

# **Physical Water Quality Parameters in Misty Lake: Habitat Conditions for Lentic and Lotic Threespine Stickleback (*Gasterosteus aculeatus*)**

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Threespine Stickleback (*Gasterosteus aculeatus*)

by

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## ABSTRACT

LoScerbo, D., Gilmore, S., Boothroyd, M., Kwok, C. Loseto, L., Noel, M., Colbourne, K., Castañeda, R., and Grant, P. 2026. Physical Water Quality Parameters in Misty Lake: Habitat Conditions for Lentic and Lotic Threespine Stickleback (*Gasterosteus aculeatus*). Can. Manuscr. Rep. Fish. Aquat. Sci. 3317: viii + 36 p.  
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In 2023, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designated the Misty Lake Lentic and Lotic Threespine Stickleback (*Gasterosteus aculeatus*) populations as Endangered, citing their restricted distribution and continued decline in habitat quality. Despite the importance of water quality in supporting these populations and maintaining the features, functions, and attributes of their habitat, no baseline data had been collected prior to this study. From May 22 to September 17, 2025, we continuously monitored physical water quality parameters (water temperature, dissolved oxygen, and water level) at both the inlet and outlet streams of Misty Lake. We also collected discrete surface-water measurements of temperature, dissolved oxygen, pH, and turbidity at eight locations throughout the lake. The results indicate generally favourable conditions in the inlet stream but reveal recurring periods of hypoxic stress in the outlet stream and in portions of the lake. Together, these data provide the first baseline characterization of physical water quality in Misty Lake and establish a critical reference point for detecting future anthropogenic or climate-driven changes.

## RÉSUMÉ

LoScerbo, D., Gilmore, S., Boothroyd, M., Kwok, C. Loseto, L., Noel, M., Colbourne, K., Castañeda, R., and Grant, P. 2026. Physical Water Quality Parameters in Misty Lake: Habitat Conditions for Lentic and Lotic Threespine Stickleback (*Gasterosteus aculeatus*). Can. Manuscr. Rep. Fish. Aquat. Sci. 3317: viii + 36 p.  
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En 2023, le Comité sur la situation des espèces en péril au Canada (COSEPAC) a désigné les populations lenticques et lotiques d'épinoches à trois épines (*Gasterosteus aculeatus*) du lac Misty comme étant en voie de disparition, invoquant leur répartition restreinte et le déclin continu de la qualité de leur habitat. Malgré l'importance de la qualité de l'eau pour le soutien de ces populations et le maintien des caractéristiques, fonctions, et attributs de leur habitat, aucune donnée de référence n'avait été recueillie avant cette étude. Du 22 mai au 17 septembre 2025, nous avons surveillé en continu des paramètres physicochimiques de la qualité de l'eau (température de l'eau, oxygène dissous, et niveau d'eau) aux cours d'eau d'entrée et de sortie du lac Misty. Nous avons également effectué des mesures ponctuelles de la température, de l'oxygène dissous, du pH, et de la turbidité de l'eau de surface à huit endroits différents du lac. Les résultats indiquent des conditions généralement favorables dans le cours d'eau d'entrée, mais révèlent des épisodes récurrents de stress hypoxique dans le cours d'eau de sortie ainsi que dans certaines parties du lac. Ces données constituent la première caractérisation de référence de la qualité physique de l'eau du lac Misty et établissent un point de repère essentiel pour détecter de futurs changements d'origine anthropique ou liés au climat.

## INTRODUCTION

Misty Lake Lotic and Lentic Threespine Stickleback populations (*Gasterosteus aculeatus*, hereafter abbreviated as MLS) are a species pair endemic to Misty Lake (50°35'N, 127°15'W) and the surrounding inlet and outlet streams, near Port McNeil on Vancouver Island, British Columbia, Canada. These two populations are evolutionarily significant and represent one of the most extreme cases of morphological divergence among parapatric lake-stream pairs of Threespine Stickleback (COSEWIC 2023, Paccard et al. 2020). In 2023, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) reassessed both populations of MLS and confirmed their recommendation as Endangered, due to their small distribution, continuing decline in habitat quality related to highway proximity, forestry activities and risk of invasive species introduction (COSEWIC 2023).

Lotic and lentic MLS occur in two distinct habitats. The lotic population are observed strictly within the inlet stream, which feeds into Misty Lake (Oke et al. 2017, COSEWIC 2023). The inlet stream is a dendritic network with the mainstem approximately 20 km long, composed of fast-flowing riffles and slow-flowing deep pools, in mixed forest with active logging and beaver activity. At the confluence of the inlet creek and Misty Lake, there is a swampy transition area of dense brush and high beaver activity, where hybridization between the lotic and lentic populations occur (Oke et al. 2017, COSEWIC 2023). The lentic population is found in Misty Lake and the outlet stream, which drains from the lake into the Keogh River. Misty Lake is a small lake with a surface area of 0.36 km<sup>2</sup> and a maximum depth of 6.1 m (COSEWIC 2023). The outlet stream is approximately 2 km long, passes through dense brush, bogs and mixed forest, and is dominantly slow-flowing with deep pools and runs. The forest surrounding parts of the outlet stream is also active with logging and beaver activity. The water in the Misty Lake system is distinctly dark-colored from tannins (Lavin and McPhail 1993).

Critical habitat for the Misty Lake species pair is identified as the entire lake area, including all riparian habitat within 15 m of the wetted area of Misty Lake, the inlet stream up to the most known upstream occupied extent, including all riparian habitat within 30 m of the wetted area of the inlet stream and the swampy transition area, and the outlet stream up to the most downstream occupied extent, including all riparian habitat within 30 m of the wetted area of the outlet stream (Fisheries and Oceans Canada 2018, Hatfield 2009). Biophysical features of the critical habitat for MLS are listed as “stable water quality parameters including oxygen, pH and temperature range,” however there is currently no data on the stability or seasonal range of these parameters (Fisheries and Oceans Canada 2018). Determining normal variance of water quality to develop quantitative range for critical habitat attributes was identified as a recovery measure in the action plan (Fisheries and Oceans Canada 2020). Further, changes in water quality due to anthropogenic activity (e.g., forestry activity, proximity to a highway, riparian disturbance due to recreation, and elevated risk of introduction of invasive species) are identified threats to Misty Lake stickleback recovery (COSEWIC 2023, Fisheries and Oceans Canada 2018). The Water Survey of Canada operates a

hydrometric station on the Keogh River (Station 08HF014), a confluence of the Misty Lake system, providing continuous water flow data for the mainstem, but not other physical water quality parameters. To date, no baseline physical or chemical water quality data has been collected on Misty Lake or the surrounding streams.

Extreme periods of high water temperature and low dissolved oxygen are becoming more common due to anthropogenic impacts on watersheds and climate change (Jenny et al. 2016, Rajesh and Rehana 2022). During fish monitoring in August of 2015 (a period of low flow and high air temperature), the lentic population of MLS in the outlet stream were observed swimming at the surface of the water (Oke et al. 2017). Although physical water quality data were not recorded at the time, this surface-oriented behavior was hypothesized to be a stress response to low dissolved oxygen in the outlet stream. Such behavior is consistent with aquatic surface respiration (ASR), a common adaptation in many fish species under hypoxic conditions, whereby individuals ventilate their gills with the thin, oxygen-rich surface layer of water that is in closer equilibrium with the atmosphere. In response to the knowledge gap on MLS habitat quality, as well as the reports of stress behaviour of the lentic population, we aimed to collect and record data on physical water quality in MLS critical habitat. The goal of our monitoring was to (1) collect data on water level, water temperature, dissolved oxygen (DO), pH and turbidity to describe the present conditions of water quality for MLS lotic and lentic critical habitat, (2) detect periods of potential high physiological stress risk (high temperature, low dissolved oxygen) for MLS and co-occurring Coastal Cutthroat Trout (*Oncorhynchus clarkii clarkii*) and Coho Salmon (*Oncorhynchus kisutch*) to inform management, and (3) provide data for comparison with future studies to be able to detect changes in water quality over time within MLS critical habitat.

## METHODS

We monitored the inlet and outlet streams of Misty Lake for continuous hourly physical water quality (i.e., DO, temperature and water level) throughout the spring to the fall of 2025, through installation of water quality stations. In addition, we took discrete physical water quality samples (i.e., pH, turbidity, DO, and temperature) at 8 surface water locations in Misty Lake, and at both inlet and outlet streams on September 17, 2025 (Figure 1).

Water quality stations were installed on May 22, 2025 and removed on September 17, 2025. This time range was selected to target the juvenile and adult rearing (e.g., foraging) season (late April to mid-September), while avoiding periods of ice overwinter and local flooding in early spring that limited access to streams (Hatfield 2009).

The location of the inlet water quality station (50°36'11.58"N, 127°15'11.19"W) was selected downstream of the crossing of Highway 19, approximately 900 m upstream of Misty Lake (Figure 2A), to capture inflowing physical water quality just prior to its entry into the lake and the hybrid zone. This section of the inlet stream was located in dense mixed forest, composed of riffles and pools over cobble and gravel dominant substrate. The inlet station was positioned in a pool adjacent to a riffle (Figure 2B). The outlet stream station (50°36'49.25"N, 127°16'31.37"W) was installed downstream of a Forest

Service Road bridge crossing (Figure 2C) in an open area dominant in grasses, sedges and brush. Here, the stream was slow flowing, composed of runs and pools formed by beaver activity, and a substrate dominant in organic matter. The location of the outlet station was selected to be downstream of the location where stress behaviour was observed in the lentic population in 2015 (Oke et al. 2017). The outlet station was positioned in a deep pool between runs, surrounded by dense brush (Figure 2D).

Stilling wells were installed at each water quality station to measure seasonal changes in water level, following standard operating procedures developed by Martens et al. (unpublished report). Stilling wells were constructed out of 1 m of black ABS pipe, with holes drilled into the sides at regular intervals to calm the water flowing through the pipe. This allows for stable pressure readings by the water level logger. HOBO © water level (U20) loggers were hung inside stilling wells using water-resistant Dyneema © cord. On the outside of the stilling well, a stainless steel meter stick was used as a staff gauge to provide stage height reference measurements. Stage height is the relative water height at a stilling well, which is not equal to true water depth for comparison across stations, but provides consistent readings for comparison within a station throughout the season, so long as the position of the staff gauge is not disturbed. The stilling well was secured in place by a metal T-post and support cables. A HOBO © dissolved oxygen (U26) logger, within a protective case made from perforated ABS pipe, was attached to the outside of the stilling well and placed at the same depth as the water level logger. This ensured that water quality readings were comparable between the two logger types at each station. DO was recorded using an optical sensor and fitted with a copper anti-fouling guard to reduce measurement error from algal growth.

Prior to deployment, DO sensor caps were calibrated using a 2-point calibration method. The DO sensor was placed inside a sealed calibration cap with using a water-saturated sponge for 15 minutes to achieve 100% air saturation. The DO sensor was then calibrated to 0% air saturation by submersing the sensor in a sodium sulfite solution for 15 minutes. Hourly barometric pressure, daily mean air temperature and total precipitation were recorded by the Environment Canada weather station 1026273 station at the Port Hardy Airport (approx. 10 km and 12 km from the outlet and inlet stations, respectively).

In addition to continuous physical water quality loggers, point measurements were taken at 8 surface water locations (~1 m) throughout Misty Lake on September 17, 2025 via paddleboard, as well as at each water quality station upon decommission. Water temperature, dissolved oxygen, pH, turbidity and air saturation were taken with a YSI © ProDSS Multiparameter Handheld Meter at each station. Water depth in the lake was measured with a handheld depth sounder.

DO and water temperature data collected from loggers were visualized and passed through QAQC protocols in R version 4.4.2 (R Core Team, 2024). Briefly, any measurements where DO ( $\text{mg}\cdot\text{L}^{-1}$ ) or water temperature ( $^{\circ}\text{C}$ ) were between 0 and -1 were corrected to 0, any measurements where DO ( $\text{mg}\cdot\text{L}^{-1}$ ) or water temperature ( $^{\circ}\text{C}$ ) were below -1, or where DO was greater than  $15\text{ mg}\cdot\text{L}^{-1}$  or where water temperature was greater than  $40^{\circ}\text{C}$  were removed as measurement error. Any time periods where

water temperature was equal to or greater than air temperature were flagged for visual inspection of data to determine if the logger was out of water. If the logger was determined to be out of water, the measurements within that time period were removed.

To describe water quality at each station, we computed the 7-day rolling averages of mean and maximum daily water temperature (MWAT, MWMT, respectively) and mean and minimum DO (MWAD, MWMinD, respectively). These metrics capture daily variation and extremes, and allow for comparison with other ecophysiology studies on thermal sensitivity and hypoxia in fish (Iacarella et al. 2024, Kelly and Kelly 2024, Lusardi et al. 2020). We calculated the total number of hours per day per station where water temperature and oxygen exceeded stress thresholds. The threshold for thermal stress was set to temperatures equal to or greater than 21°C, to align with experimental reports of reductions in growth rate (Schade et al. 2014), and decreased fecundity (Barrett and Stein 2024, Hani et al. 2019) in threespine stickleback. Two thresholds were used for hypoxic stress; dissolved oxygen concentrations less than or equal to 2.2 mg·L<sup>-1</sup> is the reported value for changes in metabolism and behaviour in threespined stickleback (O'Connor 2007, O'Connor et al. 2011, Sneddon and Yerbury 2004). A second threshold of less than 6 mg·L<sup>-1</sup> was used to reflect the reported limit of growth and consumption across fish species (Rosenfeld and Lee 2022) and Canadian and BC freshwater quality guidelines (BC Ministry of Environment 1997, Canadian Council of Ministers of the Environment 2001).

## RESULTS

To provide a present-day physical water quality baseline for future comparison of MLS critical habitat, the inlet and outlet streams of Misty Lake were monitored for water quality throughout the juvenile and adult MLS rearing season. Water quality measurements were recorded continuously from May 22, 2025 to September 17, 2025, for a total of 238 days or 2833 hours of paired measurements of water level, water temperature, and dissolved oxygen. In addition, point measurements were taken throughout Misty Lake for depth, water temperature, dissolved oxygen, pH and turbidity (Table 1).

Inlet and outlet streams provide contrasting habitats for MLS over the sampling period from late spring to late summer. Seasonal distributions of water temperature showed moderate overlap between streams but differed significantly (Wilcoxon signed rank  $V = 25138$ ,  $p = < 0.001$ ), while seasonal water level ( $V = 0$ ,  $p = < 0.001$ ) and dissolved oxygen ( $V = 0$ ,  $p = < 0.001$ ) were clearly divergent between streams (Figure 3). Overall, the inlet creek was cooler, shallower, more oxygenated and more variable in temperature, than the outlet creek, which was warmer, deeper, less oxygenated, and more variable in dissolved oxygen.

Water temperatures in MLS inlet and outlet streams were within the suitable range for stickleback thermotolerance (Figure 4). Mean weekly average water temperatures (MWAT) in the inlet creek ranged from a minimum of 11.1°C ( $P_5$ -  $P_{95} = 10.7$ – $11.9$ °C) in late-May to a maximum of 16.5°C ( $P_5$ -  $P_{95} = 15.2$ – $17.8$ ) in mid-August (Table 2). The

mean weekly maximum water temperature (MWMT) in the inlet creek ranged from 11.6°C ( $P_5$ -  $P_{95}$  = 10.9–12.8°C) in late-May to 18.0°C ( $P_5$ -  $P_{95}$  = 15.8–20.0°C) in mid-August. The outlet creek was warmer and less variable than the inlet creek, with MWAT ranging from 13.5°C ( $P_5$ -  $P_{95}$  = 13.0–14.1°C) in late-May to 18.1°C ( $P_5$ -  $P_{95}$  = 17.9–18.4°C) in late-August, and MWMT ranging from 13.9°C ( $P_5$ -  $P_{95}$  = 13.1–14.4°C) in late-May to 18.5 ( $P_5$ -  $P_{95}$  = 18.3–18.8°C) in late-August (Table 3). Both the inlet and outlet streams remained within optimal temperatures for stickleback (<21°C) throughout the May–September monitoring period. Daily water temperature generally peaked in the evening in the inlet creek (Mode = 17:00), and in the afternoon in the outlet creek (Mode = 13:00, Figure 5).

Dissolved oxygen in MLS lotic habitat was highly variable across seasons and between inlet and outlet stations; the inlet creek was consistently normoxic, while the outlet creek dropped to levels of concern for aquatic life for multiple periods throughout the season (Figure 5). Mean weekly average DO (MWAD) in the inlet creek ranged from a maximum of 10.9 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 10.6–11.1 mg·L<sup>-1</sup>) in mid-June to a minimum of 7.4 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 7.2–7.7 mg·L<sup>-1</sup>) in early-September. (Table 4). The mean weekly minimum DO (MWMinD) in the inlet creek ranged from 10.3 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 10.0–10.5 mg·L<sup>-1</sup>) in mid-June to 7.2 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 7.0–7.4 mg·L<sup>-1</sup>) in early-September. The outlet creek MWAD ranged from a maximum of 8.5 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 8.3–8.7 mg·L<sup>-1</sup>) in late-May to a minimum of 1.4 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 1.3–1.5 mg·L<sup>-1</sup>) in early-September. (Table 5). The mean weekly minimum DO (MWMinD) in the outlet creek ranged from 8.4 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 8.0–8.6 mg·L<sup>-1</sup>) in mid-June to 1.3 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 1.2–1.4 mg·L<sup>-1</sup>) in early-September. (Table 5). Daily DO was generally lowest in the evening in the inlet creek (Mode = 16:00), and overnight in the outlet creek (Mode = 23:00, Figure 6).

Cumulatively, the outlet accrued 2213 hours where dissolved oxygen levels dropped below 6 mg·L<sup>-1</sup>, and 426 hours where dissolved oxygen dropped to 2.2 mg·L<sup>-1</sup> or less (Table 5, Figure 7). These hypoxic events began in early June and continued throughout the monitoring season (until mid-September). A period of continuous extreme hypoxia ( $\leq 2.2$  mg·L<sup>-1</sup>) occurred from August 28 to September 14, for a total span of 18 days. Prior to this period, daily air temperature peaked on August 11 at 20.7°C ( $P_5$ -  $P_{95}$  = 15.7–25.5°C). Water temperature in the outlet creek peaked the day after at 18.2°C ( $P_5$ -  $P_{95}$  = 17.6–19.0°C). A period of rainfall began shortly after, from August 14–20, reaching a seasonal daily peak of 30 mm on August 18. Water level in the outlet creek began to rise during this period of rainfall, reaching a daily maximum of 0.72 m (97 percentile) on August 21, and gradually declining to a mean of 0.43 m ( $P_5$ -  $P_{95}$  = 0.40–0.51 m) during the period of extreme hypoxia. The average water temperature during the extreme hypoxic event was 16.0°C ( $P_5$ -  $P_{95}$  = 14.7–17.7°C), which is within the mean seasonal temperature within the outlet creek ( $\bar{x}$  = 16.1,  $P_5$ -  $P_{95}$  = 13.8–18.1°C).

