APPENDIX O

AQUATICS BASELINE

2023 Aquatic Resources Baseline Report

Springpole Gold Project

First Mining Gold Corp.

ONS2104

Prepared by:
WSP Canada Inc.

October 2024

2023 Aquatic Resources Baseline Report
Springpole Gold Project

Red Lake District, Northwest Ontario
Project #ONS2104

Prepared for:

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List of Fish Names

Ojibway / Anishinaabemowin	English Common Name	Scientific Name
	Blacknose Shiner	*Notropis heterolepis*
	Bluntnose Minnow	*Pimephales notatus*
	Brook Stickleback	*Culaea inconstans*
Mizay	Burbot, Ling, Ling-cod, Eelpout	*Lota lota*
Odoonibiins	Cisco	*Coregonus artedi*
	Common Shiner	*Luxilus cornutus*
	Eastern Blacknose Dace	*Rhinichthys atratalus*
	Emerald Shiner	*Notropis atherinoides*
	Fathead Minnow	*Pimephales promelas*
	Finescale Dace	*Chrosomus neogaeus*
	Golden Shiner	*Notemigonus crysoleucas*
	Iowa Darter	*Etheostoma exile*
	Johnny Darter	*Etheostoma nigrum*
	Lake Chub	*Couesius plumbeus*
Name	Lake Sturgeon	*Acipenser fulvescens*
Namegos	Lake Trout	*Salvelinus namaycush*
Adikameg	Lake Whitefish	*Coregonus clupeaformis*
	Logperch	*Percina caprodes*
	Longnose Dace	*Rhinichthys cataractae*
Giigoozens	Minnow (small-bodied fish)	Various under *Cyprinidae*
	Mimic Shiner	*Notropis volucellus*
	Mottled Sculpin	*Cottus bairdii*
	Redhorse species	*Moxostoma sp.*
	Northern Pearl Dace	*Margariscus nachtriebi*
Ginoozhe	Northern Pike, Jackfish, Northern	*Esox lucius*
	Northern Redbelly Dace	*Chrosomus eos*
Ashigan	Rock Bass	*Ambloplites rupestris*
	River Darter	*Percina shumardi*
	Shorthead Redhorse	*Moxostoma macrolepidotum*
	Silver Redhorse	*Moxostoma anisurum*
	Slimy Sculpin	*Cottus cognatus*
	Spoonhead Sculpin	*Cottus ricei*
	Spottail Shiner	*Notropis hudsonius*
Nambin	Sucker species	Various under *Catostomus sp.*
	Trout-perch	*Percopsis omiscomaycus*
Ogaans	Walleye	*Sander vitreus*
Nambin	White Sucker	*Catostomus commersonii*
Asawe	Yellow Perch	*Perca flavescens*

Sources: The Ojibwe People's Dictionary (https://ojibwe.lib.umn.edu), Cat Lake Ojibway mobile app (https://apps.apple.com/ca/app/cat-lake/id1332458093) and Holm et al. (2010).

LIST OF ABBREVIATIONS

°C	Degrees Celsius
>	Greater than
<	Less than
%	Percent
BIC	Benthic invertebrate community
BsM	Provincial Broadscale Monitoring
CALA	Canadian Association for Laboratory Accreditation
CCME	Canadian Council of Ministers of the Environment
cell/L	Cells per litre
cm	Centimetres
CWQGs	Canadian Water Quality Guidelines
DO	Dissolved oxygen
eDNA	Environmental DNA
EPT	*Ephemeroptera*, *Plecoptera* and *Trichoptera* benthic invertebrate taxa groups
g	Grams
k	Condition factor
km	Kilometres
L	Length in millimetres
LSA	Local Study Area
m	Metres
mm	Millimetres
m/s	Metres per second
m^2	Square metres
mg/L	Milligrams per litre
mg/m^3	Milligrams per cubic metre
mL	Millilitres
MNRF	The former Ministry of Natural Resources and Forestry—now the MNR (Ministry of Natural Resources)
NAD	North American Datum
ng/µL	Nanograms per micro-litre
Project	Springpole Gold Project
PSQGs	Ontario Provincial Sediment Quality Guidelines
PWQOs	Ontario Provincial Water Quality Objectives
QA / QC	Quality assurance and quality control
qPCR	Quantitative polymerase chain
RIN	River Index Netting
RSA	Regional Study Area
TKN	Total Kjeldahl itrogen
TLEN	Total length
TOC	Total organic carbon
tpd	Tonnes per day
UTM	Universal Transverse Mercator
W	Weight in grams
µg/L	Micrograms per litre
µm	Micron
$µm^3$	Cubic micrometres
µS/cm	Microsiemens per centimetre

1.0 INTRODUCTION

First Mining Gold Corp. proposes to develop, operate and eventually decommission / close an open pit mine and ore process plant with supporting facilities known as the Springpole Gold Project (the Project). The Project is located in a remote area of northwestern Ontario, approximately 110 kilometres (km) northeast of the Municipality of Red Lake and 145 km north of the Municipality of Sioux Lookout (Figure 1-1).

An Environmental Assessment pursuant to the *Canadian Environmental Assessment Act, 2012* and the *Ontario Environmental Assessment Act* is required to be completed for the Project. This document is one of a series of baseline reports prepared by WSP Canada Inc. (WSP) on behalf of First Mining Gold Corp. to describe the current environmental conditions and update existing aquatic baseline information.

1.1 Purpose and Objective of the Report

This Aquatic Resources Baseline Report has been prepared to summarize the findings of the fish and fish habitat assessments conducted during 2023. Results from previous baseline surveys are also included in this section to provide between-year comparisons (e.g., lower trophic data) or cumulative inventory (e.g., fish community distribution) data, as requested by reviewers of the draft Environmental Impact Statement / Environmental Assessment. The 2023 work, as described in this report, includes the following:

- Multi-season physicochemical profile measurements and laboratory water quality sample collection within deep basins of Springpole (n = 6), Birch (n = 2), SW-01b, SW-23 and inland lakes (n = 8) in the baseline investigation area and far-field locations (n = 3);
- Primary productivity / lower trophic level (chlorophyll *a*, phytoplankton and zooplankton) assessment within the deep basins of Springpole (n = 6) and Birch (n = 2) lakes, SW-01b and SW-23;
- Fish habitat assessments within Springpole Lake; and
- Spring environmental DNA (eDNA) Lake Sturgeon (name; *Acipenser fulvescens*) assessment in Springpole Lake and surrounding watershed.

1.2 Project Overview

The Project is proposed to be mined as an open pit. To allow the development and safe operation of the open pit mine, dikes will be established to facilitate safe and controlled dewatering of the open pit basin. Ore from the open pit will be processed in an onsite process plant at approximately 30,000 tonnes per day (tpd). Tailings resulting from the processing of ore will be stored in a co-disposal facility.

To allow the development and safe operation of the open pit mine, dikes will be established to facilitate safe and controlled dewatering of the open pit basin.

These are the main components of the Project:

- Open pit;
- Dikes;
- Co-disposal facility for mine rock and tailings;
- Surficial soils stockpile;
- Ore stockpiles;
- Process plant or process plant complex;
- Buildings and supporting infrastructure;
- Water management and treatment facilities;
- Fish habitat development area;
- Accommodations complex;
- Aggregate operation(s);

- Transmission line; and
- Mine access road and co-located air strip.

The Project is expected to be developed over a three-year period during which dikes will be installed to support the dewatering of an isolated area for open pit mining. The mine will be operated for approximately 10 years. Decommissioning and closure of the site is expected to take five years and will be followed by a period of environmental monitoring.

The baseline studies were designed to assess the existing conditions within a regional context, as well as local aquatic environs that may have potential interactions with the area in the vicinity of the Project. The study areas are defined below:

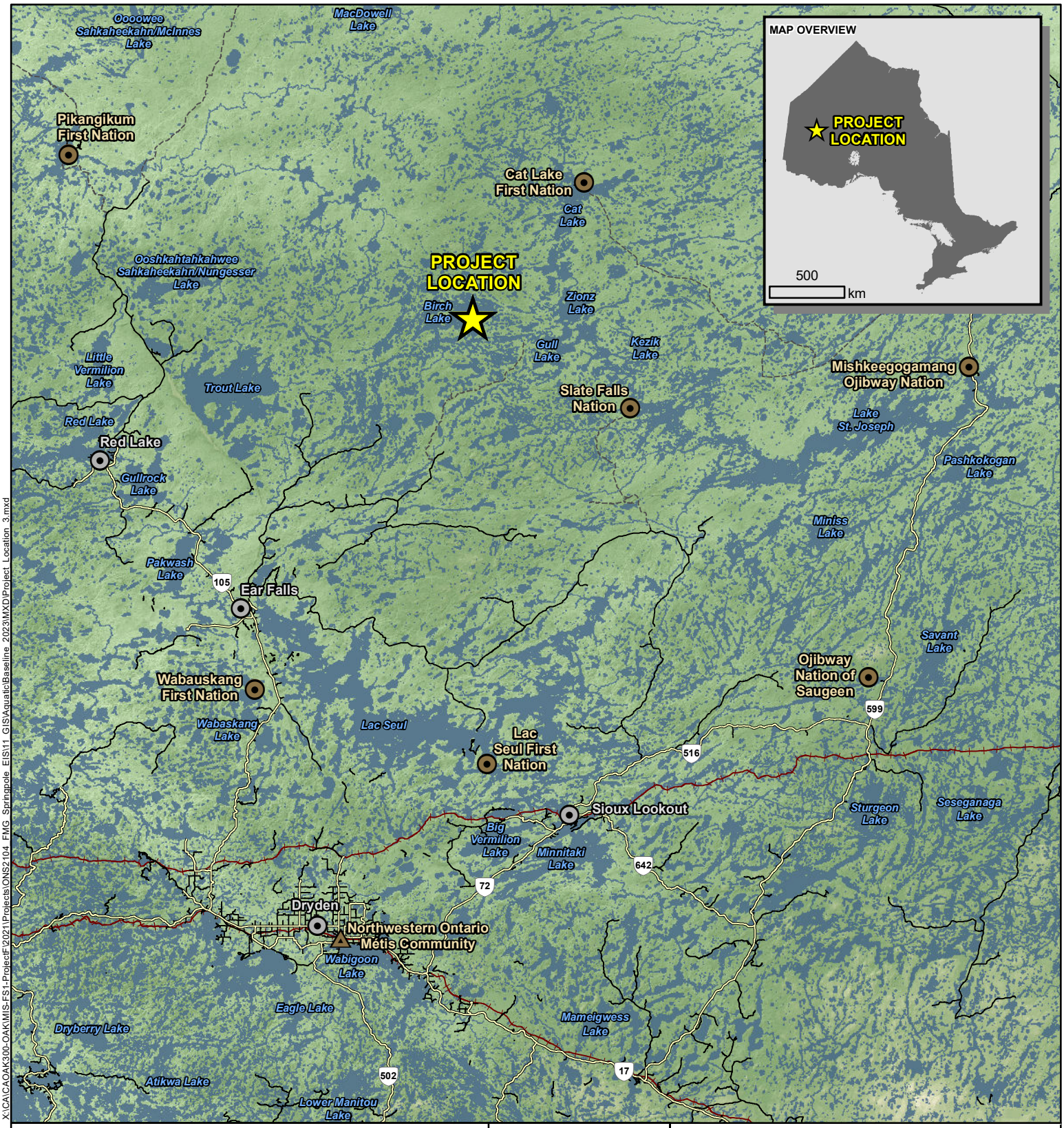
- **Regional Study Area (RSA):** Biophysical that encompasses and extends beyond the Project area and the Local Study Area. The RSA is used to provide context for the assessment of potential Project effects, the assessment of cumulative effects and is the maximum geographical extent or zone of influence in which effects from the Project may be identifiable.
- **Local Study Area (LSA):** The LSA extends beyond the Project area and was defined by applying a buffer around the Project area to reflect the primary area of expected effects. The size of the LSA is intended to capture anticipated direct effects from the Project (such as emissions, discharges and habitat loss) and indirect effects resulting from the Project.

1.3 Overview of Baseline Studies

Fish community and fish habitat studies have been conducted for this Project within the RSA and LSA since 2009, including a Provincial Broadscale Monitoring (BsM) program in Birch Lake (Figure 1-2). The baseline studies previously conducted include the following:

- 2009 – Cycle 1 BsM; Birch Lake (MNRF 2020a);
- 2011 – Summer Springpole Lake, Birch Lake and inland waterbodies fish community survey (FMG & Portt 2018);
- 2012 – Spring, summer and fall inland waterbodies and watercourses, as well as large area lakes (e.g., Springpole, Seagrave, Birch) fish community and fish habitat surveys, acoustic telemetry surveys, bathymetric mapping and physicochemical profile data collection (FMG & Portt 2018);
- 2013 – Spring, summer and fall inland waterbodies and watercourses, as well as Springpole Lake fish community and fish habitat surveys, acoustic telemetry receiver deployment and download, and detailed bathymetric mapping with substrate hardness characterization (FMG & Portt 2018);
- 2014 – Cycle 2 BsM; Birch Lake (MNRF 2020b);
- 2015 – Summer inland waterbodies and watercourses fish community and fish habitat surveys, acoustic telemetry receiver download (FMG & Portt 2018);
- 2017 – Summer and fall inland waterbodies and watercourses fish community and fish habitat surveys (FMG & Portt 2018);
- 2019 – Summer and fall inland waterbodies and watercourses, as well as Springpole Lake fish community and fish habitat surveys (Wood 2021);
- 2019 – Cycle 3 BsM survey in Birch Lake (MNRF 2020c);
- 2020 – Springpole Lake candidate outfall benthic invertebrate community (BIC) surveys, and sediment quality assessment (Wood 2021);
- 2021 – Springpole Lake multi-season physicochemical profile measurements, water quality sample collection, primary productivity assessment in deep basins, fish community and habitat assessment in inland lakes, and tissue and aging analysis of small-bodied fish species (Wood 2021 and Wood 2022); and

- 2022 – Springpole Lake multi-season physicochemical profile measurements; water quality sample collection; primary productivity assessment in deep basins; fish community and habitat assessment in Springpole, Birch, and inland lakes; fish tissue and aging analysis of small-bodied fish species; BsM cycle in Springpole Lake; eDNA surveys in Springpole Lake and Birch Lake; and Lake Sturgeon targeted spring netting in Springpole Lake (WSP 2023).



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LEGEND

- Project Location
- Town
- First Nation Reserve
- Northwestern Ontario Métis Community
- Highway
- Secondary Road
- Resource / Winter Road
- Railway

0 12.5 25 50 75 100 Kilometres

NOTES:
- Topographic information extracted from LIO, MNRF.

Datum: NAD83
Projection: UTM Zone 15N

First Mining Gold

WSP

SPRINGPOLE GOLD PROJECT

Project Location

PROJECT N°: ONS2104	**FIGURE: 1.1**
SCALE: 1:1,500,000	DATE: September 2024

505000 520000 535000 550000 565000 580000 595000

5705000
5690000
5675000

Wavell Lake
Retter Lake
Bertrand Lake
Blondin Lake
Brownstone Lake
Pierson Lake
Poirier Lake
Mainprize Lake
Graham Lake
Carillon Lake
Kapikik Lake
Gitche Lake
Noble Lake
Richardson Lake
Jackpine Lake
Offer Lake
Casummit Lake
Mink Lake
Armour Lake
Little Shabumeni Lake
Needler Lake
Birch Lake
Keigat Lake
Zionz Lake
Cat River
Cluderay Lake
Durkin Lake
Guest Lake
RSW-2
Gull Lake
Maluish Lake
Birch River
Springpole Lake
Fawcett Lake
RSW-1
Shabumeni Lake
Superstition Lake
Shabu Lake
Swain Lake
Seagrave Lake
Grace Lake
Usick Lake
Bertha Lake
Bathurst Lake
Washagomis Lake
McNaughton Lake
Deaddog Lake
Christina Lake
Strachan Lake
Narrow Lake
Sundown Lake
Hailstone Creek
Premier Lake
Cook Lake
Marsh Lake
Hailstone Lake
Senior Lake
Okanse Lake
RSW-3
Woman Lake
Sesikinaga River
Margaret Lake
Costello Lake
Latreille Lake
SLATE FALLS NATION RESERVE
Tarpley Lake
Perrigo Lake
Sesikinaga Lake
Snelgrove Lake
Joyce Lake
Confederation Lake

X:\CA\CAOAK300-OAK\MS-FS1-Project\P2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\AquaticBaseline_2023\MXD\Aquatic_StudyAreas_3.mxd

LEGEND

- Proposed Mine Feature
- Project Development Area
- Local Study Area
- Regional Study Area
- Regional Study Area Sites
- Existing Road
- Existing Transmission Line
- Watercourse
- Waterbody

NOTES:
- Topographic information extracted from LIO, MNRF.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

0 5 10 20 30 40 50 Kilometres

Datum: NAD83
Projection: UTM Zone 15N

N W E S

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SPRINGPOLE GOLD PROJECT

Aquatic Study Areas

PROJECT N°: ONS2104 | **FIGURE: 1.2**

SCALE: 1:250,000 | DATE: September 2024

2.0 METHODS

2.1 Assessment Overview

The 2023 aquatic resources field studies supplemented previously collected data and addressed any optimizations in the Project footprint. In addition, the 2023 sample locations are presented in Figure 2-1a, with site-specific sampling locations presented in Figures 2-1b to 2-1h, and the gear and protocol-specific sampling locations are presented in Figure 2-2 to Figure 2-4.

