Deep Creek Lake Continuous Monitoring Summary 2025

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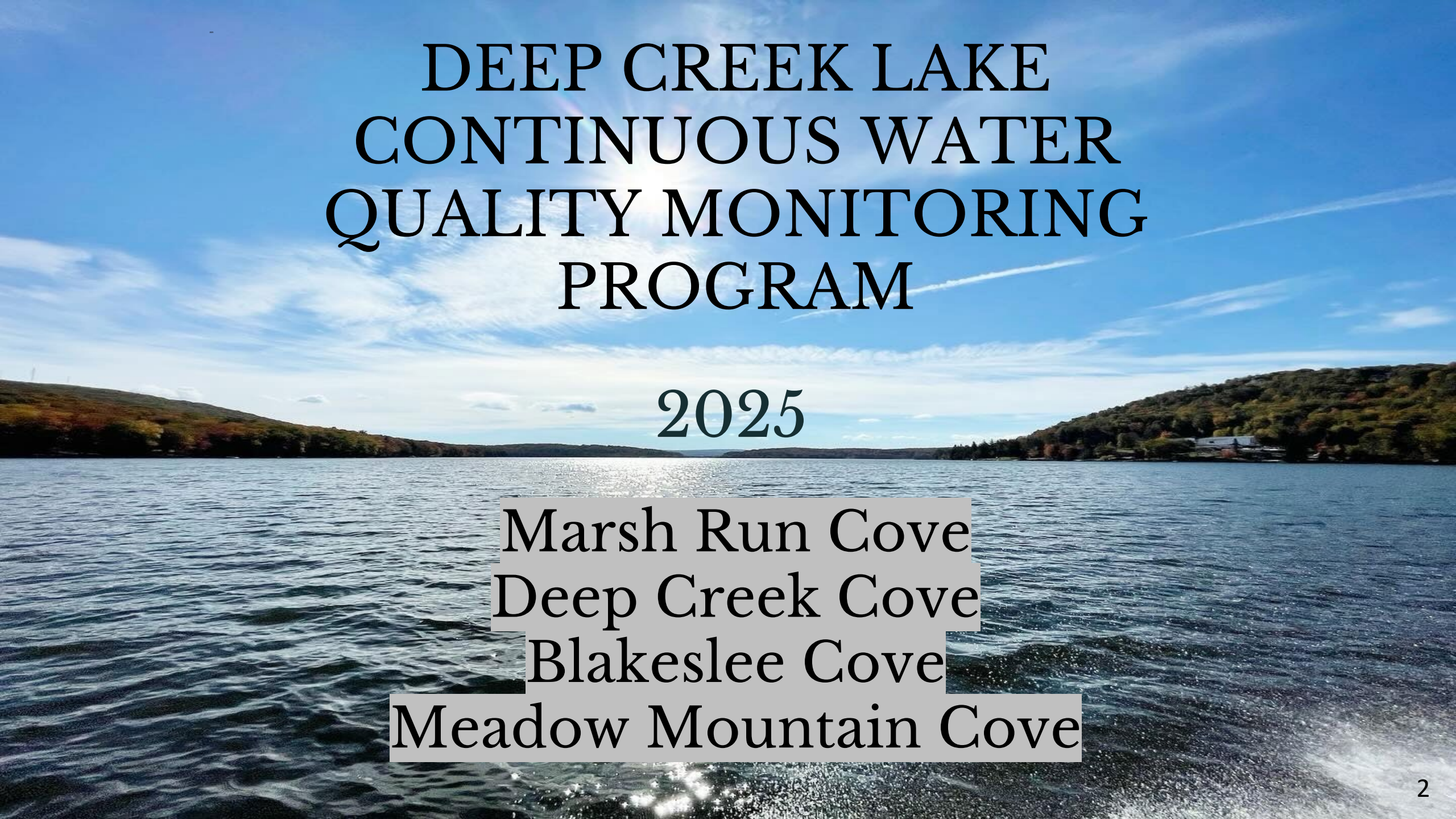
Resource Assessment Service

March 2026

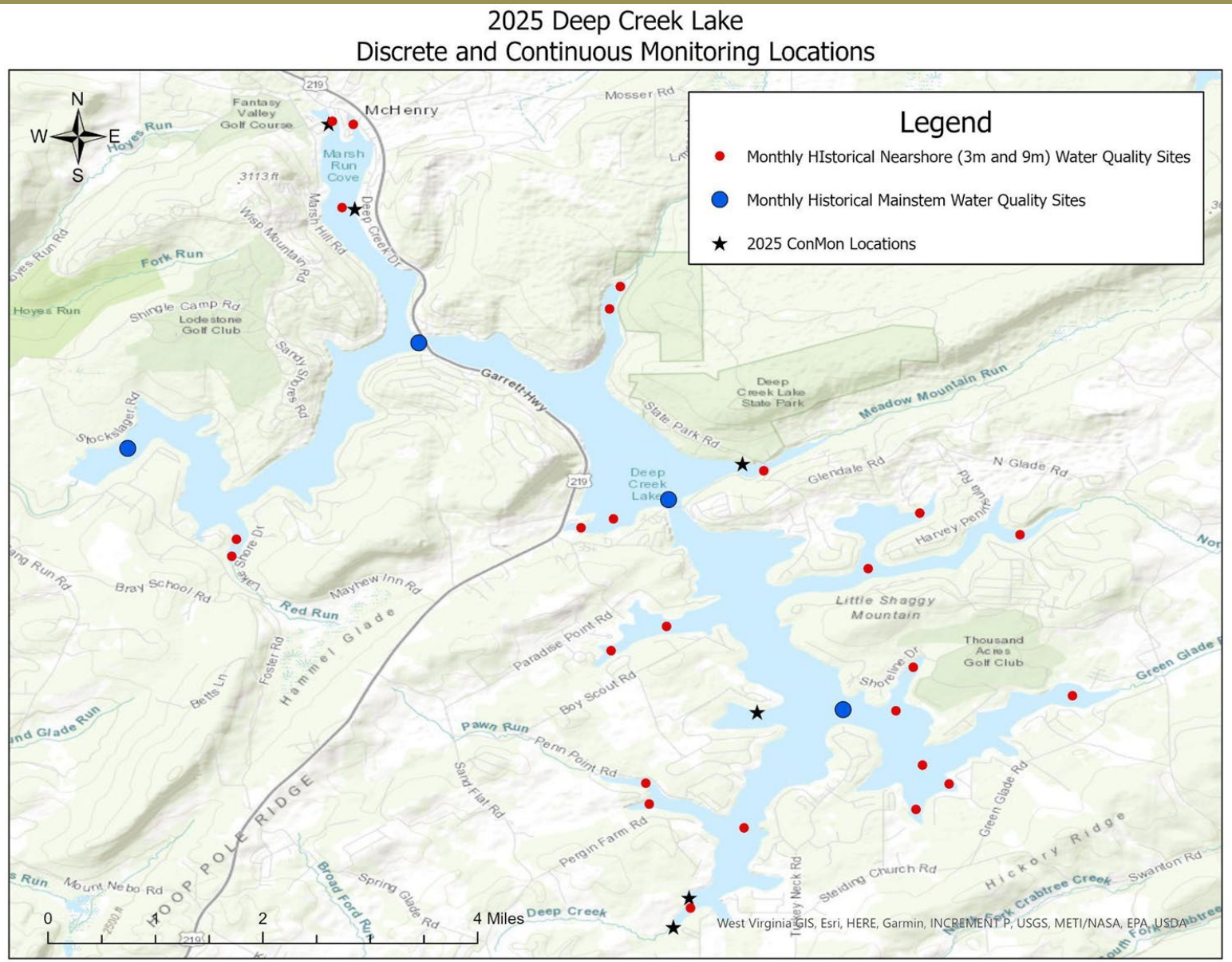


DEEP CREEK LAKE CONTINUOUS WATER QUALITY MONITORING PROGRAM

2025

Marsh Run Cove
Deep Creek Cove
Blakeslee Cove
Meadow Mountain Cove

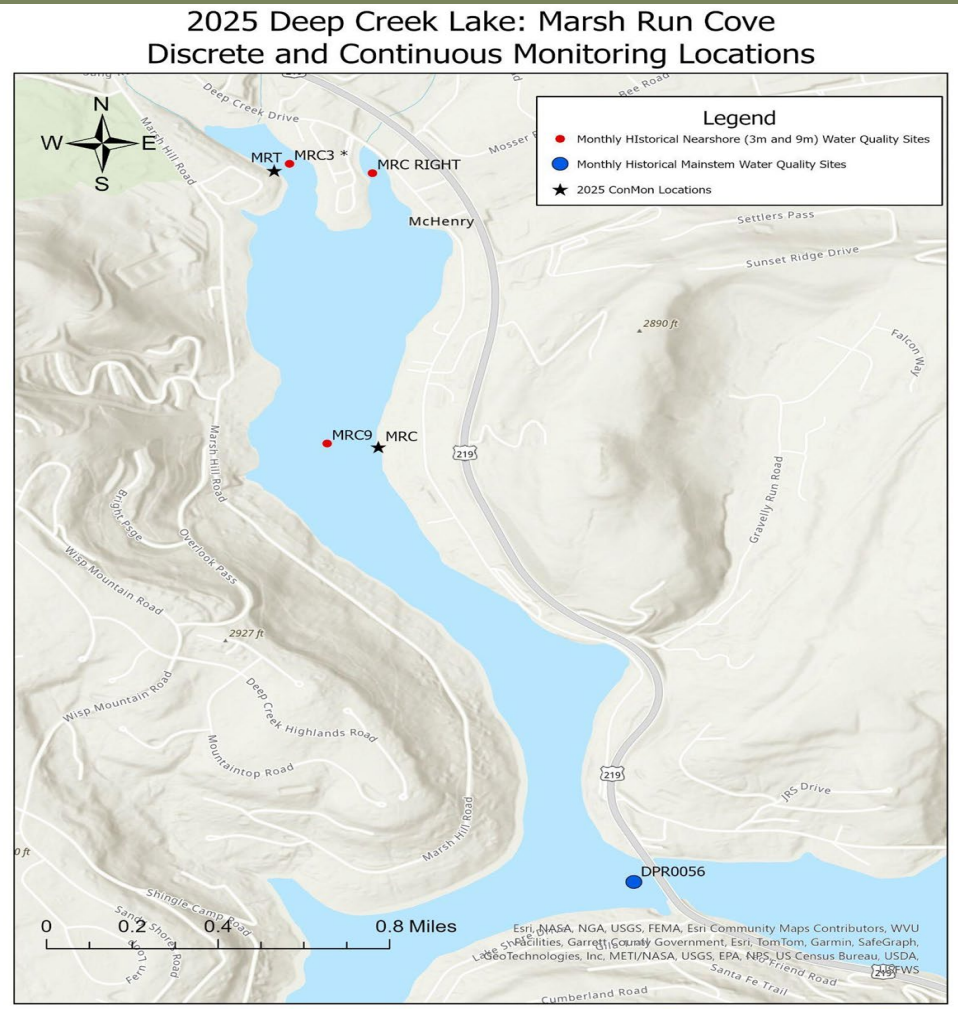
2025 Deep Creek Lake Monitoring Locations



- In 2025, six continuous monitors (meters) were deployed around Deep Creek Lake in fixed locations from May through September/ October. Two meters were deployed in Marsh Run Cove. Two meters were deployed in Deep Creek Cove. One meter was deployed in Meadow Mountain Cove and the final meter was deployed in Blakeslee Cove.
- Marsh Run Cove and Deep Creek Cove each had one meter near the tributary, and one in the deeper portion of the cove; Meadow Mountain Cove and Blakeslee Cove had one meter placed toward the mouth of the coves.
- The meters were secured to a dock within a PVC pipe or placed in a modified crab pot and placed under a dock to ensure protection of the meter.
- All locations received permission from the dock owners.
- The meters were programmed to take readings every 15 minutes. The parameters included: temperature, dissolved oxygen, pH, turbidity, specific conductance, chlorophyll, and phycocyanin (blue-green algae).
- Every three to four weeks, the meters were rotated allowing time for the original meter to be cleaned, serviced and calibrated. This process ensured the most accurate data possible, without interrupting the continuous collection of data.

Marsh Run Cove 2025
Continuous Monitoring Meter Locations

Marsh Run Cove
Marsh Run Tributary



- Marsh Run Trib location from May 15 - October 8: Lake Pointe Inn, 174 Lake Pointe Dr #1534, McHenry, MD 21541; Coordinates: 39.556989, -79.357306
- Marsh Run Cove location from May 22 - October 8: 1211 Deep Creek Dr, McHenry, MD 21541; Coordinates: 39.545830, -79.353889
- Marsh Run Trib was placed into a PVC tube attached to a spud pole on a dock at Lake Pointe Inn closer to the mouth of Marsh Run to monitor the shallow area of the cove. Depth at Marsh Run Trib station ranged from 1.4 – 2.6 meters deep throughout the monitoring season.
- Marsh Run Cove was placed into a PVC tube attached to a spud pole on a dock near the center of the cove to get a better idea of the overall water quality within Marsh Run Cove. Depth at this station ranged from 0.9 – 2.0 meters deep throughout the monitoring season.