Surface water was measured throughout Misty Lake and the inlet and outlet streams between 15–17 September 2025 (Table 6, Figure 1). Mean values of lake surface water chemistry were as follows: water temperature 16.8°C ( $P_5$ -  $P_{95}$  = 13.9–18.5°C), dissolved oxygen 6.32 mg·L<sup>-1</sup> ( $P_5$ -  $P_{95}$  = 5.19–6.23 mg·L<sup>-1</sup>) and 64.4 % air sat. ( $P_5$ -  $P_{95}$  = 48.7–76.2% air sat.), pH 5.93 ( $P_5$ -  $P_{95}$  = 5.19–6.23), turbidity 1.62 NTU ( $P_5$ -  $P_{95}$  = 1.00–2.82

NTU). The average depth of the lake was 1.65 m and ranged from 0.8 to 5.9 m. Three locations throughout the lake (MLL2, MLL3 and MLL5) showed surface water DO levels below  $6 \text{ mg}\cdot\text{L}^{-1}$ , corresponding to a bay on the northwest side of the lake (MLL2, depth =1.3 m), the swampy area where lake drains into the outlet creek (MLL3, depth =0.9 m), and the area where a secondary inlet creek enters the lake (MLL5, depth =0.8 m). Across all 5 stations throughout the inlet stream (MLU1–5, Table 6), mean water temperature was 13.4 (range 11.6–15.1), mean DO was 82.3 % air sat. (range 58.7–94.1) or  $8.57 \text{ mg}\cdot\text{L}^{-1}$  (range 6.39–9.74), pH was 5.85 (range 5.69–6.42) and turbidity was 2.49 NTU (range 1.77–4.21). Likewise, across the 2 outlet stations (MLOA and MLOB, Table 6), mean DO was 66.85 % air sat. (range 65.4–68.3) or  $6.25 \text{ mg}\cdot\text{L}^{-1}$  (range 6.25–6.76), pH was 6.06 (range 6.01–6.1) and turbidity was 1.39 NTU (range 1.27–1.5).

Both inlet and outlet streams showed evidence of restricted flow from obstructions at logging road crossings. Evidence of prior major flooding was observed during the installation of water quality monitoring equipment in May 2025, upstream of logging-road crossings of the inlet stream (Figure 8A). The culvert installed for the road crossing was obstructed by woody debris, likely from beaver activity (Figure 8B). A beaver exclusion fence was not present. When retrieving equipment in September 2025, flooding and culvert obstruction at the inlet creek was still observed to be present. Point measurements of water quality in the flooded inlet stream at station MLU5 (Figure 1) indicated low DO, nearing the threshold of hypoxia (DO = 58.7 % air sat.,  $6.39 \text{ mg}\cdot\text{L}^{-1}$ , Table 6). Flooding was also observed upstream of the logging-road crossings of the outlet creek (Figure 8C). The wooden bridge installed for the road crossing was collapsed to below the water line of the creek (Figure 8D). Point source measurements of water quality in the flooded outlet creek at station MLOA (Figure 1) indicate low DO, nearing the threshold of hypoxia (DO = 65.4% air sat.,  $6.25 \text{ mg}\cdot\text{L}^{-1}$ , Table 6).

## DISCUSSION

This report provides the first seasonal ranges of dissolved oxygen, temperature and water level for MLS critical habitat. The inlet stream was generally fast flowing, shallow, cool, and normoxic. In contrast, the outlet stream was slow-moving, pool-forming, warm and hypoxic for the majority of the summer season (June–September). Of note, obstructed logging-road stream crossings coincided with our observations of flooding and hypoxia at the monitoring station in the outlet stream, but not at the monitoring station in the inlet stream. Data from this report can be compared to repeated monitoring efforts in later years to monitor MLS critical habitat for stability or changes in physical water quality, as part of the Misty Lake Recovery Strategy and Action Plan (Fisheries and Oceans Canada 2018, 2020).

We found no evidence of water temperature exceeding optimal thermal ranges for stickleback in the inlet or outlet streams. However, we observed multiple periods of hypoxia from June to September in the outlet stream, and in some locations of Misty Lake during sampling on September 17, 2025. Of note, a prolonged period of continuous extreme hypoxia ( $\leq 2.2 \text{ mg}\cdot\text{L}^{-1}$ ) occurred in the outlet stream from August 28

to September 14 (18 days). This level of prolonged hypoxia is well below BC water quality guidelines for aquatic life (BC Ministry of Environment 1997, Canadian Council of Ministers of the Environment 2001), below the hypoxia tolerance of salmonids (Rosenfeld and Lee 2022), and at a level observed to alter metabolism and behaviour in sticklebacks (O'Connor 2007, O'Connor et al. 2011, Sneddon and Yerbury 2004). Conditions in the outlet stream prior to this period of extreme hypoxia suggest a combination of high temperatures and precipitation may have increased aquatic respiration and organic matter in the outlet stream, resulting in declines in dissolved oxygen (Hotchkiss et al. 2015, Webster and Meyer 1997).

A limitation to this report is the use of a single water quality station to describe each inlet and outlet stream. While stations were located downstream of suspected sources of disturbance or mixing (i.e., road crossings, confluence streams), water quality may vary throughout the length of a stream due to local habitat differences, such as gradient and cover, and may not be represented fully by a single station. This is more likely for the inlet stream as it is much longer than the outlet stream (20 km and 2 km, respectively). For example, a point measurement taken from the flooded inlet stream at station MLU5 during the fall site visit showed DO levels approaching hypoxia, while all other point measurements in the inlet stream, as well as the continuous logger data at station MLU2, were consistently normoxic.

Future water quality monitoring should investigate water quality variation throughout each stream, with a focus on areas of the inlet stream that are slow-flowing and pool forming, such as flooded areas at logging-road crossings. Other opportunities for research include investigating drivers of episodic and seasonal hypoxia detected in this report, as well as potential community impacts of hypoxia on MLS and the resident salmonids within MLS critical habitat. Future work could also investigate habitat connectivity (i.e., fish passage) and seasonal flow throughout the outlet stream to ensure MLS critical habitat is continuous and accessible to MLS throughout the summer rearing season.

## **DATA AVAILABILITY**

All data collected for this report are available on the Government of Canada's Enterprise Data Hub (Record ID: 536bfa0c-1719-4b13-b533-f76cf936f63b; Permalink: <https://edh-cde.dfo-mpo.gc.ca/catalogue/srv/api/records/536bfa0c-1719-4b13-b533-f76cf936f63b>).

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fieldwork to review protocols. We thank them for their continued stewardship of the ecosystem integral to this research.

**Table 1.** Monthly mean water quality measurements at inlet (MLU2) and outlet (MLOA) streams of Misty Lake in 2025. Water level is expressed in metres relative to stage height, except for Misty Lake which is measured as depth from surface. Each value is the monthly mean calculated from hourly measurements, with the 5% and 95% quantiles in brackets. Total hours where DO was below the 6 mg·L<sup>-1</sup> threshold and the 2.2 mg·L<sup>-1</sup> threshold were calculated for each month.

| Location                    | Month    | Water level (m)  | Water temp. (°C) | DO (mg·L <sup>-1</sup> ) | DO (% air sat.)   | Total hours DO <6 mg·L <sup>-1</sup> | Total hours DO ≤2.2 mg·L <sup>-1</sup> |
|-----------------------------|----------|------------------|------------------|--------------------------|-------------------|--------------------------------------|----------------------------------------|
| <b>Inlet stream (MLU2)</b>  | May*     | 0.18 (0.15–0.26) | 11.5 (10.5–13.2) | 9.7 (9.1–10.4)           | 88.6 (85.1–93.5)  | 0                                    | 0                                      |
|                             | June     | 0.12 (0.11–0.14) | 13 (11.1–15.3)   | 10 (8.2–11.4)            | 94.2 (79.5–102.2) | 0                                    | 0                                      |
|                             | July     | 0.13 (0.12–0.17) | 14.9 (12.1–17)   | 9.6 (7.7–11.1)           | 93.9 (76.5–102.1) | 0                                    | 0                                      |
|                             | Aug.     | 0.15 (0.12–0.31) | 15.3 (13.8–17.7) | 8.9 (7.1–10.5)           | 88.1 (71–100.9)   | 0                                    | 0                                      |
|                             | Sept.**  | 0.16 (0.11–0.38) | 14.3 (12.7–15.6) | 8.6 (6.9–10.1)           | 84.1 (68.7–98)    | 0                                    | 0                                      |
| <b>Misty Lake (MLL)</b>     | Sept.*** | 1.65 (0.8–4.47)  | 16.8 (13.9–18.5) | 6.3 (5.2–6.2)            | 64.4 (48.7–76.2)  | -                                    | -                                      |
| <b>Outlet stream (MLOA)</b> | May*     | 0.56 (0.47–0.68) | 13.8 (12.9–15.1) | 8.1 (7–8.7)              | 78.2 (67.6–83.7)  | 0                                    | 0                                      |
|                             | June     | 0.36 (0.32–0.46) | 15.5 (14.1–17.4) | 5.2 (4.3–7)              | 51.4 (42–66.6)    | 505                                  | 0                                      |
|                             | July     | 0.32 (0.3–0.34)  | 16.5 (14.9–18)   | 4.3 (3.7–5.1)            | 43.3 (36.1–54.7)  | 725                                  | 1                                      |
|                             | Aug.     | 0.43 (0.3–0.71)  | 17.1 (15.8–18.4) | 3.9 (1.4–6.3)            | 39.9 (14.4–64.6)  | 622                                  | 103                                    |
|                             | Sept.**  | 0.49 (0.4–0.81)  | 15.8 (14.7–17)   | 2.2 (1.3–5.6)            | 22.2 (12.9–56.6)  | 361                                  | 322                                    |

\* Average and ranges for the month of May were calculated from hourly data collected between the installation date May 22, 2025 to May 30, 2025.

\*\* Average and ranges for the month of September were calculated from hourly data collected between September 1, 2025 to September 17, 2025 (date of logger removal).

\*\*\* Point measurements were taken on September 17, 2025.

**Table 2.** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 5/22/2025 | -                          | -                          | 9.5 (9.2-9.8)            | 12.4 (10.9-13.4)         |
| 5/23/2025 | -                          | -                          | 9.5 (9.2-9.9)            | 12.7 (11.5-13.4)         |
| 5/24/2025 | -                          | -                          | 9.9 (9.3-11.5)           | 13.1 (12.3-14.1)         |
| 5/25/2025 | -                          | -                          | 10.2 (9.3-11.9)          | 13.4 (12.6-14.2)         |
| 5/26/2025 | -                          | -                          | 10.4 (9.3-11.9)          | 13.4 (12.6-14.2)         |
| 5/27/2025 | -                          | -                          | 10.7 (9.5-12)            | 13.6 (12.6-14.3)         |
| 5/28/2025 | 11.1 (10.7-11.9)           | 11.6 (10.9-12.8)           | 11.3 (9.5-13.5)          | 14.8 (13.1-18.8)         |
| 5/29/2025 | 11.3 (10.7-12.5)           | 11.9 (10.9-13.5)           | 11.5 (10.2-13.5)         | 14.9 (13.3-18.8)         |
| 5/30/2025 | 11.5 (10.7-12.6)           | 12.2 (10.9-13.5)           | 11.6 (10.3-13.5)         | 14.8 (12.4-18.8)         |
| 5/31/2025 | 11.7 (10.8-12.6)           | 12.4 (11.1-13.5)           | 11.3 (10.2-13.3)         | 14.5 (12-18.8)           |
| 6/1/2025  | 11.9 (11.1-12.6)           | 12.7 (11.5-13.5)           | 11.3 (10.2-13.3)         | 14.6 (12-18.8)           |
| 6/2/2025  | 12.1 (11.4-12.6)           | 13 (11.9-13.6)             | 11.4 (10.2-13.3)         | 14.7 (12-19.1)           |
| 6/3/2025  | 12.3 (11.9-12.7)           | 13.2 (12.5-13.7)           | 11.4 (10.2-13.2)         | 14.5 (12-19.1)           |
| 6/4/2025  | 12.5 (11.9-13.1)           | 13.4 (12.5-14.1)           | 11.2 (10.2-12.3)         | 13.8 (12-15.8)           |
| 6/5/2025  | 12.6 (11.9-13.2)           | 13.4 (12.5-14.2)           | 11.3 (10.2-12.4)         | 13.8 (12-15.8)           |
| 6/6/2025  | 12.7 (11.9-13.2)           | 13.6 (12.5-14.5)           | 11.7 (10.8-12.8)         | 14.5 (12.6-16.7)         |
| 6/7/2025  | 12.9 (12.3-13.4)           | 14 (13.2-15.1)             | 12.1 (11.2-13.3)         | 15.6 (13.1-19.2)         |
| 6/8/2025  | 13.1 (12.5-13.6)           | 14.4 (13.5-15.5)           | 12.4 (11.3-13.5)         | 16.2 (13.1-19.6)         |
| 6/9/2025  | 13.2 (12.8-13.6)           | 14.7 (13.8-15.5)           | 12.6 (11.3-13.5)         | 16.4 (13.1-19.6)         |
| 6/10/2025 | 13.2 (12.9-13.6)           | 14.8 (14.1-15.5)           | 12.8 (11.8-13.5)         | 16.8 (14.5-19.6)         |
| 6/11/2025 | 13.1 (12.4-13.6)           | 14.7 (13.6-15.5)           | 12.6 (11.3-13.5)         | 16.4 (14-19.6)           |
| 6/12/2025 | 13 (12.1-13.6)             | 14.6 (13.3-15.5)           | 12.4 (10.9-13.5)         | 16.3 (13.5-19.6)         |
| 6/13/2025 | 12.8 (11.9-13.6)           | 14.5 (13.3-15.5)           | 12.2 (10.9-13.5)         | 16.1 (13.5-19.6)         |
| 6/14/2025 | 12.5 (11.7-13.6)           | 14.3 (13.3-15.5)           | 11.7 (10.5-13.3)         | 15.3 (13.5-17.6)         |
| 6/15/2025 | 12.3 (11.7-13.1)           | 14.2 (13.3-15.1)           | 11.5 (10.5-12.8)         | 15.2 (13.5-17.1)         |
| 6/16/2025 | 12.2 (11.7-12.8)           | 14 (13.3-14.9)             | 11.6 (10.5-13.4)         | 15.4 (13.5-17.8)         |
| 6/17/2025 | 12.2 (11.7-13)             | 14 (13.3-14.8)             | 11.9 (10.5-14)           | 15.6 (13.5-17.8)         |
| 6/18/2025 | 12.3 (11.7-13)             | 13.9 (13.3-14.8)           | 12.1 (10.5-14)           | 15.8 (13.7-17.8)         |
| 6/19/2025 | 12.3 (11.7-13)             | 14 (13.3-14.8)             | 12.2 (10.6-14)           | 16.2 (14.8-17.8)         |
| 6/20/2025 | 12.4 (11.8-13.1)           | 14 (13.3-14.9)             | 12.5 (10.8-14)           | 16.4 (15-17.8)           |
| 6/21/2025 | 12.7 (12.2-13.4)           | 14.3 (13.3-15.3)           | 12.9 (11.8-14)           | 16.6 (15.8-17.8)         |
| 6/22/2025 | 12.9 (12.4-13.6)           | 14.3 (13.3-15.5)           | 13 (12.1-14)             | 16.4 (15.7-17.6)         |
| 6/23/2025 | 13.2 (12.4-14.2)           | 14.7 (13.3-16.5)           | 13 (12.1-13.8)           | 16.3 (15.7-17.4)         |
| 6/24/2025 | 13.4 (12.4-14.4)           | 14.9 (13.3-16.5)           | 12.8 (12.1-13.4)         | 16.1 (15.3-17.4)         |
| 6/25/2025 | 13.5 (12.5-14.4)           | 15 (13.7-16.5)             | 12.8 (12.1-13.4)         | 16 (15.1-17.4)           |
| 6/26/2025 | 13.6 (12.8-14.4)           | 15 (13.7-16.5)             | 12.8 (11.9-13.4)         | 15.6 (13.4-17.4)         |
| 6/27/2025 | 13.6 (12.8-14.4)           | 14.9 (13.5-16.5)           | 12.6 (11.8-13.3)         | 15.2 (13.1-17.1)         |
| 6/28/2025 | 13.6 (12.8-14.4)           | 14.8 (13.5-16.5)           | 12.7 (11.8-13.5)         | 15.3 (13.1-17.4)         |