A seasonal summary of the 2022 and 2023 aquatic resources sampling effort is provided in Table 2–1 with a seasonal summary of the fish community sampling gear-specific efforts by area provided in Table 2–2. The 2023 aquatics studies were limited to three surface water sampling events in February, March and May, and one eDNA sampling event in May and June. Fish habitat types within the LSA were characterized during the baseline studies; descriptions of the habitat types are provided in Section 2.2. A summary of the sampling locations by habitat type provided in Table 2-3. The 2023 sampling events took place during the following timelines:

- Winter: February 9 to 12 and March 24 to 28; and
- Spring: May and June due to lake ice breakup (May 23 to June 2).

2.2 Fish Habitat Assessments

Habitat assessments were conducted at riverine (lotic) and ponded or lake (lentic) stations within the LSA during the 2022 field studies, and within Springpole Lake in 2023. These assessments characterized the habitat types present at each station and supported delineation of homogeneous habitat throughout the study area. Habitat types were classified using a combination of the following classifications and natural features:

- Watercourse or waterbody type;
- Permanence;
- Stream order (as applicable); and
- The use of a modified Ontario Stream Assessment Protocol, where appropriate.

In-field surface water quality measurements were recorded at each sample location using handheld portable water quality meters. Physicochemical parameter profiles at one (1) metre (m) intervals were also collected within the deep basins of Springpole Lake (n = 6) and Birch Lake (n = 2), SW-01b, SW-23, inland lakes (n = 8) and locations within the RSA (n = 3). The water quality instruments were calibrated daily and measured the following parameters:

- Temperature;
- pH;
- Conductivity;
- Dissolved oxygen (DO); and
- Depth of parameter measurement.

Sections 2.2.1 to 2.2.9 provide a description of the fish habitat types within the LSA, which have been updated using the 2022 and 2023 field study results and review comments provided through engagement with government agencies and Indigenous communities associated with the draft EIS/EA. The influence of consultation on fish and fish habitat will be summarized in the final EIS/EA.

2.2.1 Habitat Type A

Habitat type A represents lentic (lake / pond) habitat characterizing the smaller, shallow inland waterbodies within the LSA that is likely to support spawning, rearing and foraging for a variety of small-bodied fish species (giigoozens), with potential of large-bodied fish species such as Northern Pike (ginoozhe; *Esox lucius*) and Yellow Perch (asawe; *Perca flavescens*). Substrate composition in habitat type A includes predominantly soft, fine-grained sediments with some localized boulder / bedrock and cobble / sand occurrences, as well as coarse woody debris with detritus. Vegetation in the upland zones was composed mainly of mixed forest dominated by Black Spruce (*Picea mariana*) and Tamarack (*Larix laricina*); while vegetation near to the riparian zone included wood shrub species such as alder, and herbaceous species such as Sweetgale (*Myrica gale*) and grasses. In general, two types of riparian zone vegetation were observed in habitat type A: a grassy floating mat with mosses, Sweetgale and herbaceous species; or a narrow riparian zone with overhanging shrubs and rushes (such as Hardstem Bulrush; *Schoenoplectus acutus*) that extended into the open water littoral zone covering a portion of the open water surface. Nearshore, shallow areas are also commonly populated by other emergent and submergent or floating aquatic macrophytes such as Yellow Pond Lily (*Nuphar lutea*) and pondweed species.

2.2.2 Habitat Type B

Habitat type B represents lentic habitat characterizing the deep (greater than 4 metres [>4 m] total in depth) inland waterbodies within the LSA. The total depth is the primary difference between habitat types A and B, which can also influence fish species community and thermal regime. Habitat type B is also likely to support a variety of small and large-bodied species of all life stages. Substrate composition in habitat type B is similar to habitat type A with predominantly soft, fine grained sediments with greater abundance of localized boulder / bedrock and cobble / sand occurrences, as well as coarse woody debris with detritus. Vegetation in the upland zones is mainly mixed forest dominated by Black Spruce and Tamarack; while vegetation near to the riparian zone included wood shrub specie such as alder, and herbaceous species such as Sweetgale and grasses. In general, two types of riparian zone vegetation were observed in habitat type B; a grassy floating mat with mosses, Sweetgale and herbaceous species; or a narrow riparian zone with overhanging shrubs and rushes (such as Hardstem Bulrush) that extended into the open water littoral zone covering a portion of the open water surface. Nearshore, shallow areas are also commonly populated by other emergent and submergent or floating aquatic macrophytes such as Yellow Pond Lily and pondweed species.

2.2.3 Habitat Type C

Habitat type C represents deep water lentic habitat characterizing the large lake environs such as Springpole and Birch lakes. These lakes support a variety of forage fish, large-bodied fish and sport fish (Lake Trout [namegos; *Salvelinus namaycush*], Walleye [ogaans; *Sander vitreus*] and Lake Whitefish [adikameg; *Coregonus clupeaformis*]) indicative of deep water and rocky shoal habitat. Substrate composition nearshore is mostly composed of exposed bedrock and boulder, with localized areas of soft, fine-grained sediments commonly associated with tributary inflows and sheltered embayments. Coarse wood structure (e.g., driftwood) and some localized areas of aquatic macrophytes within the soft sediment substrate areas is present. Vegetation in the upland zones include mainly mixed forest dominated by Black Spruce and Tamarack, while vegetation near to the riparian zone included woody shrub species such as alder and herbaceous species.

2.2.4 Habitat Type D

Habitat type D represents ephemeral stream environments characterized as low-lying areas that may contain diffused pockets of standing water and only convey overland flow during periods of heavy rainfall or during spring freshet (snowmelt). Habitat type D was also commonly associated with a complete loss of defined channel, transitioning into areas of muskeg drainage and underground flow, and is not likely considered fish habitat. Overall, this habitat characterized the subsurface channels and flow paths connecting waterbodies such as L-6 and L-16 (Table 2-3). This habitat was dominated by willow, grasses, alder and Sweetgale, with some Black Spruce, mosses and Tamarack. Where open channels were observed, the substrate composition within this habitat type was almost exclusively fines, with some boulder and bedrock observed.

2.2.5 Habitat Type E

Habitat type E represents intermittent riverine habitat that only experiences flow during some parts of each year (generally said to occur between 10% to 80% of the time), with little to no floodplain, steep banks and shrub riparian vegetation providing nearly complete canopy cover. The substrate is mostly exposed bedrock and boulder with some isolated pockets of fine-grained substrate. This habitat type is likely to support small-bodied and large-bodied fish species with preference to flowing water during spawning season (e.g., spring freshet). Riparian vegetation is dense alder and willow species, with upland Black Spruce, poplar and Tamarack. This habitat type commonly occurs within gradient changes between inland streams and habitat type C waterbodies.

2.2.6 Habitat Type F

Habitat type F represents riverine habitat with moderate beaver activity creating alternating series of pools and impoundments (via beaver dams). These areas are also characterized by side overflow channels created during high flow events. The pool habitat has abundant coarse and fine wood debris, with soft, fine-grained sediments that support dense aquatic macrophytes. Riparian vegetation is mostly composed of grasses and sedges with alder and willow species further upland adjacent to Black Spruce, poplar and Tamarack forest. Habitat type F typically occurs between inland waterbodies and at the downstream extent of the habitat types G and H reaches, where beavers have utilized the narrowing, natural topography to construct dams. These pooled areas are likely to hold a variety of small-bodied fish species that were trapped due to beaver activity and support all life cycles seasonally.

2.2.7 Habitat Type G

Habitat type G represents riverine habitat with a broad floodplain and extensive floating mats of herbaceous species typical of muskeg and beaver ponds. This habitat is primarily represented by flat channel morphology with occasional pools in the thalweg of meander bends and back bays of the channel. Habitat Type G is likely to provide fish habitat for various small-bodied fish species. The substrate is characterized by soft, fine-grained sediment with occasional boulders and localized areas of exposed bedrock. Dense aquatic macrophyte growth and coarse woody debris contribute most of the instream cover. Vegetation in the upland zones is mainly mixed forest dominated by Black Spruce, poplar and Tamarack; while vegetation near to the riparian zone includes alder, willow and herbaceous species.

2.2.8 Habitat Type H

Habitat type H represents riverine habitat with a moderate to broad floodplain, similar to habitat type G; however, wetted width is much greater than habitat type G and was observed at fewer locations within the assessed areas. As with habitat type G, the type H habitat is characterized by flat channel morphology with occasional pools and is likely to provide fish habitat for various small-bodied fish. The substrate is

characterized by soft, fine-grained sediment with some boulders. Abundant aquatic macrophytes and coarse woody debris are present. The riparian zone consists mostly of grasses and sedges. Upland areas are mainly mixed forest dominated by Black Spruce, Poplar and Tamarack; while vegetation near to the riparian zone includes alder, willow and herbaceous species.

2.2.9 Habitat Type I

Habitat type I represents the Birch River habitat characterizing fast flowing river sections with cobble, boulder and bedrock riffle and rapids habitat. This area was characteristic of steeper gradients and generally shallow channel cross sections. The upland and riparian vegetation communities were mainly mixed forest dominated by Black Spruce and sparse Tamarack and Poplar species; however, recent forest fire damage shows an early succession stage of growth for these species. Macrophyte growth was observed in low abundance within the area, yet algae covering rocks and Pondweed growing in the fast current between rocks were noted in some less turbulent areas.

2.3 Fish Community

Fish community studies were conducted during spring and summer 2022 as per the Licences to Collect Fish for Scientific Purposes numbers 1100874, 1101444 and 1101682, issued by the Red Lake District Ministry of Natural Resources and Forestry (MNRF). The following gear types were used based on site-specific habitat conditions:

- Baited gee-style minnow traps;
- Backpack electrofishing units;
- Angling equipment;
- Dip nets;
- eDNA filter packs;
- Gillnets (various stretched mesh sizes, including Riverine Index Nets); and
- Seine nets.

A summary of the fish sampling gear used at each sampling location by field program is presented in Table 2–2. All fish captured were identified to species by qualified fisheries staff; measured for length (total and fork) and fresh weight, scrutinized for visible malformation, parasites or evidence of disease, sex was determined when possible, and non-lethal age structures were collected. Additionally, lethal age structures and baseline fish tissue of target fish species were collected during the spring 2022 Springpole Lake and Birch Lake assessments as well as the summer 2022 Springpole BsM study.

2.3.1 Lake Sturgeon Targeted Netting

Lake Sturgeon have been documented historically within Birch Lake, the Birch River and Seagrave Lake by Cat Lake First Nation and Ear Falls community members, as well as tourist operators and a small commercial fishing operation from the 1970s (personal comm., MNRF 2021). The *Atlas of Lake Sturgeon Waters in Ontario* that derived Lake Sturgeon distribution data from a variety of sources, including the provincial fisheries database of lake and streams surveys and other fisheries assessment projects, identifies Birch Lake as one of nine lakes within the Red Lake MNRF district that contain Lake Sturgeon (Kerr 2002). To date, Lake Sturgeon have not been captured during the Springpole Project baseline fish community studies, nor have they been captured during the three cycles of broadscale monitoring (BsM) programs conducted on Birch Lake by the MNRF in 2009, 2014 and 2019 (MNRF 2020a; 2020b; 2020c). The most recent anecdotal observations provided by the MNRF were dated up to 1997, although several observations were not dated.

Due to the lack of Lake Sturgeon captures during the above noted studies, a Lake Sturgeon netting program was implemented during the 2022 field season to assess potential presence in Springpole Lake; specifically,

the southeast arm along the flow path between the Cromarty Lake inflow (Birch River) and outflow of Springpole Lake. The assessment used a modified River Index Netting (RIN) protocol for the capture of Lake Sturgeon, including extra-large RIN nets with stretched mesh sizes of 204, 230, 255 and 306 millimetres (mm) (8, 9, 10 and 12 inches, respectively; Jones and Yunker 2009). A total of 12 overnight net sets were fished for 18 hours (±2 hours) and set perpendicular to flow (Figure 2-2). Net sets were conducted in the spring to target Lake Sturgeon during the spring migration period as they travel to spawning locations, rather than the standard July 1 to October 1 RIN protocol assessment targeting all species.

2.3.2 Environmental DNA Sampling

Organisms are constantly releasing DNA into the environment through various means, including natural shedding of cells, excretions and other processes. Using a relatively new technique it is now possible to detect their presence by collecting eDNA and identifying species-specific nucleic acid sequences. This sampling method has rapidly gained popularity in the scientific and natural resource management fields over the last decade for both terrestrial and aquatic studies as it is a quick, cost-effective and efficient way to determine species presence. Through eDNA analysis of a water sample, the species present in a waterbody can be ascertained, making it particularly useful for identifying low levels of declining species, invasive species' presence (especially during early invasion stages with low total numbers), species difficult to sample with or that are sensitive to conventional methods, and locations difficult to sample (i.e., remote or private lands). As such, when non-invasive and/or non-lethal sampling is required, eDNA can be the preferred option.

The eDNA sampling was introduced to the 2022 field season to aid in Lake Sturgeon detection efforts and characterize the fish communities within Springpole Lake, Birch Lake and surrounding waterbodies. Samples were taken at a total of 15 locations (Figure 2-2); 12 in spring and 15 in summer, across Springpole Lake, Birch Lake, S-16 and RSA locations. Sampling involved collecting triplicate water samples of approximately 4 litres (L) at each location and field filtering using 5 micron (µm) Smith-Root self-preserving filter packs and a vacuum pump, which are considered best practice for detecting species at low levels (Turner et al. 2014; Sepulveda et al. 2019). These filters were analyzed using metabarcoding by Nature Metrics North America Ltd. in Guelph, Ontario. Negative controls were also taken to aid in extrapolation of results. Detailed sampling and analysis information can be found in Appendix E.

As the eDNA sampling was intended to assist Lake Sturgeon detection efforts, the study design included sampling water from different microhabitats to increase the likelihood of detection. The four samples collected within the southeast arm of Springpole Lake (Springpole-eDNA-01 to 04) were identified to be the highest probability areas for Lake Sturgeon detection, and thus coincided with natural pinch points in the lake to capture spring spawning movement and with extra large RIN sets, as discussed in Section 2.3.1. These samples consisted of three homogenized benthic-zone water grab samples, taken approximately 0.5 m above bottom where Lake Sturgeon tend to reside.

The other five eDNA sample locations in Springpole Lake (Springpole-eDNA-05 to 09), and two locations in Birch Lake (Birch-eDNA-11 and 12), were collected at the deepwater basin locations, consistent with the surface water quality monitoring locations. Composite samples were taken at 1 m below surface, mid-column, 1 m from bottom and near shore with another grab 1 m from bottom. This sampling protocol was intended to collect as much eDNA, from as many species occupying various depths and habitats as possible. The only stream location, S-16 (Birch-eDNA-10), was sampled mid-channel with a single grab.

Separating these sample sites by location and microhabitat allowed for the greatest range of fish community results, while still prioritizing Lake Sturgeon as a target species.

Sampling for Lake Sturgeon eDNA was continued in 2023, with a Lake Sturgeon specific quantitative polymerase chain (qPCR) analysis. This program was conducted in spring (May and June) 2023 once the water temperature reached 10°C, to align with Lake Sturgeon spawning temperature. Potential and historical spawning locations were targeted, based on information provided by the MNRF and local First Nations (MNRF 2016), imagery review of the Birch and Cat River systems, and sites selected where suitable float plane access was possible. During perceived post-spawn timing, once water temperatures had risen, sampling shifted toward deep (10 to 20 m) holes in Springpole and Birch lakes to sample areas anticipated to provide suitable late-spring and summer habitat for Lake Sturgeon. A complete list of sample locations is shown in Figure 2-2. Due to a large forest fire immediately northeast of the Cat Lake First Nation community, the airspace was closed during sampling and sampling locations near the community could not be sampled.