Blakeslee Cove 2025
Continuous Monitoring Meter Location

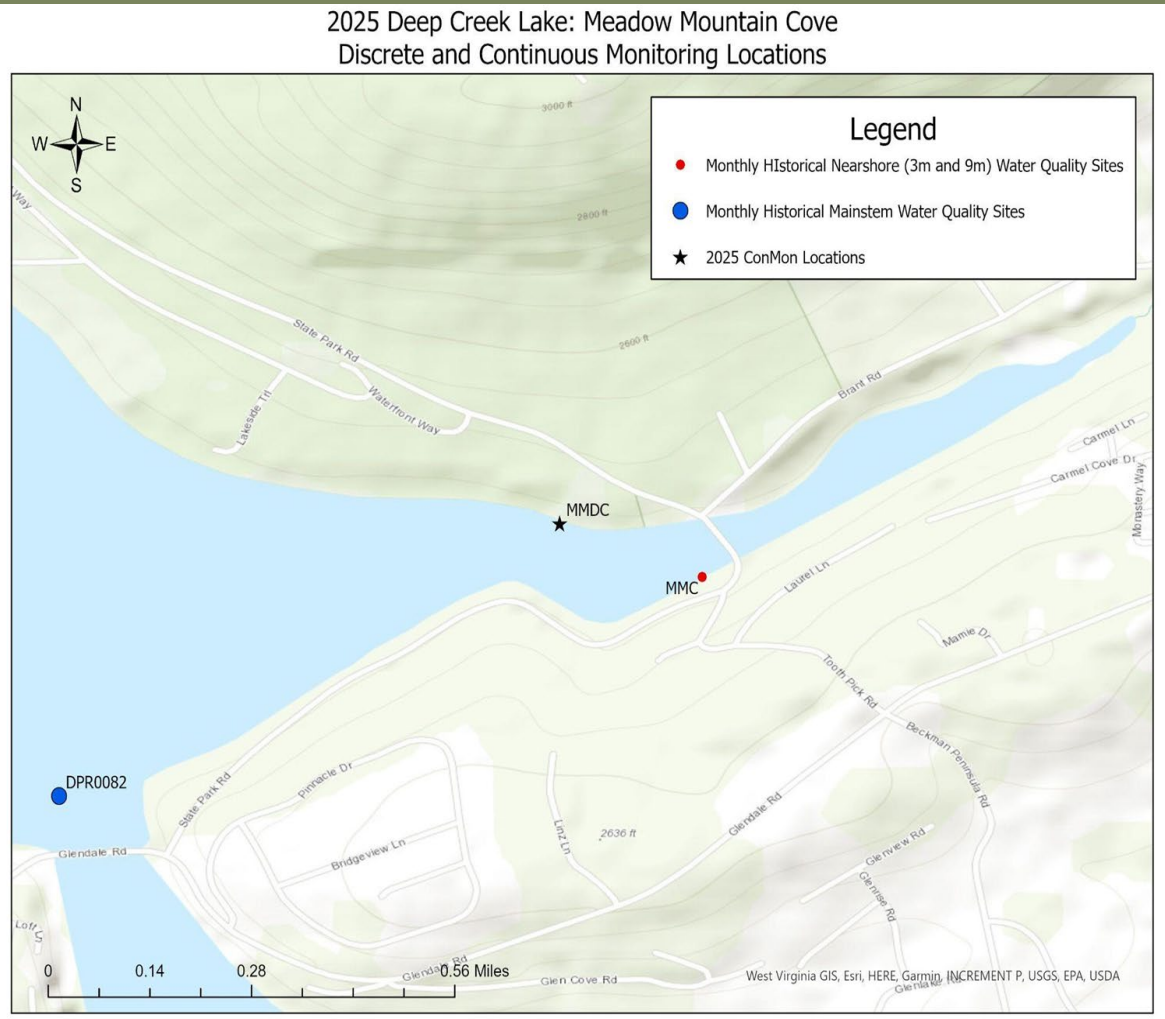
Blakeslee Cove

- Blakeslee Cove location from May 22 - October 2: 902 Holy Cross Dr, Oakland, MD 21550; Coordinates: 39.4780556, -79.2997222

- Blakeslee Cove was placed in a PVC pole attached to a spud pole on a dock to monitor the water quality in Blakeslee Cove. Later in the season the meter was moved to a modified crab pot and tied to the dock so the dock could be moved out due to lower lake levels. Depth at this station ranged from 1.6 – 2.4 meters deep throughout the monitoring season.

Meadow Mountain Cove 2025 Continuous Monitoring Meter Location

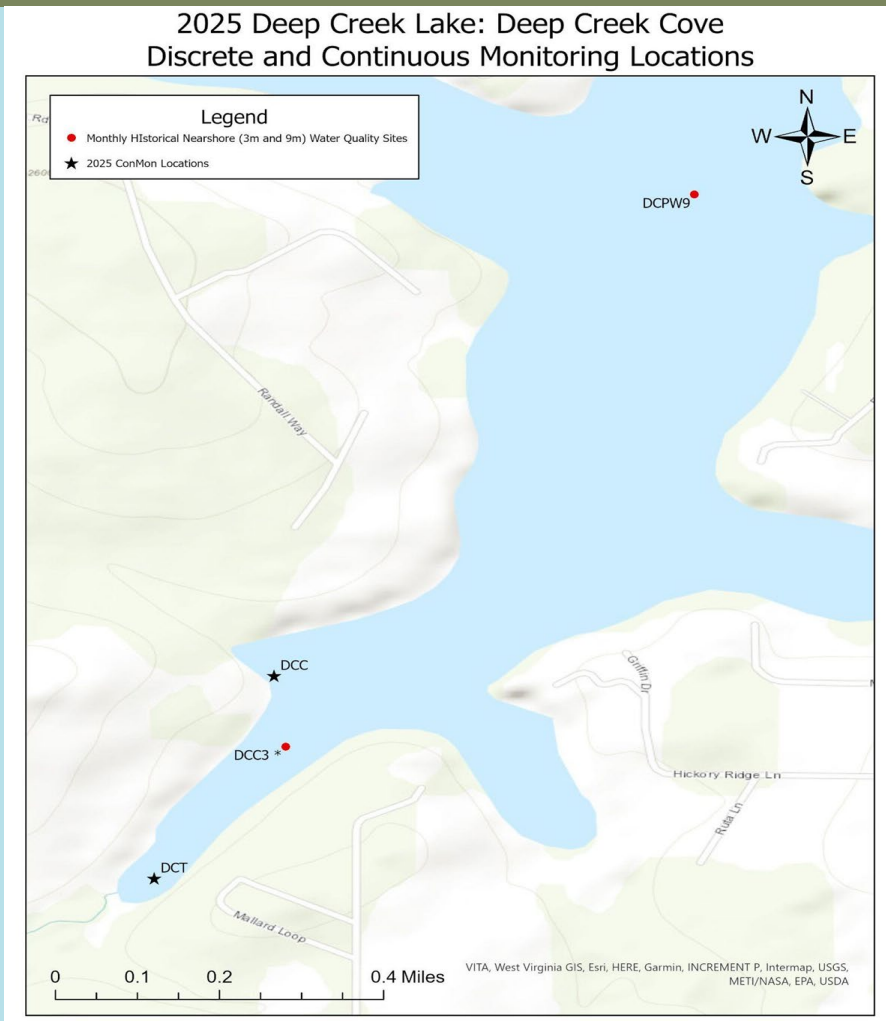
Meadow Mountain Cove



- Meadow Mountain Cove location from May 15 - October 16: 898 State Park Rd, Swanton, MD 21561; Coordinates: 39.5115, -79.3017
- Meadow Mountain Cove was placed in a PVC pole attached to a spud pole on a dock to monitor the water quality in Meadow Mountain Cove. Depth at this station ranged from 1.8 – 3.0 meters deep throughout the monitoring season.
- This site was chosen as a permanent site to be monitored annually.

Deep Creek Cove 2025
Continuous Monitoring Meter Locations

Deep Creek Trib
Deep Creek Cove



- Deep Creek Trib location from May 19 - September 2 : 153 Mallard Loop, Oakland, MD 21550; Coordinates: 39.448997, -79.310893
- Deep Creek Cove location from May 23 - October 8: 22 Randall Way, Oakland, MD 21550; Coordinates: 39.4530556, -79.3088889
- Deep Creek Trib was placed in a modified crab pot under a dock to monitor the water quality near the tributary of Deep Creek Cove. Depth at this station ranged from 0.5 – 1.2 meters deep throughout the monitoring season. The meter was pulled earlier than the other sites due to low lake water levels.
- Deep Creek Cove was placed in a modified crab pot under a dock to monitor the water quality in the middle of the Deep Creek Cove. Depth at this station ranged from 0.7 – 1.4 meters deep throughout the monitoring season.

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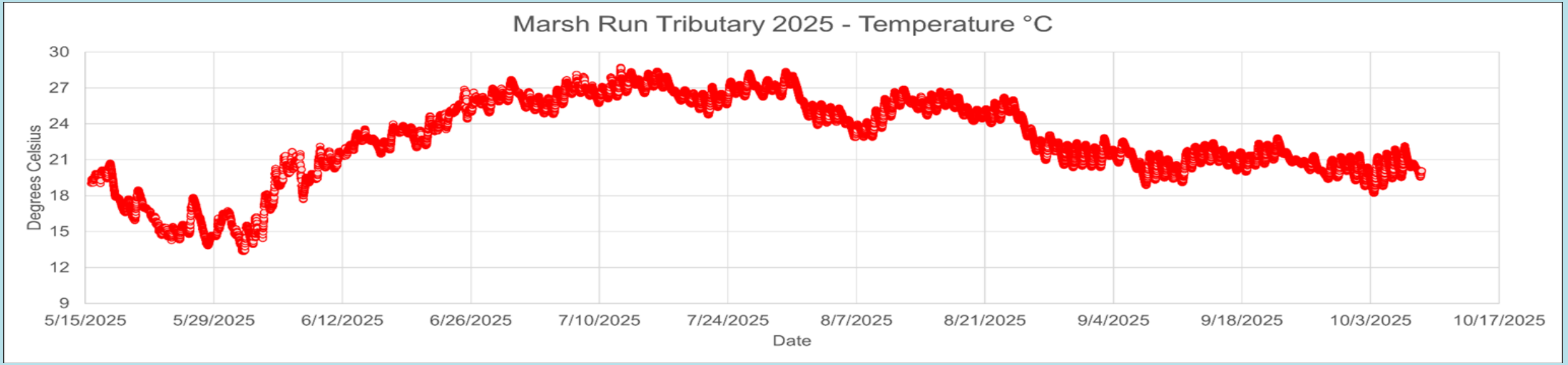
Temperature

Temperature: Measures the temperature of the water in degrees Celsius. Temperature affects both the biological and chemical characteristics of surface water. Some parameters being measured may be affected by a change in temperature. These include dissolved oxygen, pH, chlorophyll and specific conductance. The lower the temperature of the water, the more dissolved oxygen (DO) it can hold, so as the temperature of the water increases, DO will typically decrease. pH and chlorophyll tend to decrease with increased temperature, as well. However, specific conductivity may increase with higher temperatures. This is due to warmer water being able dissolve more minerals from the surrounding rock and sediments, this effect is dependent upon the type of rock and sediments in the area. (see 1 and 2 on the citations slide).

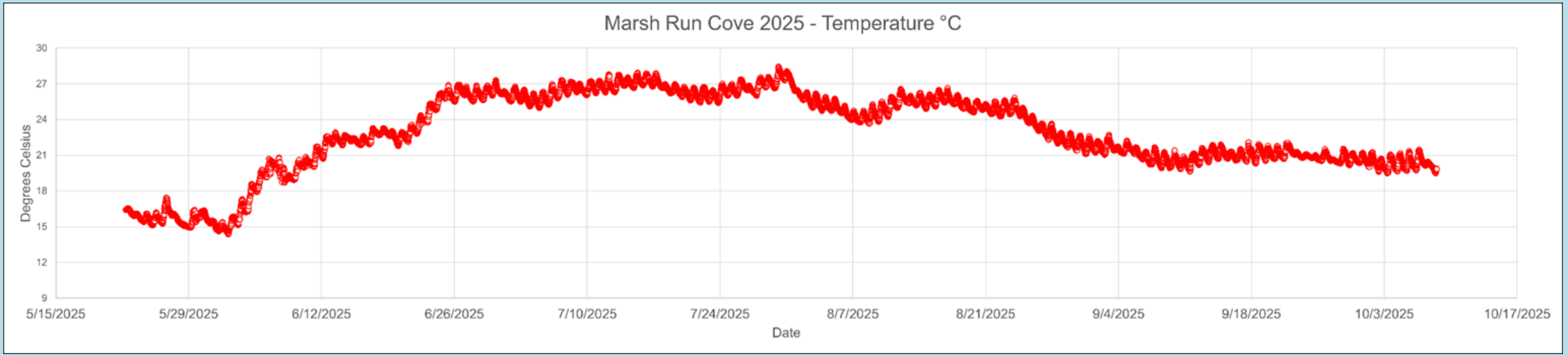
The long-term average (May through October 2009 – 2025) for Deep Creek Lake surface temperature is 21.03 degrees Celsius.

Temperature ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	14.20 - 28.30	21.78
Marsh Run Trib (May - Oct)	13.32 - 28.75	22.59
Marsh Run Cove (May - Oct)	14.38 - 28.44	22.86
Meadow Mountain Cove (May - Oct)	14.21 - 28.40	22.37
Blakeslee Cove (May - Oct)	14.55 - 28.39	23.11
Deep Creek Trib (May - Sept)	9.74 - 29.69	22.19
Deep Creek Cove (May - Oct)	13.90 - 29.47	22.88