**Table 2. (contd.)** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 6/29/2025 | 13.7 (12.8-14.4)           | 14.9 (13.5-16.7)           | 12.9 (11.8-14.1)         | 15.8 (13.1-18.5)         |
| 6/30/2025 | 13.8 (12.8-14.7)           | 14.9 (13.5-16.7)           | 13 (11.8-14.2)           | 16 (13.1-19.4)           |
| 7/1/2025  | 13.8 (12.8-14.9)           | 15 (13.5-16.7)             | 13.1 (11.8-14.2)         | 16.1 (13.1-19.4)         |
| 7/2/2025  | 13.9 (12.8-14.9)           | 15 (13.5-16.7)             | 13.1 (11.8-14.2)         | 16.1 (13.1-19.4)         |
| 7/3/2025  | 14 (13-14.9)               | 15.3 (13.9-16.7)           | 13.4 (12.4-14.2)         | 16.8 (14.5-19.4)         |
| 7/4/2025  | 14.1 (13.6-14.9)           | 15.6 (14.6-16.7)           | 13.6 (13.3-14.2)         | 17.4 (15.4-19.4)         |
| 7/5/2025  | 14.1 (13.6-14.9)           | 15.7 (14.7-16.7)           | 13.5 (13-14.2)           | 17.3 (15.4-19.4)         |
| 7/6/2025  | 14.2 (13.6-14.9)           | 15.7 (14.7-16.8)           | 13.6 (13-14.5)           | 17.2 (15.4-19.3)         |
| 7/7/2025  | 14.1 (13.6-14.8)           | 15.7 (14.7-16.6)           | 13.5 (13-14.5)           | 16.8 (15.4-18.4)         |
| 7/8/2025  | 14.2 (13.6-15.2)           | 15.7 (14.7-16.6)           | 13.6 (13-14.6)           | 16.8 (15.3-18.4)         |
| 7/9/2025  | 14.3 (13.6-15.3)           | 15.8 (15.1-16.6)           | 13.6 (13-14.6)           | 16.8 (15.5-18.4)         |
| 7/10/2025 | 14.5 (13.6-15.3)           | 15.9 (15.1-16.7)           | 13.8 (13-14.7)           | 17 (15.5-18.8)           |
| 7/11/2025 | 14.8 (13.7-15.4)           | 15.9 (15.1-16.7)           | 13.8 (13-14.7)           | 16.8 (15.5-18.8)         |
| 7/12/2025 | 15.1 (14.4-15.6)           | 16.2 (15.4-16.8)           | 14.2 (13.2-15.1)         | 17.2 (15.5-18.8)         |
| 7/13/2025 | 15.3 (14.5-15.9)           | 16.2 (15.4-16.8)           | 14.1 (13.2-15)           | 16.8 (15.5-18.7)         |
| 7/14/2025 | 15.5 (15.1-15.9)           | 16.2 (15.4-17)             | 14.5 (13.4-15.5)         | 17.1 (15.5-19)           |
| 7/15/2025 | 15.5 (15.1-15.9)           | 16.5 (15.4-17.2)           | 14.4 (13.3-15.5)         | 17.6 (15.9-19)           |
| 7/16/2025 | 15.5 (14.8-15.9)           | 16.6 (15.9-17.2)           | 14.5 (13.7-15.5)         | 17.8 (16.2-19)           |
| 7/17/2025 | 15.4 (14.6-15.9)           | 16.5 (15.9-17.2)           | 14.4 (13.7-15.5)         | 17.7 (16.2-18.9)         |
| 7/18/2025 | 15.3 (14.6-15.9)           | 16.6 (16.1-17.2)           | 14.4 (13.7-15.5)         | 17.8 (16.4-18.9)         |
| 7/19/2025 | 15.2 (14.6-15.9)           | 16.5 (16.1-17.2)           | 14.3 (13.7-15.3)         | 17.7 (16.4-18.9)         |
| 7/20/2025 | 15 (14.6-15.7)             | 16.6 (16.1-17.2)           | 14.3 (13.7-15.3)         | 18.1 (17.4-18.9)         |
| 7/21/2025 | 15 (14.6-15.5)             | 16.6 (16.1-17.5)           | 14 (13.5-14.5)           | 17.9 (17.4-18.6)         |
| 7/22/2025 | 14.9 (14.6-15.4)           | 16.6 (16.1-17.3)           | 14 (13.5-14.5)           | 17.7 (17.3-18.4)         |
| 7/23/2025 | 15 (14.8-15.4)             | 16.6 (16.1-17.3)           | 14.2 (13.6-14.8)         | 17.6 (17.1-18.4)         |
| 7/24/2025 | 15 (14.7-15.4)             | 16.7 (16.2-17.4)           | 14.3 (13.7-14.8)         | 17.5 (17.1-18.3)         |
| 7/25/2025 | 15.1 (14.7-15.4)           | 16.7 (16.2-17.4)           | 14.4 (13.7-15)           | 17.7 (17.1-18.6)         |
| 7/26/2025 | 15 (14.2-15.4)             | 16.7 (16.2-17.4)           | 14.3 (13.5-15)           | 17.7 (17.1-18.6)         |
| 7/27/2025 | 14.8 (14-15.4)             | 16.7 (16.2-17.4)           | 14.1 (13.3-15)           | 17.8 (17.1-18.7)         |
| 7/28/2025 | 14.7 (14-15.4)             | 16.7 (16.2-17.2)           | 14.2 (13.3-15)           | 18.3 (17.1-20.4)         |
| 7/29/2025 | 14.7 (14-15.3)             | 16.9 (16.2-17.9)           | 14.4 (13.3-15.6)         | 19.1 (17.1-22.2)         |
| 7/30/2025 | 14.7 (14-15.5)             | 17.2 (16.4-18.3)           | 14.5 (13.3-15.7)         | 19.7 (17.5-22.4)         |
| 7/31/2025 | 14.8 (14-15.6)             | 17.4 (16.4-18.3)           | 14.6 (13.3-15.7)         | 20.2 (18.1-22.4)         |
| 8/1/2025  | 14.9 (14-15.6)             | 17.6 (16.5-18.3)           | 14.6 (13.3-15.7)         | 20.7 (18.2-22.5)         |
| 8/2/2025  | 15.1 (14.2-15.8)           | 17.6 (16.6-18.3)           | 15 (13.5-16.1)           | 20.8 (18.5-22.5)         |
| 8/3/2025  | 15.3 (14.5-15.8)           | 17.6 (16.6-18.3)           | 15.4 (14.4-16.4)         | 21.1 (19.1-22.5)         |
| 8/4/2025  | 15.5 (15.2-15.8)           | 17.6 (16.6-18.3)           | 15.6 (15-16.4)           | 20.7 (18.4-22.5)         |
| 8/5/2025  | 15.5 (15.2-15.8)           | 17.3 (16.3-18.2)           | 15.6 (15-16.4)           | 20 (18.2-22)             |

**Table 2. (contd.)** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 8/6/2025  | 15.4 (15.1-15.7)           | 16.9 (15.5-18)             | 15.6 (14.8-16.4)         | 19.4 (17.3-21.8)         |
| 8/7/2025  | 15.3 (14.8-15.7)           | 16.5 (15.3-17.8)           | 15.5 (14.6-16.4)         | 19 (17.2-21.8)           |
| 8/8/2025  | 15.1 (14.5-15.7)           | 16.2 (15.3-17.2)           | 15.4 (14.5-16.4)         | 18.5 (17.2-20.2)         |
| 8/9/2025  | 15.2 (14.5-16.1)           | 16.5 (15.3-18)             | 15.5 (14.5-16.6)         | 18.8 (17.2-20.7)         |
| 8/10/2025 | 15.5 (14.5-16.8)           | 16.7 (15.3-18.2)           | 15.6 (14.5-17.1)         | 18.7 (17.2-20.3)         |
| 8/11/2025 | 15.7 (14.5-17.3)           | 17.1 (15.3-19.6)           | 16.3 (14.5-19.7)         | 19.8 (17.2-24.4)         |
| 8/12/2025 | 16.1 (14.5-17.8)           | 17.6 (15.3-20)             | 16.9 (14.5-20.4)         | 20.4 (17.2-25)           |
| 8/13/2025 | 16.3 (14.5-17.8)           | 17.9 (15.6-20)             | 17.1 (14.5-20.4)         | 20.7 (18.2-25)           |
| 8/14/2025 | 16.4 (14.7-17.8)           | 17.9 (15.7-20)             | 17 (14-20.4)             | 20.2 (15.8-25)           |
| 8/15/2025 | 16.5 (15.2-17.8)           | 18 (15.8-20)               | 17.1 (14.1-20.4)         | 20 (15.5-25)             |
| 8/16/2025 | 16.4 (15.2-17.8)           | 17.6 (15.7-20)             | 16.9 (14.1-20.4)         | 19.8 (15.5-25)           |
| 8/17/2025 | 16.1 (15.2-17.8)           | 17.3 (15.7-20)             | 16.3 (13.6-20.4)         | 19.2 (14.9-25)           |
| 8/18/2025 | 15.8 (15.2-17.5)           | 16.6 (15.5-18.9)           | 15.3 (13.4-18.7)         | 17.6 (14.7-21.4)         |
| 8/19/2025 | 15.3 (14.8-16.2)           | 16 (15.1-17.2)             | 14.3 (13.1-16.1)         | 16.8 (14.7-18.9)         |
| 8/20/2025 | 15 (14.5-15.4)             | 15.6 (15-16.2)             | 13.8 (12.7-15.1)         | 16.6 (14.7-18.4)         |
| 8/21/2025 | 14.9 (14.3-15.3)           | 15.5 (15-16.2)             | 13.5 (12.3-15.1)         | 17.3 (15.2-19)           |
| 8/22/2025 | 14.8 (14.3-15.3)           | 15.3 (15-15.9)             | 13.2 (12.3-14.5)         | 17.5 (15.2-19.4)         |
| 8/23/2025 | 14.7 (14.3-15.2)           | 15.2 (15-15.7)             | 12.8 (12.3-13.5)         | 17.2 (15.2-19.4)         |
| 8/24/2025 | 14.6 (14.3-15.1)           | 15.2 (15-15.6)             | 12.8 (12.3-13.4)         | 17.4 (15.4-19.4)         |
| 8/25/2025 | 14.6 (14.3-14.8)           | 15.2 (15-15.5)             | 12.8 (12.3-13.6)         | 17.6 (16.3-19.4)         |
| 8/26/2025 | 14.6 (14.3-14.9)           | 15.2 (15-15.5)             | 13 (12.3-13.9)           | 17.4 (15.9-19.4)         |
| 8/27/2025 | 14.6 (14.3-14.9)           | 15.2 (15-15.5)             | 13.1 (12.3-13.9)         | 17.1 (15.5-19.4)         |
| 8/28/2025 | 14.7 (14.4-14.9)           | 15.4 (15.1-16)             | 13.3 (12.5-13.9)         | 17 (15.5-19.2)           |
| 8/29/2025 | 14.7 (14.6-14.9)           | 15.5 (15.2-16.1)           | 13.4 (12.7-13.9)         | 16.8 (15.5-18.4)         |
| 8/30/2025 | 14.8 (14.6-15)             | 15.5 (15.2-16.1)           | 13.7 (13.3-14.3)         | 16.8 (15.5-18.4)         |
| 8/31/2025 | 14.8 (14.6-15)             | 15.6 (15.2-16.1)           | 13.9 (13.4-14.5)         | 16.8 (15.5-18.4)         |
| 9/1/2025  | 14.8 (14.6-15)             | 15.7 (15.2-16.1)           | 14 (13.4-14.5)           | 17 (15.5-18.4)           |
| 9/2/2025  | 14.9 (14.6-15)             | 15.7 (15.3-16.1)           | 14 (13.4-14.5)           | 17.2 (15.6-18.4)         |
| 9/3/2025  | 14.9 (14.7-15)             | 15.8 (15.4-16.1)           | 14.1 (13.4-14.5)         | 17.4 (16.5-18.4)         |
| 9/4/2025  | 14.9 (14.7-15)             | 15.7 (15.3-16)             | 14.2 (13.6-14.5)         | 17 (15.8-18.1)           |
| 9/5/2025  | 14.9 (14.8-15)             | 15.7 (15.3-15.9)           | 14.3 (14.1-14.5)         | 16.8 (15.8-17.5)         |
| 9/6/2025  | 14.9 (14.8-15)             | 15.8 (15.5-16.2)           | 14.2 (13.9-14.5)         | 16.8 (15.9-17.5)         |
| 9/7/2025  | 14.8 (14.4-15)             | 15.7 (14.9-16.2)           | 14 (13.5-14.4)           | 16.5 (14.9-17.5)         |
| 9/8/2025  | 14.8 (14.4-15)             | 15.5 (14.8-16.2)           | 14.1 (13.5-14.4)         | 16.2 (14.9-17.2)         |
| 9/9/2025  | 14.6 (14.2-14.9)           | 15.4 (14.8-16.2)           | 14 (13.5-14.3)           | 16.1 (14.9-17)           |
| 9/10/2025 | 14.5 (13.9-14.8)           | 15.3 (14.7-16.1)           | 13.8 (12.9-14.3)         | 15.7 (14.7-16.5)         |
| 9/11/2025 | 14.3 (13.8-14.8)           | 15.3 (14.7-16.1)           | 13.7 (12.9-14.3)         | 15.9 (14.7-16.8)         |
| 9/12/2025 | 14.4 (13.8-14.8)           | 15.3 (14.7-16.1)           | 13.7 (12.9-14.3)         | 15.8 (14.7-16.8)         |

**Table 2. (contd.)** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 9/13/2025 | 14.4 (13.8-14.8)           | 15.1 (14.7-15.5)           | 13.8 (12.9-14.7)         | 15.9 (14.7-16.9)         |
| 9/14/2025 | 14.4 (13.8-14.8)           | 15.1 (14.7-15.5)           | 13.8 (12.9-14.7)         | 16.2 (15.2-17)           |
| 9/15/2025 | 14.1 (13.3-14.8)           | 14.9 (14.1-15.5)           | 13.2 (11.1-14.6)         | 16.5 (15.2-17.4)         |
| 9/16/2025 | 13.9 (12.9-14.8)           | 14.7 (13.6-15.5)           | 13.5 (11.1-15.5)         | 17.6 (15.2-22.3)         |
| 9/17/2025 | 13.8 (12.9-14.8)           | 14.5 (13.4-15.5)           | 13.7 (11.2-15.5)         | 18 (16.1-22.3)           |

**Table 3.** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 5/22/2025 | -                          | -                          | 9.5 (9.2-9.8)            | 12.4 (10.9-13.4)         |
| 5/23/2025 | -                          | -                          | 9.5 (9.2-9.9)            | 12.7 (11.5-13.4)         |
| 5/24/2025 | -                          | -                          | 9.9 (9.3-11.5)           | 13.1 (12.3-14.1)         |
| 5/25/2025 | -                          | -                          | 10.2 (9.3-11.9)          | 13.4 (12.6-14.2)         |
| 5/26/2025 | -                          | -                          | 10.4 (9.3-11.9)          | 13.4 (12.6-14.2)         |
| 5/27/2025 | -                          | -                          | 10.7 (9.5-12)            | 13.6 (12.6-14.3)         |
| 5/28/2025 | 13.5 (13-14.1)             | 13.9 (13.1-14.4)           | 11.3 (9.5-13.5)          | 14.8 (13.1-18.8)         |
| 5/29/2025 | 13.6 (13-14.5)             | 14.1 (13.1-15.4)           | 11.5 (10.2-13.5)         | 14.9 (13.3-18.8)         |
| 5/30/2025 | 13.7 (13-14.8)             | 14.1 (13.1-15.6)           | 11.6 (10.3-13.5)         | 14.8 (12.4-18.8)         |
| 5/31/2025 | 13.8 (13-14.8)             | 14.2 (13.1-15.6)           | 11.3 (10.2-13.3)         | 14.5 (12-18.8)           |
| 6/1/2025  | 13.9 (13.1-14.8)           | 14.4 (13.4-15.6)           | 11.3 (10.2-13.3)         | 14.6 (12-18.8)           |
| 6/2/2025  | 14.1 (13.3-14.8)           | 14.8 (13.7-15.8)           | 11.4 (10.2-13.3)         | 14.7 (12-19.1)           |
| 6/3/2025  | 14.4 (13.6-14.9)           | 15.1 (14.2-15.8)           | 11.4 (10.2-13.2)         | 14.5 (12-19.1)           |
| 6/4/2025  | 14.6 (14-15.1)             | 15.4 (14.5-16)             | 11.2 (10.2-12.3)         | 13.8 (12-15.8)           |
| 6/5/2025  | 14.7 (14-15.3)             | 15.4 (14.5-16)             | 11.3 (10.2-12.4)         | 13.8 (12-15.8)           |
| 6/6/2025  | 14.8 (14-15.5)             | 15.6 (14.5-16.4)           | 11.7 (10.8-12.8)         | 14.5 (12.6-16.7)         |
| 6/7/2025  | 15.1 (14.2-16)             | 16.1 (15.2-17.3)           | 12.1 (11.2-13.3)         | 15.6 (13.1-19.2)         |
| 6/8/2025  | 15.5 (14.7-16.6)           | 16.6 (15.6-18.1)           | 12.4 (11.3-13.5)         | 16.2 (13.1-19.6)         |
| 6/9/2025  | 15.8 (15-16.8)             | 16.9 (15.7-18.2)           | 12.6 (11.3-13.5)         | 16.4 (13.1-19.6)         |
| 6/10/2025 | 16.1 (15.2-16.8)           | 17.2 (16-18.2)             | 12.8 (11.8-13.5)         | 16.8 (14.5-19.6)         |
| 6/11/2025 | 16.2 (15.4-16.8)           | 17.3 (16.1-18.2)           | 12.6 (11.3-13.5)         | 16.4 (14-19.6)           |
| 6/12/2025 | 16.2 (15.5-16.8)           | 17.3 (16.1-18.2)           | 12.4 (10.9-13.5)         | 16.3 (13.5-19.6)         |
| 6/13/2025 | 16.1 (15.3-16.8)           | 17.2 (16-18.2)             | 12.2 (10.9-13.5)         | 16.1 (13.5-19.6)         |
| 6/14/2025 | 16 (15-16.8)               | 17 (15.8-18.2)             | 11.7 (10.5-13.3)         | 15.3 (13.5-17.6)         |
| 6/15/2025 | 15.7 (14.9-16.7)           | 16.6 (15.8-18.1)           | 11.5 (10.5-12.8)         | 15.2 (13.5-17.1)         |
| 6/16/2025 | 15.4 (14.9-16.4)           | 16.2 (15.6-17.5)           | 11.6 (10.5-13.4)         | 15.4 (13.5-17.8)         |
| 6/17/2025 | 15.2 (14.9-15.8)           | 15.9 (15.4-16.4)           | 11.9 (10.5-14)           | 15.6 (13.5-17.8)         |
| 6/18/2025 | 15.1 (14.9-15.4)           | 15.7 (15.3-16.2)           | 12.1 (10.5-14)           | 15.8 (13.7-17.8)         |
| 6/19/2025 | 15 (14.9-15.2)             | 15.6 (15.3-16.1)           | 12.2 (10.6-14)           | 16.2 (14.8-17.8)         |
| 6/20/2025 | 15 (14.9-15.1)             | 15.5 (15.3-15.8)           | 12.5 (10.8-14)           | 16.4 (15-17.8)           |
| 6/21/2025 | 15 (14.9-15.3)             | 15.7 (15.3-16.3)           | 12.9 (11.8-14)           | 16.6 (15.8-17.8)         |
| 6/22/2025 | 15.2 (14.9-15.8)           | 15.8 (15.3-16.9)           | 13 (12.1-14)             | 16.4 (15.7-17.6)         |
| 6/23/2025 | 15.4 (14.9-16.2)           | 16.1 (15.3-17.4)           | 13 (12.1-13.8)           | 16.3 (15.7-17.4)         |
| 6/24/2025 | 15.5 (14.9-16.4)           | 16.3 (15.3-17.4)           | 12.8 (12.1-13.4)         | 16.1 (15.3-17.4)         |
| 6/25/2025 | 15.7 (14.9-16.4)           | 16.4 (15.4-17.4)           | 12.8 (12.1-13.4)         | 16 (15.1-17.4)           |
| 6/26/2025 | 15.7 (15-16.4)             | 16.4 (15.4-17.4)           | 12.8 (11.9-13.4)         | 15.6 (13.4-17.4)         |
| 6/27/2025 | 15.6 (14.7-16.4)           | 16.3 (14.9-17.4)           | 12.6 (11.8-13.3)         | 15.2 (13.1-17.1)         |
| 6/28/2025 | 15.6 (14.7-16.4)           | 16.2 (14.9-17.4)           | 12.7 (11.8-13.5)         | 15.3 (13.1-17.4)         |