2.3.3 Broadscale Monitoring Program

To supplement existing fisheries community data, the 2022 field studies included a summer BsM program to characterize the fish community in Springpole Lake (Sandstrom et al. 2013). Three rounds of BsM data have already been collected in Birch Lake (2009, 2014 and 2019), but no BsM surveys were previously completed in Springpole Lake. The standardized, repeatable BsM assessment in Springpole Lake allows equitable comparison of these results to other provincial BsM data and will support comparison to future assessments and monitoring efforts.

As per the BsM protocol (Sandstrom et al. 2013), 39 nets were set with durations ranging from 16 to 22 hours per set. These sets were equally spread throughout Springpole Lake and set perpendicular to depth contours based on bathymetric data. The 39 sets were spread between large and small mesh gangs and further divided upon the following depth categories: 1 to 3, 3 to 6, 6 to 12, 12 to 20 and 20 to 35 m, as per the protocol. Based on requests from the Red Lake District MNRF to increase shallow net sets, large mesh nets had a total of 3, 5 ,5, 4 and 4 sets in each depth category, respectively. An additional 6 large mesh nets were set in the 20 to 35 m depth category, as per request from Fisheries and Oceans Canada staff, with 45 total net sets (Figure 2-3).

During the program, fish tissue and aging samples were collected from incidental fish mortalities to contribute additional data for the baseline studies.

Total catch per species and catch per unit effort (CPUE) were calculated for the entire BsM program in Springpole Lake and further characterized by basin, including six distinct basins throughout the lake. Basin designations (NB01, NB02, NB03, NB46, CB07 and EB05) correspond with the surface water quality profile locations described in Section 2.6.1; however, NB46 incorporates the areas of L-15-B4 and L-15-B6, while CB07 and EB05 divide the southeast arm of Springpole Lake. Basin extents are shown in Figure 2-3 with the BsM netting locations.

Additional analysis followed MNR internal BsM protocol (personal comm., MNRF 2024), which involves filtering data by NA1 (North American large mesh) nets, removing target species captures smaller than those considered "recruit-sized" to the NA1 nets (Lake Trout less than [<]350 mm, Lake Whitefish <400 mm, Northern Pike <500 mm and Walleye <350 mm; Walker et al. 2013), calculating CPUE (relative abundance) and relative biomass per depth strata, and a CPUE area-weighted calculation using proportion of each depth strata within the lake to compare with Birch Lake BsM cycles. Using these data, fish health was assessed using condition factor (k; Williams 2000) and the equation:

$$k = \frac{100{,}000 * W}{L^3}$$

Where W is the weight in grams (g) and L is the total length (TLEN) in mm. A k < 0.6 indicates a poor condition fish; a k > 1 indicates a good condition fish. Density was likewise estimated using catchability coefficients, that estimate the proportion of fish per hectare caught in the gillnet, for Lake Trout (Lester et al. 2021) and Walleye (Giacomini et al. 2020). Population estimates in the NB01 basin and Springpole Lake for Lake Trout and Walleye were calculated using overall surface area. Finally, annual production, a function of overall population size, was determined using the production ratios of Lake Trout and Walleye known for closed populations (Randall and Minns 2000).

2.4 Spawning Habitat Surveys

Northern Pike spawning habitat surveys were conducted during May and June of 2022 on Springpole Lake. Sampling was conducted using a Geographic Information Systems-based screening tool that considered total water depth, substrate type and aquatic vegetation mapping to identify candidate spawning habitat for field verification. Due to unseasonably high waters, the majority of shoreline was considered spawning habitat as shoreline vegetation was submerged. Surveys involved slowly boating along transects within candidate spawning areas with one crew member at the bow on an elevated platform, recording qualitative characteristics such as the presence of submerged vegetation and documenting Northern Pike observed in the shallows. Key characteristics, including presence of Northern Pike, submerged vegetation, and water depth less than 2 m were indictors used to delineate spawning habitat. These surveys were conducted to confirm if Northern Pike spawning habitat is present within the selected locations and to contribute to the previously documented habitat survey information.

2.5 Contaminants in Fish Tissue

Fish tissue samples for contaminant analysis were composed of whole-body composite samples for small-bodied species, individual large-bodied fish whole-body samples and large-bodied boneless, dorsal epaxial muscle fillet samples. Sentinel small-bodied species retained for analysis were determined based on presence and abundance of the species within each sample area at the time of sampling.

Small-bodied sentinel fish species retained for tissue analysis during the spring 2022 field studies included young-of-the-year Yellow Perch and Blacknose Shiner (*Notropis heterolepis*). Each whole-body composite sample consisted of enough fish for a total fresh mass greater than 20 grams (g) wet weight, with a target of 50 g, to reduce likelihood of insufficient laboratory sample mass. The number of fish per composite sample varied based on the size distribution of individuals captured at each sample location. The smallest fish in each sample was generally greater than or equal to 85% of the TLEN of the largest fish chosen for the sample, with a minimum TLEN difference within a composite sample no greater than 75%. Individuals from the sampled populations representing the full range of TLENs were submitted for age assessment using species appropriate ageing structures.

Large-bodied fish tissue samples were also taken during the summer 2022 program. Samples (n = 82) were taken during the August BsM netting, in which 14 Lake Trout, 17 Lake Whitefish, 30 Northern Pike and 21 Walleye were retained for analysis; samples consisted of whole-body (small, juvenile fish) and fillet samples.

Fish tissue samples were submitted to ALS Environmental, in Thunder Bay, Ontario, for total metals, including mercury, methylmercury, as well as percent moisture.

Metals of concern analyzed for this study included deleterious substances measured in mining effluent under the Metal and Diamond Mining Effluent Regulations, and metals known to have a negative effect on the health of aquatic life and consumers of aquatic biota: arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium and zinc. Fish tissue metal concentrations were statistically compared

among sample areas. Mercury and selenium are often of interest when assessing baseline conditions as these metals can have negative effects on the health of aquatic life and consumers of aquatic biota.

The total mercury concentrations measured in large-bodied species fish tissue were compared to the provincial consumption guidelines (MOECC 2015) and federal food and nutrition standards (Health Canada 2011). Concentrations of methylmercury for all fish species were also compared to the Canadian Council of Ministers of the Environment (CCME) Canadian Tissue Residue Guideline for the Protection of Wildlife Consumers of Aquatic Biota – methylmercury (CCME 2000). The proportion of methylmercury to total mercury in fish muscle tissue has been reported as ranging from 80% to 100% for freshwater adult fish, with the majority of these indicating a percent greater than 90% (Bishop and Neary 1975; Huckabee et al. 1979, Jackson 1990; Bloom 1992; Lasorsa and Allen-Gil 1995; Kannan et al. 1998; Jewett et al. 2003).

Selenium is often considered a metal of concern as it can have negative effects on aquatic life. It can be released into aquatic environments naturally through weathering or anthropogenic sources (United States Environmental Protection Agency 2016). Concentrations of selenium were measured in fish tissue during the 2022 studies to determine baseline concentrations and for comparisons to future data. The Federal Environmental Quality Guidelines criteria established for selenium in whole body fish tissue were compared to the study results.

2.6 Surface Water

2.6.1 Lake Profiles

Lake profile plots displayed temperature in degrees Celsius (°C) and DO in milligrams per litre (mg/L) measurements against depth collected during the sampling events in 2022 (February, March, May, June, July, August, September and October) and 2023 (February, March and May). Profiles were measured at 1 m intervals within the deep basins of Springpole Lake (n = 6), Birch (n = 2), SW-01b, SW-23, and inland lakes (n = 8) within the LSA, and far-field locations in the RSA (n = 3).

2.6.2 Field Sampling

In situ water quality data were collected at each surface water sampling location using a hand-held YSI DSS multi-parameter water quality meter at 1 m below surface. Temperature, DO, pH, and conductivity were recorded. The locations of all sampling stations were recorded in Universal Transverse Mercator (UTM) using a handheld Global Positioning System (GPS) unit.

2.7 Lower Trophic and Primary Productivity Assessment

The lower trophic and primary productivity assessment evaluated eutrophication indicators including chlorophyll *a* (the primary pigment of photosynthesis for algae, cyanobacteria, and plants), phytoplankton (microalgae; primary producers) biomass, and zooplankton (first order consumers; animal component of the planktonic community) biomass. The former two plankton groups are within the lowest trophic levels of an aquatic ecosystem which support the upper-level fish community. These components were sampled concurrently three times during the 2022 open-water season (June, August and September) and once during March 2023 from the Springpole Lake and Birch Lake deep basins, SW-01b and SW-23, as shown in Figure 2-1a.

2.7.1 Chlorophyll *a*

Chlorophyll *a* samples were collected concurrently with the composite water sample collected for the phytoplankton community analysis at the sample locations shown in Figure 2-1a. In-field depth integrated composite samples were collected and stored in black high-density polyethylene bottles, kept cool (on ice or with ice packs) and away from direct light for shipment to ALS Environmental, Thunder Bay, Ontario.

2.7.2 Phytoplankton

A Kemmerer bottle was used to collect phytoplankton samples from within the euphotic zone (uppermost layer of a body of water that receives sunlight). At sampling locations with euphotic zones greater than 2 m in depth, water was collected at 2 m intervals and combined into a composite sample in a clean container. A sub-sample of the water was poured into a pre-labelled 500 millilitre (mL) opaque plastic bottle and preserved with 2 mL of Lugol's solution. Phytoplankton samples were kept cool (but not frozen) and in the dark for shipment to ALS Environmental, Thunder Bay, Ontario, for analyses of taxonomic composition, abundance and biomass.

2.7.3 Zooplankton

Zooplankton sampling methods followed a standardized protocol using a 0.13 m diameter, 63 µm mesh Wisconsin plankton net with a detachable collection bucket (codend) to collect zooplankton samples from the water column. The plankton net was lowered until the bottom of the collection bucket was approximately 30 centimetres (cm) above the bottom sediment and then towed vertically to the surface at a rate of approximately 0.5 metres per second (m/s). Approximately half an Alka-Seltzer tablet was added as a narcotizing agent to prevent contortion of organisms prior to the sample being transferred from the codend to a pre-labelled container and preserved with 10% buffered formalin. Zooplankton samples were kept cool (although not frozen) for shipment to Biologica Environmental Services Ltd., Victoria, British Columbia for taxonomic analysis (i.e., species composition, density, and biomass).

2.7.4 Data Analysis

The lower trophic and primary productivity results analyses focused on total biomass and community composition. Biomass data can be used to interpret ecological significance and have food web linkages. Community composition was analyzed to species-level for both phytoplankton and zooplankton, and figures were created based on class-level and order-level identifications, respectively. Calculations were completed using Microsoft Excel and plots were created using RStudio 3.6.2.

2.8 Sediment and Benthic Invertebrate Surveys

2.8.1 Field Sampling

Surficial sediment samples were collected concurrently with BIC samples using a Petite Ponar grab sampler during the fall (October 2022) sampling program (Figure 2-4). Each ponar grab sampled a surface area of 0.023 square metres (m^2). Three grab sub-samples were taken at lake sample locations within similar depths and pooled (homogenized) into one composite sample to account for localized habitat heterogeneity and represent the substrates within the sampling location. Homogenizing the benthic samples also increased the likelihood of sampling all available taxa from the BIC by reducing the effects of intra-sample variation inherent to benthic communities.

The substrate properties at each benthic sampling location (i.e., particle size, metal, and nutrient concentrations) were characterized to further support interpretation of the benthic community between and among sample locations. All surficial sediment sampling followed the protocols as set out by the Canadian Association for Laboratory Accreditation Guide to Current Sampling Practices (Fowlie 2014) and Environment Canada's (2012) technical guidance for environmental effects monitoring.

The following quality assurance and quality control (QA / QC) measures were implemented during benthic sample collection:

- Sampling gear used was appropriate for substrate present;
- Laboratory gloves (e.g., nitrile) were worn throughout the sampling process and replaced at each sampling location;
- Equipment was thoroughly rinsed and cleaned using appropriate cleansers and decontaminant agents prior to use between sampling locations;
- BIC samples were stored in appropriate containers using appropriate preservatives (10% buffered formalin solution) as directed by the laboratory;
- Sediment samples were placed in clean, pre-labelled, laboratory prepared glass jars;
- Blind field duplicate sediment quality samples were collected for 10% of total samples;
- Sample identification, location, date, and other pertinent information was recorded in a field logbook / log sheet, on the sample container and on laboratory Chain of Custody forms; and
- An experienced taxonomist was used for identification of freshwater macroinvertebrates.

All benthic samples were labelled with unique identification numeration. The BIC samples were field sieved and preserved with 10% buffered formalin solution within six hours of sample collection to maintain sample integrity and minimize the likelihood of within sample predation or decomposition, before transport to the taxonomist.

2.8.2 Laboratory Sampling Processing

Substrate composition was characterized through qualitative visual field assessments and quantitative laboratory grain size analysis. Laboratory chemical analysis was conducted by ALS Environmental, located in Thunder Bay, which is accredited by the Canadian Association for Laboratory Accreditation Guide to Current Sampling Practices in accordance with International Organization for Standardization / International Electrotechnical Commission 17025:2005 – General Requirements for the Competence of Testing and Calibration Laboratories for the tested parameters. The occurrence of large particle sizes (cobble and boulder) within representative reaches and sections of the rivers and creeks was recorded by field staff during habitat assessment.

Taxonomist laboratory BIC sample processing procedures included subsampling as required for samples containing large amounts of organic material and/or large sample volumes, to identify a minimum of 100 individuals. Sorting included washing samples through 250 and 500 µm sieves, and organism sorting / identification using a stereomicroscope (10x multiplication). All invertebrates were identified to the lowest practical level and generally to the genus level, with the exception of leeches, oligochaetes, stoneflies, mayflies, dragonflies, amphipods, and adult beetles and bugs, which were identified to the species level.

2.8.3 Sediment Quality Data Analysis

The analytical sediment results were compared to the Ontario Provincial Sediment Quality Guidelines (PSQGs; MOE 2008) and Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME 2001). The Canadian Sediment Quality Guidelines' criteria are established based on the formal federal protocol to evaluate potential adverse biological effects on aquatic environments. They prescribe a level of contamination at which there are probable effects (probable effect level). The PSQGs are guidelines which promote the protection of aquatic life and are based on sound scientific information. They establish three levels of effects that reflect potential chronic and long-term effects of contaminants on benthic invertebrates as follows:

- No effect level: fish and sediment-dwelling organisms are not affected by chemicals in the sediment;

- Lowest effect level: level of sediment contamination that can be tolerated by the majority of sediment-dwelling benthic invertebrates; and
- Severe effect level: level of sediment contamination at which pronounced disturbance of the sediment-dwelling community can be expected.

Sediment grain size and chemical analyses were conducted at a lab accredited by the Canadian Association for Laboratory Accreditation Guide to Current Sampling Practices in accordance with International Organization for Standardization / International Electrotechnical Commission 17025:2005 – General Requirements for the Competence of Testing and Calibration Laboratories.

2.8.4 Quality Assurance and Quality Control (QA / QC)

The precision of the sediment quality data was assessed using blind, split field duplicate samples collected from the same ponar haul(s). The relative percent difference (RPD) between measured data and the duplicate from the same site was calculated by dividing the difference of the two measurements by the average of the measurements and multiplying by 100. The equation for RPD is shown below:

$$RPD = \frac{(X1 - X2)}{\left(\frac{X1 - X2}{2}\right)} \times 100$$

Further data evaluation was considered when the RPD between native and duplicate sample results was greater than 30% for metals (inorganics and mercury).

2.8.5 Benthic Invertebrate Data Analysis

BICs at each sample location were characterized using descriptive indices, including total invertebrate density, Simpson's index of diversity, evenness and taxon richness. These indices were calculated and summarized using the guidelines for EEM as stipulated by Environment Canada (2012). In addition, the relative percent community contribution of the *Ephemeroptera*, *Plecoptera*, and *Trichoptera* (EPT) benthic invertebrate taxa groups and the Chironomid taxa were calculated to further characterize the sample location BICs. Calculations for BIC indices were completed using Microsoft Excel and plots were created using RStudio 3.6.2.

- Total invertebrate density was calculated for each replicate station as the total number of individuals per square metre.
- Simpson's Index of Diversity (I-D) is a descriptor of both the abundance patterns and taxonomic richness of the community. Simpson's Index of Diversity can range from 0 to 1 and reaches its greatest indication of diversity at a value of 1.
- Simpson's Evenness (E) is similar to Simpson's Index of Diversity, it is a measure of how the abundance of individuals is distributed within the taxonomic groups inhabiting the sample location. Evenness ranges from 0 to 1 and reaches complete evenness at 1.
- Taxon richness (Family Richness) is a count of the number of taxa found within an area. For this study, richness was reported at the family level.
- The percent EPT is the percentage of individual benthic invertebrates within a sample that belong to the orders *Ephemeroptera*, *Plecoptera* and *Trichoptera*. High relative percent EPT composition can indicate un-impacted water quality, since EPT taxa are generally intolerant of environmental stresses and are typically more abundant in areas unaffected by anthropogenic factors.
- The percentage of the community represented by Chironomids (family: *Chironomidae*) were also calculated. Some genera of this taxa group are more tolerant of environmental stresses (pollution), consequently Chironomids tend to dominate the BIC in areas with degraded conditions.

