of citizen science water monitoring conducted by the Friends of Saltwater State Park, as of August 2, 2023.



This sampling program was made possible by Friends of Saltwater State Park, Washington Parks and Recreation Commission, and GWW Sno-King Watershed Council.



TABLE OF VALUES, WATER MONITORING RESULTS

Sample Time	15:30	10:15	10:40	10:25	11:30	10:00	10:40
Date	01/12/23	01/21/23	02/07/23	02/22/23	03/05/23	03/21/23	04/04/23
Air Temperature, Deg. C	10	9	9	4	8	10	8
Water Temperature, Deg. C	6	7	5	5	5	8	6
pH	7.5	8.0	7.5	8.5	7.5	8.0	7.5
Dissolved Oxygen, 1 mg/L	9.0	11.0	9.4	12.4	10.4	12.1	10.4
Dissolved Oxygen, 2 mg/L	9.1	11.0	9.6	12.6	10.3	11.7	10.0
Dissolved Oxygen, mg/L	9.1	11.0	9.5	12.5	10.4	11.9	10.2
% Oxygen Saturation	73	90.9	74.2	97.7	80.9	100.8	82.3
Total Alkalinity, mg/L	35	45	35	65	25	70	35
Total Hardness, mg/L	50	50	50		40	100	60
Turbidity, JTU	2	2	2	2	2	2	2
Turbidity, NTU		8		8		8	
Nitrate-N, mg/L	0.25	0.6	0.25	0.2	0.25	0.4	0.25
Orthophosphate, mg/L		0.2		0.2	0	0.2	0
Date	01/12/23	01/21/23	02/07/23	02/22/23	03/05/23	03/28/23	04/04/23
E-coli sample volume, mL	1	1	1	1	3	1	1
E-Coli, Plate 1	0	0	0	0	5	0	2
Plate 2	0	0	0	1	3	0	3
Plate 3	0	0	0	0	0	0	1
E-Coli, #/100 mL	0	1	1	33	133	1	200
Other Coliform Plate 1	0	39	57	11	130	11	93
Plate 2	0	26	66	16	117	8	68
Plate 3	0	34	97	10	0	12	14
Total Coliform, #/100 mL	0	3301	7334	1266	4250	1034	6033
E-Coli 3 month geometric mean	46	16	6	6	10	10	10
E-Coli max single sample	320	320	320	320	320	320	320
E-Coli max 3 month mean	100	100	100	100	100	100	100
E-Coli 3-mon. Highest Single Plate	400	400	400	400	400	500	500
Sample Time	10:45	13:00	16:25	10:00	14:33	10:30	9:50
Date	04/18/23	05/07/23	06/07/23	06/20/23	07/03/23	07/19/23	08/02/23
Air Temperature, Deg. C	13	14	23	16	20	18	17
Water Temperature, Deg. C	8	11	15	12	14	15	13
pH	8.0	7.5	7.5	8.0	8.0	8.5	8.0
Dissolved Oxygen, 1 mg/L	11.6	8.6	6.6	9.0	7.2	8.4	7.8
Dissolved Oxygen, 2 mg/L'	11.0	8.8	6.8	8.8	7.4	8.2	8.0
Dissolved Oxygen, mg/L	11.3	8.7	6.7	8.9	7.3	8.3	7.9
% Oxygen Saturation	95.8	79.1	66.3	82.4	70.9	82.2	75.2
Total Alkalinity, mg/L	60	35	110	65	95	110	105
Total Hardness, mg/L	70	50	100	50	80	70	90
Turbidity, JTU	2	2	2	2	2	2	2
Turbidity, NTU	8			8		8	
Nitrate-N, mg/L		0.25	0.5	0.3	0.5	0.2	0.5
Orthophosphate, mg/L				1		0.2	
Date	04/18/23	05/07/23	06/07/23	06/20/23	07/03/23	07/19/23	08/02/23
E-coli sample volume, mL	1	1	1	1	1	1	1
E-Coli, Plate 1	0	0	12	7	3	4	31
Plate 2	0	0	9	8		3	27
Plate 3	0	5	0	7			
E-Coli, #/100 mL	1	167	1050	733	300	350	2733
Other Coliform Plate 1	20	56	172	158	130	24	243
Plate 2	19	150	178	148		42	260
Plate 3	25	155	0	156			
Total Coliform, #/100 mL	2134	12200	18550	16133	13300	3650	27733
E-Coli 3 month geometric mean	7	15	41	54	141	154	577
E-Coli max single sample	320	320	320	320	320	320	321
E-Coli max 3 month mean	100	100	100	100	100	100	101
E-Coli 3-mon. Highest Single Plate	500	500	1200	1200	1200	1200	3100

The dissolved oxygen concentration and percent saturation remain low. There has been no measurable turbidity, and the hardness and alkalinity are typical. The E-Coli population has increased to a level not seen since a sewer spill in 2020. The 3-month mean has increased by a factor of 10 since June, well above the recommended level for recreational activity. Nitrate-nitrogen is above recommended limits.

Suggested water quality ranges for maximum health of aquatic life:

Alkalinity between 60 and 150 mg/L

pH between 6.5 and 9.

Hardness between 60 and 189 mg/L

Dissolved oxygen at 9.0 mg/L or above

pH between 6.5 and 9.

Turbidity below 5.0 NTU (Note: The method detection limit for the method used is 8.0 NTU. Values below 8 NTU are reported as 8.0)

E-Coli 3 month mean below 100 for recreational use

Nitrate Nitrogen 0.31 mg/L

Orthophosphate .06 mg/L