**Table 3. (contd.)** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 6/29/2025 | 15.6 (14.7-16.4)           | 16.2 (14.9-17.3)           | 12.9 (11.8-14.1)         | 15.8 (13.1-18.5)         |
| 6/30/2025 | 15.6 (14.7-16.4)           | 16.2 (14.9-17.5)           | 13 (11.8-14.2)           | 16 (13.1-19.4)           |
| 7/1/2025  | 15.6 (14.7-16.4)           | 16.2 (14.9-17.5)           | 13.1 (11.8-14.2)         | 16.1 (13.1-19.4)         |
| 7/2/2025  | 15.6 (14.7-16.4)           | 16.2 (14.9-17.5)           | 13.1 (11.8-14.2)         | 16.1 (13.1-19.4)         |
| 7/3/2025  | 15.6 (14.7-16.4)           | 16.4 (15.1-17.5)           | 13.4 (12.4-14.2)         | 16.8 (14.5-19.4)         |
| 7/4/2025  | 15.8 (15.2-16.4)           | 16.7 (15.7-17.5)           | 13.6 (13.3-14.2)         | 17.4 (15.4-19.4)         |
| 7/5/2025  | 15.9 (15.5-16.4)           | 16.7 (15.9-17.5)           | 13.5 (13-14.2)           | 17.3 (15.4-19.4)         |
| 7/6/2025  | 15.9 (15.5-16.4)           | 16.7 (15.9-17.5)           | 13.6 (13-14.5)           | 17.2 (15.4-19.3)         |
| 7/7/2025  | 15.8 (15.5-16.2)           | 16.6 (15.9-17)             | 13.5 (13-14.5)           | 16.8 (15.4-18.4)         |
| 7/8/2025  | 15.8 (15.5-16.3)           | 16.6 (15.9-16.9)           | 13.6 (13-14.6)           | 16.8 (15.3-18.4)         |
| 7/9/2025  | 15.8 (15.5-16.3)           | 16.6 (16-16.9)             | 13.6 (13-14.6)           | 16.8 (15.5-18.4)         |
| 7/10/2025 | 16 (15.6-16.5)             | 16.8 (16-17.7)             | 13.8 (13-14.7)           | 17 (15.5-18.8)           |
| 7/11/2025 | 16.1 (15.6-16.6)           | 16.9 (16-17.9)             | 13.8 (13-14.7)           | 16.8 (15.5-18.8)         |
| 7/12/2025 | 16.4 (15.9-17)             | 17.3 (16.3-18.5)           | 14.2 (13.2-15.1)         | 17.2 (15.5-18.8)         |
| 7/13/2025 | 16.6 (15.9-17.4)           | 17.4 (16.3-18.5)           | 14.1 (13.2-15)           | 16.8 (15.5-18.7)         |
| 7/14/2025 | 16.9 (16.1-17.6)           | 17.8 (16.3-19)             | 14.5 (13.4-15.5)         | 17.1 (15.5-19)           |
| 7/15/2025 | 17.1 (16.1-17.9)           | 18 (16.5-19)               | 14.4 (13.3-15.5)         | 17.6 (15.9-19)           |
| 7/16/2025 | 17.3 (16.6-17.9)           | 18.4 (17.7-19)             | 14.5 (13.7-15.5)         | 17.8 (16.2-19)           |
| 7/17/2025 | 17.4 (16.8-17.9)           | 18.4 (17.7-19)             | 14.4 (13.7-15.5)         | 17.7 (16.2-18.9)         |
| 7/18/2025 | 17.4 (17.1-17.9)           | 18.4 (17.9-19)             | 14.4 (13.7-15.5)         | 17.8 (16.4-18.9)         |
| 7/19/2025 | 17.4 (16.7-17.9)           | 18.3 (17.7-19)             | 14.3 (13.7-15.3)         | 17.7 (16.4-18.9)         |
| 7/20/2025 | 17.2 (16.6-17.9)           | 18.2 (17.6-19)             | 14.3 (13.7-15.3)         | 18.1 (17.4-18.9)         |
| 7/21/2025 | 17.1 (16.6-17.8)           | 18 (17.6-18.6)             | 14 (13.5-14.5)           | 17.9 (17.4-18.6)         |
| 7/22/2025 | 16.9 (16.6-17.4)           | 17.8 (17.6-18.3)           | 14 (13.5-14.5)           | 17.7 (17.3-18.4)         |
| 7/23/2025 | 16.8 (16.6-17.1)           | 17.7 (17.4-18)             | 14.2 (13.6-14.8)         | 17.6 (17.1-18.4)         |
| 7/24/2025 | 16.7 (16.3-16.9)           | 17.6 (17.3-17.9)           | 14.3 (13.7-14.8)         | 17.5 (17.1-18.3)         |
| 7/25/2025 | 16.6 (16.3-16.8)           | 17.5 (17.3-17.8)           | 14.4 (13.7-15)           | 17.7 (17.1-18.6)         |
| 7/26/2025 | 16.5 (15.9-16.8)           | 17.4 (17-17.8)             | 14.3 (13.5-15)           | 17.7 (17.1-18.6)         |
| 7/27/2025 | 16.4 (15.7-16.8)           | 17.3 (16.8-17.8)           | 14.1 (13.3-15)           | 17.8 (17.1-18.7)         |
| 7/28/2025 | 16.2 (15.4-16.8)           | 17.1 (16.4-17.5)           | 14.2 (13.3-15)           | 18.3 (17.1-20.4)         |
| 7/29/2025 | 16 (15.4-16.7)             | 17 (16.4-17.3)             | 14.4 (13.3-15.6)         | 19.1 (17.1-22.2)         |
| 7/30/2025 | 15.9 (15.4-16.4)           | 17 (16.4-17.3)             | 14.5 (13.3-15.7)         | 19.7 (17.5-22.4)         |
| 7/31/2025 | 16 (15.4-16.5)             | 17 (16.4-17.5)             | 14.6 (13.3-15.7)         | 20.2 (18.1-22.4)         |
| 8/1/2025  | 16 (15.4-16.5)             | 17.1 (16.4-17.6)           | 14.6 (13.3-15.7)         | 20.7 (18.2-22.5)         |
| 8/2/2025  | 16.2 (15.4-16.8)           | 17.1 (16.4-17.6)           | 15 (13.5-16.1)           | 20.8 (18.5-22.5)         |
| 8/3/2025  | 16.3 (15.5-16.8)           | 17.2 (16.5-17.6)           | 15.4 (14.4-16.4)         | 21.1 (19.1-22.5)         |
| 8/4/2025  | 16.4 (16-16.8)             | 17.3 (17-17.6)             | 15.6 (15-16.4)           | 20.7 (18.4-22.5)         |

**Table 3. (contd.)** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 8/5/2025  | 16.5 (16.3-16.8)           | 17.3 (17.1-17.6)           | 15.6 (15-16.4)           | 20 (18.2-22)             |
| 8/6/2025  | 16.5 (16.4-16.8)           | 17.2 (16.9-17.6)           | 15.6 (14.8-16.4)         | 19.4 (17.3-21.8)         |
| 8/7/2025  | 16.5 (16.2-16.8)           | 17.1 (16.7-17.5)           | 15.5 (14.6-16.4)         | 19 (17.2-21.8)           |
| 8/8/2025  | 16.4 (15.8-16.8)           | 16.9 (16.3-17.3)           | 15.4 (14.5-16.4)         | 18.5 (17.2-20.2)         |
| 8/9/2025  | 16.3 (15.8-16.6)           | 16.9 (16.3-17.5)           | 15.5 (14.5-16.6)         | 18.8 (17.2-20.7)         |
| 8/10/2025 | 16.5 (15.8-17.2)           | 17.1 (16.3-18.1)           | 15.6 (14.5-17.1)         | 18.7 (17.2-20.3)         |
| 8/11/2025 | 16.6 (15.8-17.5)           | 17.3 (16.3-18.3)           | 16.3 (14.5-19.7)         | 19.8 (17.2-24.4)         |
| 8/12/2025 | 16.9 (15.8-18)             | 17.6 (16.3-18.9)           | 16.9 (14.5-20.4)         | 20.4 (17.2-25)           |
| 8/13/2025 | 17.1 (15.8-18.1)           | 17.8 (16.3-19)             | 17.1 (14.5-20.4)         | 20.7 (18.2-25)           |
| 8/14/2025 | 17.2 (15.9-18.1)           | 18 (16.5-19)               | 17 (14-20.4)             | 20.2 (15.8-25)           |
| 8/15/2025 | 17.3 (16.4-18.1)           | 18.1 (17-19)               | 17.1 (14.1-20.4)         | 20 (15.5-25)             |
| 8/16/2025 | 17.3 (16.4-18.1)           | 18 (16.8-19)               | 16.9 (14.1-20.4)         | 19.8 (15.5-25)           |
| 8/17/2025 | 17.1 (16.2-18.1)           | 17.7 (16.5-19)             | 16.3 (13.6-20.4)         | 19.2 (14.9-25)           |
| 8/18/2025 | 16.8 (15.9-18.1)           | 17.4 (16.2-19)             | 15.3 (13.4-18.7)         | 17.6 (14.7-21.4)         |
| 8/19/2025 | 16.5 (15.9-17.6)           | 17.1 (16.2-18.4)           | 14.3 (13.1-16.1)         | 16.8 (14.7-18.9)         |
| 8/20/2025 | 16.5 (15.9-17.3)           | 17 (16.2-17.9)             | 13.8 (12.7-15.1)         | 16.6 (14.7-18.4)         |
| 8/21/2025 | 16.5 (15.9-17.4)           | 17.1 (16.2-18.1)           | 13.5 (12.3-15.1)         | 17.3 (15.2-19)           |
| 8/22/2025 | 16.8 (15.9-17.8)           | 17.3 (16.2-18.3)           | 13.2 (12.3-14.5)         | 17.5 (15.2-19.4)         |
| 8/23/2025 | 17 (15.9-18)               | 17.5 (16.2-18.4)           | 12.8 (12.3-13.5)         | 17.2 (15.2-19.4)         |
| 8/24/2025 | 17.3 (15.9-18.3)           | 17.9 (16.4-18.8)           | 12.8 (12.3-13.4)         | 17.4 (15.4-19.4)         |
| 8/25/2025 | 17.7 (16.5-18.4)           | 18.2 (17.4-18.8)           | 12.8 (12.3-13.6)         | 17.6 (16.3-19.4)         |
| 8/26/2025 | 18 (17.4-18.4)             | 18.4 (18.1-18.8)           | 13 (12.3-13.9)           | 17.4 (15.9-19.4)         |
| 8/27/2025 | 18 (17.5-18.4)             | 18.4 (18.1-18.8)           | 13.1 (12.3-13.9)         | 17.1 (15.5-19.4)         |
| 8/28/2025 | 18.1 (17.9-18.4)           | 18.5 (18.3-18.8)           | 13.3 (12.5-13.9)         | 17 (15.5-19.2)           |
| 8/29/2025 | 18 (17.5-18.4)             | 18.5 (18.2-18.8)           | 13.4 (12.7-13.9)         | 16.8 (15.5-18.4)         |
| 8/30/2025 | 17.9 (17.3-18.4)           | 18.4 (18-18.8)             | 13.7 (13.3-14.3)         | 16.8 (15.5-18.4)         |
| 8/31/2025 | 17.7 (17-18.3)             | 18.2 (17.3-18.6)           | 13.9 (13.4-14.5)         | 16.8 (15.5-18.4)         |
| 9/1/2025  | 17.5 (16.8-18.1)           | 17.9 (17.1-18.5)           | 14 (13.4-14.5)           | 17 (15.5-18.4)           |
| 9/2/2025  | 17.3 (16.8-17.9)           | 17.7 (17-18.5)             | 14 (13.4-14.5)           | 17.2 (15.6-18.4)         |
| 9/3/2025  | 17 (16.5-17.7)             | 17.5 (16.7-18.4)           | 14.1 (13.4-14.5)         | 17.4 (16.5-18.4)         |
| 9/4/2025  | 16.8 (16.3-17.3)           | 17.2 (16.5-18.1)           | 14.2 (13.6-14.5)         | 17 (15.8-18.1)           |
| 9/5/2025  | 16.6 (16.1-17.1)           | 16.9 (16.3-17.7)           | 14.3 (14.1-14.5)         | 16.8 (15.8-17.5)         |
| 9/6/2025  | 16.4 (15.9-16.9)           | 16.7 (16.2-17.1)           | 14.2 (13.9-14.5)         | 16.8 (15.9-17.5)         |
| 9/7/2025  | 16.2 (15.6-16.8)           | 16.5 (15.9-17.1)           | 14 (13.5-14.4)           | 16.5 (14.9-17.5)         |
| 9/8/2025  | 16 (15.5-16.6)             | 16.3 (15.7-16.9)           | 14.1 (13.5-14.4)         | 16.2 (14.9-17.2)         |
| 9/9/2025  | 15.8 (15.3-16.3)           | 16 (15.5-16.6)             | 14 (13.5-14.3)           | 16.1 (14.9-17)           |
| 9/10/2025 | 15.6 (15-16.2)             | 15.8 (15.1-16.4)           | 13.8 (12.9-14.3)         | 15.7 (14.7-16.5)         |

**Table 3. (contd.)** Mean weekly average water and air temperature (MWAT<sub>water</sub>, MWAT<sub>air</sub>) and mean weekly maximum water and air temperature (MWMT<sub>water</sub>, MWMT<sub>air</sub>) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAT <sub>water</sub> (°C) | MWMT <sub>water</sub> (°C) | MWAT <sub>air</sub> (°C) | MWMT <sub>air</sub> (°C) |
|-----------|----------------------------|----------------------------|--------------------------|--------------------------|
| 9/11/2025 | 15.3 (14.5-16)             | 15.6 (14.9-16.2)           | 13.7 (12.9-14.3)         | 15.9 (14.7-16.8)         |
| 9/12/2025 | 15.2 (14.5-15.8)           | 15.5 (14.9-16.1)           | 13.7 (12.9-14.3)         | 15.8 (14.7-16.8)         |
| 9/13/2025 | 15.1 (14.5-15.5)           | 15.4 (14.9-15.8)           | 13.8 (12.9-14.7)         | 15.9 (14.7-16.9)         |
| 9/14/2025 | 15.1 (14.5-15.5)           | 15.4 (14.9-15.8)           | 13.8 (12.9-14.7)         | 16.2 (15.2-17)           |
| 9/15/2025 | 15.1 (14.5-15.5)           | 15.5 (14.9-16.1)           | 13.2 (11.1-14.6)         | 16.5 (15.2-17.4)         |
| 9/16/2025 | 15.3 (14.5-16.2)           | 15.7 (14.9-16.8)           | 13.5 (11.1-15.5)         | 17.6 (15.2-22.3)         |
| 9/17/2025 | 15.7 (14.6-17.2)           | 16.1 (15-17.4)             | 13.7 (11.2-15.5)         | 18 (16.1-22.3)           |

**Table 4.** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAD (mg·L <sup>-1</sup> ) | MWMinD (mg·L <sup>-1</sup> ) | MWAD (% air sat.)   | MWMinD (% air sat.) |
|-----------|----------------------------|------------------------------|---------------------|---------------------|
| 5/28/2025 | 9.9 (9.4-10.3)             | 9.8 (9.2-10.2)               | 90.2 (87.5-93.4)    | 89.4 (86.8-92.2)    |
| 5/29/2025 | 9.8 (9.3-10.3)             | 9.6 (9.1-10.1)               | 89.2 (86.8-92.5)    | 88.4 (85.9-91)      |
| 5/30/2025 | 9.6 (9.2-10)               | 9.5 (9.1-9.9)                | 88.1 (86-90.3)      | 87.5 (85.4-89.7)    |
| 5/31/2025 | 9.5 (9.2-9.9)              | 9.4 (9.1-9.8)                | 87.4 (85.2-89.4)    | 86.7 (84.6-88.9)    |
| 6/1/2025  | 9.4 (9.2-9.8)              | 9.3 (9.1-9.7)                | 86.8 (85.2-88.9)    | 86.1 (84.4-88.2)    |
| 6/2/2025  | 9.3 (9.2-9.6)              | 9.2 (9.1-9.4)                | 86.3 (85.2-87.9)    | 85.6 (84.4-87.3)    |
| 6/3/2025  | 9.3 (9.2-9.3)              | 9.1 (9.1-9.3)                | 86 (85.2-87)        | 85.2 (84.4-86.2)    |
| 6/4/2025  | 9.2 (9-9.3)                | 9.1 (8.8-9.3)                | 85.6 (84.4-86.4)    | 84.7 (83.6-85.6)    |
| 6/5/2025  | 9.1 (8.8-9.3)              | 9 (8.6-9.3)                  | 84.9 (82.5-86)      | 83.9 (81-85.2)      |
| 6/6/2025  | 9 (8.6-9.3)                | 8.9 (8.3-9.3)                | 84.1 (80.8-86)      | 83 (79.3-85)        |
| 6/7/2025  | 8.9 (8.4-9.3)              | 8.7 (8.1-9.2)                | 83.4 (79.9-86)      | 82 (77.6-85)        |
| 6/8/2025  | 8.8 (8.4-9.3)              | 8.5 (8-9.1)                  | 82.5 (79.5-86)      | 80.8 (76.6-85)      |
| 6/9/2025  | 8.7 (8.4-9.2)              | 8.4 (8-8.9)                  | 82.4 (79.5-85.9)    | 80.1 (76.6-84.4)    |
| 6/10/2025 | 8.9 (8.4-9.9)              | 8.5 (8-9.4)                  | 83.9 (79.5-92.9)    | 80.9 (76.6-88.4)    |
| 6/11/2025 | 9.2 (8.4-10.8)             | 8.8 (8-10.4)                 | 86.5 (79.5-100.4)   | 83 (76.6-95.9)      |
| 6/12/2025 | 9.5 (8.4-11.1)             | 9.1 (8-10.7)                 | 89.3 (79.5-102.1)   | 86 (76.6-99.8)      |
| 6/13/2025 | 9.9 (8.4-11.1)             | 9.4 (8-10.7)                 | 92.3 (79.5-102.1)   | 89 (76.6-100.3)     |
| 6/14/2025 | 10.2 (8.6-11.1)            | 9.4 (8.1-10.7)               | 94.7 (81.3-102.1)   | 88.9 (76.3-100.3)   |
| 6/15/2025 | 10.6 (9.4-11.1)            | 9.8 (8.4-10.7)               | 97.8 (88.8-102.1)   | 92.2 (77.4-100.3)   |
| 6/16/2025 | 10.9 (10.4-11.1)           | 10 (8.8-10.7)                | 99.9 (96.1-102.1)   | 95.1 (80.6-100.4)   |
| 6/17/2025 | 10.9 (10.6-11.1)           | 10.1 (8.9-10.7)              | 100.5 (97.6-102.1)  | 96.5 (82.9-100.4)   |
| 6/18/2025 | 10.9 (10.6-11.1)           | 10.1 (8.9-10.6)              | 100.3 (97.5-101.6)  | 96.7 (83.4-100.4)   |
| 6/19/2025 | 10.8 (10.6-11.1)           | 10.1 (8.9-10.5)              | 100.1 (97.5-101.4)  | 96.7 (83.4-100.2)   |
| 6/20/2025 | 10.8 (10.6-11)             | 10.1 (8.9-10.5)              | 100 (97.5-101)      | 96.7 (83.4-100.2)   |
| 6/21/2025 | 10.7 (10.5-11)             | 10.3 (10-10.5)               | 100.6 (100.4-101)   | 100.1 (100-100.2)   |
| 6/22/2025 | 10.7 (10.5-10.8)           | 10.3 (10-10.5)               | 100.6 (100.4-100.8) | 100.1 (100-100.2)   |
| 6/23/2025 | 10.6 (10.4-10.8)           | 10.2 (9.8-10.5)              | 100.6 (100.4-100.8) | 100.1 (100-100.2)   |
| 6/24/2025 | 10.6 (10.4-10.8)           | 10.2 (9.8-10.5)              | 100.6 (100.5-100.8) | 100.1 (100-100.2)   |
| 6/25/2025 | 10.6 (10.4-10.8)           | 10.1 (9.8-10.5)              | 100.6 (100.6-100.8) | 100.1 (100-100.2)   |
| 6/26/2025 | 10.6 (10.4-10.7)           | 10.1 (9.8-10.4)              | 100.7 (100.6-100.8) | 100.2 (100-100.4)   |
| 6/27/2025 | 10.6 (10.4-10.7)           | 10.1 (9.8-10.4)              | 100.6 (100.6-100.8) | 99.5 (96.9-100.4)   |
| 6/28/2025 | 10.4 (9.8-10.7)            | 9.9 (9.1-10.4)               | 99.3 (93.9-100.8)   | 97.6 (89.4-100.4)   |
| 6/29/2025 | 10.2 (9.5-10.7)            | 9.6 (8.2-10.4)               | 97.9 (90.8-100.8)   | 94.7 (81.6-100.4)   |
| 6/30/2025 | 10.1 (9.2-10.7)            | 9.3 (7.6-10.4)               | 96.1 (89.1-100.8)   | 91.3 (77.3-100.4)   |
| 7/1/2025  | 9.7 (8.3-10.7)             | 9 (7.5-10.4)                 | 92.9 (81.3-100.8)   | 87.8 (76.2-100.4)   |
| 7/2/2025  | 9.6 (8.3-10.7)             | 8.6 (7.5-10.4)               | 91.4 (81.3-100.8)   | 84.9 (76.2-99)      |
| 7/3/2025  | 9.5 (8.3-10.7)             | 8.6 (7.5-10.1)               | 91.4 (81.3-101.2)   | 84.8 (76.2-98.6)    |