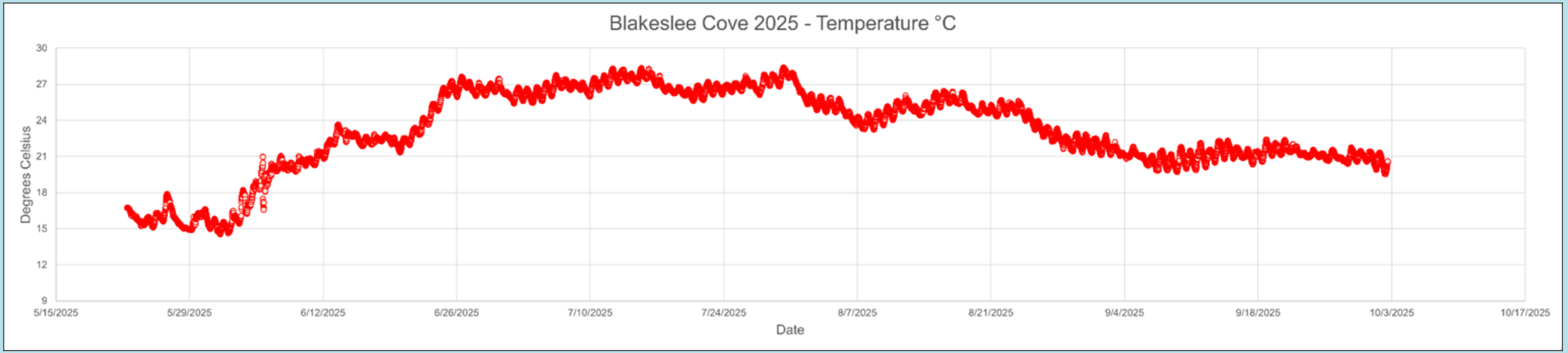
Marsh Run Trib May 15 - October 8, 2025



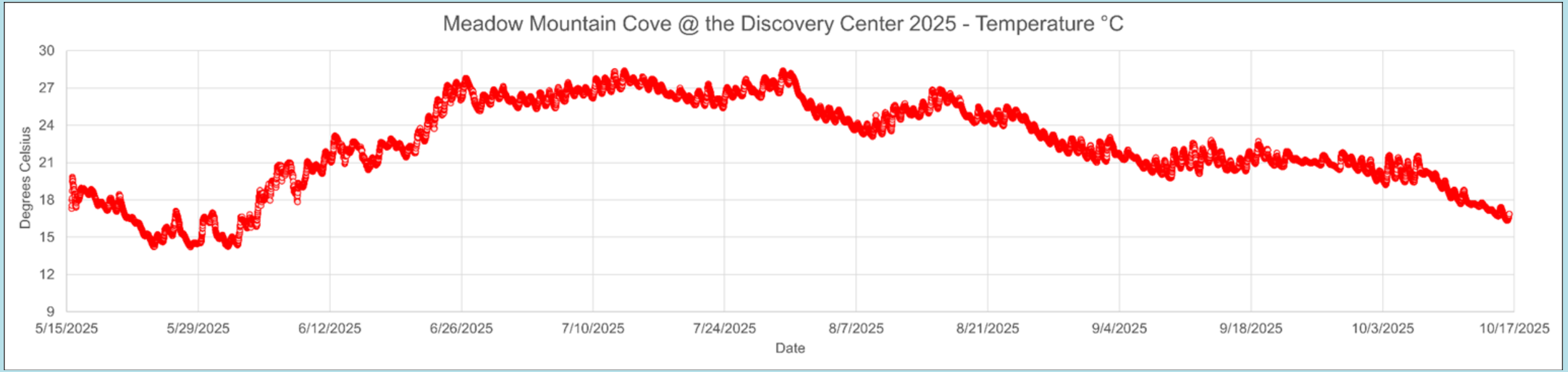
Marsh Run Cove May 22 – October 8, 2025



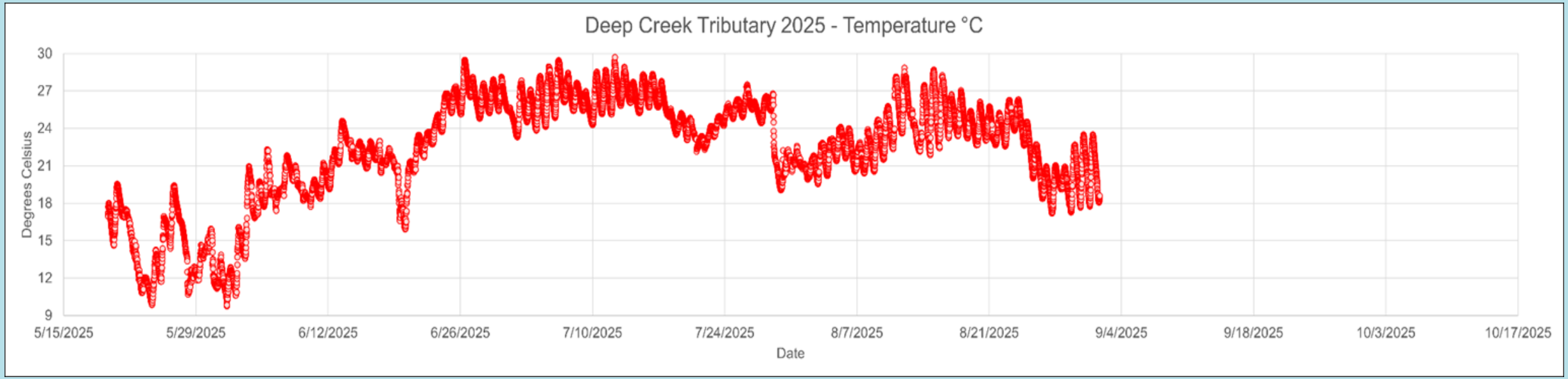
Blakeslee Cove May 22 – October 2, 2025



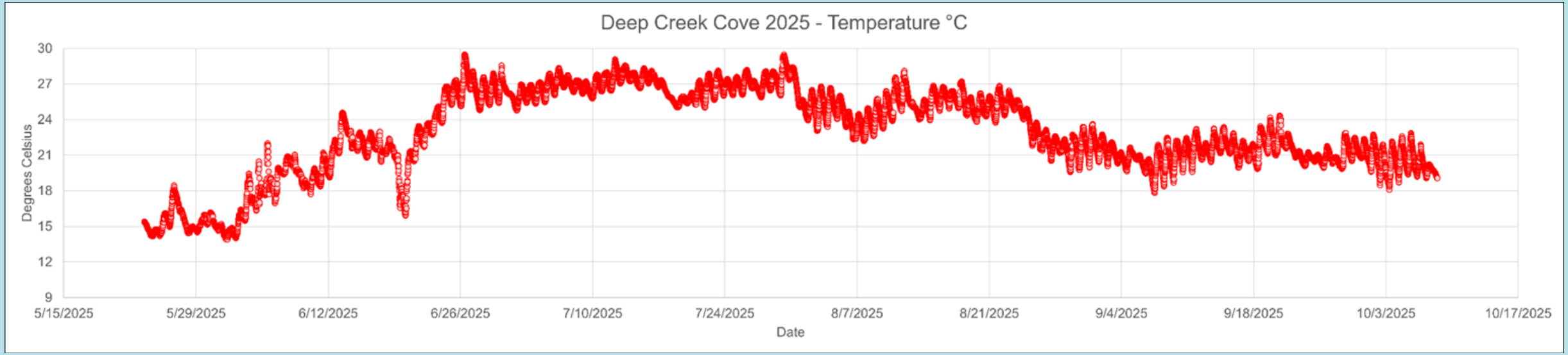
Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025



Deep Creek Cove May 23 – October 8, 2025



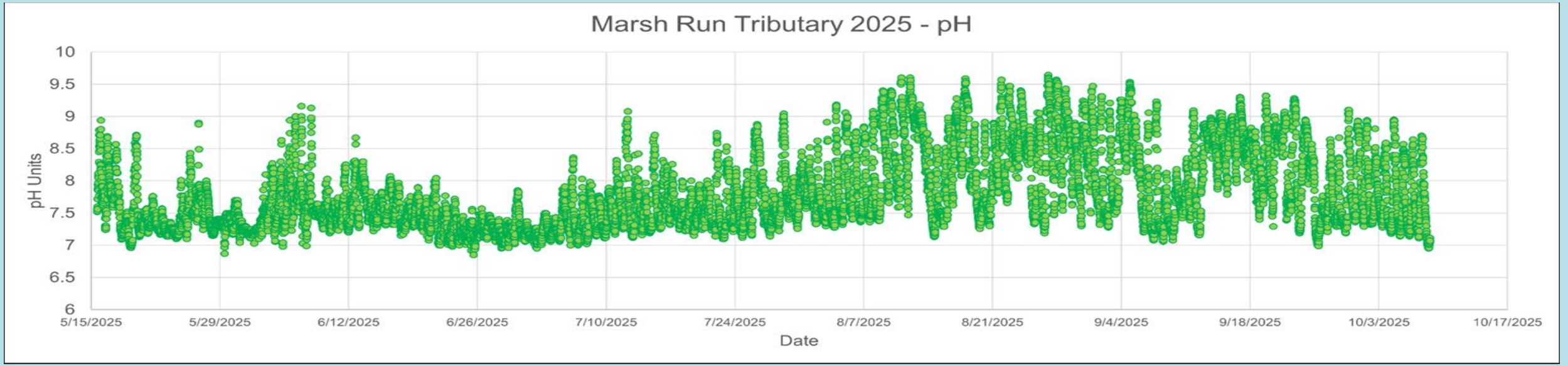
pH

pH: pH is a chemical measure of whether something is an acid or a base. It is measured on a log scale of 0 to 14. Lower pH (acid) is sometimes seen in fresh waters due to acid precipitation or even naturally-occurring organic acids, which can be found in areas with wetlands. High pH (base) can occur due to chemical processes associated with photosynthesis. During photosynthesis, aquatic plants remove carbon dioxide from the water. This can raise the pH in the water. Since plants photosynthesize with sunlight, the pH of the water will typically be highest during the middle of the afternoon, and lowest just before sunrise. The continuous monitoring data show diurnal variations representing this photosynthetic process. The range of pH tends to be greater in an area with a low buffering capacity (low alkalinity).(see 3, 4, and 5 on the citations slide)

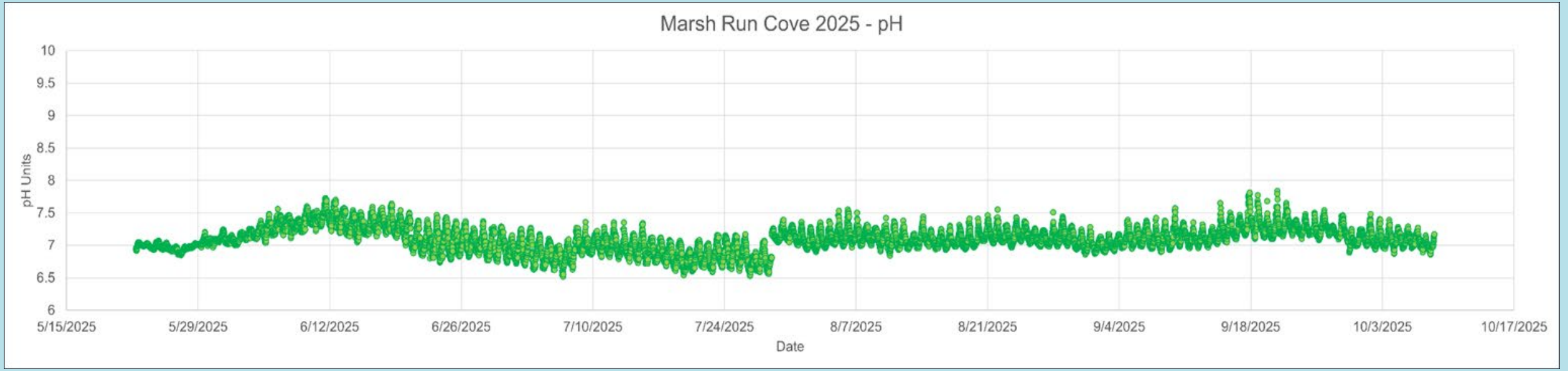
The long-term average (May through October 2009 – 2025) for Deep Creek Lake surface pH is 7.21

pH ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	6.80 - 9.40	7.38
Marsh Run Trib (May - Oct)	6.85 - 9.64	7.80
Marsh Run Cove (May - Oct)	6.52 - 7.84	7.09
Meadow Mountain Cove (May - Oct)	6.73 - 8.12	7.22
Blakeslee Cove (May - Oct)	6.90 - 9.11	7.44
Deep Creek Trib (May - Sept)	6.00 - 9.81	7.56
Deep Creek Cove (May - Oct)	6.35 - 9.47	7.52