Table 2-1: Aquatic Resources Field Study Locations

WATERBODY	SAMPLE ID	UTM EASTING (M)	UTM NORTHING (M)	HABITAT OBSERVATIONS	SEDIMENT AND BENTHOS SAMPLING	FISH COMMUNITY	eDNA	LAKE STURGEON NETTING
Birch Lake	BIRCH-B1	551,082	5,695,872	-	-	Sp, Su	Sp, Su	-
	BIRCH-B2	546,134	5,695,587	-	-	Sp, Su	Sp, Su	-
	BIRCH-1	548,063	5,695,207	Sp, Su	-	Sp, Su	-	-
	BIRCH-2	547,433	5,695,119	Sp, Su	-	Sp, Su	-	-
	BIRCH-3	546,413	5,693,440	Su	-	Su	-	-
	BIRCH-4	547,188	5,692,342	Su	-	Su	-	-
	BIRCH-1-S/B	548,430	5,694,551	-	Fa	-	-	-
	BIRCH-2-S/B	547,157	5,692,379	-	Fa	-	-	-
	BIRCH-3-S/B	546,353	5,693,664	-	Fa	-	-	-
	BIRCH-4-S/B	546,766	5,695,102	-	Fa	-	-	-
	BIRCH-5-S/B	547,867	5,694,853	-	Fa	-	-	-
Birch River	LS-eDNA-13	557,422	5,696,726	-	-	-	SP	-
	LS-eDNA-14	548,123	5,700,476	-	-	-	SP	-
	LS-eDNA-01	527,383	5,689,415	-	-	-	SP	-
	LS-eDNA-02	544,944	5,686,178	-	-	-	SP	-
S-16	S-16	547,219	5,692,375	Sp, Su	-	Sp, Su	Sp, Su	-
	S-16-S/B	547,993	5,691,714	-	Fa	-	-	-
Springpole Lake (Lake 15)	L-15-B1	549,752	5,693,000	-	-	Sp, Su	Sp, Su	-
	L-15-B2	551,129	5,692,543	-	-	Sp, Su	Sp, Su	-
	L-15-B3	549,958	5,691,732	-	-	Sp, Su	Sp, Su	-
	L-15-B4	550,197	5,690,385	-	-	Sp, Su	Sp, Su	-
	L-15-B5	559,999	5,687,605	-	-	Sp, Su	-	-
	L-15-B6	549,073	5,690,230	-	-	Sp, Su	Sp, Su	-
	SW-07a	552,550	5,687,777	Sp	-	Sp	-	-
	SW-08a	549,512	5,687,807	Sp	-	Sp	-	-
	XL-GN1	552,117	5,687,800	-	-	-	-	Sp
	XL-GN2	549,517	5,687,783	-	-	-	-	Sp
	XL-GN3	548,914	5,687,131	-	-	-	-	Sp
	XL-GN4	564,049	5,688,671	-	-	-	-	Sp
	XL-GN5	556,502	5,688,170	-	-	-	-	Sp
	XL-GN6	554,918	5,688,058	-	-	-	-	Sp
	XL-GN7	565,024	5,688,178	-	-	-	-	Sp

Table 2-1: Aquatic Resources Field Study Locations

WATERBODY	SAMPLE ID	UTM EASTING (M)	UTM NORTHING (M)	HABITAT OBSERVATIONS	SEDIMENT AND BENTHOS SAMPLING	FISH COMMUNITY	eDNA	LAKE STURGEON NETTING
	XL-GN8	559,114	5,688,147	-	-	-	-	Sp
	XL-GN9	553,886	5,688,096	-	-	-	-	Sp
	XL-GN10	556,507	5,688,015	-	-	-	-	Sp
	XL-GN11	553,213	5,688,054	-	-	-	-	Sp
	XL-GN12	549,273	5,687,104	-	-	-	-	Sp
	eDNA-01	565,024	5,688,178	-	-	-	Sp, Su	-
	eDNA-02	554,998	5,688,040	-	-	-	Sp, Su	-
	eDNA-03	548,843	5,687,163	-	-	-	Sp, Su	-
	eDNA-04	549,512	5,687,807	-	-	-	Sp, Su	-
	L-15-S/B	548,432	5,691,501	-	Fa	-	-	-
	LS-eDNA-03	565,331	5,687,543	-	-	-	SP	-
	LS-eDNA-04	548,794	5,687,068	-	-	-	SP	-
	LS-eDNA-09	559,304	5,687,453	-	-	-	SP	-
	LS-eDNA-10	551,790	5,692,299	-	-	-	SP	-
	LS-eDNA-11	551,019	5,689,189	-	-	-	SP	-
	LS-eDNA-12	549,190	5,689,912	-	-	-	SP	-
	LS-eDNA-15	549,404	5,691,897	-	-	-	SP	-
Lake 1	L-1	549,559	5,694,597	Sp, Su	-	Sp, Su	-	-
Lake 2	L-2	550,032	5,694,256	Sp, Su	-	Sp, Su	-	-
Lake 3	SW-09	547,851	5,693,454	Sp, Su	-	Sp	-	-
Lake 5	SW-26	548,885	5,692,916	Sp, Su	-	-	-	-
Lake 16	L-16	547,908	5,691,837	Sp, Su	-	Sp	-	-
Lake 17	L-17	547,678	5,694,292	Sp, Su	-	Sp, Su	-	-
Lake 18	L-18	547,322	5,694,729	Sp, Su	-	Sp, Su	-	-
Lake 19	L-19	551,445	5,694,478	Sp, Su	-	Sp, Su	-	-
Lake 20	L-20	552,476	5,693,616	-	-	-	-	-
Seagrave Lake	LS-eDNA-08	556,447	5,682,602	-	-	-	SP	-
Fawcett Lake	LS-eDNA-05	585,021	5,686,045	-	-	-	SP	-
Lake St. Joseph	LS-eDNA-06	697,661	5,668,021	-	-	-	SP	-
	LS-eDNA-07	694,667	5,675,074	-	-	-	SP	-

Table 2-1: Aquatic Resources Field Study Locations

WATERBODY	SAMPLE ID	UTM EASTING (M)	UTM NORTHING (M)	HABITAT OBSERVATIONS	SEDIMENT AND BENTHOS SAMPLING	FISH COMMUNITY	eDNA	LAKE STURGEON NETTING
Gull Lake	RSW-1	572,027	5,686,785	-	-	-	Fa	-
	RSW-2	576,756	5,691,755	-	-	-	Fa	-
Cat River System	RSW-3	596,216	5,671,806	-	-	-	Fa	-

Notes:
1 Coordinates provided represent the approximate midpoint of the study area in UTM Zone 15U, North American Datum (NAD) 83.
2 "Sp" data collected during the 2022 spring field study (May and June).
3 "Su" data collected during the 2022 summer field study (July and August).
4 "Fa" data collected during the 2022 fall field study (September and October).
5 "SP" data collected during the 2023 spring field study (May and June).

Table 2-2: Fish Community by Sample Area and Season

SAMPLE LOCATION	GILLNET	MINNOW TRAP	SEINE NET	ANGLING	DIP NET	ELECTROFISHING	eDNA
Birch Lake	Sp	Su	Su	-	-	-	Sp, Su, SP
S-16	-	-	-	-	-	Sp, Su	Sp, Su
Springpole Lake (L-15)	Sp	-	-	-	Sp	-	Sp, Su, SP
Seagrave Lake	-	-	-	-	-	-	SP
L-1	-	Sp, Su	-	-	-	-	-
L-2	Sp	Sp, Su	Su	-	-	-	-
L-3	Sp	Sp	-	-	-	-	-
L-16	Sp	Sp	-	Sp	Sp	-	-
L-17	-	Sp, Su	-	-	-	-	-
L-18	-	Sp, Su	-	-	-	-	-
L-19	-	Sp, Su	-	-	-	-	-
RSA	-	-	-	-	-	-	Fa, SP

Notes:
1 "Sp" data collected during the 2022 spring field study (May and June).
2 "Su" data collected during the 2022 summer field study (July and August).
3 "SP" data collected during the 2023 spring field study (May and June).
* Sampling for eDNA was delayed during the summer program until early September 2022.

Table 2-3: Key Habitat Type Criteria

Habitat Type Classification		Lake / Pond			Riverine					
		Type A	**Type B**	**Type C**	**Type D**	**Type E**	**Type F**	**Type G**	**Type H**	**Type I**
General Habitat Attributes		• Shallow inland lake / pond habitat • Shoreline varies between extensive floating mats of herbaceous species and localized sections with boulder, cobble and/or sand	• Deep inland lake habitat • Shoreline varies between extensive floating mats of herbaceous species and localized sections with boulder, cobble and/or sand	• Large lake habitat • Shoreline mostly bedrock / boulder substrate, with some and shallow nearshore soft sediments commonly at tributary inflows	• Low lying area with diffuse pockets of standing water • Sections of complete loss of channel, can transition into muskeg drainage, overland drainage flow path or underground flow	• No floodplain with dense shrub riparian vegetation • Bedrock, boulder and cobble substrate with coarse wood debris	• Moderate beaver activity creating alternating series of pools / impoundments • Side overflow channels created during high flow and stream stage events • Abundant coarse wood debris	• Broad floodplain with extensive floating mats of herbaceous species typical of muskeg and beaver ponds / impoundments • Primarily flat morphology with occasional pools in the thalweg of meander bends and back bays of the channel	• Moderate to broad floodplain • Primarily flat morphology with occasional pools • Commonly occurring as main connecting channels between inland waterbodies	• Birch River habitat • No floodplain • Steep banks with fast flowing riffle and rapids habitat • Coarse grained substrate across channel including boulder and cobble, as well as exposed bedrock
Permanence		Permanent	Permanent	Permanent	Ephemeral	Intermittent	Permanent	Permanent	Permanent	Permanent
Characteristic Morphology Features	**Bankfull Width (m)**	N/A	N/A	N/A	N/A	0.50 to 4.0 m	1.0 to 10 m	>5 m	>5 m	>10 m
	Bankfull Depth (m)	Total depth <4 m	Total depth ≥4 m	Total depth ≥4 m	N/A	0.60 to 1.5 m	0.40 to 2 m	>1 m	>1 m	>0.50 m
	Channel Morphology	Pool: 100%	N/A	N/A	N/A	Slow Riffle: 5% Glide: 95%	Flat: 96% Pool: 4%	Flat: 98% Pool: 2%	Flat: 98% Pool: 2%	Fast Riffle: 80% Slow Riffle: 15% Glide: 5%
Substrate Composition (approximate %)		Boulder: 2% Cobble: 2% Fines: 96%	Boulder: 5% Cobble: 5% Fines: 90%	Bedrock: 60% Boulder: 20% Fines: 20%	Bedrock: 20% Boulder: 20% Fines: 60%	Bedrock: 20% Boulder: 60% Fines: 10%	Bedrock: 5% Boulder: 15% Fines: 80%	Bedrock: 5% Boulder: 15% Fines: 80%	Bedrock: 5% Boulder: 5% Fines: 90%	Cobble: 15% Bedrock: 45% Boulder: 40%
Instream Cover (approximate %)		Macrophytes: 80% Rock: 5% Wood: 15%	Macrophytes: 80% Rock: 10% Wood: 10%	Macrophytes: 15% Rock: 75% Wood: 10%	Rock: 60% Wood: 40%	Bank: 15% Macrophytes: 5% Rock: 40% Wood: 40%	Bank: 5% Macrophytes: 50% Rock: 10% Wood: 25%	Bank: 5% Macrophytes: 40% Rock: 10% Wood: 45%	Bank: 15% Macrophytes: 40% Rock: 10% Wood: 35%	Rock: 80% Wood: 20%
Dominant Riparian Types (approximate %)		Macrophytes: 10% Grasses and Sedges: 45% Shrubs: 35% Trees: 10%	Macrophytes: 10% Grasses and Sedges: 45% Shrubs: 35% Trees: 10%	Grasses and Sedges: 10% Shrubs: 65% Trees: 25%	Grasses and Sedges: 10% Shrubs: 60% Trees: 30%	Macrophytes: 5% Grasses and Sedges: 10% Shrubs: 40% Trees: 45%	Macrophytes: 15% Grasses and Sedges: 70% Shrubs: 10% Trees: 5%	Macrophytes: 10% Grasses and Sedges: 80% Shrubs: 5% Trees: 5%	Macrophytes: 10% Grasses and Sedges: 80% Shrubs: 5% Trees: 5%	Grasses and Sedges: 30% Shrubs: 60% Trees: 10%
Representative baseline Habitat Sampling Locations (pre-2019)[1]		L-4, L-5, L-6, L-11, L-14, S-9 pond habitat	L-1, L-2, L-3, L-10, L-12, L-13, L-16	Birch Lake, Seagrave Lake, Springpole Lake (L-15)	S-14, S-16 (upstream reach), S-17, S-25	S-9 (upper reaches), stream between L-12 and L-13, S-16 (midstream and downstream reach), S-26 (upstream reach), S-29	S-16 (midstream reach)	S-16 (midstream reach), S-26 (downstream reach), S-28, (downstream reach)	S-27	None
Representative 2019-2020 Habitat Sampling Locations[2]		S-9 pond habitat	None	Springpole Lake (L-15)	UNX01, UNX03, L-4-OUT, L-6-OUT, S-9 (upstream reaches), S-19, S-20 (upstream reaches), S-21, S-22 (upstream reaches)	L-5-OUT (downstream reach), S-9 (upstream reach), S-18, S-21 (downstream reach), S-22 (downstream reach)	Connecting stream between L-1 and L-2, L-5-OUT (upstream reach)	S-20 (downstream reach), S-19 (upstream reach), S-21 (downstream reach)	UNX07	Birch River (BR-KM22)
Representative 2021-2023 Habitat Sampling Locations		L-17, L-18, L-19, L-20	None	Birch Lake, Springpole Lake (L-15)	None	None	None	None	None	None

Notes:
1. As per data reported within the earlier baseline documents (FMG & Portt 2018).
2. As per data reported within the recent baseline studies (Wood 20212021).

545000 547500 550000 552500 555000 557500 560000 562500 565000 567500

5697500 5695000 5692500 5690000 5687500

Birch Lake
Dole Lake
Springpole Lake (North Basin)
Springpole Lake (Southeast Arm)
Birch Lake
Satterly Lake
Cromarty Lake
Gull Lake
Birch River

2.1a
2.1b
2.1c
2.1d
2.1e
2.1f
2.1g
2.1h

L-1 L-2 L-3 L-4 L-5 L-6 L-10 L-11 L-12 L-13 L-14 L-16 L-17 L-18 L-19 L-20

PROJECT LOCATION

MAP OVERVIEW

Enlarged Area
Jackpine Lake
Birch Lake
Zionz Lake
Durkin Lake
Springpole Lake
RSW-2
Fawcett Lake
RSW-1
Gull Lake
Kezik Lake
Seagrave Lake
Bertha Lake
Deaddog Lake
Christina Lake
Strachan Lake
Bumpy Lake
Senior Lake
Marsh Lake
Hailstone Lake
RSW-3
SLATE FALLS NATION RESERVE
North Bamaji Lake
10 Km

LEGEND

- Project Location
- Local Study Area
- Regional Study Area
- Regional Study Area Sites
- Contour (10 m intervals)
- Watercourse
- Waterbody
- Flow Direction
- Fish Community Map Index (Labelled with Figure Number)

2022 and 2023 Sampling Locations

- Angling
- Dip Net
- Electrofishing
- Gill Net
- Minnow Trap
- Seine Net
- Surface Water Quality

*Netting locations from the 2022 and 2023 Lake Sturgeon and eDNA monitoring are provided on Figure 2-2.
**Netting locations from the 2022 Springpole Lake Broadscale monitoring assessment are provided on Figure 2-3.
***Sediment Quality and Benthic Invertebrate Community sampling locations are provided on Figure 2-4.