**Table 4. (contd.)** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAD (mg·L <sup>-1</sup> ) | MWMinD (mg·L <sup>-1</sup> ) | MWAD (% air sat.)   | MWMinD (% air sat.) |
|-----------|----------------------------|------------------------------|---------------------|---------------------|
| 7/4/2025  | 9.5 (8.3-10.6)             | 8.6 (7.5-10)                 | 91.4 (81.3-101.1)   | 83.9 (76.2-96.6)    |
| 7/5/2025  | 9.7 (8.3-10.7)             | 8.8 (7.5-10.2)               | 92.9 (81.3-101.4)   | 85.8 (76.2-100.3)   |
| 7/6/2025  | 9.8 (8.3-10.7)             | 9 (7.5-10.2)                 | 94.3 (81.3-101.4)   | 88.8 (76.2-100.3)   |
| 7/7/2025  | 10 (8.4-10.7)              | 9.4 (7.8-10.2)               | 96.1 (81.7-101.4)   | 92.2 (77.1-100.3)   |
| 7/8/2025  | 10.1 (8.9-10.7)            | 9.3 (7.7-10.2)               | 97.5 (88.3-101.4)   | 91.9 (75.8-100.3)   |
| 7/9/2025  | 9.9 (8.1-10.7)             | 9.3 (7.5-10.2)               | 95.6 (79.8-101.4)   | 91.3 (74.6-100.3)   |
| 7/10/2025 | 9.5 (7.8-10.7)             | 9 (7.5-10.1)                 | 92.3 (77.2-101.2)   | 88.2 (74.6-100.3)   |
| 7/11/2025 | 9.2 (7.8-10.6)             | 8.7 (7.5-10.1)               | 89.4 (77.2-101.2)   | 86.8 (74.6-100.3)   |
| 7/12/2025 | 8.8 (7.8-10.4)             | 8.3 (7.5-9.8)                | 86.3 (77.2-100.9)   | 83.8 (74.6-100.1)   |
| 7/13/2025 | 8.4 (7.8-10)               | 8 (7.5-9.2)                  | 83.1 (77.1-97)      | 80.5 (74.6-93.8)    |
| 7/14/2025 | 8 (7.8-8.6)                | 7.7 (7.4-8)                  | 79.8 (76.8-85.2)    | 77.2 (74.6-79.3)    |
| 7/15/2025 | 7.9 (7.7-8)                | 7.7 (7.4-8)                  | 78.2 (76.6-79.7)    | 77.4 (75.7-79.3)    |
| 7/16/2025 | 8.1 (7.7-9)                | 7.7 (7.4-8)                  | 80.5 (77-88.5)      | 77.9 (76.1-79.3)    |
| 7/17/2025 | 8.4 (7.7-10)               | 8 (7.4-9.4)                  | 83.5 (77-97.7)      | 80.9 (76.1-93.3)    |
| 7/18/2025 | 8.7 (7.7-10.2)             | 8.3 (7.4-9.9)                | 86.4 (77-100.4)     | 83.6 (76.1-99)      |
| 7/19/2025 | 9.1 (7.7-10.3)             | 8.6 (7.4-9.9)                | 89.6 (77-101.1)     | 86.7 (76.1-100.1)   |
| 7/20/2025 | 9.4 (7.7-10.4)             | 8.9 (7.4-9.9)                | 92.8 (77-101.3)     | 89.9 (76.1-100.5)   |
| 7/21/2025 | 9.8 (8.2-10.4)             | 9.2 (7.6-9.9)                | 96.2 (81.4-101.3)   | 93.3 (76.7-100.5)   |
| 7/22/2025 | 10.1 (9.7-10.4)            | 9.6 (8.5-9.9)                | 99.6 (94.6-101.3)   | 96.8 (84.5-100.5)   |
| 7/23/2025 | 10.2 (10.2-10.4)           | 9.8 (9.6-10)                 | 100.9 (100.2-101.3) | 99.9 (98.6-100.5)   |
| 7/24/2025 | 10.3 (10.2-10.4)           | 9.8 (9.6-10)                 | 101 (100.6-101.3)   | 100 (98.8-100.5)    |
| 7/25/2025 | 10.3 (10.2-10.4)           | 9.8 (9.6-10)                 | 101.1 (100.9-101.3) | 100.3 (99.9-100.5)  |
| 7/26/2025 | 10.3 (10.2-10.5)           | 9.8 (9.6-9.9)                | 101.1 (100.9-101.2) | 100.2 (99.9-100.5)  |
| 7/27/2025 | 10.3 (10.2-10.5)           | 9.8 (9.6-9.9)                | 101 (100.8-101.2)   | 100.1 (99.8-100.4)  |
| 7/28/2025 | 10.4 (10.2-10.5)           | 9.8 (9.6-9.9)                | 101 (100.7-101.2)   | 100 (99.6-100.4)    |
| 7/29/2025 | 10.4 (10.2-10.5)           | 9.7 (9.5-9.9)                | 100.9 (100.4-101.2) | 99.8 (99.3-100.2)   |
| 7/30/2025 | 10.3 (10.1-10.5)           | 9.6 (9.4-9.8)                | 100.7 (100.2-101.2) | 99.7 (99.3-100.1)   |
| 7/31/2025 | 10.3 (10.1-10.5)           | 9.6 (9.4-9.8)                | 100.6 (100.2-101.1) | 99.6 (99.3-100)     |
| 8/1/2025  | 10.3 (10.1-10.5)           | 9.6 (9.4-9.8)                | 100.5 (100.2-101.1) | 99.6 (99.3-99.9)    |
| 8/2/2025  | 10.2 (10.1-10.5)           | 9.6 (9.4-9.9)                | 100.4 (100.2-100.8) | 99.6 (99.3-99.9)    |
| 8/3/2025  | 10.2 (10.1-10.4)           | 9.6 (9.4-9.8)                | 100.3 (100.1-100.6) | 99.5 (99.2-99.9)    |
| 8/4/2025  | 10.1 (10-10.2)             | 9.6 (9.4-9.8)                | 100.2 (100.1-100.3) | 99.5 (99.2-99.9)    |
| 8/5/2025  | 10.1 (10-10.2)             | 9.6 (9.4-9.9)                | 100.2 (100.1-100.4) | 99.6 (99.3-100)     |
| 8/6/2025  | 10.1 (10-10.2)             | 9.7 (9.5-10)                 | 100.3 (100.1-100.5) | 99.7 (99.3-100.1)   |
| 8/7/2025  | 10.1 (10-10.3)             | 9.8 (9.5-10.1)               | 100.3 (100.1-100.6) | 99.8 (99.3-100.2)   |
| 8/8/2025  | 10.2 (10-10.4)             | 9.9 (9.6-10.1)               | 100.4 (100.1-100.6) | 99.8 (99.3-100.2)   |
| 8/9/2025  | 10.1 (9.9-10.4)            | 9.8 (9.5-10.1)               | 100.3 (100-100.6)   | 99.8 (99.3-100.2)   |

**Table 4. (contd.)** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAD (mg·L <sup>-1</sup> ) | MWMinD (mg·L <sup>-1</sup> ) | MWAD (% air sat.)  | MWMinD (% air sat.) |
|-----------|----------------------------|------------------------------|--------------------|---------------------|
| 8/10/2025 | 10.1 (9.8-10.4)            | 9.8 (9.5-10.1)               | 100.3 (100-100.6)  | 99.9 (99.5-100.2)   |
| 8/11/2025 | 10 (9.7-10.4)              | 9.7 (9.1-10.1)               | 100.3 (99.9-100.6) | 99.8 (99.2-100.2)   |
| 8/12/2025 | 10 (9.6-10.4)              | 9.6 (9.1-10.1)               | 100.2 (99.9-100.6) | 99.7 (99.1-100.2)   |
| 8/13/2025 | 9.9 (9.6-10.4)             | 9.5 (9.1-10.1)               | 100.2 (99.9-100.6) | 99.6 (99.1-100.1)   |
| 8/14/2025 | 9.9 (9.6-10.3)             | 9.5 (9.1-9.9)                | 100.2 (99.9-100.6) | 99.2 (97.6-99.8)    |
| 8/15/2025 | 9.8 (9.6-10.1)             | 9.4 (9.1-9.7)                | 100.2 (99.9-100.7) | 99.2 (97.6-100)     |
| 8/16/2025 | 9.6 (8.7-10.1)             | 9.1 (7.6-9.7)                | 98 (88.9-100.7)    | 94.9 (77.6-100)     |
| 8/17/2025 | 9.2 (7.4-10.1)             | 8.7 (6.9-9.7)                | 93.6 (74.1-100.7)  | 90.5 (69-100)       |
| 8/18/2025 | 8.9 (7.1-10.1)             | 8.4 (6.9-9.7)                | 89.7 (70.6-100.7)  | 86.6 (69-100)       |
| 8/19/2025 | 8.6 (7.1-10.1)             | 8.2 (6.9-9.7)                | 86.5 (70.6-100.7)  | 82.6 (69-100)       |
| 8/20/2025 | 8.5 (7.1-10.1)             | 8.1 (6.9-9.7)                | 84.3 (70.6-100.7)  | 80.5 (69-99.1)      |
| 8/21/2025 | 8.3 (7.1-9.6)              | 7.9 (6.9-9.4)                | 81.8 (70.6-95.9)   | 78.3 (69-95.4)      |
| 8/22/2025 | 8 (7.1-8.7)                | 7.6 (6.9-8.6)                | 79 (70.6-84.6)     | 75.5 (69-83.7)      |
| 8/23/2025 | 8 (7.1-8.7)                | 7.8 (7-8.6)                  | 78.3 (70.6-84.3)   | 76.8 (69.7-83.7)    |
| 8/24/2025 | 8.1 (7.5-8.7)              | 7.9 (7.2-8.6)                | 79.6 (74-84.3)     | 78.2 (71.8-83.7)    |
| 8/25/2025 | 8.2 (7.9-8.7)              | 8 (7.5-8.6)                  | 80.4 (77.8-84.3)   | 79 (73.5-83.7)      |
| 8/26/2025 | 8.2 (7.8-8.7)              | 8.1 (7.7-8.6)                | 80.2 (76.9-84.3)   | 79.6 (76.5-83.7)    |
| 8/27/2025 | 8 (7.6-8.5)                | 7.9 (7.5-8.3)                | 78.7 (75-82.4)     | 78.1 (74.4-81.4)    |
| 8/28/2025 | 7.9 (7.4-8.3)              | 7.7 (7.1-8.1)                | 77.2 (72.9-80.5)   | 76.5 (71.9-79.8)    |
| 8/29/2025 | 7.7 (7.3-8.1)              | 7.5 (7-8)                    | 75.8 (71.7-79.3)   | 75.2 (70.9-78.7)    |
| 8/30/2025 | 7.6 (7.3-8)                | 7.4 (7-7.9)                  | 74.7 (71.4-78.6)   | 74.1 (70.9-77.9)    |
| 8/31/2025 | 7.5 (7.2-7.9)              | 7.3 (7-7.8)                  | 73.6 (71.2-77.5)   | 73 (70.8-77.1)      |
| 9/1/2025  | 7.4 (7.2-7.7)              | 7.2 (7-7.6)                  | 72.6 (71.2-75.8)   | 72 (70.6-75.3)      |
| 9/2/2025  | 7.4 (7.2-7.7)              | 7.2 (7-7.4)                  | 72.6 (71.2-75.7)   | 71.4 (70.6-73.1)    |
| 9/3/2025  | 7.6 (7.2-8.6)              | 7.2 (7-7.8)                  | 74.5 (71.2-84.3)   | 72 (70.6-76)        |
| 9/4/2025  | 7.9 (7.2-9.4)              | 7.4 (7-8.2)                  | 77.7 (71.2-92.5)   | 73.4 (70.6-79.8)    |
| 9/5/2025  | 8 (7.2-9.4)                | 7.4 (7-8.2)                  | 78.7 (71.2-92.5)   | 73.1 (69.5-79.8)    |
| 9/6/2025  | 8.1 (7.2-9.4)              | 7.4 (7-8.2)                  | 79.5 (71.2-92.5)   | 72.6 (68.1-79.8)    |
| 9/7/2025  | 8.3 (7.4-9.4)              | 7.4 (7-8.2)                  | 81.4 (72.8-92.5)   | 72.6 (68.1-79.8)    |
| 9/8/2025  | 8.6 (7.8-9.6)              | 7.7 (7-8.9)                  | 84.8 (76.6-94.7)   | 75.3 (68.1-86.9)    |
| 9/9/2025  | 8.9 (7.9-9.9)              | 8.1 (7-9.6)                  | 87.7 (77.6-96.1)   | 78.6 (68.1-93.3)    |
| 9/10/2025 | 9.1 (7.9-10.1)             | 8.3 (7-9.8)                  | 89.1 (77.6-97.2)   | 81.2 (68.1-95.8)    |
| 9/11/2025 | 9.1 (7.9-10.1)             | 8.5 (7-9.8)                  | 88.9 (77.6-97.2)   | 82.4 (68.1-95.8)    |
| 9/12/2025 | 9.2 (8.1-10.1)             | 8.5 (6.9-9.8)                | 90.1 (79.5-97.2)   | 82.4 (68.1-95.8)    |
| 9/13/2025 | 9.1 (7.5-10.1)             | 8.4 (6.8-9.8)                | 88.9 (73.7-97.2)   | 82.3 (67.6-95.8)    |
| 9/14/2025 | 8.9 (7.1-10.1)             | 8.4 (6.7-9.8)                | 87.2 (70.1-97.2)   | 81.7 (66.5-95.8)    |
| 9/15/2025 | 8.8 (7.1-10.1)             | 8.3 (6.7-9.8)                | 85.6 (70.1-97.2)   | 80.7 (66.5-95.8)    |

**Table 4. (contd.)** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake inlet stream station (MLU2). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets.

| Date      | MWAD (mg·L <sup>-1</sup> ) | MWMinD (mg·L <sup>-1</sup> ) | MWAD (% air sat.) | MWMinD (% air sat.) |
|-----------|----------------------------|------------------------------|-------------------|---------------------|
| 9/16/2025 | 8.7 (7.1-10)               | 8.1 (6.7-9.7)                | 83.7 (70.1-96.3)  | 78.9 (66.5-94)      |
| 9/17/2025 | 8.5 (7.1-9.4)              | 7.9 (6.7-9.2)                | 81.5 (70.1-91.3)  | 76.9 (66.5-87.2)    |

**Table 5.** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets. Total hours where DO was below the 6 mg·L<sup>-1</sup> threshold and the 2.2 mg·L<sup>-1</sup> threshold were calculated for each day.