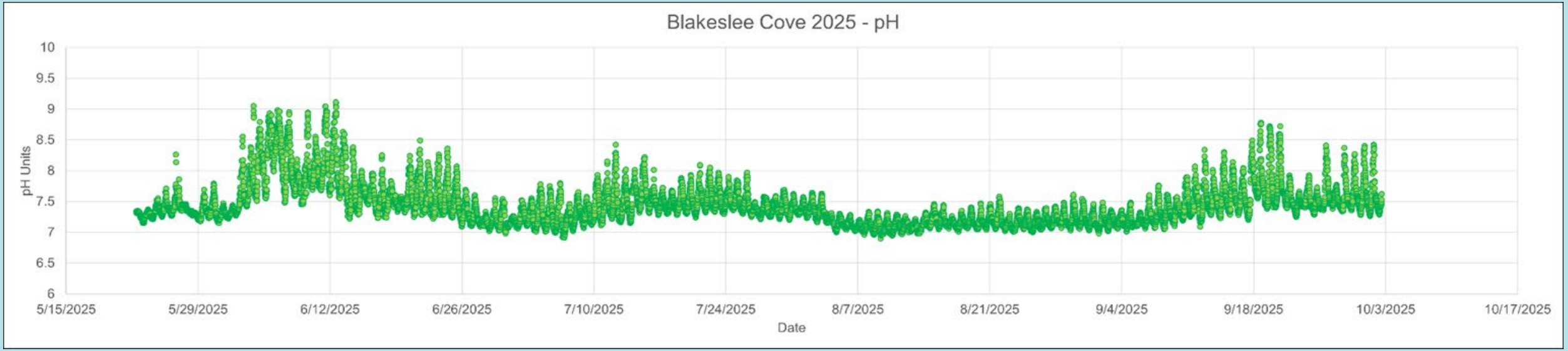
Marsh Run Trib May 15 - October 8, 2025



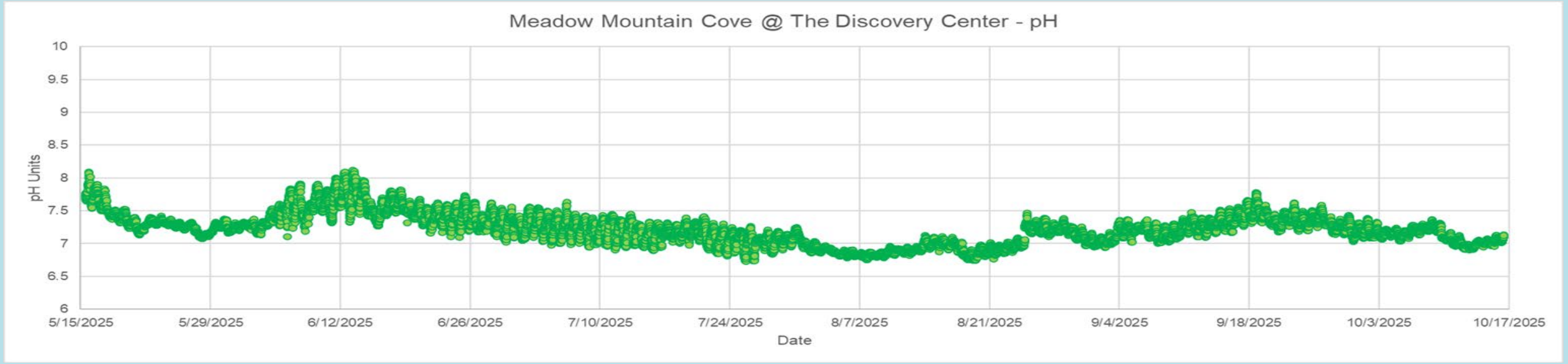
Marsh Run Cove May 22 – October 8, 2025



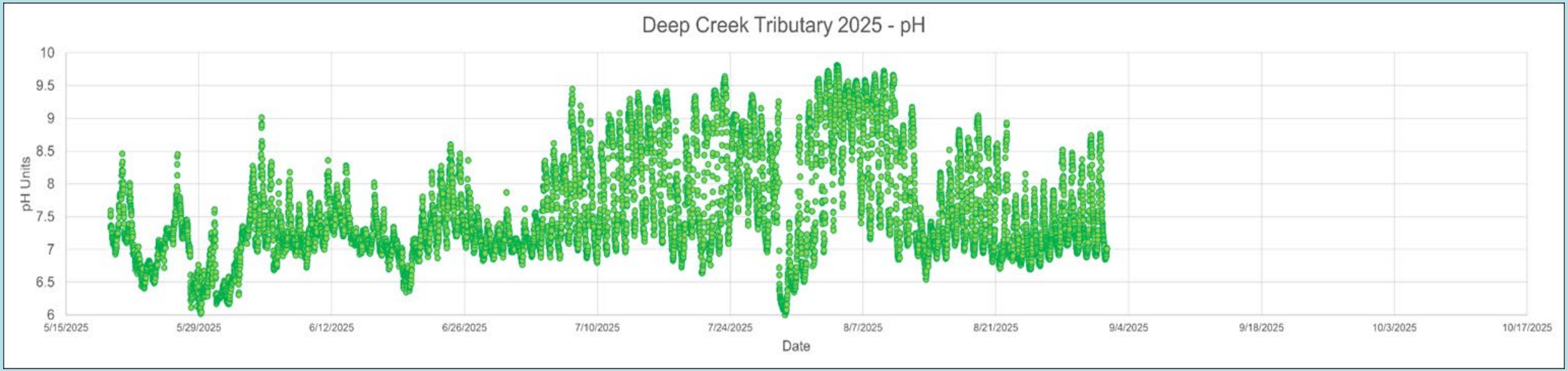
Blakeslee Cove May 22 – October 2, 2025



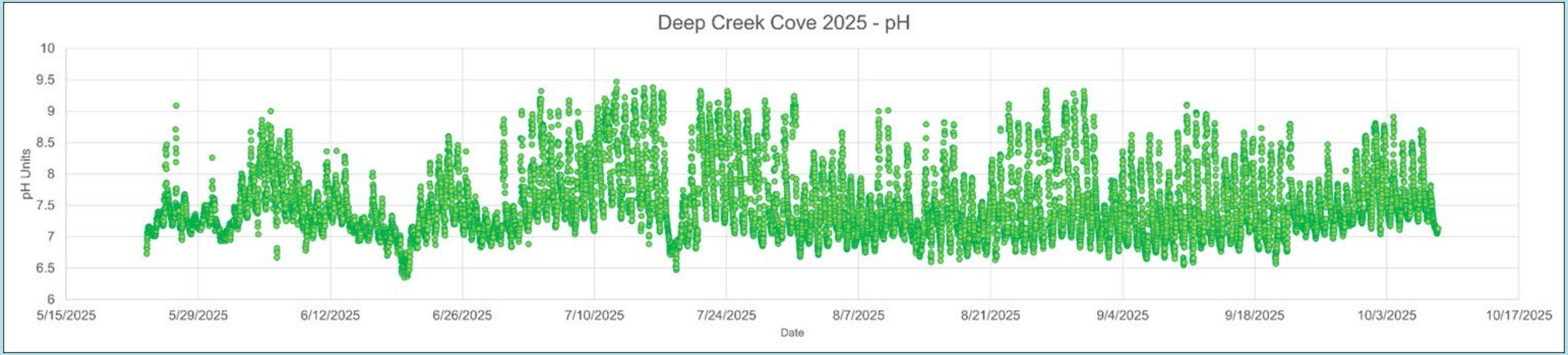
Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025



Deep Creek Cove May 23 – October 8, 2025



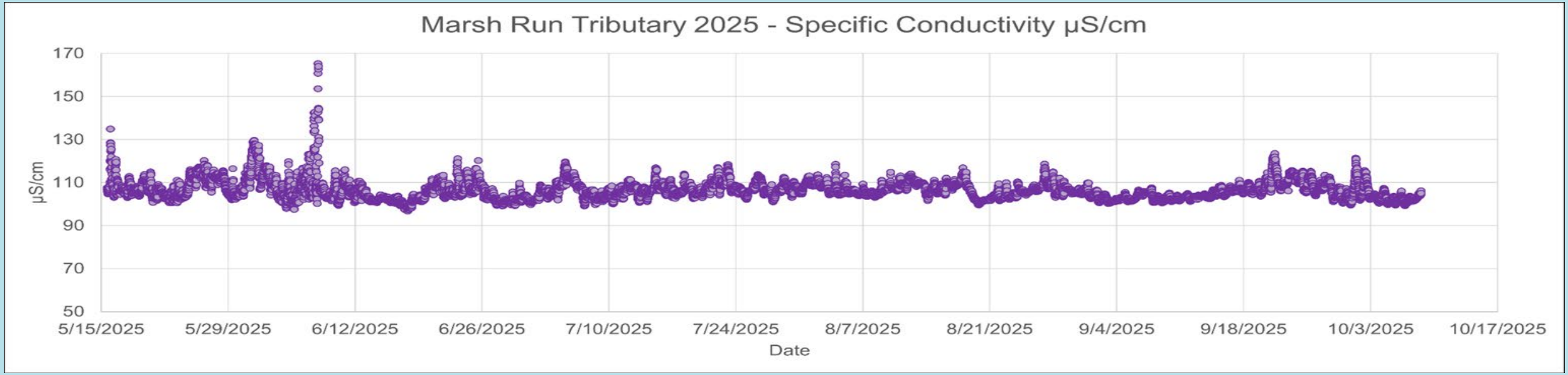
Specific Conductance

Specific Conductance: This is a measure of how well electricity can flow through water- a water quality property whose value is proportional to the collective concentration of ions in solution. The specific conductivity measurement depends on the concentration of ions, which come from various salts and inorganic materials in the water, and the temperature of the solution. There may be an increase or decrease (dependent on what type of rock or minerals are present in the tributary) during high flow events. This especially noticeable in the meters that are placed closest to the tributaries. (see 2, 3 and 6 on the citations slide)

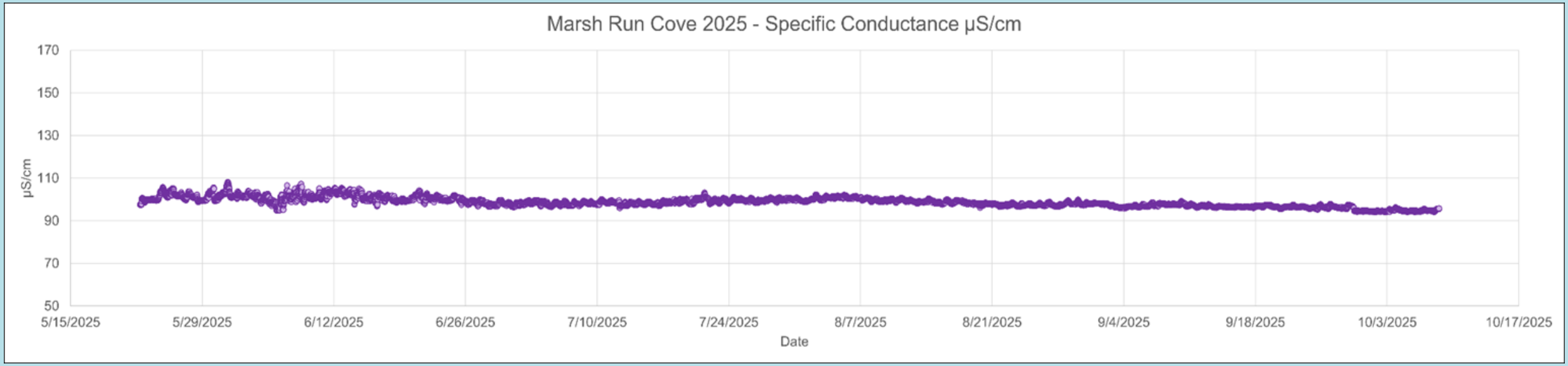
The long-term average for Deep Creek Lake surface from May through October 2009 -2025 specific conductivity is 92.09 µS/cm.

Specific Conductance ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	83.0 - 112.0	91.9
Marsh Run Trib (May - Oct)	96.7 - 165.3	106.4
Marsh Run Cove (May - Oct)	94.1 - 108.2	98.7
Meadow Mountain Cove (May - Oct)	86.7 - 94.7	91.2
Blakeslee Cove (May - Oct)	84.4 - 93.0	88.9
Deep Creek Trib (May - Sept)	51.8 - 88.7	79.0
Deep Creek Cove (May - Oct)	59.1 - 95.1	86.5

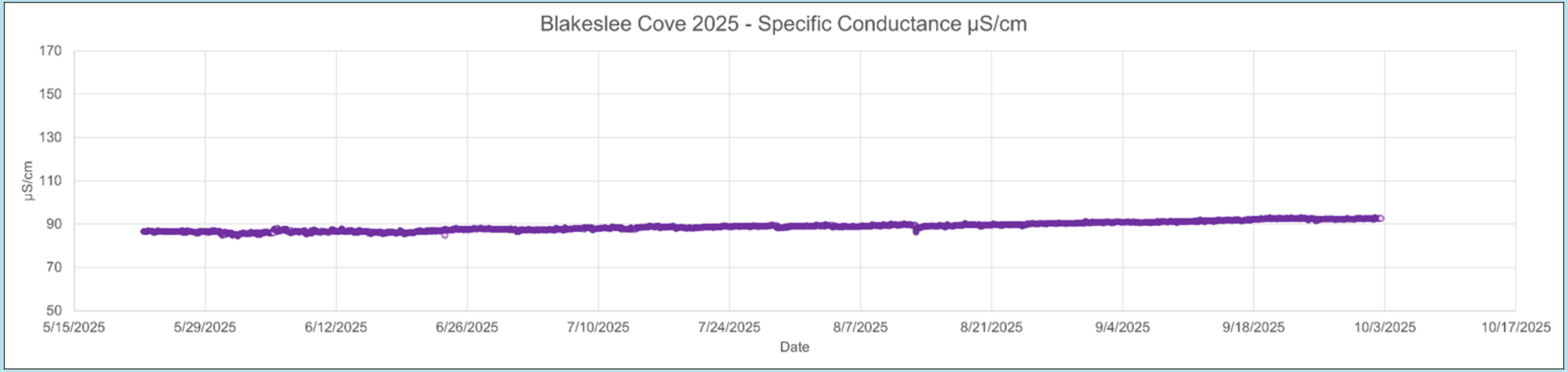
Marsh Run Trib May 15 - October 8, 2025



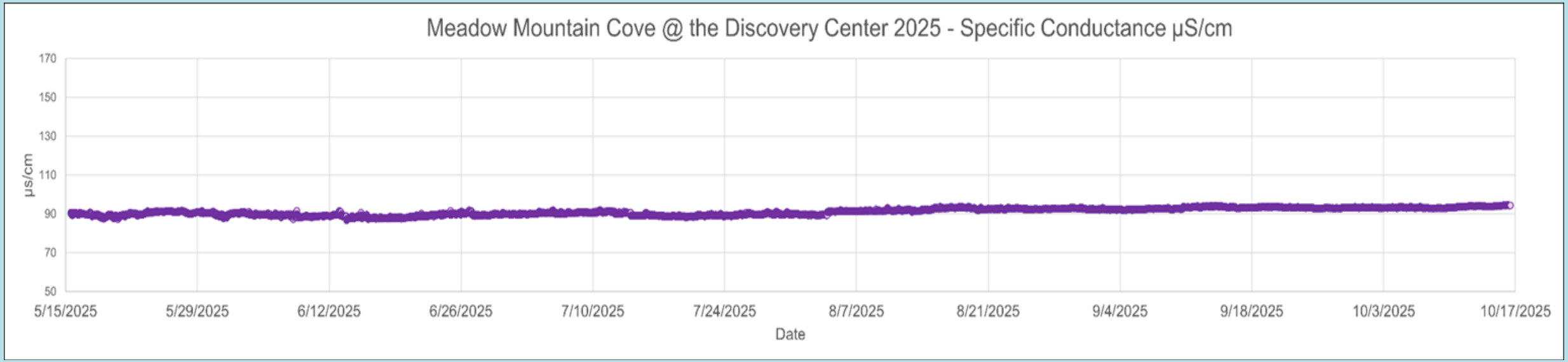
Marsh Run Cove May 22 – October 8, 2025



Blakeslee Cove May 22 – October 2, 2025

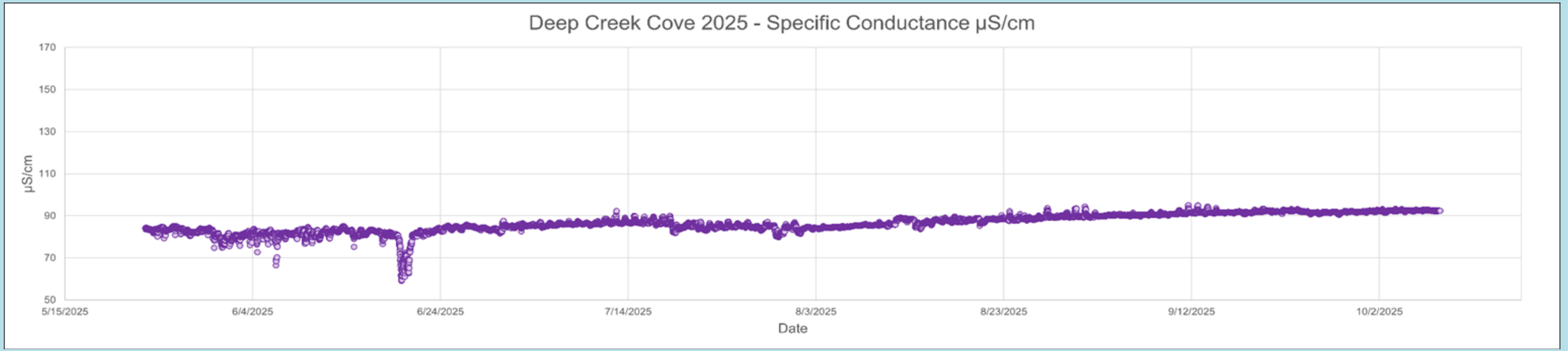


Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025

Deep Creek Cove May 23 – October 8, 2025



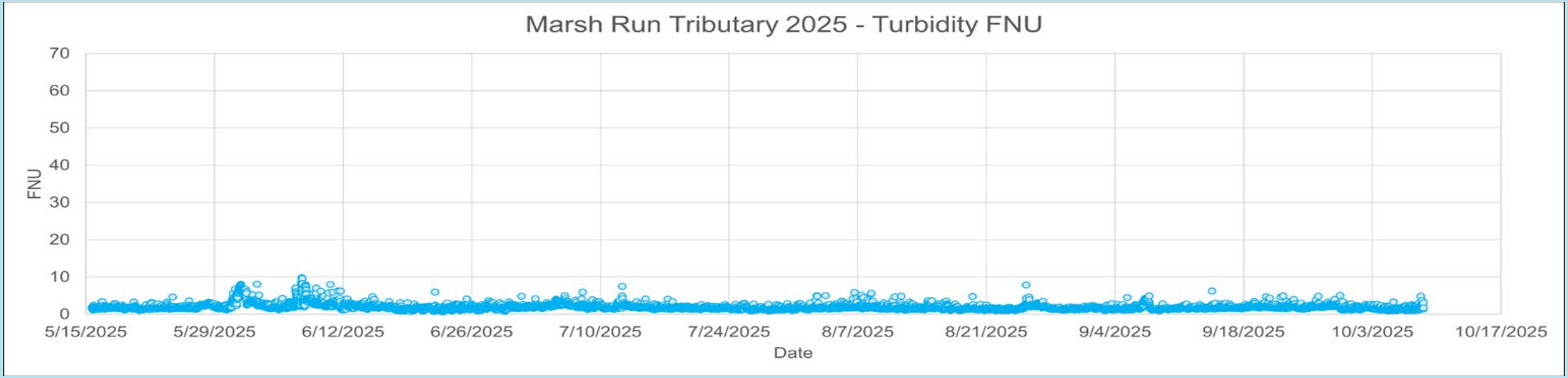
Turbidity

Turbidity: Turbidity is a measure of the clarity of water. Turbid waters typically appear cloudy and have high concentrations of total suspended solids (TSS), thereby allowing less light to penetrate through the water. Increased turbidity can be due to excessive algal growth, land runoff and shoreline erosion, pollution, resuspension of bottom sediments, dredging operations, or during high periods of fresh-water input from tributaries. Continuous turbidity values over a threshold of 15 NTUs (Nephelometric Turbidity Units) or FNUs (Formazin Nephelometric Units) are normally considered to be detrimental to submerged aquatic vegetation growth and overall ecological productivity. Increased turbidity can also lead to decreased fish health by increasing susceptibility to infectious diseases through increased stress and reducing the ability of fish's gills to extract dissolved oxygen from the water, as well as decrease the recreational value of a water body. (see 2 and 3 on the citations slide)