0 1 2 4 6 8 10 Kilometres

NOTES:
- Topographic information extracted from LIO, MNRF.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

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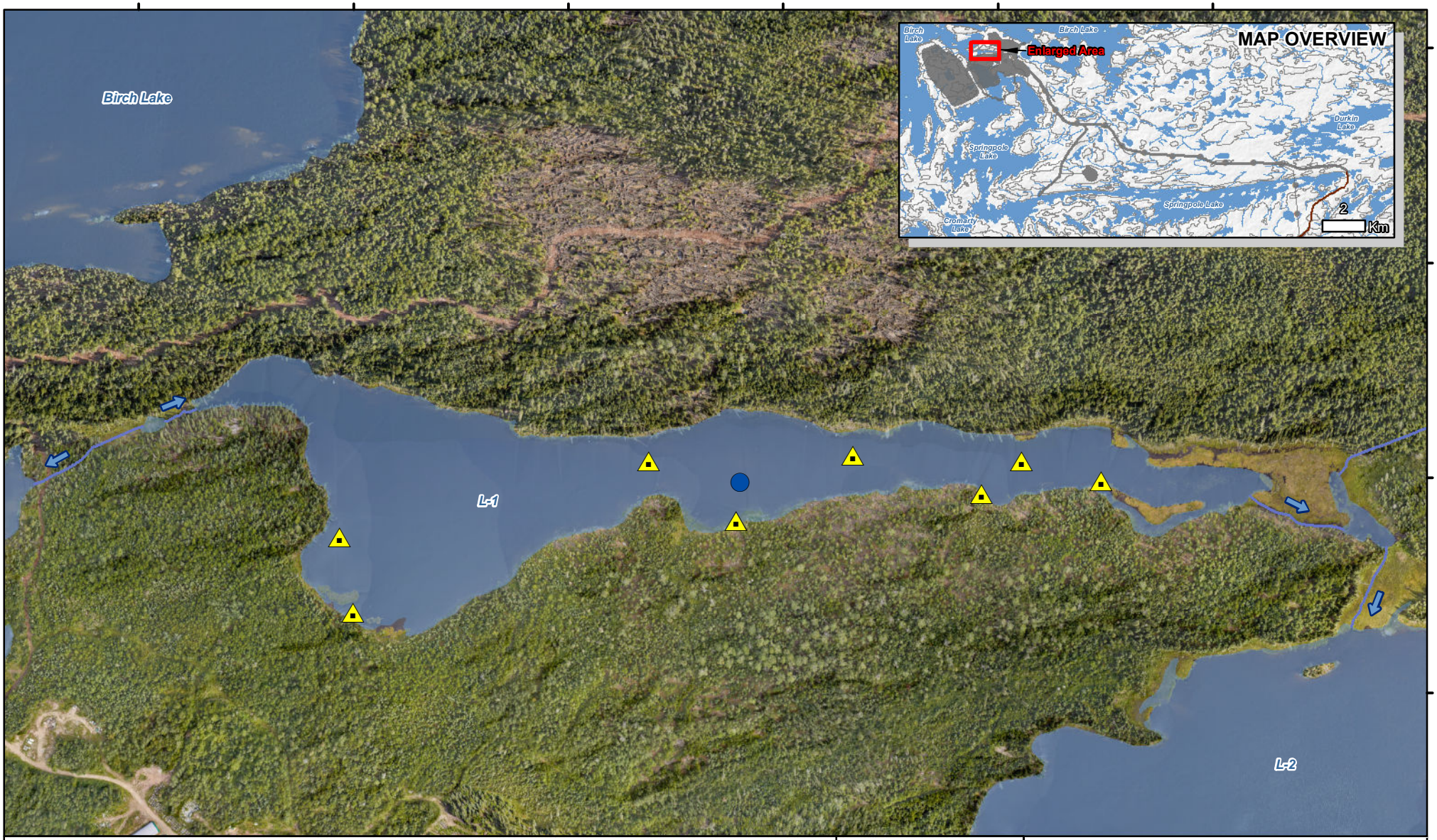
SPRINGPOLE GOLD PROJECT

2022 and 2023 Sample Locations

PROJECT N°: ONS2104 | **FIGURE: 2.1a**

SCALE: 1:65,000 | DATE: September 2024

X:\CA\CAOAK300-OAKMIS-FS1-Project\P2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\Fish_Community_Overview_3.mxd



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LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 and 2023 Sampling Locations

- Surface Water Quality
- Minnow Trap

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

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SPRINGPOLE GOLD PROJECT

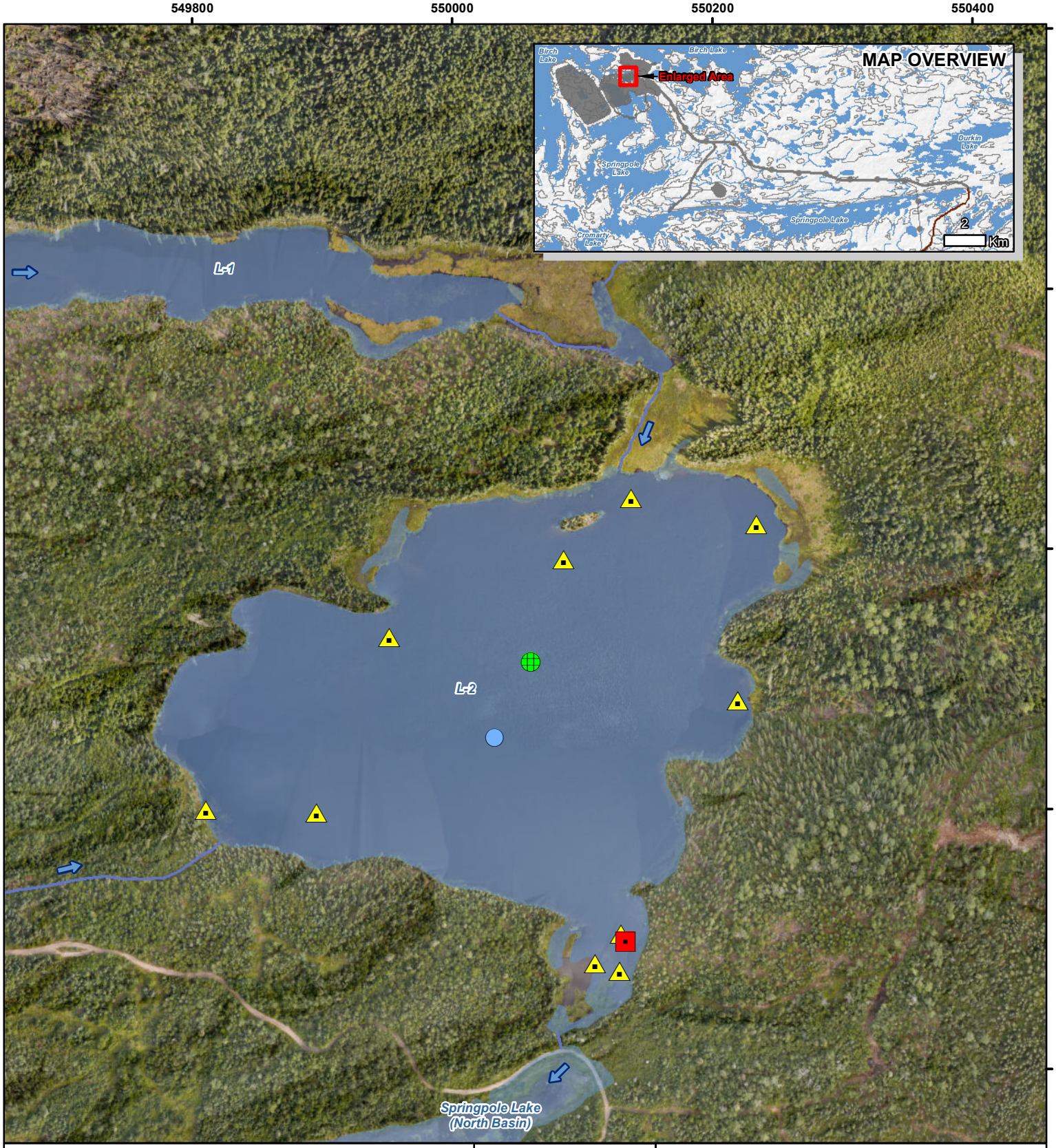
2022 and 2023 Fish Community and Surface Water Quality Sampling Locations L-1

Datum: NAD83
Projection: UTM Zone 15N

N
W
E
S

0 50 100 200 300 400 500 Metres

PROJECT N°: ONS2104	**FIGURE: 2.1b**
SCALE: 1:5,000	DATE: September 2024



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LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 Sampling Locations

- Surface Water Quality
- Gill Net
- Minnow Trap
- Seine Net

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

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SPRINGPOLE GOLD PROJECT

2022 Fish Community and Surface Water Quality Sampling Locations L-2

Datum: NAD83
Projection: UTM Zone 15N

0 50 100 200 300 400 Metres

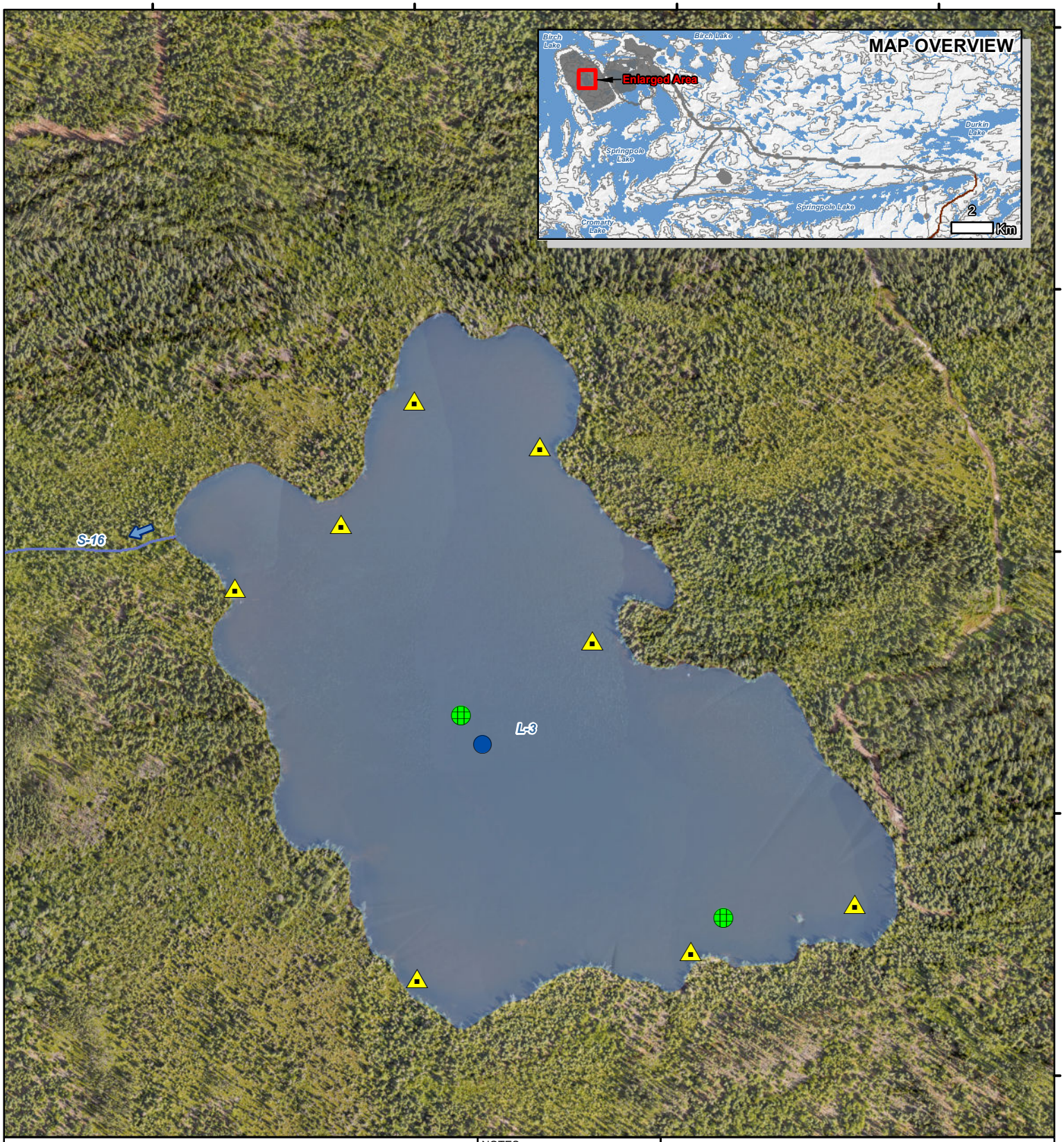
N W E S

PROJECT N°: ONS2104

FIGURE: 2.1c

SCALE: 1:4,000

DATE: September 2024



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LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 Sampling Locations

- Surface Water Quality
- Gill Net
- Minnow Trap

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 105877-0000-G-001, Rev C. 29 July 2021.
- Co-Disposal Facility provided by Knight Piésold Ltd., 27 September 2021.
- 230 kV transmission line provided by First Mining Gold, April 2024.

Datum: NAD83
Projection: UTM Zone 15N

0 50 100 200 300 400 Metres

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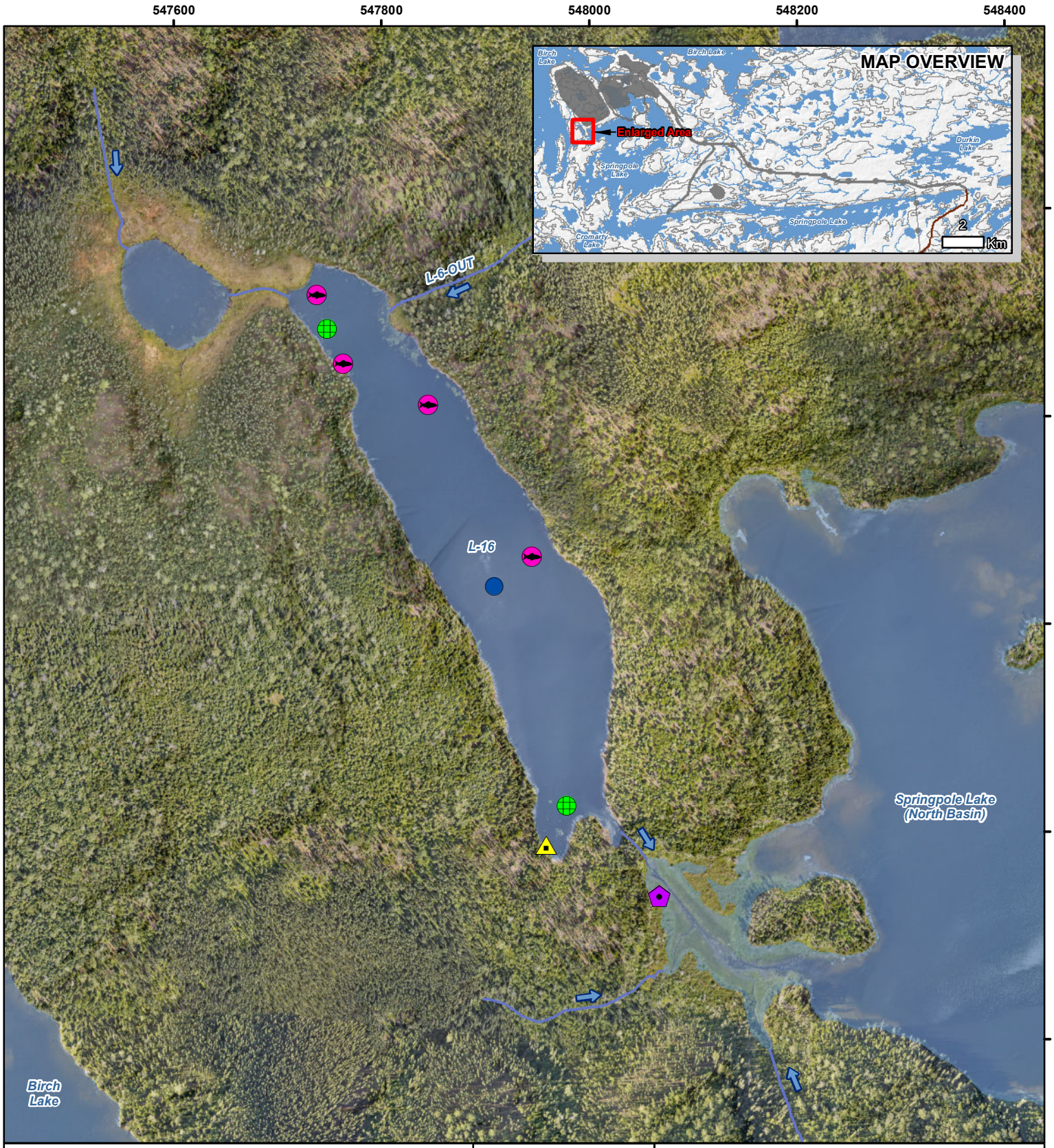
SPRINGPOLE GOLD PROJECT