| Date      | MWAD<br>(mg·L <sup>-1</sup> ) | MWMinD<br>(mg·L <sup>-1</sup> ) | MWAD<br>(% air sat.) | MWMinD<br>(% air sat.) | Total<br>hours<br>DO <6<br>mg·L <sup>-1</sup> | Total<br>hours<br>DO ≤2.2<br>mg·L <sup>-1</sup> |
|-----------|-------------------------------|---------------------------------|----------------------|------------------------|-----------------------------------------------|-------------------------------------------------|
| 5/28/2025 | 8.5 (8.3-8.7)                 | 8.4 (8-8.6)                     | 81.7 (79.2-83.8)     | 80.4 (77.8-82.5)       | 0                                             | 0                                               |
| 5/29/2025 | 8.4 (7.8-8.7)                 | 8.2 (7.6-8.6)                   | 80.4 (76-83)         | 79 (74.1-82.4)         | 0                                             | 0                                               |
| 5/30/2025 | 8.2 (7.3-8.7)                 | 8.1 (7.2-8.6)                   | 78.8 (71.8-83)       | 77.5 (69.9-82.4)       | 0                                             | 0                                               |
| 5/31/2025 | 8 (7.1-8.7)                   | 7.8 (7-8.6)                     | 76.6 (68.4-82.5)     | 75.2 (67.1-81.6)       | 0                                             | 0                                               |
| 6/1/2025  | 7.7 (7-8.6)                   | 7.6 (6.9-8.5)                   | 74.4 (67.5-81.2)     | 72.8 (65.5-79.9)       | 0                                             | 0                                               |
| 6/2/2025  | 7.5 (7-8.3)                   | 7.3 (6.8-8.2)                   | 72.4 (67.4-79.6)     | 70.7 (65.2-78.6)       | 0                                             | 0                                               |
| 6/3/2025  | 7.3 (6.8-8)                   | 7.1 (6.7-7.8)                   | 70.4 (66.3-77.7)     | 68.7 (65.1-75.9)       | 0                                             | 0                                               |
| 6/4/2025  | 7 (6.6-7.5)                   | 6.9 (6.5-7.3)                   | 68.4 (65.2-73.5)     | 66.8 (64.2-71.6)       | 0                                             | 0                                               |
| 6/5/2025  | 6.9 (6.5-7.1)                 | 6.7 (6.4-7)                     | 66.9 (64.6-69.6)     | 65.4 (63.2-68)         | 0                                             | 0                                               |
| 6/6/2025  | 6.8 (6.4-7.1)                 | 6.6 (6.3-6.9)                   | 65.8 (63.7-67.5)     | 64.5 (62.7-66.2)       | 0                                             | 0                                               |
| 6/7/2025  | 6.6 (6.2-7)                   | 6.5 (6.1-6.9)                   | 65.1 (62.4-67.5)     | 63.7 (61.3-65.4)       | 0                                             | 0                                               |
| 6/8/2025  | 6.5 (5.9-6.9)                 | 6.3 (5.8-6.7)                   | 63.9 (60.4-66.9)     | 62.7 (59.1-65.4)       | 0                                             | 0                                               |
| 6/9/2025  | 6.3 (5.7-6.7)                 | 6.1 (5.4-6.6)                   | 62.4 (57.6-65.6)     | 61.2 (56.1-64.7)       | 11                                            | 0                                               |
| 6/10/2025 | 6.1 (5.4-6.6)                 | 5.9 (5.2-6.5)                   | 60.8 (55-64.8)       | 59.4 (53.3-63.6)       | 18                                            | 0                                               |
| 6/11/2025 | 5.8 (5.1-6.5)                 | 5.6 (4.9-6.3)                   | 58.7 (51.5-64.1)     | 57.2 (49.4-62.8)       | 24                                            | 0                                               |
| 6/12/2025 | 5.6 (5-6.3)                   | 5.4 (4.5-6.1)                   | 56.5 (49.3-62.9)     | 54.6 (45.6-62.1)       | 24                                            | 0                                               |
| 6/13/2025 | 5.4 (5-6.1)                   | 5.1 (4.5-5.9)                   | 54.4 (48.8-61.3)     | 52.2 (45.1-60)         | 24                                            | 0                                               |
| 6/14/2025 | 5.3 (5-5.8)                   | 4.9 (4.5-5.6)                   | 52.3 (48-58.8)       | 50 (44.7-57.4)         | 24                                            | 0                                               |
| 6/15/2025 | 5.1 (4.8-5.5)                 | 4.7 (4.3-5.3)                   | 50.4 (46.9-56)       | 47.9 (44.1-54.3)       | 24                                            | 0                                               |
| 6/16/2025 | 5 (4.7-5.3)                   | 4.6 (4.2-5)                     | 48.8 (45.6-53.1)     | 46.1 (42.6-51.2)       | 24                                            | 0                                               |
| 6/17/2025 | 4.8 (4.5-5)                   | 4.4 (4-4.7)                     | 47.3 (44.4-49.9)     | 44.2 (40.1-47.5)       | 24                                            | 0                                               |
| 6/18/2025 | 4.8 (4.5-5)                   | 4.3 (4-4.5)                     | 46.6 (44.3-48.9)     | 43.5 (40.1-45.9)       | 24                                            | 0                                               |
| 6/19/2025 | 4.7 (4.5-5)                   | 4.3 (4-4.5)                     | 46.2 (44.3-48.5)     | 43.5 (40.1-45.9)       | 24                                            | 0                                               |
| 6/20/2025 | 4.7 (4.5-4.9)                 | 4.3 (4-4.5)                     | 45.8 (44.3-47.4)     | 43.2 (40.1-44.9)       | 24                                            | 0                                               |
| 6/21/2025 | 4.6 (4.5-4.8)                 | 4.3 (4-4.4)                     | 45.4 (44.3-46.4)     | 42.8 (40.1-44.6)       | 24                                            | 0                                               |
| 6/22/2025 | 4.6 (4.5-4.7)                 | 4.2 (4-4.4)                     | 45.2 (44.3-46)       | 42.5 (39.9-44.6)       | 24                                            | 0                                               |
| 6/23/2025 | 4.6 (4.5-4.7)                 | 4.2 (3.9-4.4)                   | 45.2 (44.3-46)       | 42.4 (39.8-44.6)       | 24                                            | 0                                               |
| 6/24/2025 | 4.6 (4.4-4.7)                 | 4.2 (4-4.4)                     | 45.2 (44-46)         | 42.6 (41-44.6)         | 24                                            | 0                                               |
| 6/25/2025 | 4.5 (4.4-4.7)                 | 4.2 (4-4.4)                     | 44.9 (43.2-46)       | 42.3 (41-44.6)         | 24                                            | 0                                               |
| 6/26/2025 | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.4 (42.9-45.8)     | 41.3 (38.8-43.7)       | 24                                            | 0                                               |
| 6/27/2025 | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.3 (42.9-45.3)     | 41 (38.8-42.2)         | 23                                            | 0                                               |
| 6/28/2025 | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.3 (42.9-45.3)     | 40.8 (38.7-41.9)       | 22                                            | 0                                               |
| 6/29/2025 | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.2 (42.9-45.3)     | 40.8 (38.7-41.9)       | 24                                            | 0                                               |
| 6/30/2025 | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.4 (42.9-46.5)     | 40.8 (38.7-41.9)       | 23                                            | 0                                               |
| 7/1/2025  | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.6 (42.9-46.5)     | 40.7 (38.6-41.9)       | 24                                            | 0                                               |

**Table 5. (contd.)** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets. Total hours where DO was below the 6 mg·L<sup>-1</sup> threshold and the 2.2 mg·L<sup>-1</sup> threshold were calculated for each day.

| Date      | MWAD<br>(mg·L <sup>-1</sup> ) | MWMinD<br>(mg·L <sup>-1</sup> ) | MWAD<br>(% air sat.) | MWMinD<br>(% air sat.) | Total<br>hours<br>DO <6<br>mg·L <sup>-1</sup> | Total<br>hours<br>DO ≤2.2<br>mg·L <sup>-1</sup> |
|-----------|-------------------------------|---------------------------------|----------------------|------------------------|-----------------------------------------------|-------------------------------------------------|
| 7/2/2025  | 4.5 (4.4-4.7)                 | 4.1 (4-4.3)                     | 44.5 (42.6-46.5)     | 40.4 (38.3-41.9)       | 24                                            | 0                                               |
| 7/3/2025  | 4.5 (4.4-4.7)                 | 4.1 (3.9-4.3)                   | 44.9 (43-46.5)       | 40.5 (38.8-41.9)       | 24                                            | 0                                               |
| 7/4/2025  | 4.5 (4.4-4.6)                 | 4.1 (3.9-4.2)                   | 44.9 (43-46.6)       | 40.3 (38.8-41.5)       | 23                                            | 0                                               |
| 7/5/2025  | 4.5 (4.4-4.6)                 | 4 (3.7-4.1)                     | 44.6 (42.6-46.6)     | 39.8 (37.8-41.5)       | 24                                            | 0                                               |
| 7/6/2025  | 4.5 (4.4-4.7)                 | 4 (3.7-4.3)                     | 45.1 (42.6-47.4)     | 39.9 (37.8-41.7)       | 24                                            | 0                                               |
| 7/7/2025  | 4.5 (4.4-4.7)                 | 4 (3.7-4.3)                     | 44.9 (42.6-47)       | 39.9 (37.8-41.9)       | 24                                            | 0                                               |
| 7/8/2025  | 4.5 (4.3-4.7)                 | 4 (3.7-4.3)                     | 44.7 (42.6-47)       | 40 (37.8-41.9)         | 24                                            | 0                                               |
| 7/9/2025  | 4.5 (4.3-4.7)                 | 4 (3.7-4.3)                     | 44.8 (42.9-47)       | 40.3 (37.8-41.9)       | 24                                            | 0                                               |
| 7/10/2025 | 4.5 (4.3-4.7)                 | 4 (3.6-4.3)                     | 44.5 (42.9-47)       | 40.3 (37.9-41.9)       | 24                                            | 0                                               |
| 7/11/2025 | 4.4 (4.3-4.7)                 | 4 (3.6-4.3)                     | 44.2 (42.9-47)       | 40.3 (37.9-41.9)       | 24                                            | 0                                               |
| 7/12/2025 | 4.4 (4.2-4.7)                 | 4.1 (3.8-4.3)                   | 44.3 (43.1-47)       | 40.9 (39.2-41.9)       | 24                                            | 0                                               |
| 7/13/2025 | 4.3 (4.1-4.5)                 | 4 (3.7-4.1)                     | 43.4 (41.8-45)       | 40.4 (38.8-41.7)       | 24                                            | 0                                               |
| 7/14/2025 | 4.2 (4-4.3)                   | 3.9 (3.5-4.1)                   | 42.8 (41.3-43.6)     | 39.8 (37.7-41.4)       | 24                                            | 0                                               |
| 7/15/2025 | 4.2 (4-4.3)                   | 3.8 (3.5-4.1)                   | 42.8 (41.3-43.6)     | 39.8 (37.7-41.4)       | 24                                            | 0                                               |
| 7/16/2025 | 4.2 (4-4.4)                   | 3.7 (3.4-4.1)                   | 43 (41.3-44.6)       | 39.4 (37.7-40.9)       | 24                                            | 0                                               |
| 7/17/2025 | 4.2 (4-4.4)                   | 3.8 (3.4-4.1)                   | 43.3 (41.3-45.1)     | 39.6 (37.8-40.9)       | 23                                            | 0                                               |
| 7/18/2025 | 4.2 (4-4.5)                   | 3.7 (3.4-4.1)                   | 43.6 (41.3-45.2)     | 39.5 (37.8-40.8)       | 23                                            | 0                                               |
| 7/19/2025 | 4.3 (4-4.5)                   | 3.7 (3.4-4)                     | 43.7 (41.3-45.2)     | 38.8 (36.9-40.2)       | 23                                            | 0                                               |
| 7/20/2025 | 4.3 (4-4.5)                   | 3.7 (3.4-4)                     | 43.8 (41.7-45.2)     | 38.4 (36.4-40.2)       | 24                                            | 0                                               |
| 7/21/2025 | 4.3 (4.1-4.5)                 | 3.5 (2.6-4)                     | 43.9 (41.9-45.2)     | 36.6 (27.9-40.2)       | 22                                            | 1                                               |
| 7/22/2025 | 4.3 (4-4.5)                   | 3.5 (2.6-4)                     | 43.4 (40.4-45.2)     | 35.9 (27.7-39.9)       | 24                                            | 0                                               |
| 7/23/2025 | 4.2 (4-4.5)                   | 3.5 (2.6-4)                     | 42.9 (40.4-45.2)     | 35.7 (27.7-39.9)       | 24                                            | 0                                               |
| 7/24/2025 | 4.2 (4-4.4)                   | 3.5 (2.6-3.8)                   | 42.4 (40.4-44.9)     | 35.3 (27.7-39)         | 24                                            | 0                                               |
| 7/25/2025 | 4.1 (3.9-4.3)                 | 3.4 (2.6-3.8)                   | 41.7 (39.9-43.7)     | 34.5 (27.4-37.3)       | 24                                            | 0                                               |
| 7/26/2025 | 4.1 (3.9-4.2)                 | 3.4 (2.6-3.7)                   | 41.3 (39.9-42.3)     | 34.3 (27.4-37.3)       | 24                                            | 0                                               |
| 7/27/2025 | 4.1 (3.9-4.2)                 | 3.4 (2.6-3.7)                   | 41.1 (39.9-42)       | 34.2 (27.4-37.3)       | 24                                            | 0                                               |
| 7/28/2025 | 4.1 (3.9-4.4)                 | 3.6 (3.5-3.7)                   | 41.4 (39.9-43.7)     | 35.7 (34.5-37.3)       | 20                                            | 0                                               |
| 7/29/2025 | 4.2 (4-4.4)                   | 3.7 (3.5-3.7)                   | 42.1 (40.3-44.3)     | 35.6 (34.3-37.3)       | 19                                            | 0                                               |
| 7/30/2025 | 4.2 (4-4.4)                   | 3.6 (3.4-3.7)                   | 42.3 (40.3-44.3)     | 34.9 (33.4-36.5)       | 22                                            | 0                                               |
| 7/31/2025 | 4.2 (4-4.4)                   | 3.6 (3.4-3.7)                   | 42.5 (40.3-44.3)     | 34.5 (33.4-35.7)       | 22                                            | 0                                               |
| 8/1/2025  | 4.2 (4.1-4.4)                 | 3.6 (3.4-3.7)                   | 42.6 (41-44.3)       | 34.5 (33.4-35.7)       | 24                                            | 0                                               |
| 8/2/2025  | 4.2 (4.1-4.4)                 | 3.6 (3.4-3.7)                   | 42.8 (41-44.3)       | 34.4 (33.4-35.6)       | 24                                            | 0                                               |
| 8/3/2025  | 4.2 (4-4.4)                   | 3.5 (3.4-3.6)                   | 42.7 (40.7-44.3)     | 34.1 (33.3-34.8)       | 24                                            | 0                                               |
| 8/4/2025  | 4.2 (4-4.3)                   | 3.5 (3.4-3.6)                   | 42.4 (40.7-44)       | 34.2 (33.3-35)         | 24                                            | 0                                               |
| 8/5/2025  | 4.1 (4-4.2)                   | 3.5 (3.4-3.6)                   | 41.8 (40-43.3)       | 34.3 (33.3-35.2)       | 24                                            | 0                                               |

**Table 5. (contd.)** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets. Total hours where DO was below the 6 mg·L<sup>-1</sup> threshold and the 2.2 mg·L<sup>-1</sup> threshold were calculated for each day.

| Date      | MWAD<br>(mg·L <sup>-1</sup> ) | MWMinD<br>(mg·L <sup>-1</sup> ) | MWAD<br>(% air sat.) | MWMinD<br>(% air sat.) | Total<br>hours<br>DO <6<br>mg·L <sup>-1</sup> | Total<br>hours<br>DO ≤2.2<br>mg·L <sup>-1</sup> |
|-----------|-------------------------------|---------------------------------|----------------------|------------------------|-----------------------------------------------|-------------------------------------------------|
| 8/6/2025  | 4 (3.8-4.2)                   | 3.5 (3.3-3.6)                   | 41 (38.6-42.8)       | 34.3 (33.4-35.2)       | 24                                            | 0                                               |
| 8/7/2025  | 4 (3.8-4.2)                   | 3.5 (3.3-3.6)                   | 40.8 (38.6-42.3)     | 34.5 (33.4-35.4)       | 24                                            | 0                                               |
| 8/8/2025  | 4 (3.8-4.2)                   | 3.5 (3.3-3.6)                   | 40.4 (38.3-42.3)     | 34.5 (33.4-35.4)       | 24                                            | 0                                               |
| 8/9/2025  | 4 (3.8-4.1)                   | 3.5 (3.3-3.6)                   | 40.1 (38.3-41.8)     | 34.5 (33.4-35.4)       | 24                                            | 0                                               |
| 8/10/2025 | 3.9 (3.5-4.1)                 | 3.4 (3-3.6)                     | 39.4 (36.4-41.8)     | 34 (30.9-35.4)         | 24                                            | 0                                               |
| 8/11/2025 | 3.8 (3.2-4.1)                 | 3.3 (2.8-3.6)                   | 38.2 (34.2-41)       | 32.9 (28.6-35.3)       | 24                                            | 0                                               |
| 8/12/2025 | 3.6 (3-4.1)                   | 3.1 (2.6-3.6)                   | 37 (31.9-41)         | 31.5 (26.1-35.2)       | 24                                            | 1                                               |
| 8/13/2025 | 3.5 (3-4.1)                   | 3 (2.3-3.6)                     | 36.3 (31.9-41)       | 30.1 (23.8-35.2)       | 24                                            | 5                                               |
| 8/14/2025 | 3.4 (2.9-3.9)                 | 2.9 (2.3-3.5)                   | 34.7 (30.4-39.9)     | 29.1 (23.8-34.5)       | 24                                            | 0                                               |
| 8/15/2025 | 3.3 (2.9-3.7)                 | 2.8 (2.3-3.3)                   | 34.2 (30.4-39.1)     | 28.2 (23.8-33.1)       | 24                                            | 0                                               |
| 8/16/2025 | 3.2 (2.9-3.4)                 | 2.7 (2.3-2.9)                   | 33.4 (30.4-35.5)     | 27.4 (23.8-29.6)       | 24                                            | 0                                               |
| 8/17/2025 | 3.2 (2.9-3.5)                 | 2.7 (2.3-3.1)                   | 33.3 (30.4-35)       | 27.8 (23.8-31.3)       | 24                                            | 0                                               |
| 8/18/2025 | 3.3 (2.9-3.5)                 | 2.8 (2.3-3.3)                   | 33.5 (30.4-35)       | 28.4 (23.8-32.5)       | 24                                            | 0                                               |
| 8/19/2025 | 3.4 (3.1-3.8)                 | 2.9 (2.4-3.3)                   | 34.8 (31.1-38.7)     | 29.2 (24.6-32.5)       | 24                                            | 0                                               |
| 8/20/2025 | 3.9 (3.1-5.6)                 | 3.4 (2.8-4.9)                   | 39.3 (31.5-57.6)     | 34.1 (28-50)           | 0                                             | 0                                               |
| 8/21/2025 | 4.3 (3.4-6.3)                 | 3.9 (2.8-6)                     | 44.3 (34.9-65.1)     | 39.1 (28.2-62.1)       | 0                                             | 0                                               |
| 8/22/2025 | 4.7 (3.4-6.3)                 | 4.3 (2.9-6.1)                   | 48.5 (34.9-65.1)     | 44.1 (29.6-63.7)       | 0                                             | 0                                               |
| 8/23/2025 | 5.1 (3.5-6.3)                 | 4.7 (3.1-6.1)                   | 52.4 (34.9-65.1)     | 48.7 (31.1-63.7)       | 0                                             | 0                                               |
| 8/24/2025 | 5.4 (3.6-6.3)                 | 5.1 (3.1-6.1)                   | 55.9 (36.5-65.1)     | 52.5 (31.2-63.7)       | 0                                             | 0                                               |
| 8/25/2025 | 5.6 (4.3-6.3)                 | 5.3 (3.6-6.1)                   | 58.8 (44.7-65.1)     | 55.4 (37.3-63.7)       | 22                                            | 0                                               |
| 8/26/2025 | 5.8 (4.9-6.3)                 | 5.5 (4.7-6.1)                   | 60.4 (52.3-65.1)     | 57.9 (49.5-63.7)       | 24                                            | 0                                               |
| 8/27/2025 | 5.4 (4-6.2)                   | 5.1 (3.1-6.1)                   | 56.5 (41.9-64.8)     | 53.4 (32.8-63.7)       | 24                                            | 1                                               |
| 8/28/2025 | 4.8 (2.6-6.1)                 | 4.4 (1.9-6)                     | 50.4 (27.1-63.5)     | 46.7 (19.9-62.3)       | 24                                            | 24                                              |
| 8/29/2025 | 4.1 (1.8-5.8)                 | 3.8 (1.5-5.7)                   | 43.6 (18.4-61.6)     | 39.8 (15.3-60.3)       | 24                                            | 24                                              |
| 8/30/2025 | 3.5 (1.4-5.5)                 | 3.1 (1.3-5.4)                   | 36.8 (15-58.4)       | 33 (13.6-57.1)         | 24                                            | 24                                              |
| 8/31/2025 | 2.9 (1.3-5.1)                 | 2.5 (1.2-4.8)                   | 30.1 (13.7-53.9)     | 26.3 (12.2-51.5)       | 24                                            | 24                                              |
| 9/1/2025  | 2.3 (1.3-4.5)                 | 2 (1.2-3.9)                     | 24.3 (13.7-47.2)     | 20.5 (12-41.6)         | 24                                            | 24                                              |
| 9/2/2025  | 1.8 (1.3-3.2)                 | 1.5 (1.2-2.2)                   | 19 (13.7-33.3)       | 15.4 (12-23.5)         | 24                                            | 24                                              |
| 9/3/2025  | 1.5 (1.3-2)                   | 1.3 (1.2-1.6)                   | 15.7 (13.7-20.7)     | 13.5 (12-16.4)         | 24                                            | 24                                              |
| 9/4/2025  | 1.4 (1.3-1.6)                 | 1.3 (1.2-1.4)                   | 14.6 (13.7-16.3)     | 13.1 (12-14.5)         | 24                                            | 24                                              |
| 9/5/2025  | 1.4 (1.3-1.5)                 | 1.3 (1.2-1.4)                   | 14.4 (13.7-15.3)     | 13 (12-14.3)           | 24                                            | 24                                              |
| 9/6/2025  | 1.4 (1.3-1.5)                 | 1.3 (1.2-1.4)                   | 14.6 (13.7-15.5)     | 13.2 (12-14.3)         | 24                                            | 24                                              |
| 9/7/2025  | 1.5 (1.4-1.5)                 | 1.3 (1.2-1.5)                   | 14.9 (14.1-15.5)     | 13.6 (12.4-14.6)       | 24                                            | 24                                              |
| 9/8/2025  | 1.5 (1.4-1.5)                 | 1.3 (1.2-1.5)                   | 14.8 (14-15.5)       | 13.6 (12.5-14.6)       | 24                                            | 24                                              |
| 9/9/2025  | 1.5 (1.4-1.5)                 | 1.4 (1.3-1.5)                   | 14.9 (14-15.5)       | 13.7 (12.9-14.6)       | 24                                            | 24                                              |