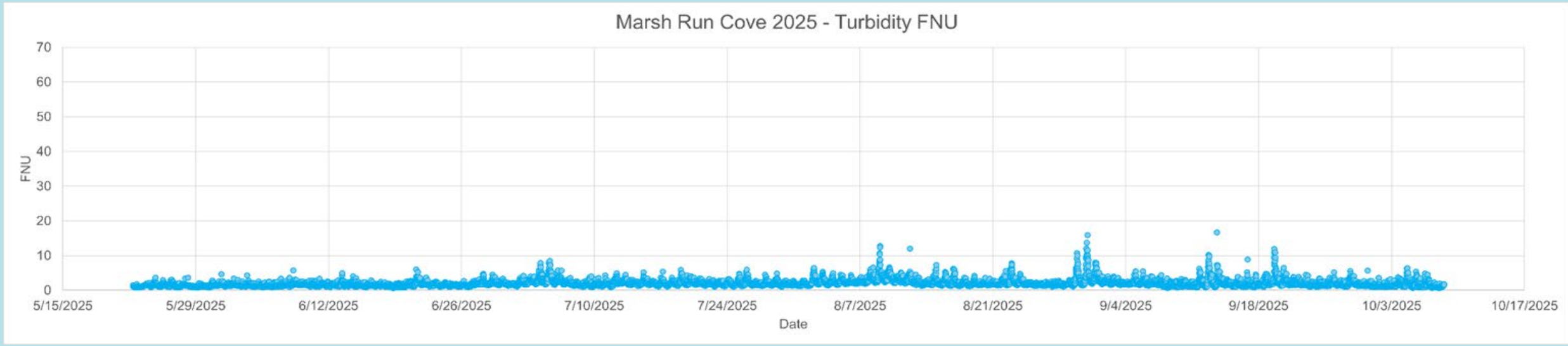
The long-term average (May through October 2017 – 2025) for Deep Creek Lake surface turbidity is 1.88 FNU.

Turbidity ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	0.90 - 6.70	1.82
Marsh Run Trib (May - Oct)	0.64 - 9.80	1.88
Marsh Run Cove (May - Oct)	0.64 - 16.67	2.03
Meadow Mountain Cove (May - Oct)	0.33 - 8.32	1.09
Blakeslee Cove (May - Oct)	0.75 - 27.34	2.03
Deep Creek Trib (May - Sept)	1.20 - 69.55	4.03
Deep Creek Cove (May - Oct)	0.95 - 18.29	2.69

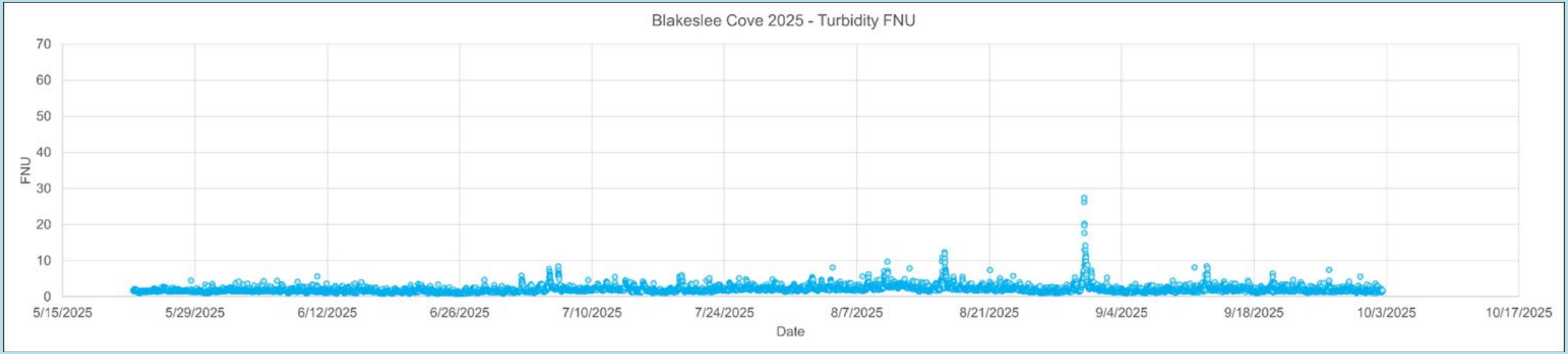
Marsh Run Trib May 15 - October 8, 2025



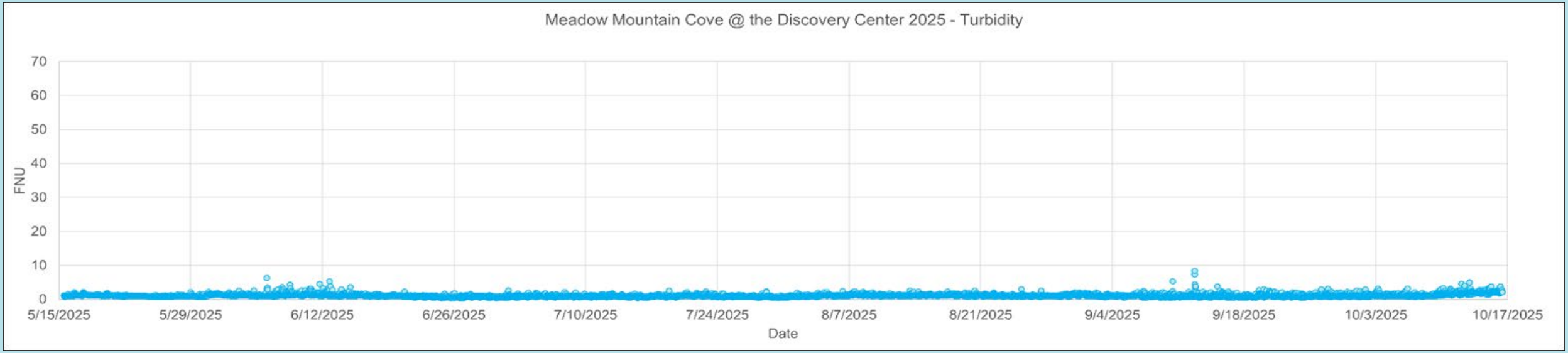
Marsh Run Cove May 22 – October 8, 2025



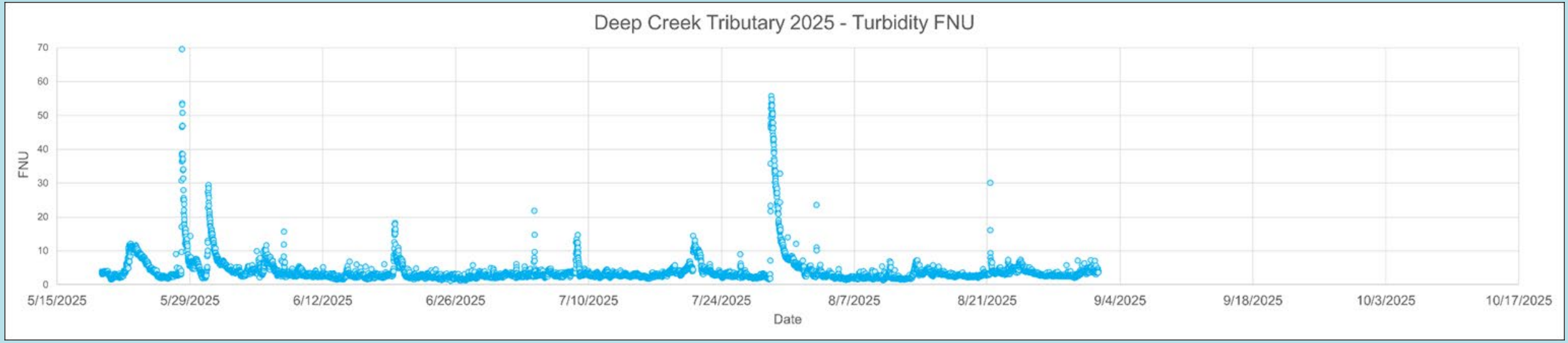
Blakeslee Cove May 22 – October 2, 2025



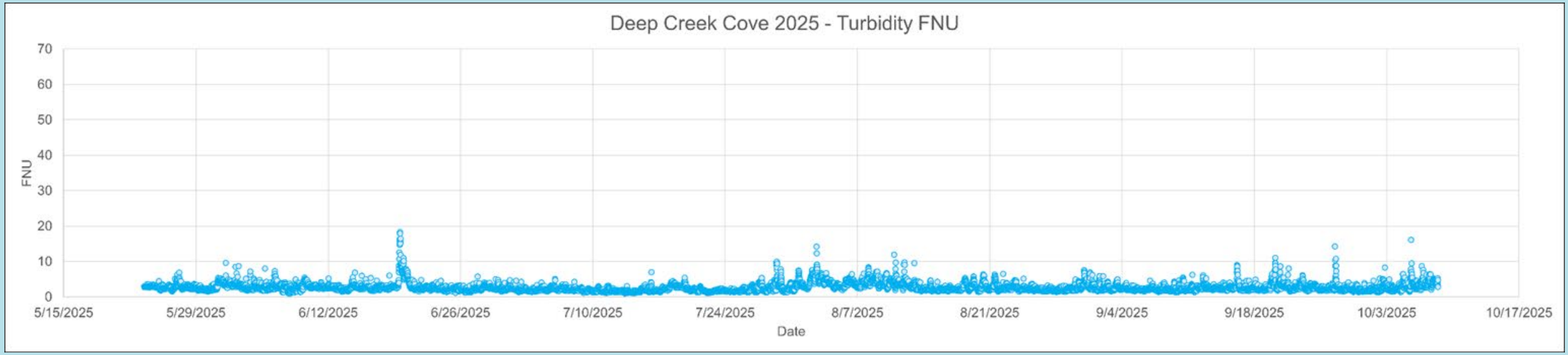
Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025



Deep Creek Cove May 23 – October 8, 2025



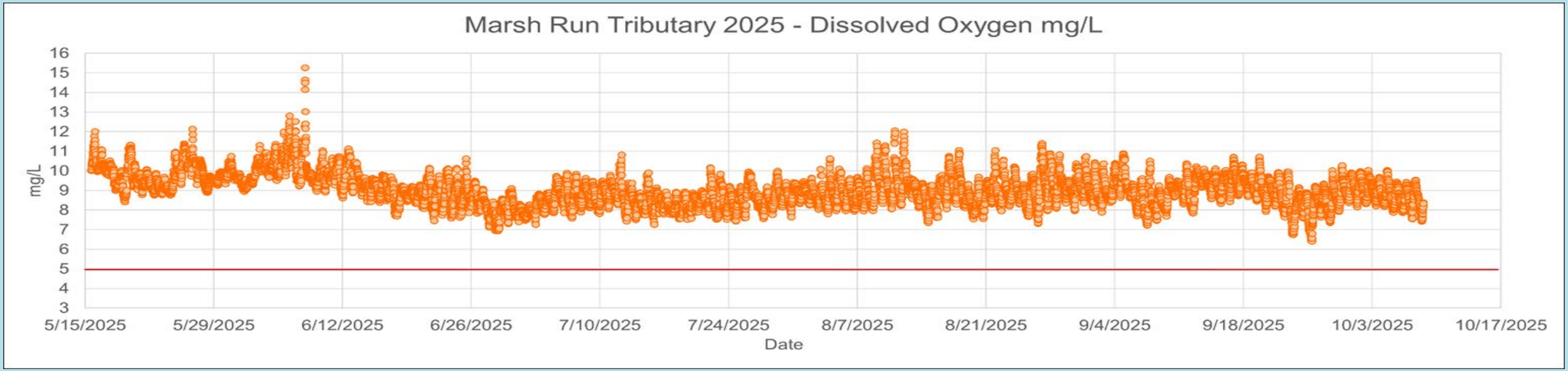
Dissolved Oxygen

Dissolved Oxygen (DO): Dissolved oxygen measures the amount oxygen molecules which have dissolved in water. DO is measured as a concentration (mg/l – milligrams per liter). When DO concentrations drop below 5 mg/l, more sensitive organisms, such as certain fish, become stressed, especially if exposed to these conditions for prolonged periods. The concentrations of DO are affected by several factors. Temperature affects the concentration since warmer water cannot dissolve as much oxygen as colder water. Also, in most cases, the DO graphs from the continuous monitoring stations show daily variations, with higher values in late afternoon and lower values at dawn. These high and low values are due to the production of oxygen by algae and submerged aquatic vegetation during the daytime and the consumption of oxygen at night by algae and other organisms in the water and bottom sediments. (see 2 and 3 on the citations slide)

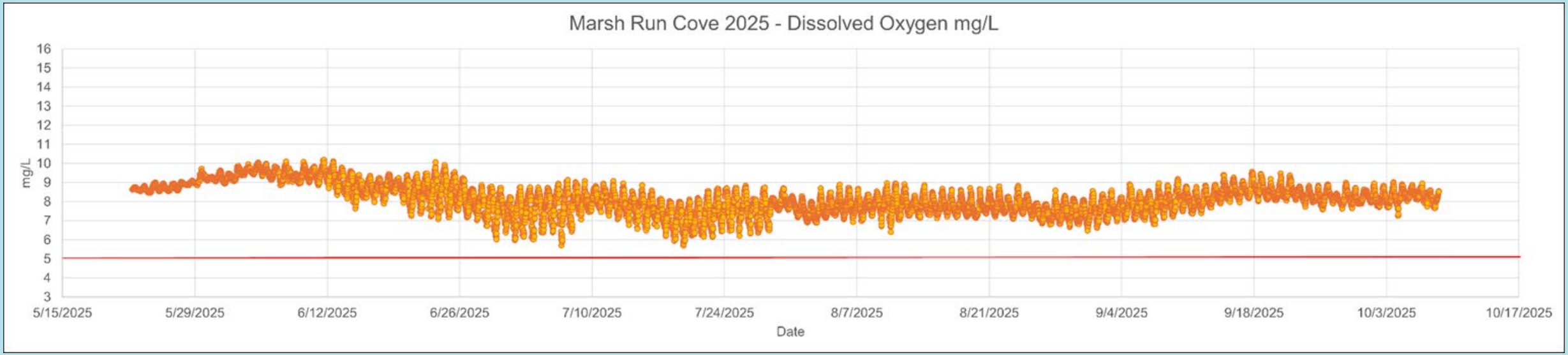
The long-term average (May through October 2009 – 2025) for Deep Creek Lake surface dissolved oxygen is 8.26 mg/L.