2022 Fish Community and Surface Water Quality Sampling Locations L-3

PROJECT N°: ONS2104	**FIGURE: 2.1d**
SCALE: 1:4,000	DATE: September 2024



X:\CA\CAOAK300-OAK\MIS-FS1-Project\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\Fish_Community_SWQ_L16_3.mxd

LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 and 2023 Sampling Locations

- Surface Water Quality
- Angling
- Dip Net
- Gill Net
- Minnow Trap

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

Datum: NAD83
Projection: UTM Zone 15N

0 50 100 200 300 400 Metres

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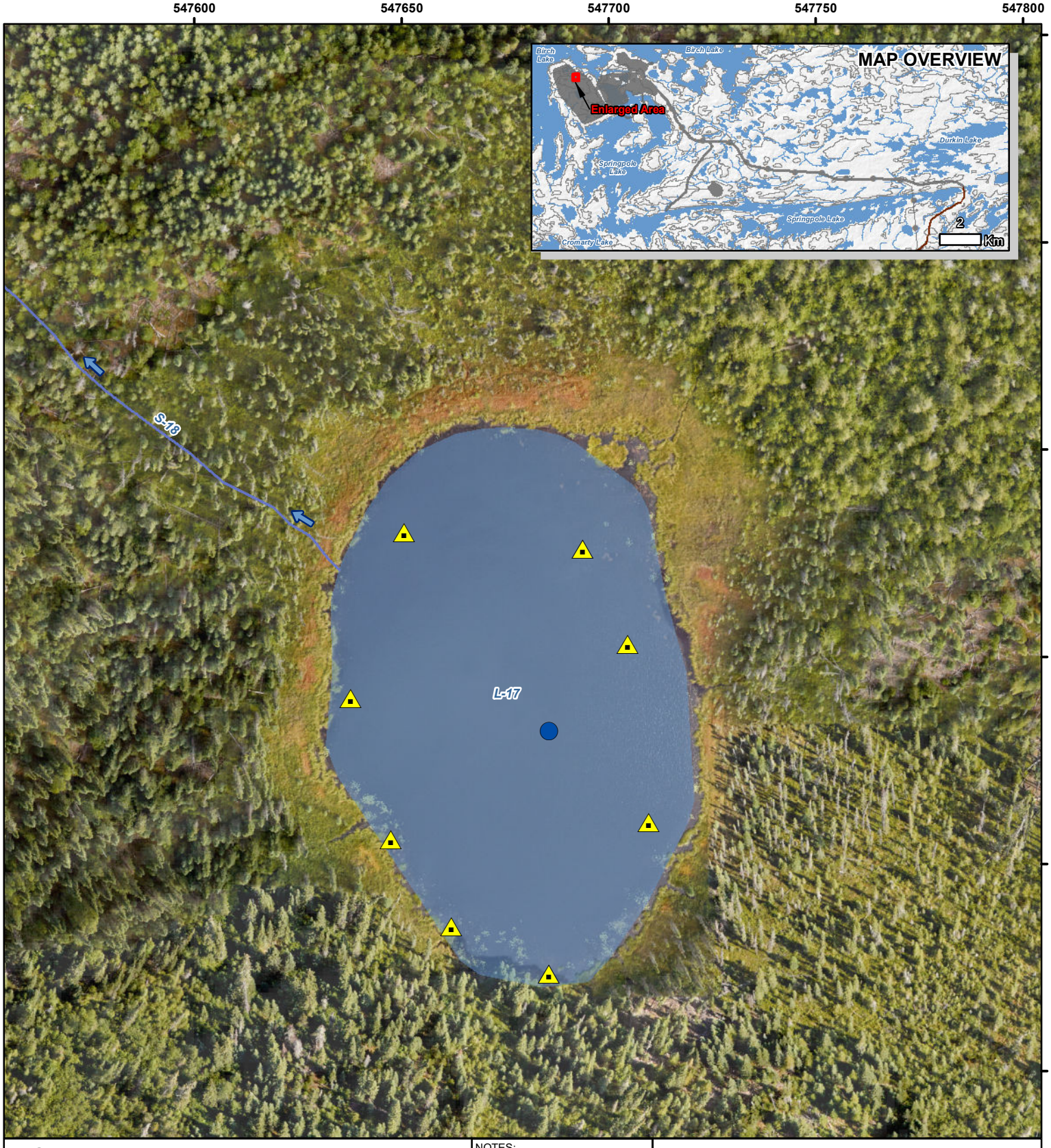
SPRINGPOLE GOLD PROJECT

2022 and 2023 Fish Community and Surface Water Quality Sampling Locations L-16

PROJECT N°: ONS2104	**FIGURE: 2.1e**
SCALE: 1:5,000	DATE: September 2024



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LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 Sampling Locations

- Surface Water Quality
- Minnow Trap

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

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SPRINGPOLE GOLD PROJECT

2022 Fish Community and Surface Water Quality Sampling Locations L-17

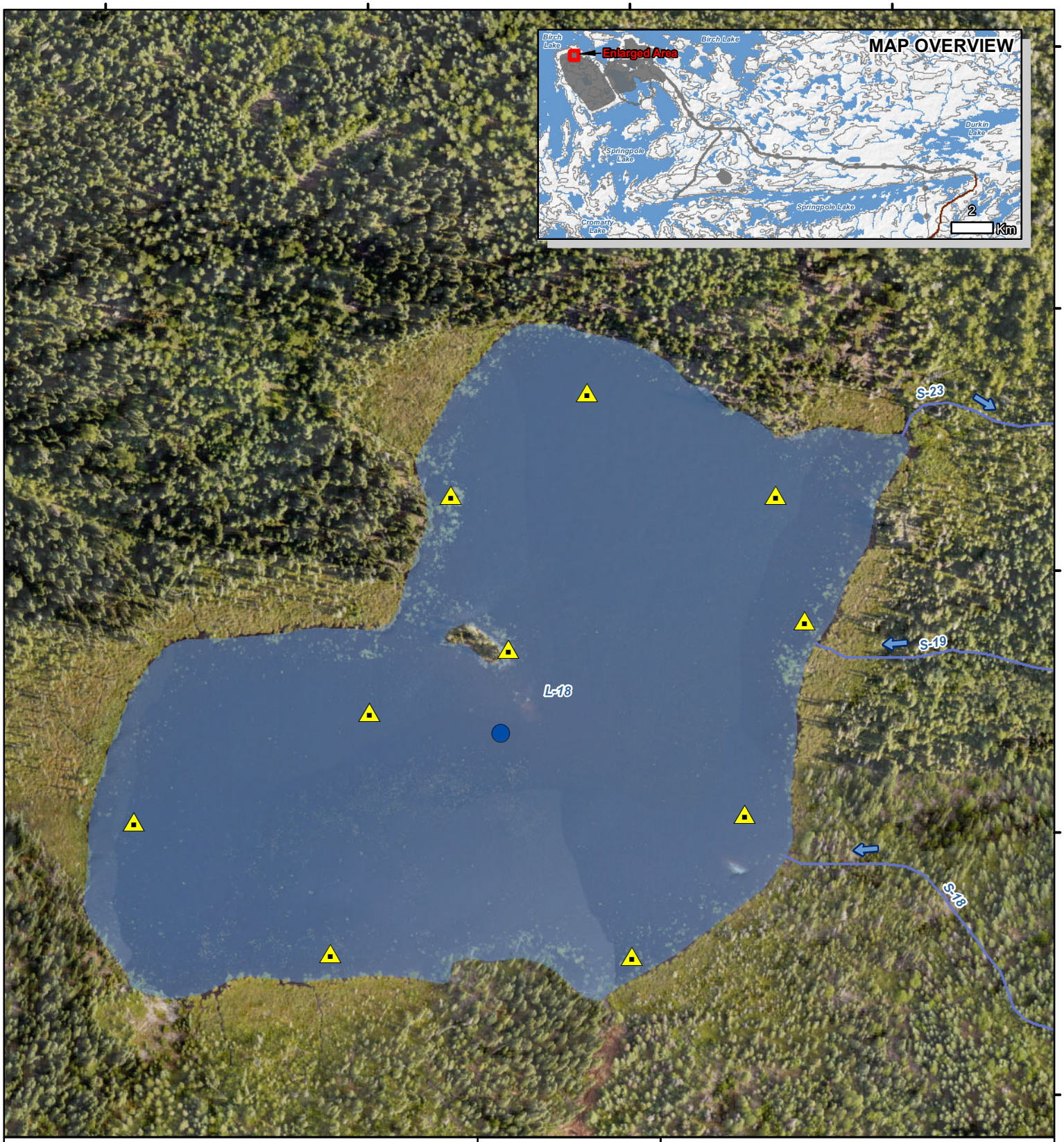
Datum: NAD83
Projection: UTM Zone 15N

0 10 20 40 60 80 100 Metres

N W E S

PROJECT N°: ONS2104 | **FIGURE: 2.1f**

SCALE: 1:1,250 | DATE: September 2024



X:\CA\CAOAK300-OAK\MIS-FS1-Project\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\Fish_Community_SWQ_L18_3.mxd

LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 Sampling Locations

- Surface Water Quality
- Minnow Trap

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

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SPRINGPOLE GOLD PROJECT

2022 Fish Community and Surface Water Quality Sampling Locations L-18

Datum: NAD83
Projection: UTM Zone 15N

0 25 50 100 150 200 Metres

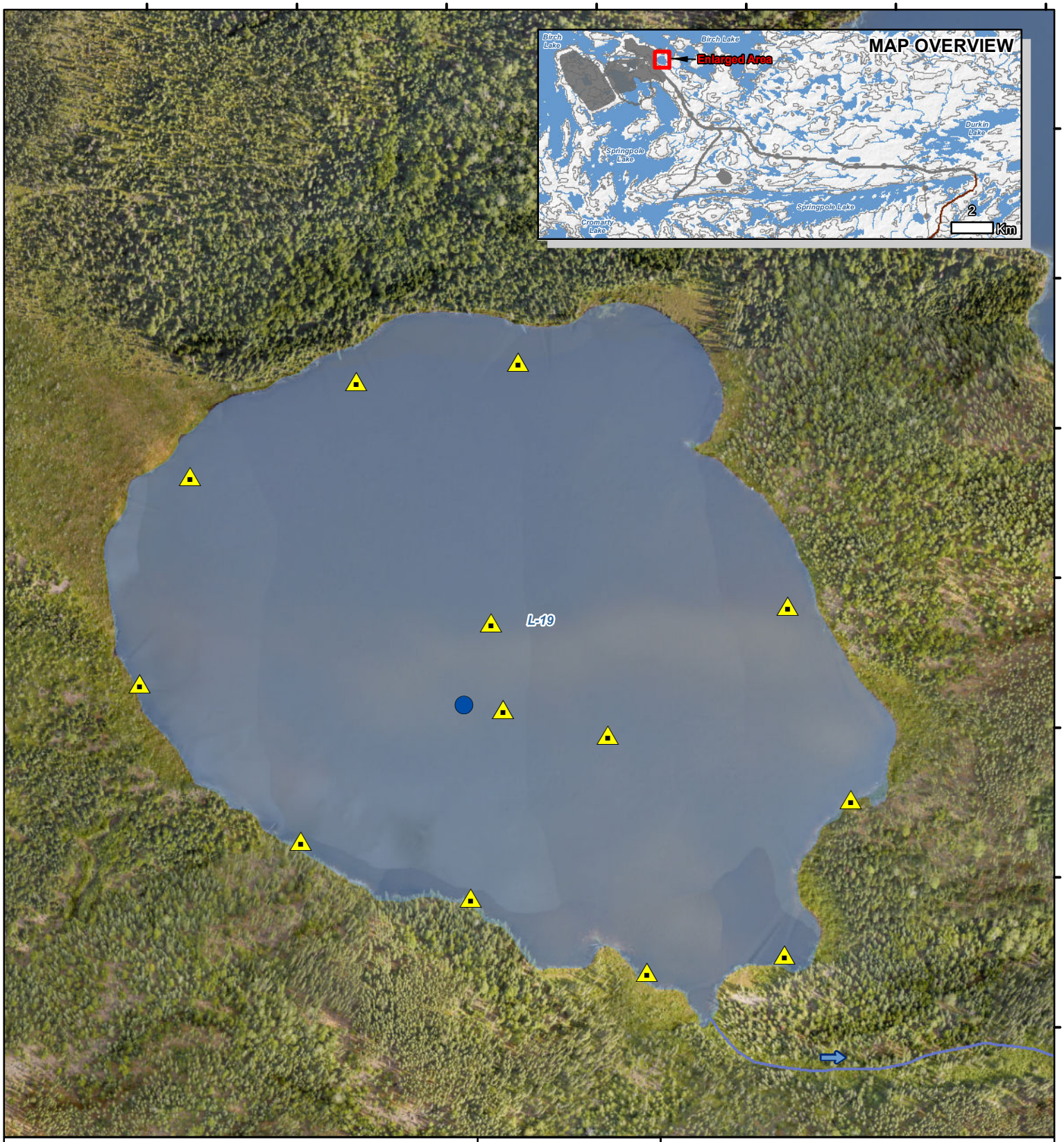
N W E S

PROJECT N°: ONS2104

FIGURE: 2.1g

SCALE: 1:2,000

DATE: September 2024



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LEGEND

- Watercourse
- Waterbody
- Flow Direction

2022 and 2023 Sampling Locations

- Surface Water Quality
- Minnow Trap

NOTES:
- Topographic information extracted from LIO, MNRF.
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

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SPRINGPOLE GOLD PROJECT

2022 and 2023 Fish Community and Surface Water Quality Sampling Locations L-19

Datum: NAD83
Projection: UTM Zone 15N

0 25 50 100 150 200 Metres

N W E S

PROJECT N°: ONS2104 | **FIGURE: 2.1h**

SCALE: 1:3,500 | DATE: September 2024

520000 540000 560000 580000 600000 620000 640000 660000 680000 700000

5740000 5720000 5700000 5680000 5660000

CAT LAKE FIRST NATION

SLATE FALLS NATION

MISHKEEGOGAMANG OJIBWAY NATION

LS-eDNA-14 LS-eDNA-13 Birch-eDNA-11 Birch-eDNA-12 Springpole-eDNA-05 Springpole-eDNA-09 Birch-eDNA-10 LS-eDNA-10 LS-eDNA-15 Springpole-eDNA-06 Springpole-eDNA-07 Springpole-eDNA-08 LS-eDNA-12 LS-eDNA-11 Springpole-eDNA-04 XL-GN2 XL-GN1 XL-GN9 XL-GN6 Springpole-eDNA-02 XL-GN5 XL-GN8 XL-GN4 XL-GN7 Springpole-eDNA-01 Springpole-eDNA-03 LS-eDNA-04 XL-GN10 XL-GN11 LS-eDNA-09 LS-eDNA-03 XL-GN12 XL-GN3 LS-eDNA-02 Gull-eDNA-14 Gull-eDNA-13 LS-eDNA-08 LS-eDNA-01 LS-eDNA-05 Cat-eDNA-15 LS-eDNA-07 LS-eDNA-06

Woolhouse Lake, Whitestone Lake, Sutterby Lake, Willis Lake, Little Cat Lake, Wigwasikak Lake, Tinker Lake, Kamungishkamo Lake, Whitelaw Lake, Sleep Lake, Upper Goose Lake, Riggs Lake, Cat Lake, Hopley Lake, Turp Lake, Shearstone Lake, Wavell Lake, Good Site Lake, Retter Lake, Bertrand Lake, Blondin Lake, Kapikik Lake, Mainprize Lake, Graham Lake, Gitche Lake, Jackpine Lake, Mink Lake, Little Shabumeni Lake, Birch Lake, Zionz Lake, Durkin Lake, Fawcett Lake, Superstition Lake, Gull Lake, Swain Lake, Grace Lake, Bertha Lake, Premier Lake, Okanse Lake, Cook Lake, Marsh Lake, Hailstone Lake, Christina Lake, Latreille Lake, Margaret Lake, Agnew Lake, Perrigo Lake, Sesikinaga Lake, One Island Lake, Wakeman Lake, Jeanette Lake, Snelgrove Lake, Senior Lake, Kezik Lake, Graydarl Lake, Satterly Lake, Cromarty Lake, Springpole Lake (North Basin), Springpole Lake (Southeast Arm), Dole Lake, Keigat Lake, Durkin Lake, Birch River, Gull Lake, Seagrave Lake, Granitebos Lake, Mousetrap Lake, Fry Lake, Duffell Lake, Jarrow Lake, Carpenter Lake, Austin Lake, Bamaji Lake, Blackstone Lake, Lake St. Joseph, Whitmore Lake, Sky Lake, Wincott Lake, Kasagiminnis Lake, Annimwash Lake, Osnaburgh Lake

2 Km

LEGEND

- Project Location
- qPCR eDNA Samples (Spring 2023)
- Metabarcoding eDNA (2022)
- Lake Sturgeon Netting Location (2022)
- Aquatic Local Study Area
- Aquatic Regional Study Area
- Aquatic Regional Study Area Sites
- Existing Road
- Existing Transmission Line
- Watercourse
- Waterbody

0 5 10 20 30 40 50 Kilometres

NOTES:
- Topographic information extracted from LIO, MNRF.