**Table 5. (contd.)** Mean weekly average dissolved oxygen (MWAD) and mean weekly maximum dissolved oxygen (MWMinD) at Misty Lake outlet stream station (MLOA). Weekly means were calculated as a 7-day rolling averages of mean and maximum daily temperatures, with 5–95% quantiles in brackets. Total hours where DO was below the 6 mg·L<sup>-1</sup> threshold and the 2.2 mg·L<sup>-1</sup> threshold were calculated for each day.

| Date      | MWAD<br>(mg·L <sup>-1</sup> ) | MWMinD<br>(mg·L <sup>-1</sup> ) | MWAD<br>(% air sat.) | MWMinD<br>(% air sat.) | Total<br>hours<br>DO <6<br>mg·L <sup>-1</sup> | Total<br>hours<br>DO ≤2.2<br>mg·L <sup>-1</sup> |
|-----------|-------------------------------|---------------------------------|----------------------|------------------------|-----------------------------------------------|-------------------------------------------------|
| 9/10/2025 | 1.5 (1.4-1.6)                 | 1.4 (1.3-1.5)                   | 15 (14.1-15.5)       | 13.9 (12.9-14.6)       | 24                                            | 24                                              |
| 9/11/2025 | 1.5 (1.4-1.7)                 | 1.4 (1.3-1.5)                   | 15.3 (14.1-16.7)     | 14 (12.9-15.1)         | 24                                            | 24                                              |
| 9/12/2025 | 1.5 (1.3-1.7)                 | 1.4 (1.2-1.5)                   | 15 (13.2-16.7)       | 13.6 (11.8-15.1)       | 24                                            | 24                                              |
| 9/13/2025 | 1.5 (1.3-1.7)                 | 1.3 (1.2-1.5)                   | 15.2 (13.2-17)       | 13.3 (11.6-15.1)       | 24                                            | 24                                              |
| 9/14/2025 | 1.7 (1.3-2.4)                 | 1.4 (1.2-1.7)                   | 16.8 (13.2-24.2)     | 13.9 (11.6-17.6)       | 24                                            | 10                                              |
| 9/15/2025 | 2.3 (1.3-4.6)                 | 1.8 (1.2-3.6)                   | 22.7 (13.4-46.3)     | 18.3 (11.6-36.3)       | 6                                             | 0                                               |
| 9/16/2025 | 2.8 (1.4-5.5)                 | 2.4 (1.2-5)                     | 28.5 (13.7-55.1)     | 24.2 (11.6-51)         | 14                                            | 0                                               |
| 9/17/2025 | 3.4 (1.4-5.6)                 | 2.9 (1.2-5.3)                   | 34.6 (14.1-57.3)     | 30 (11.6-54.7)         | 5                                             | 0                                               |

**Table 6.** Station coordinates and point source measurements for Misty Lake, the inlet stream, and the outlet stream on September 17, 2025.

| Station name                     | Station code | Description                                                                                   | Latitude | Longitude   | Water temp. (°C) | DO (% air sat.) | DO (mg/L) | pH   | Turbidity (NTU) | Depth (m) |
|----------------------------------|--------------|-----------------------------------------------------------------------------------------------|----------|-------------|------------------|-----------------|-----------|------|-----------------|-----------|
| <b>Misty Lake Inlet Creek 1</b>  | MLU1         | Inlet stream upstream of highway crossing and MLU2                                            | 50.60267 | -127.25208  | 13.2             | 81.9            | 8.6       | 5.69 | 2.53            | -         |
| <b>Misty Lake Inlet Creek 2</b>  | MLU2         | Inlet stream downstream of highway crossing, stilling well station                            | 50.60322 | -127.253108 | 13.4             | 82.9            | 8.66      | 5.78 | 1.77            | -         |
| <b>Misty Lake Inlet Creek 3</b>  | MLU3         | Second FSR crossing water measurements taken from downstream side of road                     | 50.59409 | -127.237294 | 13.8             | 94.1            | 9.74      | 6.42 | 1.91            | -         |
| <b>Misty Lake Inlet Creek 4</b>  | MLU4         | Third FSR crossing water measurements taken from upstream flooded side of road                | 50.59627 | -127.251205 | 15.1             | 93.8            | 9.44      | 5.64 | 4.21            | -         |
| <b>Misty Lake Inlet Creek 5</b>  | MLU5         | First FSR crossing water measurements taken from upstream flooded side of road                | 50.59665 | -127.233348 | 11.6             | 58.7            | 6.39      | 5.73 | 2.03            | -         |
| <b>Misty Lake 1</b>              | MLL1         | Northwest side of lake                                                                        | 50.60662 | -127.26648  | 18               | 67.9            | 6.58      | 6.08 | 1.03            | 0.8       |
| <b>Misty Lake 2</b>              | MLL2         | Bay on northwest side of lake                                                                 | 50.60765 | -127.26687  | 17.1             | 60.6            | 5.83      | 6.07 | 1.06            | 1.3       |
| <b>Misty Lake 3</b>              | MLL3         | Swamp on north side of lake in front of outlet                                                | 50.6092  | -127.26585  | 17.4             | 47.4            | 5.13      | 6.03 | 3               | 0.9       |
| <b>Misty Lake 4</b>              | MLL4         | Confluence of lake and outlet stream on north side of lake                                    | 50.6107  | -127.26816  | 17.4             | 73.5            | 7.03      | 6.15 | 0.98            | 1.8       |
| <b>Misty Lake 5</b>              | MLL5         | Confluence of lake and secondary inlet stream on southeast side of lake                       | 50.60645 | -127.25655  | 12.4             | 51.1            | 5.45      | 4.73 | 2.48            | 0.8       |
| <b>Misty Lake 6</b>              | MLL6         | Confluence of lake and primary inlet stream on south side of lake, hybrid transition zone     | 50.60509 | -127.25998  | 16.6             | 71.2            | 6.9       | 6.04 | 1.5             | 0.9       |
| <b>Misty Lake 7</b>              | MLL7         | Middle of Misty Lake                                                                          | 50.60645 | -127.262794 | 16.6             | 65.9            | 6.41      | 6.03 | 1.4             | 5.9       |
| <b>Misty Lake 8</b>              | MLL8         | Infront of public entrance path to lake on west side of lake                                  | 50.60544 | -127.269164 | 18.7             | 77.7            | 7.26      | 6.28 | 1.5             | 0.8       |
| <b>Misty Lake Outlet Creek A</b> | MLOA         | Outlet stream downstream of bridge crossing, stilling well station                            | 50.6135  | -127.27537  | 17.5             | 65.4            | 6.25      | 6.01 | 1.27            | -         |
| <b>Misty Lake Outlet Creek B</b> | MLOB         | Outlet stream downstream of MLOA, water measurements taken from upstream flooded side of road | 50.61517 | -127.28149  | 15.9             | 68.3            | 6.76      | 6.1  | 1.5             | -         |

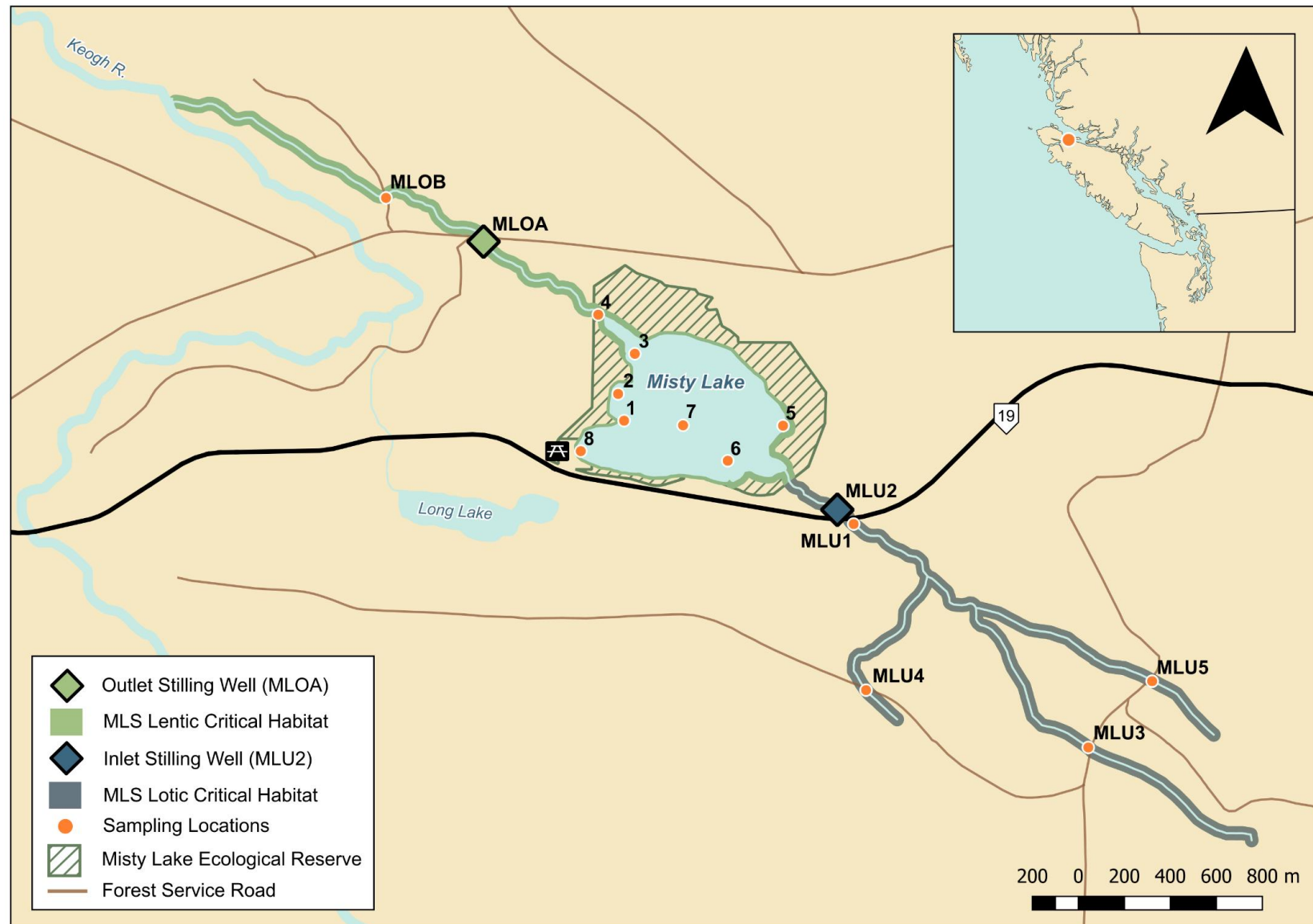


**Figure 1.** Map of stilling well stations in the inlet stream (MLU2) and the outlet stream (MLOA) of Misty Lake near Port McNeil on Vancouver Island, British Columbia, Canada. Point measurement locations are shown in the inlet stream mainstem upstream of MLU2 and the highway 19 crossing (MLU1), the inlet stream central branch (MLU3), the inlet stream western branch (MLU4), the inlet stream eastern branch (MLU5) and the outlet stream downstream of MLOA (MLOB). Point measurement locations in the lake are indicated by the single digit suffix of MLL1–8, listed in Table 6.

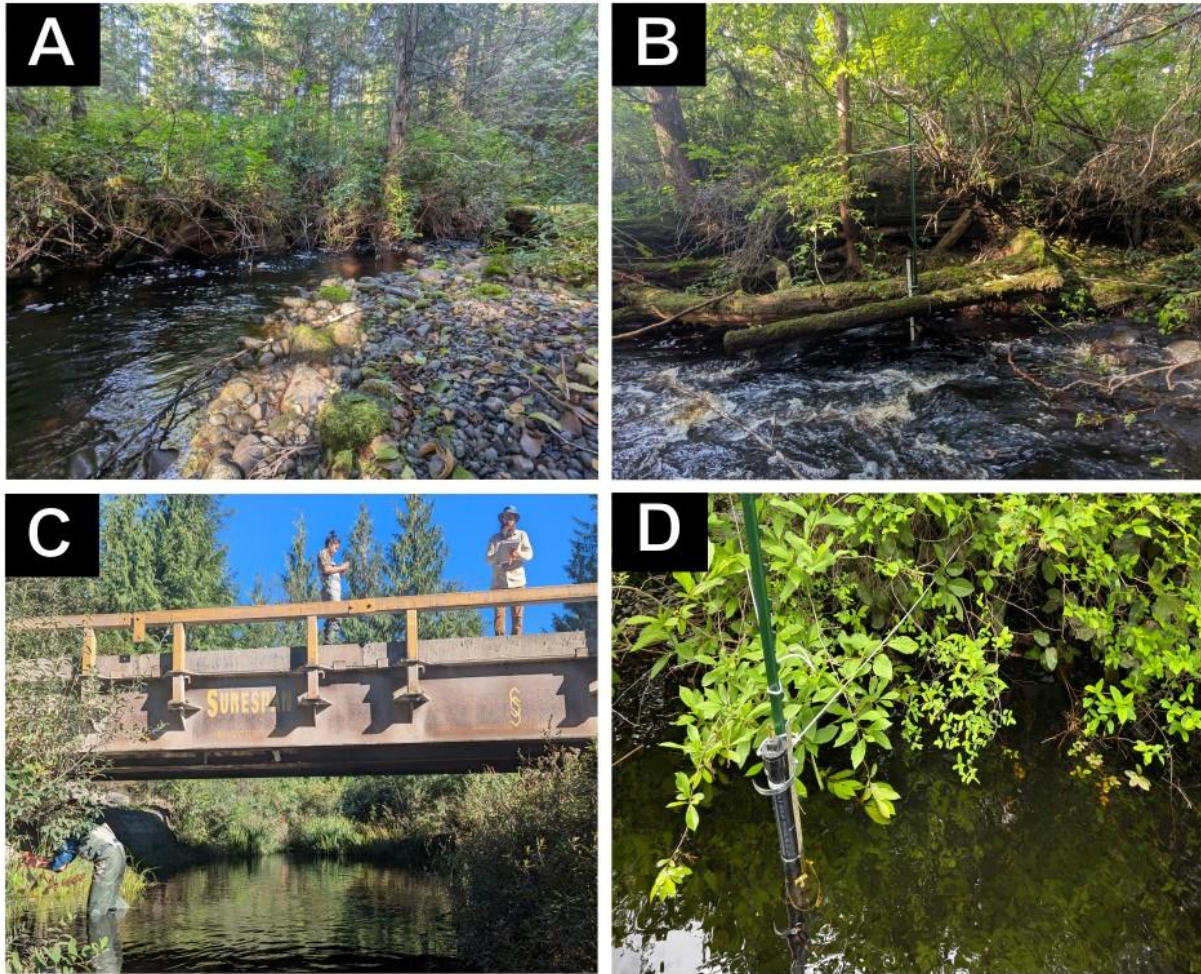


**Figure 2.** Misty Lake inlet stream (A and B) and outlet stream (C and D) water quality stations. Each station was composed of a stilling well containing a HOBO © waterlevel (U20) logger, protective housing containing a HOBO © dissolved oxygen (U26) logger, and staff guage, secured in place by a metal T-post (B and D). The inlet station was located downstream of the crossing of Highway 19, in mixed forest (A). The stream was fast flowing riffles and pools over gravel and cobble substrate. The outlet stream was located downstream of a Forest Service Road bridge crossing (C), in an open area dominant in grasses, sedges and brush. The stream was slow flowing, composed of runs and pools formed by beaver activity, and a substrate dominant in organic matter.

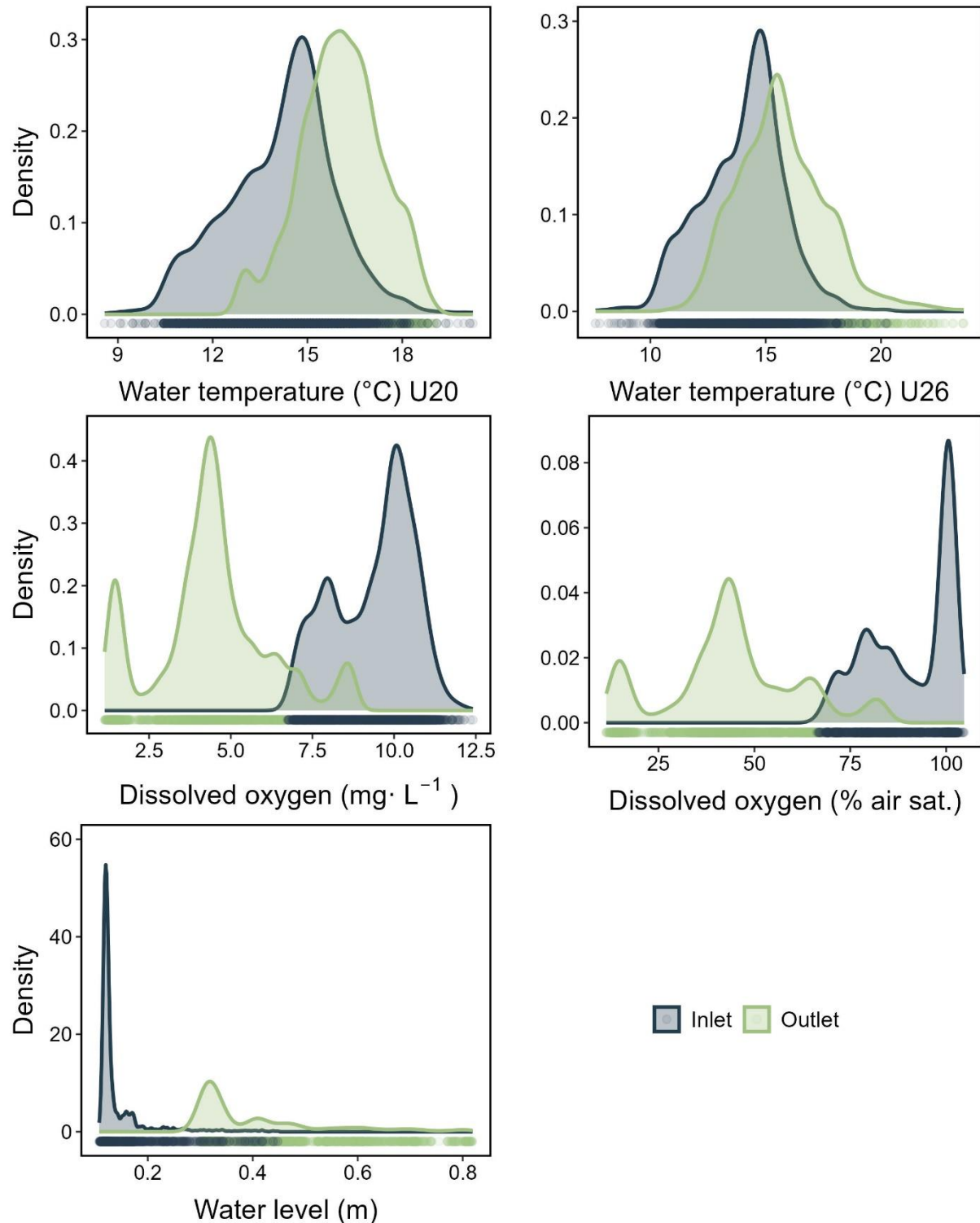


**Figure 3.** Water quality profiles for Misty Lake inlet (navy blue) and outlet (light green) streams between May 22, 2025 to September 17, 2025. Densities of hourly data are Kernal Density Estimations using a Gaussian distribution.