Dissolved Oxygen ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	6.20 - 10.70	8.30
Marsh Run Trib (May - Oct)	6.41 - 15.26	8.99
Marsh Run Cove (May - Oct)	5.60 - 10.19	8.16
Meadow Mountain Cove (May - Oct)	5.14 - 10.25	8.04
Blakeslee Cove (May - Oct)	6.65 - 11.40	8.26
Deep Creek Trib (May - Sept)	4.09 - 15.37	9.17
Deep Creek Cove (May - Oct)	3.10 - 12.00	8.53

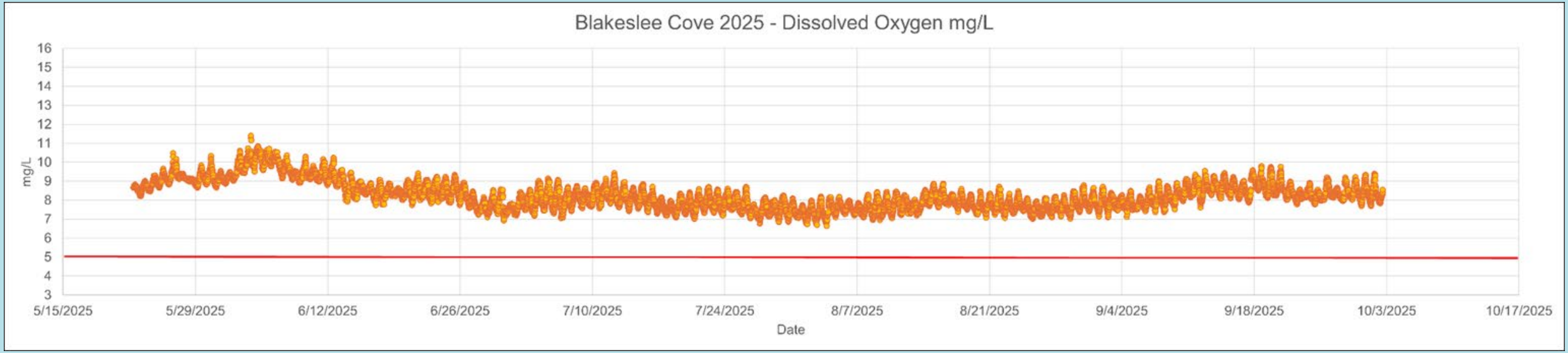
Marsh Run Trib May 15 - October 8, 2025



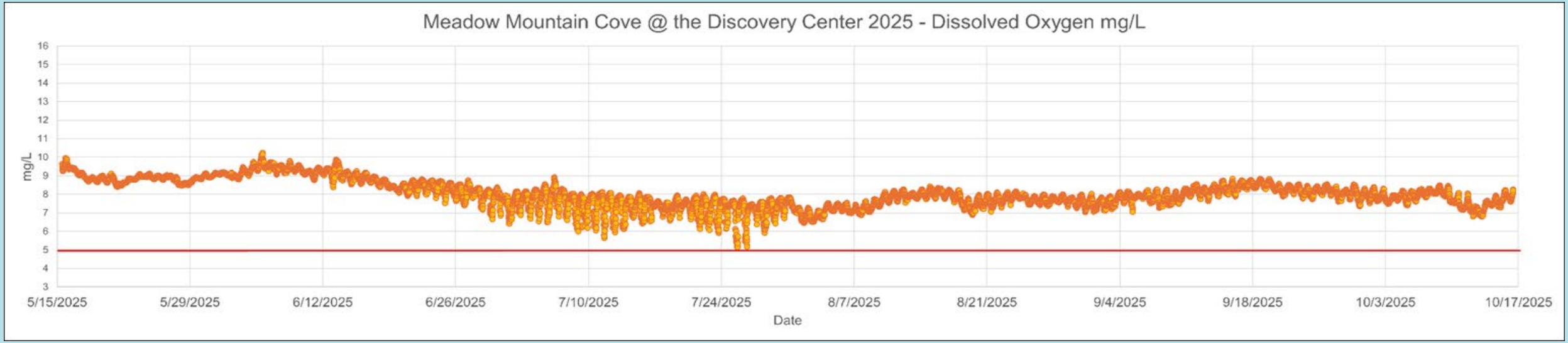
Marsh Run Cove May 22 – October 8, 2025



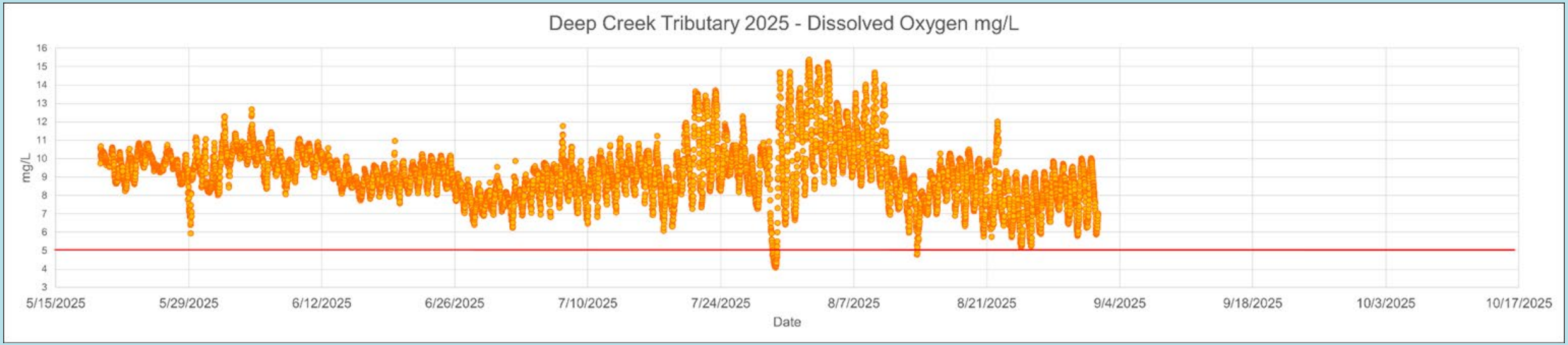
Blakeslee Cove May 22 – October 2, 2025



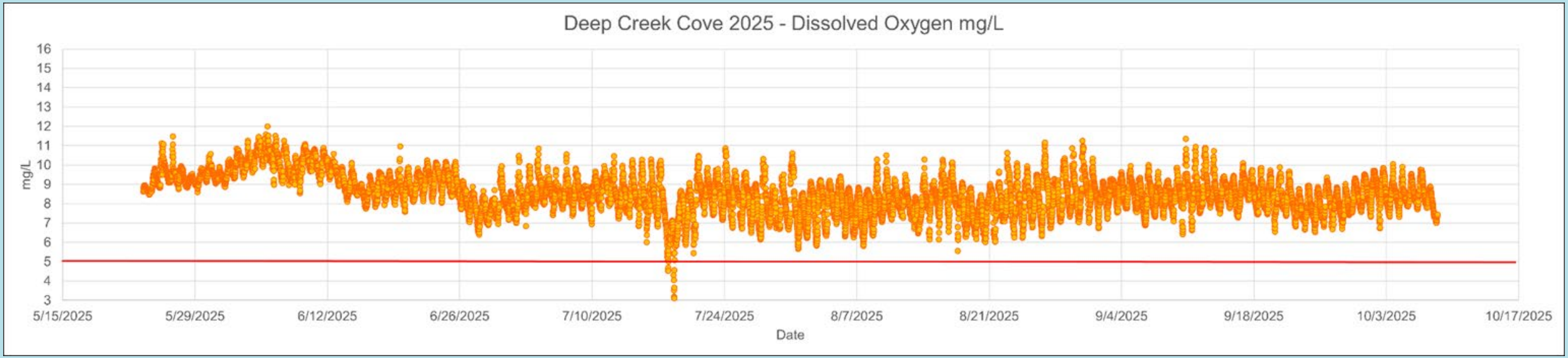
Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025



Deep Creek Cove May 23 – October 8, 2025



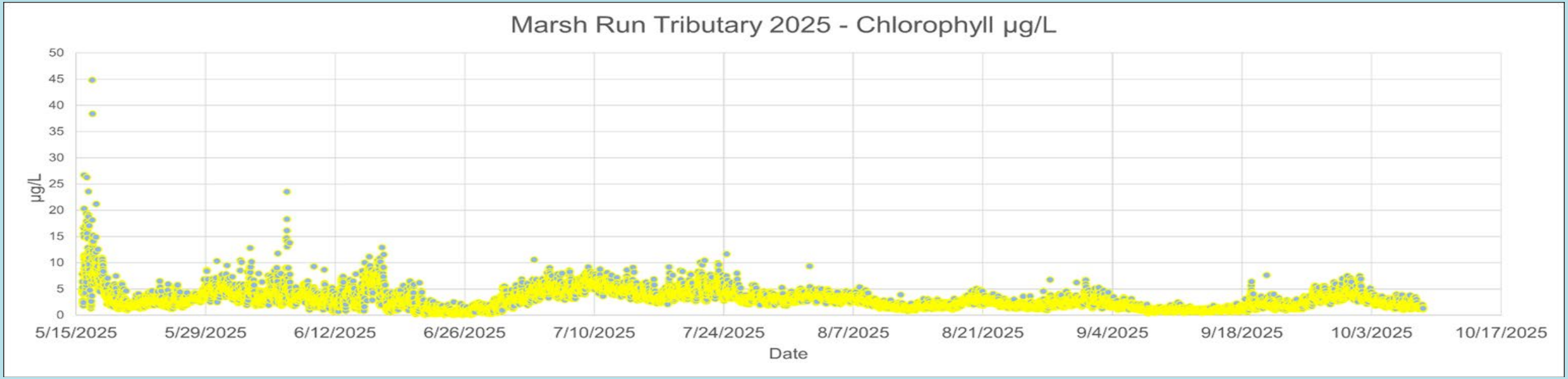
Chlorophyll

Chlorophyll: The quantity of algae in the water is measured as chlorophyll concentration (ug/l – micrograms per liter). Chlorophyll is the main chemical responsible for photosynthesis in plants, the process by which sunlight is converted into food energy**.** There are no hard and fast rules as to what constitutes a harmful concentration of chlorophyll but as a general guide, above 11 ug/L the chlorophyll is noticeable in the form of algal growth and above 30 ug/l represents a significant bloom. (see 2, 3, and 7 on the citations slide)

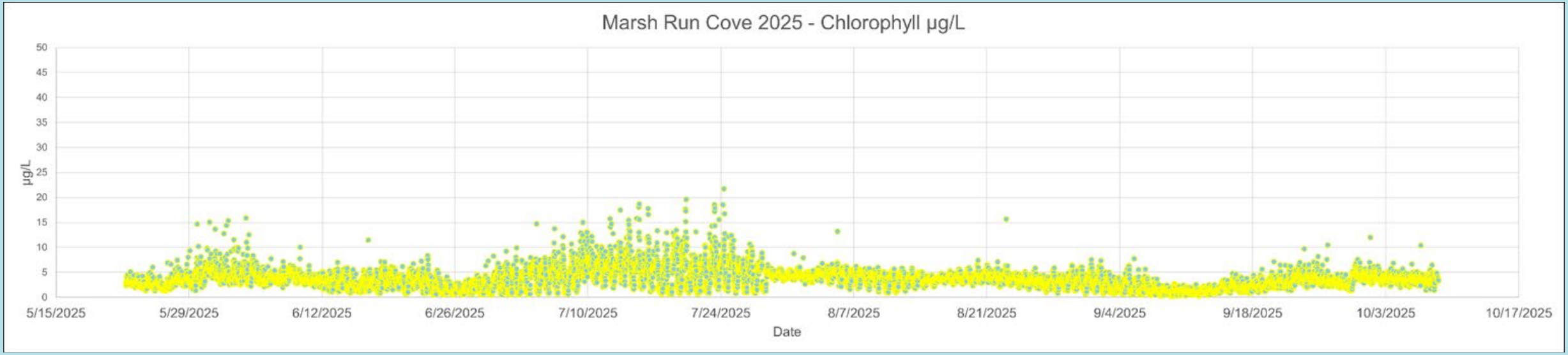
The long-term average (May through September 2017 – 2025) for Deep Creek Lake surface chlorophyll is 2.85 ug/L.