Datum: NAD83
Projection: UTM Zone 15N

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SPRINGPOLE GOLD PROJECT

2022 Lake Sturgeon Netting and 2022/2023 eDNA Sampling Locations

PROJECT N°: ONS2104 | **FIGURE: 2.2**

SCALE: 1:450,000 | DATE: September 2024

X:\CA\CAOAK300-OAK\MS-FS1-Project\P20211\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\LakeSturgeon_eDNA_Locs_3.mxd

547500 550000 552500 555000 557500 560000 562500 565000

5695000 5692500 5690000 5687500

Birch Lake
Dole Lake
Durkin Lake
Springpole Lake (North Basin)
Springpole Lake (Southeast Arm)
Birch River
Cromarty Lake
Satterly Lake
Seagrave Lake

L-1 L-2 L-3 L-4 L-5 L-6 L-10 L-11 L-12 L-13 L-14 L-16 L-17 L-18 L-19 L-20

NB01 NB02 NB03 NB46 CB07 EB05

PROJECT LOCATION

NB-LG-GN1 NB-LG-GN2 NB-LG-GN3 NB-LG-GN4 NB-LG-GN5 NB-LG-GN6 NB-LG-GN7 NB-LG-GN8 NB-LG-GN9 NB-LG-GN10 NB-LG-GN11 NB-LG-GN12 NB-LG-GN13 NB-LG-GN14 NB-LG-GN15
NB-SM-GN1 NB-SM-GN2 NB-SM-GN3 NB-SM-GN4a NB-SM-GN4b NB-SM-GN5a NB-SM-GN5b NB-SM-GN6 NB-SM-GN7 NB-SM-GN8 NB-SM-GN9
EB-LG-GN1 EB-LG-GN2 EB-LG-GN3 EB-LG-GN4 EB-LG-GN5 EB-LG-GN6 EB-LG-GN7 EB-LG-GN8 EB-LG-GN9 EB-LG-GN10 EB-LG-GN11 EB-LG-GN12
EB-SM-GN1 EB-SM-GN2 EB-SM-GN3 EB-SM-GN4 EB-SM-GN5 EB-SM-GN6 EB-SM-GN7

X:\CA\CAOAK300-OAKMIS-FS1-Project\P2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\Broadscale_Monitoring_Sample_Locs_2.mxd

LEGEND

- Project Location
- Contour (10 m intervals)
- Watercourse
- Waterbody
- Flow Direction

Broadscale Monitoring Sample Locations (Depth Below Water Level, Metres)

- 1 - 3
- 3 - 6
- 6 - 12
- 12 - 20
- 20 - 35

- Springpole Lake
- Springpole Lake Basin

Springpole Lake Bathymetry (Filled Contours, Metres)

- 0 - 1
- 1 - 3
- 3 - 6
- 6 - 12
- 12 - 20
- 20 - 35
- > 35

NOTES:
- Topographic information extracted from LIO, MNRF.
- Springpole Lake bathymetry provided by Story Environmental Inc, 2017/2019.

Datum: NAD83
Projection: UTM Zone 15N

0 1 2 4 6 8 10 Kilometres

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SPRINGPOLE GOLD PROJECT

2022 Broadscale Monitoring Netting Locations

PROJECT N°: ONS2104 | **FIGURE: 2.3**

SCALE: 1:50,000 | DATE: September 2024

547000
548000
549000
550000
5695000
5694000
5693000
5692000
5691000

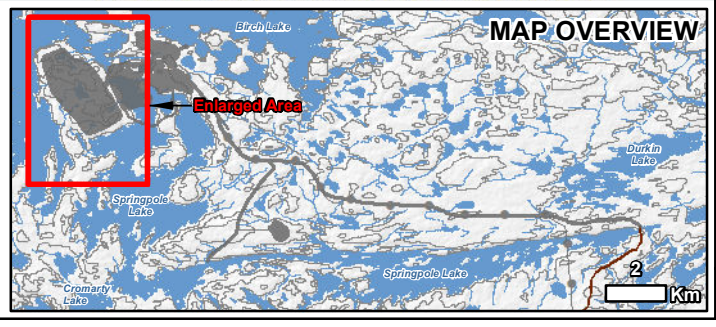
BIRCH-4
BIRCH-5
BIRCH-1
BIRCH-3
BIRCH-2
L-16
L-15-B3a
S-23
S-19
S-22
S-18
S-21
S-16
S-17
L-18
L-17
L-1
L-2
L-3
L-4
L-5
L-5-OUT
L-6
L-6-OUT
Birch Lake
Springpole Lake (North Basin)

X:\CA\CAOAK300-OAK\MIS-FS1-Project\F\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\Sediment_Benthic_Sample_Locs_3.mxd

LEGEND

- Sediment Quality and Benthic Invertebrate Community Sampling Location
- Proposed Mine Feature
- Watercourse
- Waterbody
- Flow Direction

MAP OVERVIEW



NOTES:
- Aerial imagery provided by First Mining Gold, August 2020.
- Proposed site plan provided by Ausenco, drawing number 104496-GX-03000-31344-003, Rev 1. 26 June 2023 and modified by WSP July 2023.
- 230 kV transmission line provided by First Mining Gold, April 2024.

Datum: NAD83
Projection: UTM Zone 15N

0 0.25 0.5 1 1.5 2 Kilometres

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SPRINGPOLE GOLD PROJECT

Sediment Quality and Benthic Invertebrate Community Sampling Locations

PROJECT Nº: ONS2104	**FIGURE: 2.4**
SCALE: 1:15,000	DATE: September 2024

3.0 RESULTS AND DISCUSSION

The 2022 and 2023 aquatic resources study results are presented by waterbody and field program components in Sections 3.1 to 3.13. The field programs also included the collection of surface water quality samples (near surface and discrete depth intervals at select locations) with the results presented in a separate updated water quality baseline report (WSP 2023; WSP 2024). Where applicable, baseline data from earlier Project studies have been included in the interpretation of results and data presentation, thereby summarizing the larger Project-specific dataset.

The following appendices (and associated tables and figures) provide area-specific assessment results for the inland waterbodies, Springpole Lake, Birch Lake, and the RSA as appropriate:

- Fish habitat characterization and previous baseline habitat type delineations, including spawning observations in Appendix A (Table A1-1; Figures A1-1a to A1-1e);
- Fish community survey results including gear-specific capture results listing fish species occurrence in each waterbody in Appendix B (Tables B1-1 to B1-17; Figures B1-1 to B1-8);
- eDNA metabarcoding and qPCR results detailing fish species DNA detections from eDNA samples in Appendix C (Tables C1-1 to C1-2);
- Concentrations of select contaminants of concern in fish tissue, including total mercury and methylmercury and fish aging in Appendix D (Table D1-1 to D1-5; Figures D1-1 to D1-11, Figures D2-1 to D2-12, Figures D3-1 to D3-7, Figures D4-1 to D4-2, Figures D5-1 to D5-2, and Figures D6-1 to D6-2);
- In-field physicochemical surface water quality parameters, including water quality profiles in Appendix E (Table E1-1; Figures E1-1 to E1-40);
- Lower trophic and primary productivity results in Appendix E (Table E2-1; Figures E2-1 to E2-17);
- Sediment quality results in Appendix F (Tables F1-1 to F1-9);
- The BIC results including descriptive community-based metrics for each sample area, as well as the raw data and associate community metrics plots (Tables F2-1 and F2-2; Figures F2-1 to F2-7);
- Quality Assurance and Quality Control in Appendix G (Tables G1-1 to G1-3 and Table G2-1); and
- Photographic record in Appendix H.

3.1 Springpole Lake (L-15)

Six deep basin locations within Springpole Lake (L-15) and eight surface water locations within or at inflows or outflows of the lake were sampled during 2022 and 2023 (Figure 2-1a). The deep basin locations and SW-01b had in situ water quality measurements taken, along with additional lake profiles and lower trophic sampling, including chlorophyll *a*, phytoplankton, zooplankton and samples at depth. Five of the basin locations and SW-01b were positioned within the northern portion of the lake, upgradient of the Birch River inflow (outlet of Cromarty Lake). One location (L-15-B5) was positioned within a deep basin near the eastern extent of L-15's southeast arm, between the Birch River inflow and outlet. The other seven surface water locations had in situ measurements and water quality samples taken at 1 m. The proposed treated effluent discharge location is positioned within the southeast arm, which allowed for the 2022 and 2023 aquatic resources assessment to collect information that built upon existing L-15 data and contribute to a baseline dataset in the proposed receiving area to aid in future environmental monitoring and assessment.

The following field studies occurred during 2023 in L-15:

- Winter water quality sampling; and
- Spring water quality and Lake Sturgeon eDNA sampling.

3.1.1 Fish Habitat

L-15 is characterized as Habitat Type C, which represent large lake (lentic) environments. There are two general basins within L-15; the northern basin that receives drainage from inland waterbodies and the relatively narrow southeast arm that runs from the Cromarty Lake inflow on the west to lake outflow in the east. The nearshore substrate composition at the survey locations was composed mostly of exposed bedrock and boulders, whereas areas near tributary inflows and sheltered embayments consisted of soft fine-grained sediments. Substrate at the lake bottom within the shallow embayments is dominated by submerged macrophytes, including watermilfoil (Myriophyllum sp.) and pondweed (Potamogeton sp.) species, and floating macrophytes such as Water Lily (*Nymphaea*). The emergent macrophyte community along the shorelines of surveyed areas is dominated by sedges and rushes, as well as localized areas with Water Horsetail (*Equisetum fluviatile*), Broadleaf Cattail (*Typha latifolia*), and Sweet Flag (*Acorus calamus*). Vegetation in the upland zones included mainly mixed forest dominated by Black Spruce and Tamarack, while vegetation within the riparian zone included woody shrub species such as alder and herbaceous species.

3.1.1.1 Fish Habitat Offset and Compensation Surveys

Seven fish habitat transects were surveyed during spring 2023 to characterize fish habitat offset and compensation opportunities within Springpole Lake. Studies have shown that forgage fish abundance, including Spottail Shiner (*Notropis hudsonius*), in near shore areas can be increased through the placement of large woody debris structures in the litoral zone (Theis et al. 2022). Surveys at these locations (Figures A1-1a to A1-1e) noted a lack of large woody debris in nearshore littoral zones, likely due to wave action and low water levels during 2023. Most large woody debris structures were on-shore, with little to no coverage in the near-shore littoral zone. A total of 36 log structures were noted in 3,800 m of shoreline surveyed, averaging approximately 1 log structure every 100 m of shoreline. It is anticipated that creation of anchored large woody debris structures in Springpole Lake can provide structure and habitat for forage fish, positively impacting overall lake productivity.

3.1.2 Fish Community

Fish community sampling occurred during the 2022 and 2023 field season and consisted off five major components: spring Lake Sturgeon presence / absence netting, spring lethal forage fish (small-bodied) sampling, eDNA spring and summer sampling, a summer BsM netting program, and 2023 spring Lake Sturgeon eDNA sampling. A hydroacoustic fish community study was also conducted on Springpole Lake in the summer of 2022 and is documented as a separate report (Milne 2023).

3.1.2.1 Lake Sturgeon

Twelve nets were set using the modified RIN protocol for spring 2022 Lake Sturgeon netting surveys in the southeast arm of Springpole Lake. No Lake Sturgeon were caught during the netting program. A total of six fish were captured: three Lake Trout and three Walleye. The eDNA sampling conducted in spring (concurrently with netting) and summer 2022 and spring 2023 did not detect any Lake Sturgeon DNA in Springpole Lake or any of the other sample areas, suggesting Lake Sturgeon are in very low abundance or not present.

3.1.2.2 Standard Capture Techniques

The L-15 fish community was assessed during spring and summer 2022 using standard capture techniques (i.e., gillnets, dip nets, seine nets, angling). Surveys occurred during the spring Lake Sturgeon presence / absence netting (Figure 2-2), spring small-bodied lethal sampling (Figure 2-1a), and summer BsM program

(Figure 2-3). CPUE tables for all sampling techniques across seasons are displayed in Appendix B, Tables B1-1 to B1-6.

The spring small-bodied lethal sampling employed gillnets and dip nets to capture the required samples of forage fish for tissue analysis. A total of 707 individuals were captured, including Yellow Perch, Spottail Shiner, Blacknose Shiner, Finescale Dace (*Chrosomus neogaeus*), Emerald Shiner (*Notropis atherinoides*) and Common Shiner (*Luxilus cornutus*). Of these, a total of 249 fish (including Yellow Perch, Blacknose Shiner and Spottail Shiner) were retained for analysis. Dip nets were the most effective capture method, making up 93.2% of total captures. The August BsM netting program followed the Sandstrom et al. (2013) protocol and captured a total of 1,191 individual fish, of 15 total species: Burbot (mizay; *Lota lota*), Cisco (odoonibiins; *Coregonus artedi*.), Finescale Dace, Golden Shiner (*Notemigonus crysoleucas*), Lake Trout, Lake Whitefish, Logperch (*Percina caprodes*), Northern Pike, Rock Bass (ashigan; *Ambloplites rupestris*), Shorthead Redhorse (*Moxostoma macrolepidotum*), Spottail Shiner, Trout-perch, Walleye, White Sucker (nambin; *Catostomus commersonii*) and Yellow Perch. The species captured in the greatest abundance were Walleye (n = 388) and Yellow Perch (n = 329).

All species captured were observed in other baseline studies, with the exception of Finescale Dace and Golden Shiner which had not been previously captured in L-15. Table 3-1 provides a comprehensive list of fish species for all the Project watercourses and waterbodies. L-15 contains 26 fish species, 16 of which are categorized as small-bodied or forage species. Additional data regarding the L-15 fish community and movement patterns of large-bodied species are described within baseline reports under separate cover (FMG & Portt 2018; Wood 2021; Wood 2022).

3.1.2.3 Environmental DNA Fish Community

Metabarcoding analysis identified DNA from 26 and 22 species in water samples from Springpole Lake (Springpole-eDNA-01 to Springpole-eDNA-09) taken during spring and summer 2022, respectively (Tables C1-1 and C1-2). Of these fish species, only *Coregonus* (Lake Whitefish or Cisco), *Cottidae* (sculpins), and *Rhinichthys* (Eastern Blacknose Dace [*Rhinichthys atratalus*] or Longnose Dace [*Rhinichthys cataractae*] in this region) were identified to the genus taxa level and *Salmonidae* (Lake Trout, Lake Whitefish or Cisco) to the family taxa level. Species-level DNA only detected in the spring samples included: Finescale Dace, Lake Chub (*Couesius plumbeus*), Golden Shiner, Blacknose Shiner, and Bluntnose Minnow (*Pimephales notatus*) while those detected solely in summer included: *Rhinichthys* and *Coregonus*. While the *Coregonus* genus was only reliably detected in summer, *Salmonidae* family DNA was detected in spring that could not be confirmed at the genus or species level. Meaning *Coregonus* (Lake Whitefish or Cisco) DNA could have been present in the spring samples. A total of 27 species' DNA were identified across both sampling events, all of which were previously captured using conventional fish community survey gear and standard sampling techniques.

Closely related species, with recent common ancestry, may share barcode sequences and result in metabarcoding misidentification. Local knowledge is necessary to filter detections and help ensure the proper sequencing of results. Walleye and Sauger have recent common ancestry and metabarcoding may incorrectly identify both species to be present; however, Indigenous knowledge confirms only Walleye to be present within Springpole Lake. Furthermore, the sculpin family does not represent well within the metabarcoding analysis. As such, DNA detections from the *Cottidae* family are presented at the genus taxa level, rather than being identified to species.

Spring 2023 qPCR analysis of eDNA samples did not detect Lake Sturgeon DNA from any samples, including those taken in Springpole Lake, Birch Lake, Lake St. Joseph, and in the Cat River System. Seven locations were sampled in triplicate (21 samples total) in the Springpole Lake area, one at the Springpole Lake outflow (LS-eDNA-03), one at the Cromarty Lake inflow (LS-eDNA-04), one in the Springpole Lake southeast arm (LS-eDNA-09) and four in the Springpole Lake north basin (LS-eDNA-10, LS-eDNA-11, LS-eDNA-12 and LS-eDNA-15; Figure 2-2). To date, no eDNA samples collected have contained Lake Sturgeon DNA.