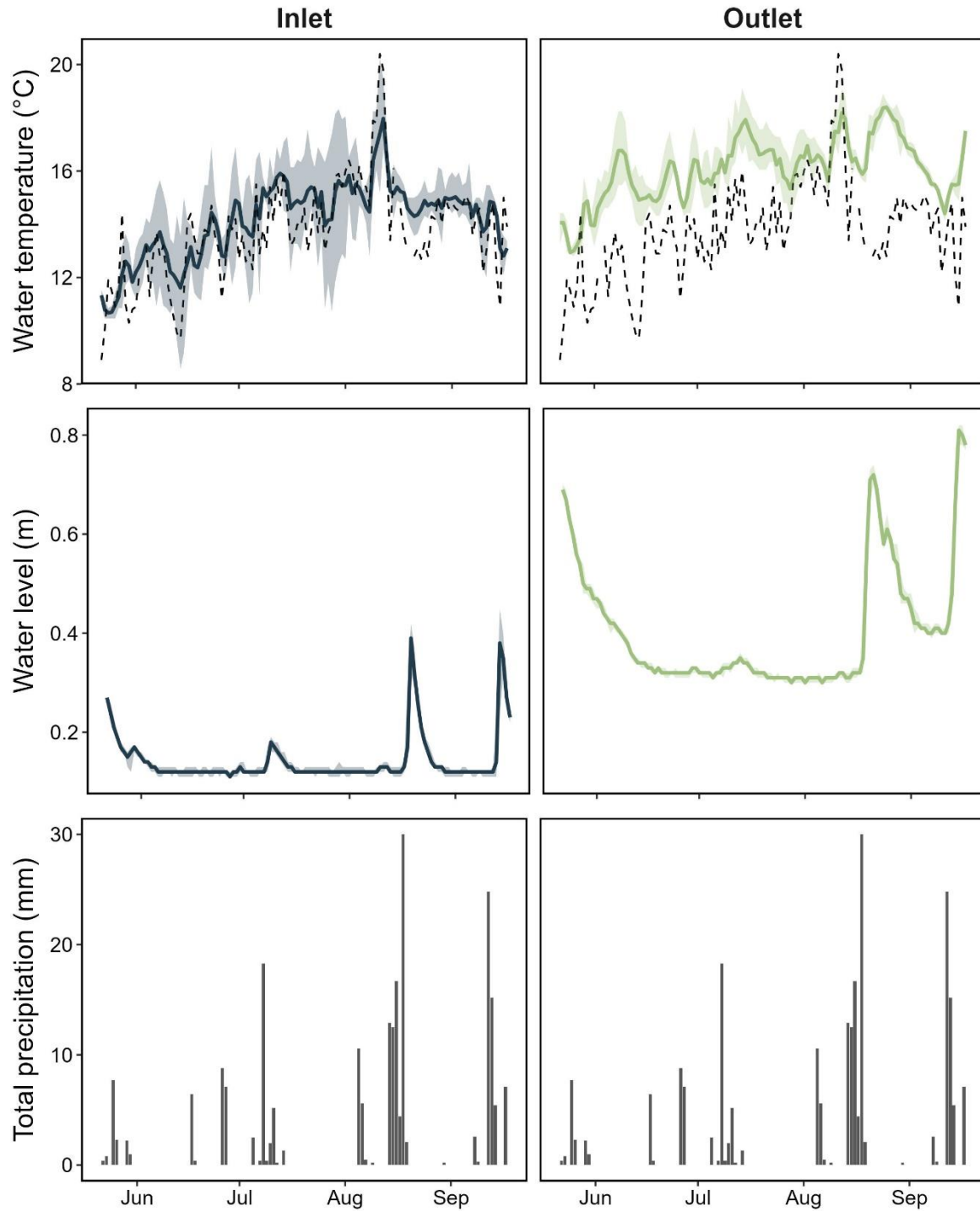


**Figure 4.** Daily ranges of water temperature and water level at inlet and outlet streams of Misty Lake between May 22, 2025 to September 17, 2025. Black solid line shows the daily mean calculated from hourly data. Shaded areas show the 5–95% quantile range around the daily mean. The dotted line shows the daily mean air temperature from the nearest weather station, Port Hardy Airport.

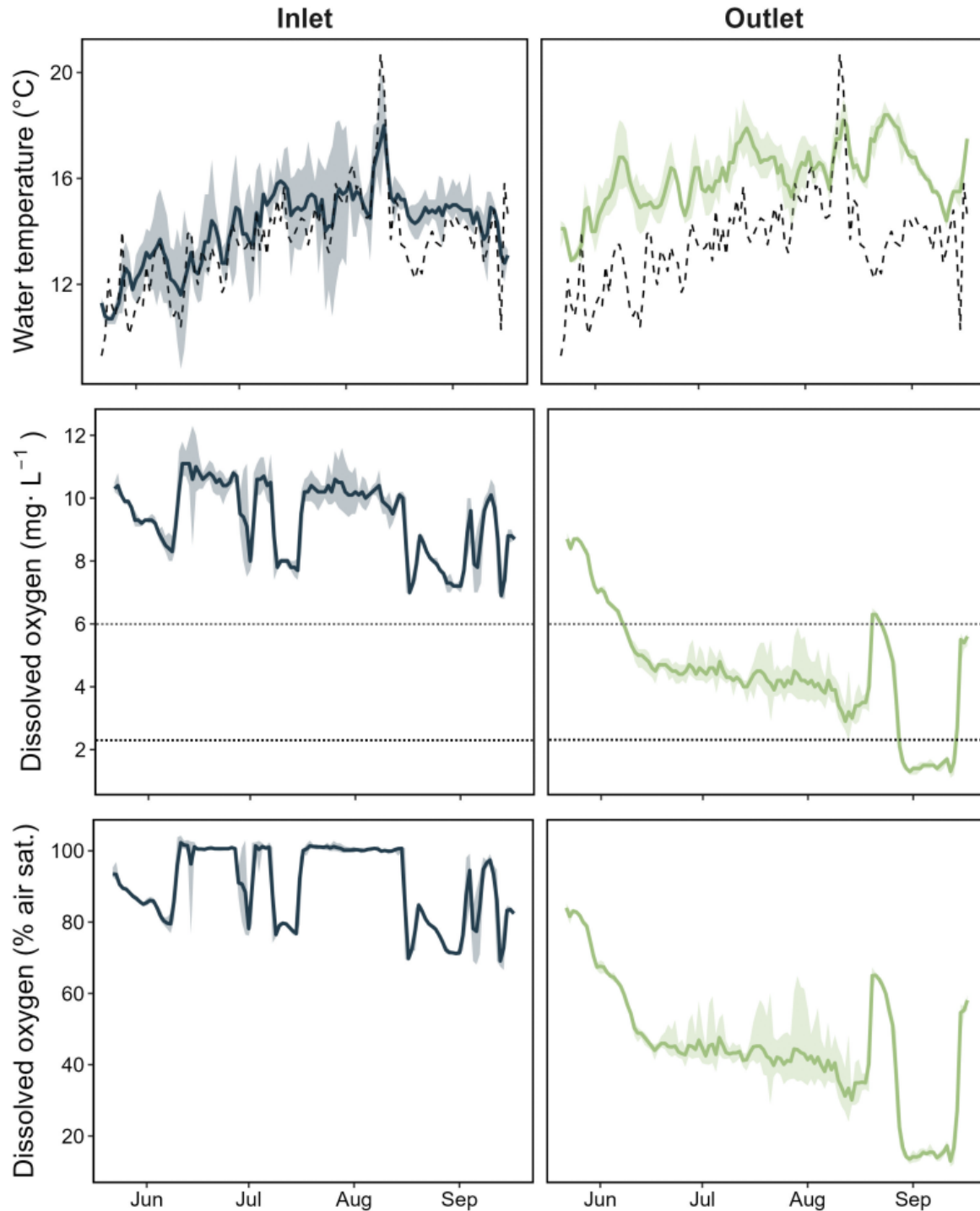


**Figure 5.** Daily ranges of water temperature and dissolved oxygen (D) inlet and outlet streams of Misty Lake between May 22, 2025 to September 17, 2025. Black solid line shows the daily mean calculated from hourly data. Shaded areas show the 5–95% quantile range around the daily mean. The black dashed line shows the daily mean air temperature from the nearest weather station, Port Hardy Airport. Hypoxic stress thresholds of 6 mg·L<sup>-1</sup> and 2.2 mg·L<sup>-1</sup> are shown as grey and black dotted lines, respectively.

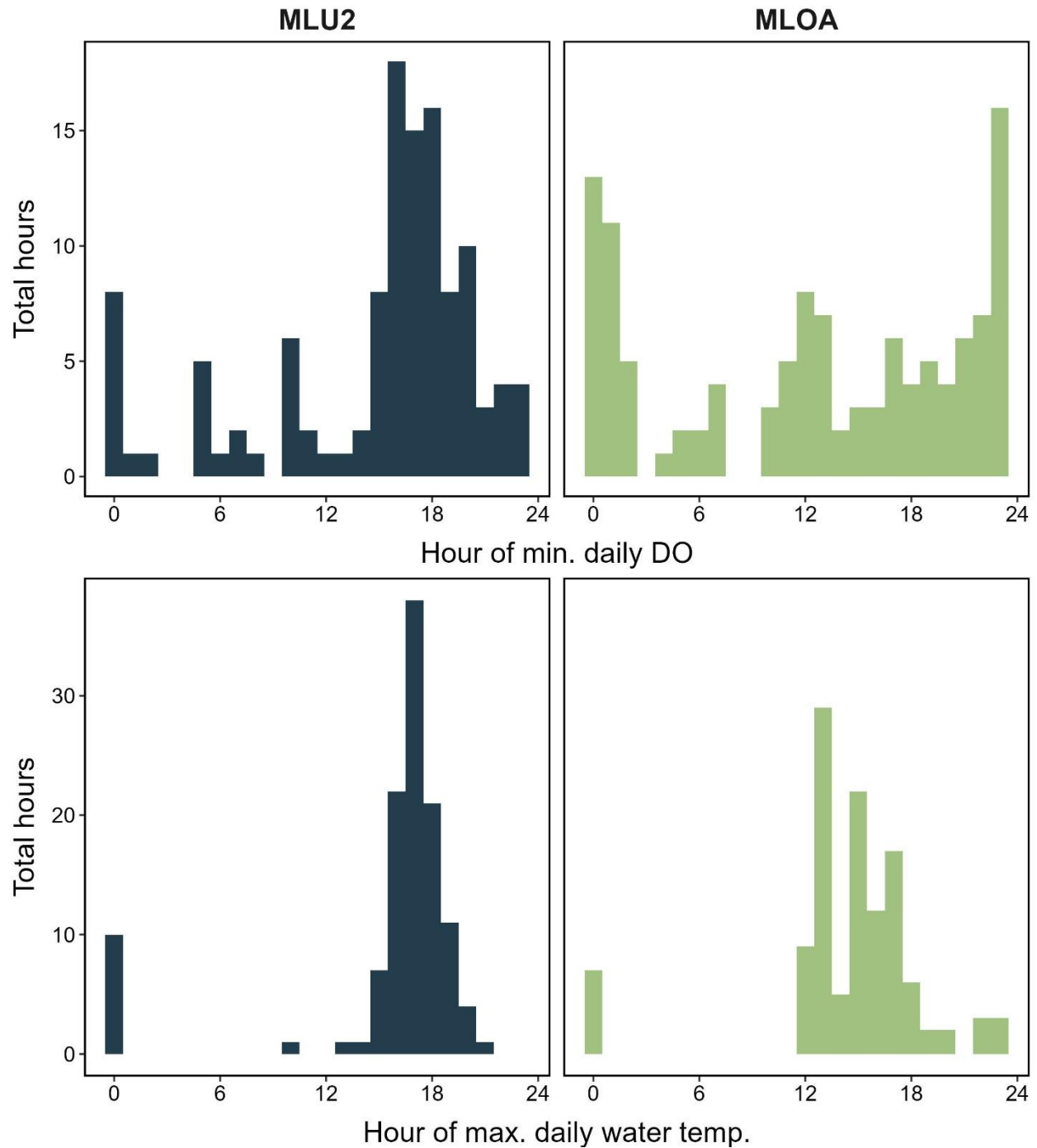


**Figure 6.** Histograms of diurnal trends in minimum daily dissolved oxygen (DO, top) and maximum daily water temperature (bottom) for inlet (MLU2) and outlet (MLOA) streams of Misty Lake between May 22, 2025 to September 17, 2025. Hour indicates hour of day in Pacific Standard Time.

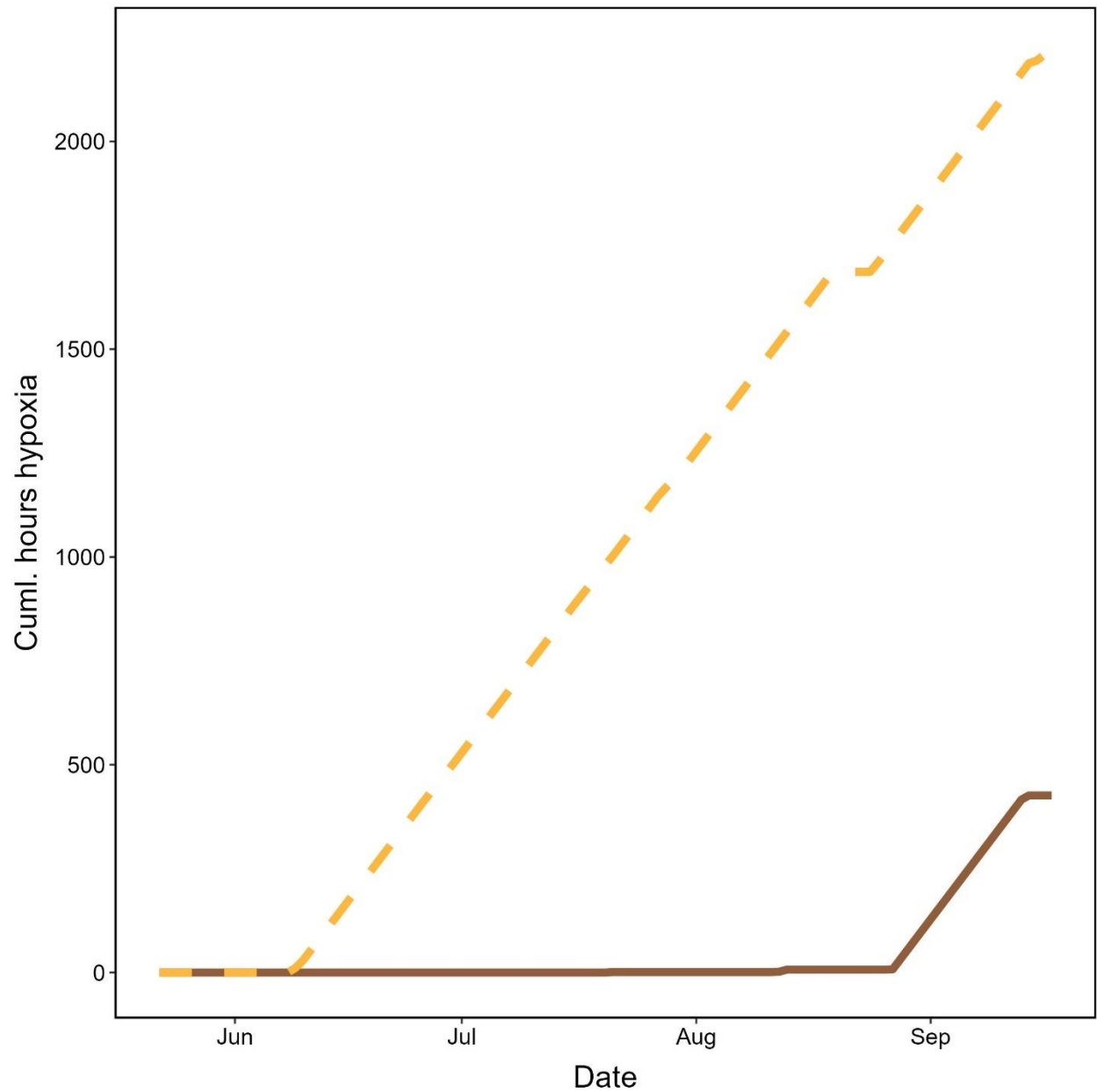


**Figure 7.** Cumulative hours of hypoxia at a threshold of 6 mg·L<sup>-1</sup> (orange, dashed line), and a threshold of 2.2 mg·L<sup>-1</sup> (brown, solid line) in the Misty Lake outlet stream between May 22, 2025 to September 17, 2025.



**Figure 8.** Photographs of flooding at road crossings in inlet (A and B) and outlet (C and D) streams of Misty Lake. (A) Aerial photo of flooding at inlet stream logging road crossing. (B) Obstructed culvert of inlet stream logging road crossing. (C) Aerial photo of flooding at outlet stream logging road crossing. (D) Collapsed log bridge of outlet logging road crossing. Photos taken by Paul Grant on May 22, 2025 (A), Scott Gilmore on May 22, 2025 (B) and September 17, 2025 (C), and Daniella LoScerbo on September 17, 2025 (D).

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