Chlorophyll ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	0.90 - 10.90	2.74
Marsh Run Trib (May - Oct)	0.08 - 44.83	3.04
Marsh Run Cove (May - Oct)	0.24 - 21.72	3.69
Meadow Mountain Cove (May - Oct)	0.01 - 29.14	2.49
Blakeslee Cove (May - Oct)	0.40 - 15.99	3.44
Deep Creek Trib (May - Sept)	0.66 - 24.90	3.37
Deep Creek Cove (May - Oct)	0.23 - 48.52	3.37

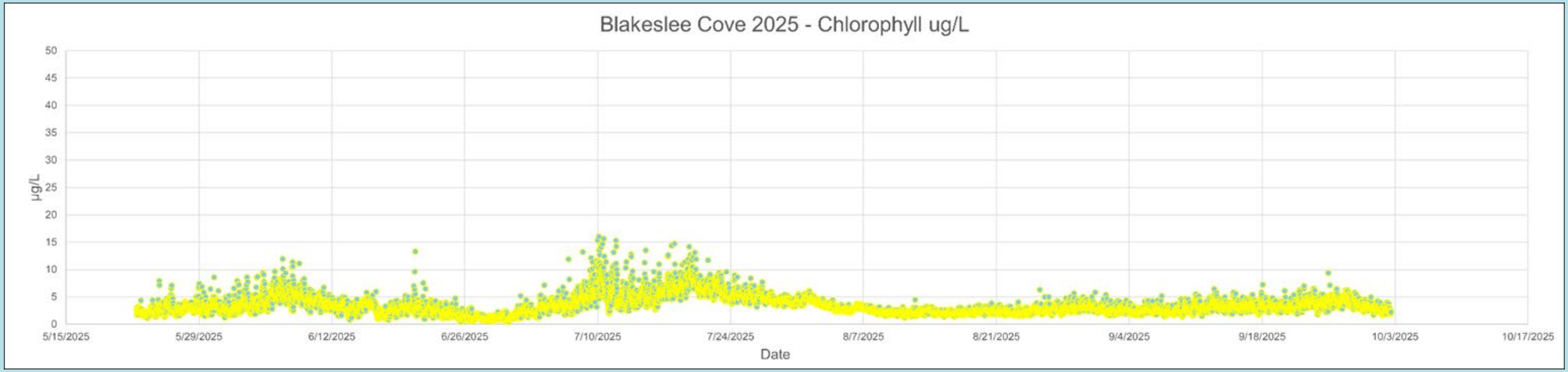
Marsh Run Trib May 15 - October 8, 2025



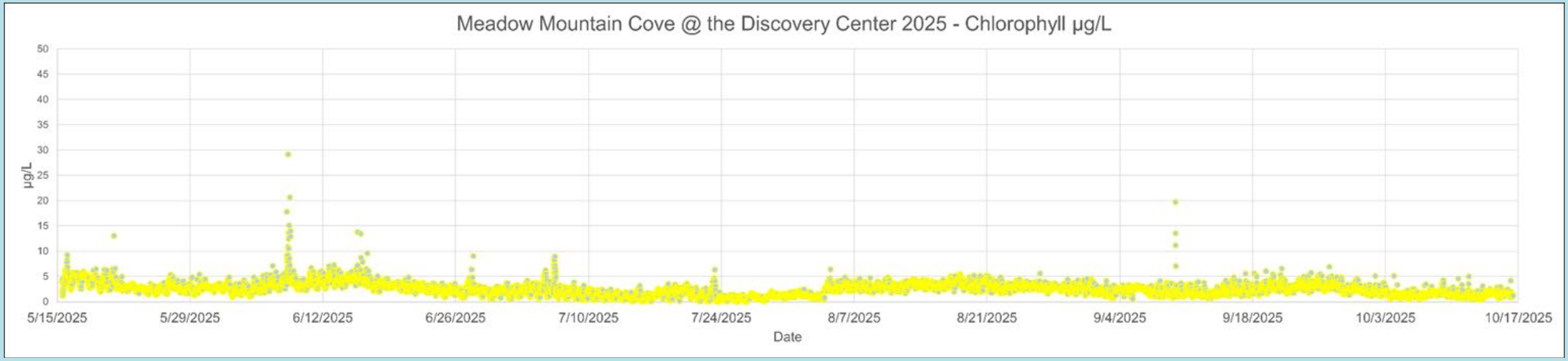
Marsh Run Cove May 22 – October 8, 2025



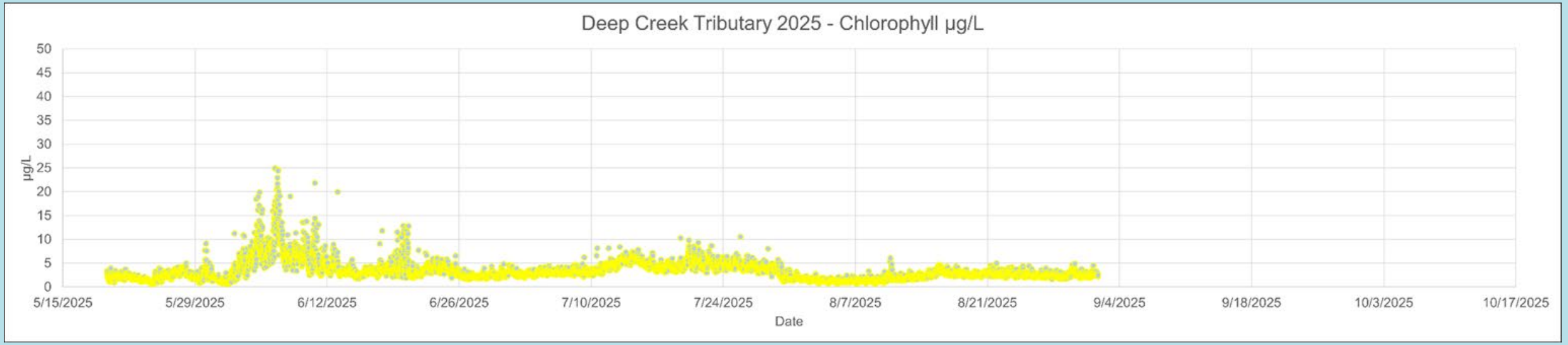
Blakeslee Cove May 22 – October 2, 2025



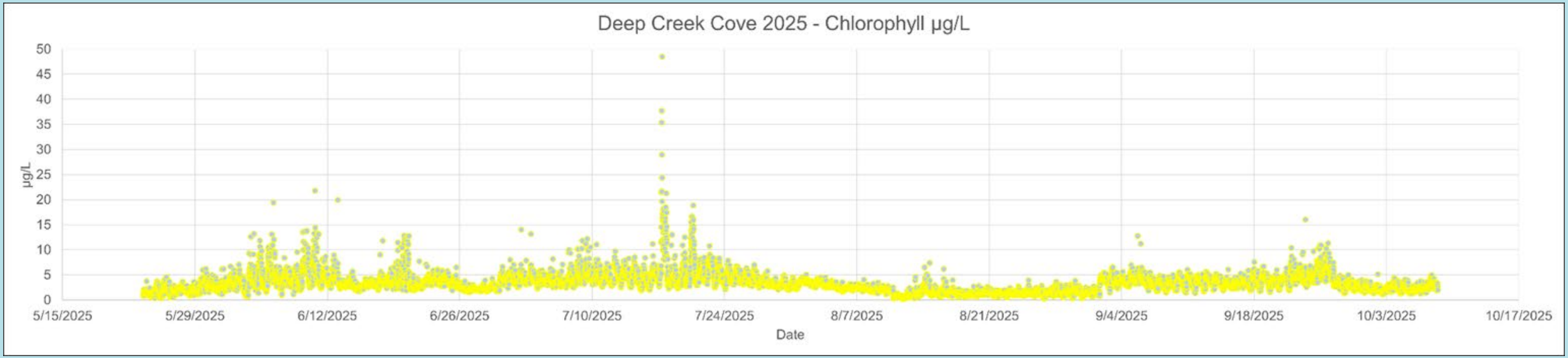
Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025



Deep Creek Cove May 23 – October 8, 2025



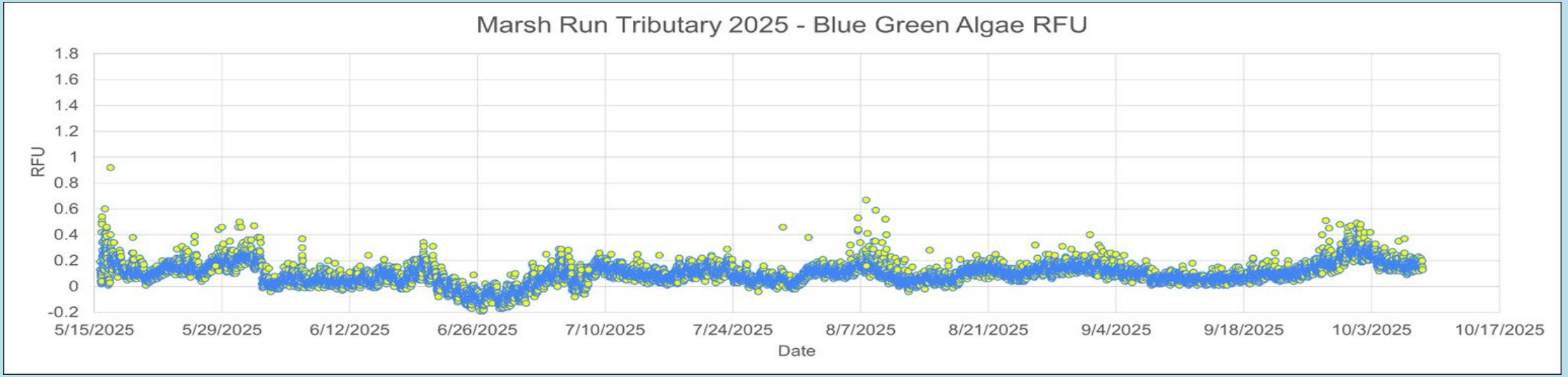
Phycocyanin

Phycocyanin: Cyanobacteria (Blue-green algae) often contain pigments such as phycocyanin. Cyanobacteria are known for their important role in noxious surface scums, known as harmful algal blooms, that form on lakes and ponds around the world. Although blue-green blooms can create nuisance conditions and undesirable water quality, most are not toxic. There are no definite rules for what is considered a harmful concentration. (see 8 and 9 on the citations slide)

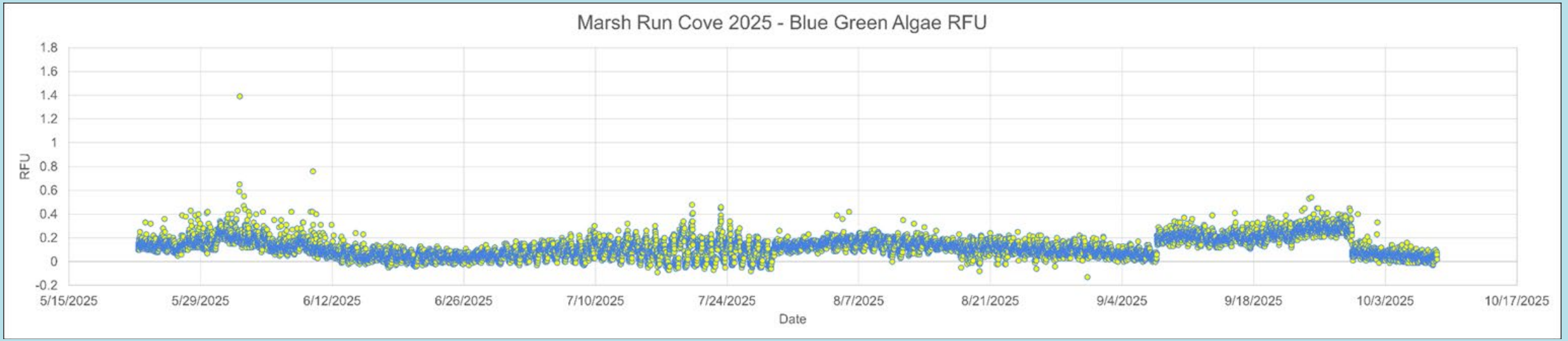
No data is available for Deep Creek Lake monthly monitoring for phycocyanin.

Phycocyanin ranges for DCL discrete sampling and all continuous monitoring stations during 2025		
Location	Range During 2025	Average during 2025
*Deep Creek Lake (DCL) (May - Oct)	N/A	N/A
Marsh Run Trib (May - Oct)	0 - 0.92	0.10
Marsh Run Cove (May - Oct)	0 - 0.59	0.13
Meadow Mountain Cove (May - Oct)	0 - 1.52	0.07
Blakeslee Cove (May - Oct)	0 - 1.05	0.12
Deep Creek Trib (May - Sept)	0 - 1.71	0.12
Deep Creek Cove (May - Oct)	0 - 1.60	0.17

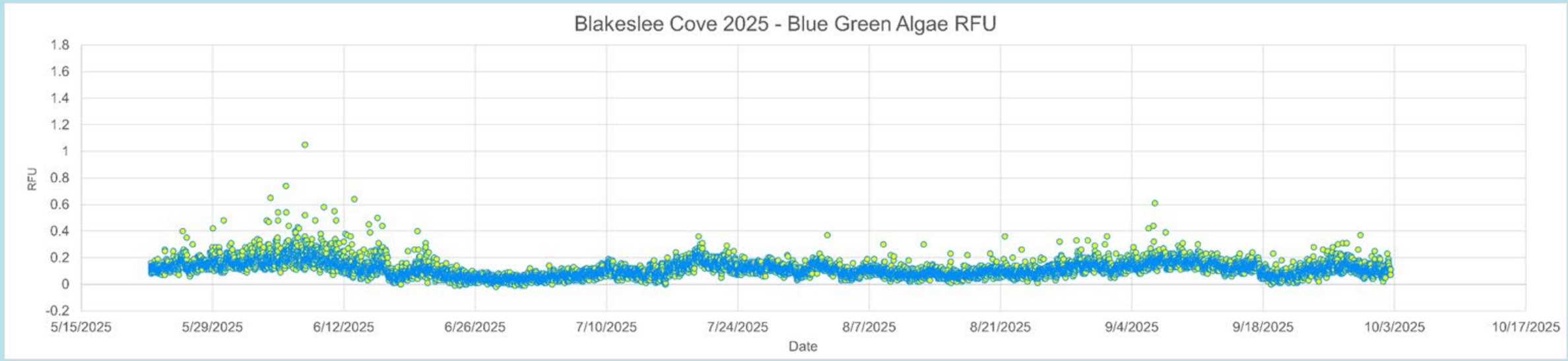
Marsh Run Trib May 15 - October 8, 2025



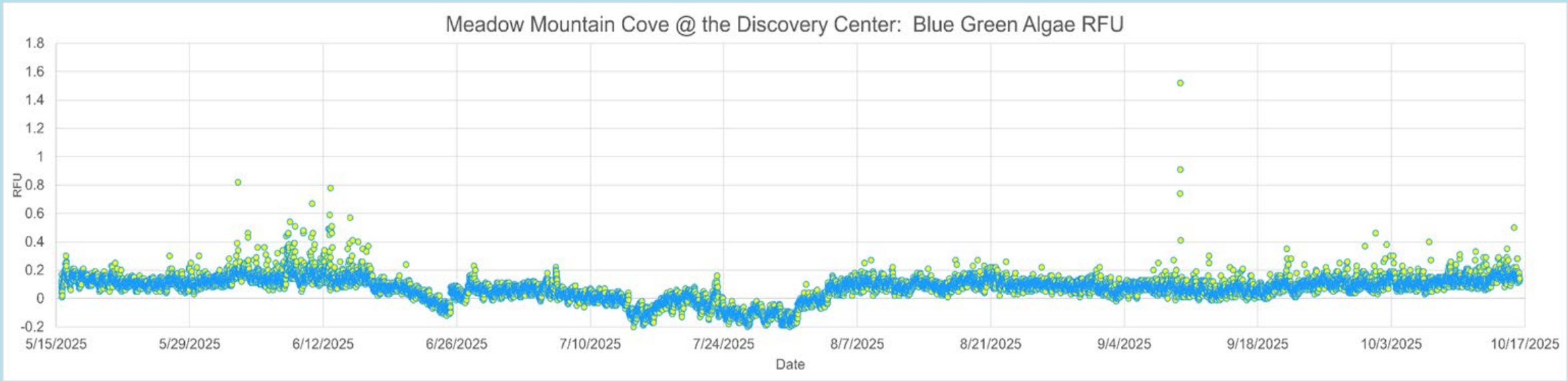
Marsh Run Cove May 22 – October 8, 2025



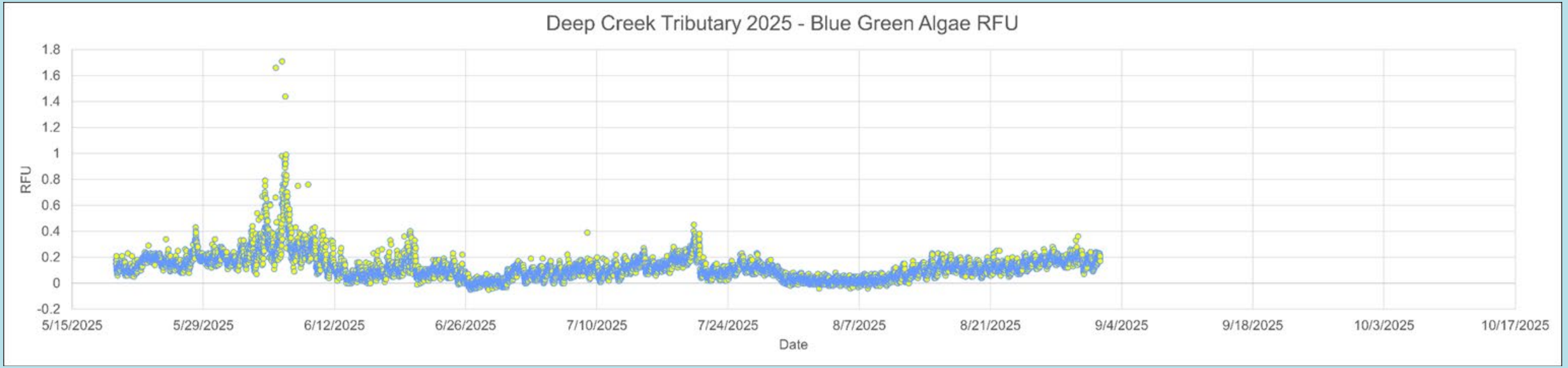
Blakeslee Cove May 22 – October 2, 2025



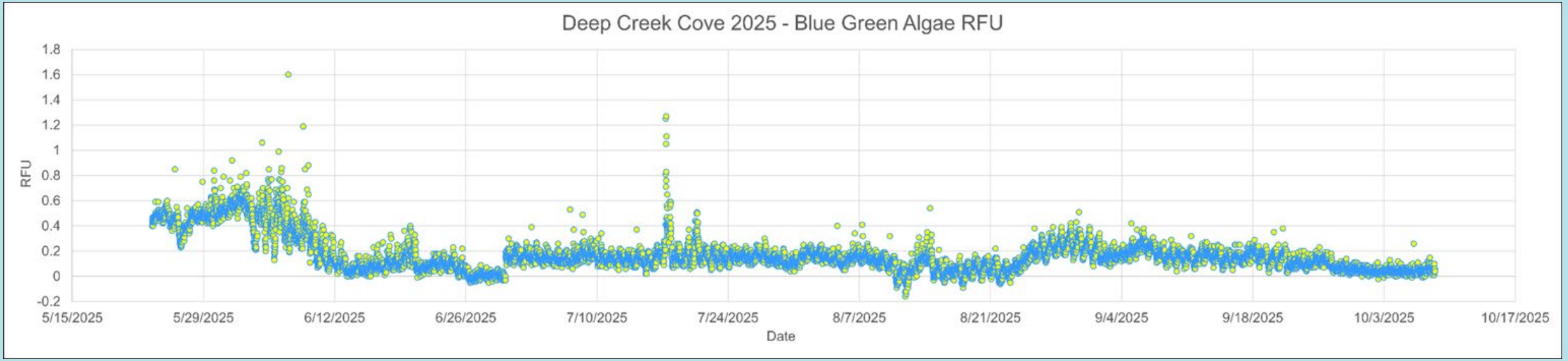
Meadow Mountain Cove May 15 – October 16, 2025



Deep Creek Trib May 19 – September 2, 2025



Deep Creek Cove May 23 – October 8, 2025



Citations

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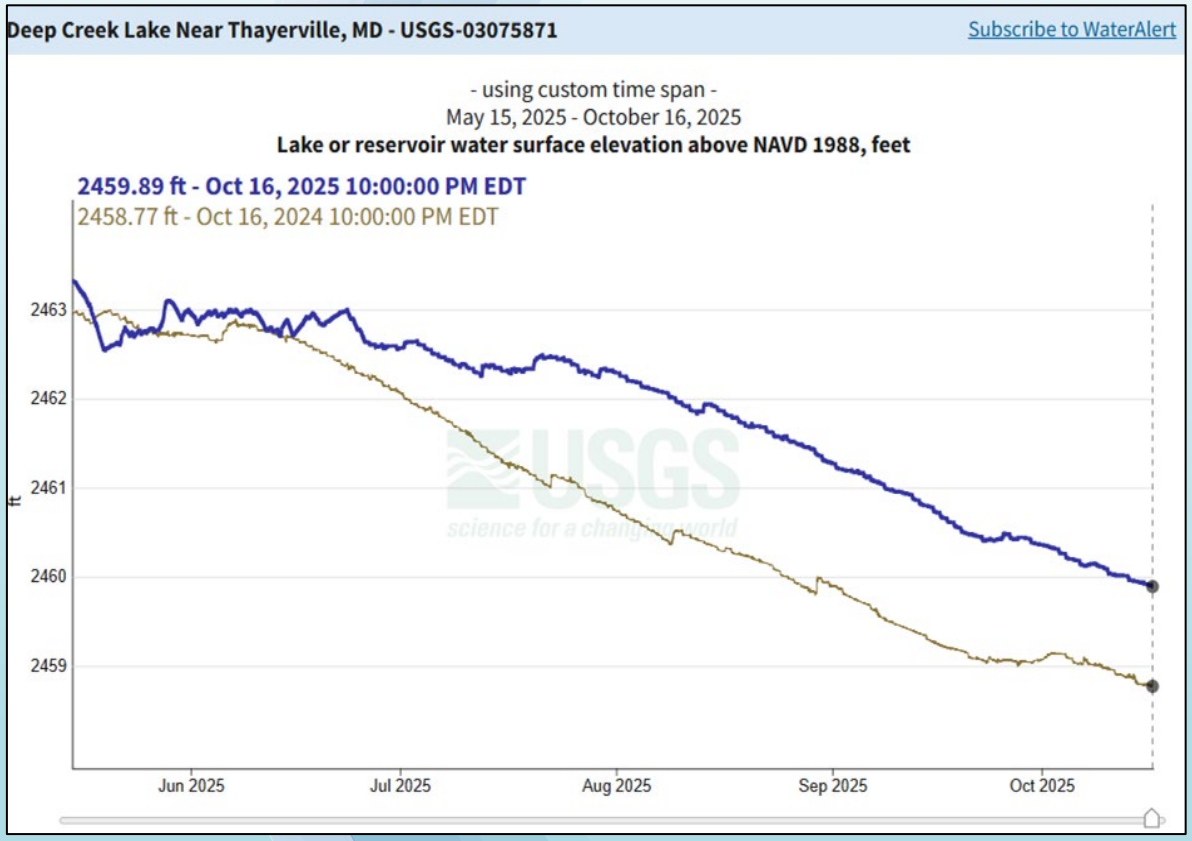
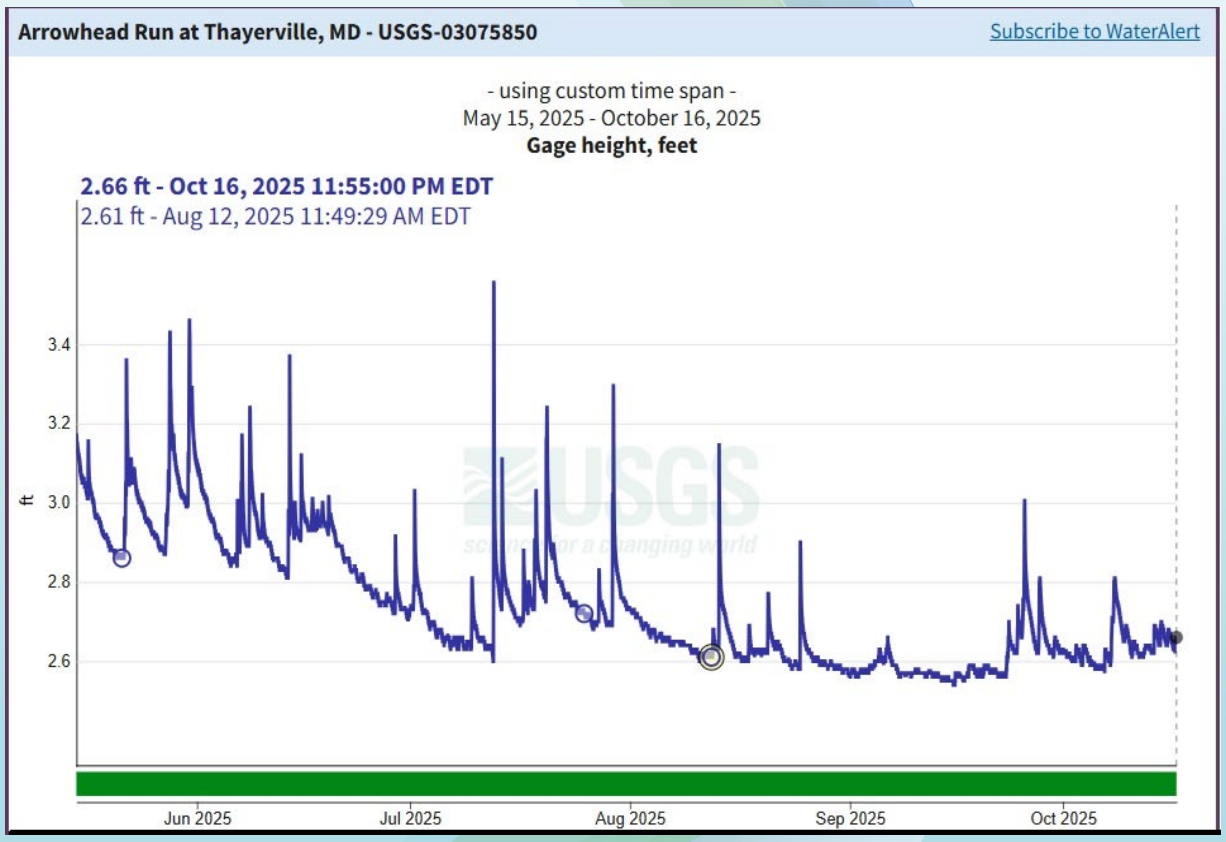
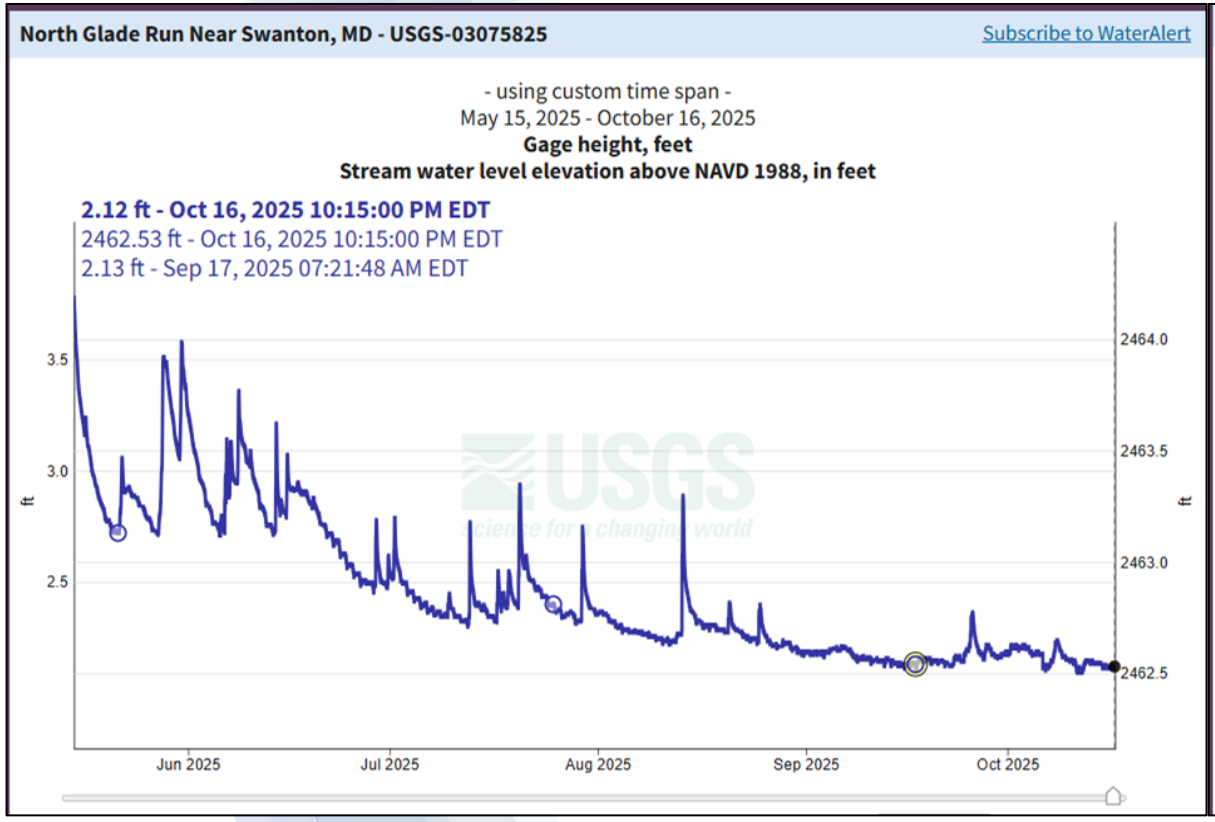
Deep Creek Lake and Arrowhead Run water levels during the monitoring season 2025





North Glade Run and Cherry Creek water levels during the monitoring season 2025



Cumulative precipitation during the monitoring season 2025