3.1.2.4 Broadscale Monitoring Program

The Springpole Lake BsM program was undertaken from 16 to 23, 2023, capturing 1,191 individual fish of 15 species (see Section 3.1.2.2). Species catch and CPUE results are provided in Tables B1-7 to B1-17. The total CPUE per species ranged from 0.003 for Logperch to 1.019 for Yellow Perch, with results from individual basins showing varying catch success. The focal deepwater species; Lake Trout and Lake Whitefish had the highest CPUE in NB02 and NB03, respectively, while Walleye and Northern Pike, commonly targeted sportfish, had the highest CPUE in NB46, EB05 and CB07.

A total of 16 Lake Trout were captured throughout the BsM program, with captures occurring in all basins except from CB07. During the spring Lake Sturgeon netting survey, however, Lake Trout were captured within CB07. Of these four basins, half of the captures occurred in NB02, and these included smaller individuals such as juveniles / young adults. Three captures occurred in each of NB01 and NB03, making 87.5% of all Lake Trout captures occurring in the northern basins of Springpole Lake. These results correspond with a separate hydroacoustic study conducted by Milne Technologies (2022), which showed higher estimated fish density at depths >12 m in these locations compared to other basins.

The highest catches occurred in the 1 to 3 m and 3 to 6 m depth strata, totalling 374 and 353 individuals captured, respectively. Captures within these strata ranges were primarily composed of Walleye and Yellow Perch, at 80% and 78% of all fish captures, respectively. All other strata capture numbers ranged from 115 (12 to 20 m) to 176 (6 to12 m) individuals. Cisco dominated the captures within the deeper depth strata, representing 70% (12 to 20 m) and 76% (20 to 35 m), respectively.

Cool water species (e.g., Walleye, Yellow Perch, Northern Pike, White Sucker and others) were found abundantly in the NB46, CB07 and EB05 basins compared to coldwater species (e.g., Lake Trout, Lake Whitefish, Burbot, Cisco) that inhabited the deeper northern basins.

Overall, fish caught in Springole Lake are of average to good condition (condition factor [k]; Williams 2000) as shown in Figures B1-7 and B1-8. The target species of Lake Trout, Lake Whitefish and Walleye had 27%, 53% and 2% of fish classified as good (k >1) and 0%, 7% and 3% as poor (k < 0.6), respectively. Northern Pike, however, had 94% of fish captures in the poor condition. This is similar to Birch Lake, which had 0%, 1% and 0% poor condition fish for Lake Trout, Lake Whitefish and Walleye, respectively, and 90% for Northern Pike.

An area-weighted CPUE analysis following MNR protocol (personal comm., MNR 2024) determined the overall Springpole Lake relative abundance to be 0.5989 based upon the 2022 BsM cycle. This is nearly identical to Birch Lake BsM cycle 1 conducted in 2009, with a value of 0.5944; however, despite similar effort, subsequent Birch Lake cycles saw a lower area-weighted relative abundance of 0.4863 and 0.3629 for cycles 2 and 3, respectively. Springpole Lake species density estimates using catch data indicate a population density of 0.3 Lake Trout per hectare and 2.5 Walleye per hectare, equating to 49 Lake Trout and 402 Walleye in the NB01 basin and 838 Lake Trout and 6840 Walleye total in Springpole Lake. Applying a production ratio (0.18 for Lake Trout and 0.29 for Walleye; Randall and Minns 2000), it suggests NB01 annually produces nine Lake Trout and 117 Walleye. These estimates are considered low because catch data were filtered to include only large mesh catch, as small mesh nets are intended for use to characterize

small-bodied fish communities and account for retention selectivity (minimum fish sizes for gillnet retention), which removed smaller caught fish from the analysis following MNR protocol (personal comm., MNR 2024). Birch Lake density estimates were similarly low with Lake Trout ranging from 0 to 0.2 fish per hectare and Walleye from 2.4 to 3.1 fish per hectare. It is anticipated that future BsM monitoring cycles in Springpole Lake may increase sample size and refine the density estimates.

Catch results and hydroacoustic information suggest that the northern deep basins (NB01, NB02, and NB03) provide important summer habitat for coldwater species (including Lake Trout and Lake Whitefish) and that fish densities are similar among these basins (Milne Technologies 2022). Furthermore, Milne found that the highest average density of non-schooling fish (i.e., Lake Trout, Northern Pike, large Walleye) was found in NB03 (1085 fish ha-1), followed by NB01 (767 fish ha-1) and then NB02 (483 fish ha-1). In these three deepwater basins, when total water depth was >18 m, large, non-schooling fish tended to occupy a pelagic, mid-water layer between 18 and 25 m that closely aligned with the bottom of the thermocline where water temperatures were <7°C. In contrast, netting efforts indicate that NB02 may have the highest proportion of Lake Trout of the three basins, despite having the lowest average density of non-schooling fish. This suggests NB02 may provide disproportionally significant Lake Trout summer refugia habitat compared to the other Springpole Lake basins.

The discrepancies between hydroacoustic and BsM density estimates are likely the result of absolute versus inferred fish biomass. Hydroacoustic sampling has the ability to capture a biomass snapshot at a given time and place, while catch data compose a small sample of the biomass in a given area for a set period of time, curtailed by factors such as gear biases, fish size and species. It is also important to consider the strength of each strategy and how they can compliment each other; recognizing the differences between techniques and estimates doesn't invalidate one method, yet serves as a reminder of what each technique can provide for a wholistic picture of current conditions. For example, the acoustic estimates suggest that the NB01 basin has similar biomass to both NB02 and NB03, and that most non-schooling fish resided between 18 to 25 m deep. The bathymetry corroborates this as 37% of the habitat deeper than 12 m (which aligns with BsM netting strata) in Springpole Lake is in NB01, or approximately one-third, and contains only 16% of the 18 to 25 m habitat. The hydroacoustic work is a great tool for providing overall biomass, but it doesn't distinguish well between species of similar sizes, or in this case large, non-schooling sportfish. BsM provides these details by viewing catch per strata and estimating the proportion of each species per unit biomass. Given that Lake Trout represented 1.38% of total catch in Springpole Lake below 12 m deep, when you apply this to the hydroacoustic density estimate of 767 fish ha^{-1} in NB01, it suggests an average density of approximately 11 Lake Trout per hectare. Alternatively, Lake Trout make up 0.74% of catch below 20 m deep; using this value the average density lowers to approximately six Lake Trout per hectare. Using the BsM catch data to interpret the hydroacoustic results provides a tangible, and relatable, density estimate of 6 to 11 Lake Trout per hectare for the 18 to 25 m depth strata.

3.1.2.5 Northern Pike Spawning Habitat Assessment

Fish habitat and spawning habitat surveys in the northern basins of L-15 for Lake Trout, Walleye, Northern Pike, and Lake Whitefish were described in the 2018 existing conditions report (FMG & Portt 2018) and supplemented during the 2021 field studies (Table A1-1). The 2022 field studies contributed to these efforts and completed Northern Pike spawning habitat assessments throughout L-15 during spring (June) 2022.

The spawning use assessment findings, substrate type, bathymetry and species-specific spawning requirements for Northern Pike, Lake Trout, and Lake Whitefish were used to generate a series of figures to illustrate observed spawning sites and locations of candidate habitats that meet species-specific needs (Wood 2022). Northern Pike spawning habitat was assessed in 2022, and a description of their species-specific spawning habitat requirements is provided below.

Northern Pike spawning habitat typically includes nearshore and even flooded riparian (terrestrial) areas accessible during the spring freshet (high water) period. As such, suitable candidate Northern Pike spawning habitat within Springpole Lake was inferred using water depths within 0 to 2 m that contained soft substrate and emergent vegetation. Figures A1-1a to A1-1e illustrate the suitable candidate spawning habitat where the above features overlap, as well as green transects where Northern Pike spawning surveys have been conducted. The areas outlined in yellow, with brown hatch marks and light blue base colour are commonly present throughout Springpole Lake, suggesting Northern Pike have spawning habitats available throughout the nearshore areas. Additionally, previous spawning activity was observed in habitat that met only some of the above screening criteria, further demonstrating abundant nearshore areas with candidate Northern Pike spawning habitat are present in Springpole Lake.

3.1.3 Fish Tissue

A total of three composite samples were analyzed from Springpole Lake for the spring small-bodied lethal sampling; two composite samples of Blacknose Shiner from the L-15-07a, and one composite sample of Yellow Perch from the L-15-08a. Due to the small-bodied size of Blacknose Shiner captured within L-15-07a, and the capture limits as per the MNRF fish collection licence conditions, additional composite samples for this species could not be obtained for analysis. Yellow Perch were not captured at the L-15-07a sample location in 2022.

Due to lab error, the L-15-08a sample was not analyzed. Both Blacknose Shiner tissue samples from L-15-07a exceeded CCME (2000) guidelines for methylmercury concentrations (0.033 mg/kg) for the protection of wildlife consumers of aquatic biota with levels of 0.034 mg/kg and 0.038 mg/kg. All other parameters were similar between the two composites with the highest values for aluminium, arsenic, cadmium, cobalt, copper, iron, and selenium being 1.7 mg/kg wwt, 0.127 mg/kg wwt, 0.0248 mg/kg wwt, 0.0118 mg/kg wwt, 0.687 mg/kg wwt, 23.8 mg/kg wwt and 0.533 mg/kg dwt, respectively (Table D1-1).

During the August 2022 BsM program, 86 fish tissue samples were collected and analyzed. Samples consisted of 14 Lake Trout, 18 Lake Whitefish, 23 Northern Pike and 16 Walleye, and results are displayed in Figures D1-1 to D1-9 and Table D1-1. A summary of these results is provided below:

- The total mercury concentrations ranged from 0.21 to 1.10 mg/kg, 0.04 to 0.22 mg/kg, 0.07 to 0.96 mg/kg and 0.16 to 1.02 mg/kg wwt in Lake Trout, Lake Whitefish, Northern Pike and Walleye, respectively. All total mercury concentrations were less than the Ontario consumption guidelines developed for the general population (1.8 mg/kg), but eight Lake Trout, 11 Northern Pike and two Walleye exceed the sensitive population consumption guideline for women of child-bearing age and children (0.5 mg/kg), as well as the Health Canada maximum contaminant concentration (0.5 mg/kg).
- Total methylmercury concentration ranged from 0.16 to 1.47 mg/kg, 0.04 to 0.20 mg/kg, 0.07 to 1.00 mg/kg and 0.12 to 1.94 mg/kg wwt in Lake Trout, Lake Whitefish, Northern Pike, and Walleye, respectively. All values exceeded the methylmercury guideline for the protection of wildlife consumers of aquatic biota (0.033 mg/kg; CCME 2000).

Other potential contaminants of concern include the following:

- Lake Trout total aluminum concentrations ranged from 0.40 to 3.09 mg/kg wwt and total arsenic concentrations ranged from 0.03 to 0.93 mg/kg wwt. Total cadmium was below the detection limit of 0.001 mg/kg wwt for all samples. Total cobalt, copper and iron concentrations ranged from 0.004 to 0.005 mg/kg, 0.15 to 0.28 mg/kg, and 1.93 to 8.92 mg/kg wwt, respectively.
- Lake Whitefish total aluminum concentrations ranged from 0.40 to 7.61 mg/kg wwt and total arsenic concentration ranged from 0.04 to 0.53 mg/kg wwt. Total cadmium, cobalt, copper and iron

concentrations ranged from 0.001 to 0.002 mg/kg, 0.004 to 0.007 mg/kg, 0.14 to 0.22 mg/kg, and 2.29 to 10.3 mg/kg wwt, respectively.

- Northern Pike total aluminum concentrations ranged from 0.40 to 18 mg/kg wwt and total arsenic concentration ranged from 0.02 to 0.08 mg/kg wwt. Total cadmium, cobalt, copper and iron concentrations ranged from 0.001 to 0.007 mg/kg wwt, 0.004 to 0.02 mg/kg wwt, 0.09 to 0.65 mg/kg wwt, and 1.31 to 23.7 mg/kg wwt, respectively.
- Walleye total aluminum concentrations ranged from 0.40 to 1.25 mg/kg wwt and total arsenic concentration ranged from 0.04 to 0.10 mg/kg wwt. Total cadmium and cobalt were 0.001 and 0.004 mg/kg wwt, respectively for all samples. Total copper and iron concentrations ranged from 0.13 to 0.26 mg/kg wwt and 1.60 to 6.48 mg/kg wwt, respectively.
- Selenium concentration in tissue samples ranged from 0.95 to 2.56 mg/kg dwt, 1.71 to 2.78 mg/kg dwt, 0.87 to 1.66 mg/kg dwt, and 0.85 to 1.97 mg/kg dwt in Lake Trout, Lake Whitefish, Northern Pike and Walleye, respectively. All selenium concentrations were less than the Federal Environmental Quality Guidelines for whole body samples (6.7 mg/kg dwt).

Total mercury concentration at age, length, and weight for Springpole Lake are displayed in Figures D2-1 to D2-12. Northern Pike showed a positive relationship between age and total mercury concentration, as well as total mercury at length and weight, as expected. Positive trends were observed between total mercury concentration and age, length, and weight in Walleye from Springpole Lake. The correlations between total mercury in fish tissue and age, length, and weight were lower in Lake Trout and Lake Whitefish suggesting greater variability in mercury concentrations in sampled fish of similar sizes, lengths, and ages. For these species, age and body weight measurements are less informative indicators of total mercury concentrations with the fish species tissue.

Total mercury in Walleye tissue within Springpole Lake during the baseline studies, and specifically within the 2019 BsM data, were compared to the Birch Lake BsM values. The Springpole Lake total mercury concentrations were similar to the few individual Birch Lake fish within the 350 to 550 mm TLEN range; however, the Springpole Lake Walleye with TLENs greater than 550 mm contained mercury in tissue concentrations greater than similar size fish from Birch Lake. Thus, naturally elevated mercury concentrations, greater than the consumption advisory limit for sensitive population, are observed in both lakes and fish of smaller size tend to accumulate less mercury.

3.1.4 Fish Aging

Due to the small size of Blacknose Shiner and lab tissue composite minimum mass (20 g), all Blacknose Shiner captured in 2022 from L-15 were sent for tissue analysis, and none were retained for age analysis. Blacknose Shiner captured in 2021 ranged in age from 0 to 2 years (Appendix D, Table D1-1).

Fish aging samples were collected during the BsM program in 2022. A total of 191 aging samples were submitted for analysis, including 1 Burbot, 30 White Sucker, 16 Lake Trout, 18 Lake Whitefish, 50 Northern Pike, 55 Walleye and 21 Yellow Perch. Individual age results are displayed in Table D1-1 and age at length is presented in Figures D3-1 to D3-7. A steep positive trend was observed between age and TLEN in Yellow Perch, Northern Pike, Walleye and White Sucker. These species are typically fast-growing ones relative to the Lake Trout and Lake Whitefish, which show more gradual positive trends. Data trends could not be analyzed for Burbot due to insufficient sample size (n = 1).

3.1.5 Water Quality

3.1.5.1 Lake Profiles

Springpole Lake profiles were measured at six deep water locations during the 2022 field programs, as shown in Figure 2-1a. The maximum water depth where profile measurements were collected was 39 m in the northern basins and 23 m in the southeast arm. Lake profile plots displayed temperature (°C) and DO (mg/L) measurements against depth collected within the eight sampling months (February, March, May, June, July, August, September and October; Figures E1-15 to E1-20). A thermocline was not visible at any sampling location in February and March, and was present only at L-15-B5 in May, suggesting Springpole Lake was well mixed during this time of year. In all seasons other than winter and all sampling locations, both temperature and DO displayed a declining trend with depth. Thermoclines were shallower than 10 m from June to September at most sampling locations, whereas in October they generally increased to depths greater than 10 m.

During 2023, profiles were measured at the same six deep water locations and SW-01b (Figure 2-1a). The maximum water depth where profile measurements were collected was 36 m in the northern basins and 18.5 m in the southeast arm. Lake profile plots displayed temperature (°C) and DO (mg/L) measurements against depth collected within the three sampling months (February, March and May; Figures E1-1 to E1-6). The only thermocline present in winter was at 4 to 5 m deep in basin B5, which also had the warmest temperature overall (3.8°C). During the May sampling event, basins B1 and B2 had a thermocline, between 5 to 6 m deep. In all seasons other than winter, during all measurements, temperature and DO displayed a declining trend with depth.

3.1.5.2 In Situ Measurements

In 2022, in situ water temperatures ranged from 0°C to 1.6°C in the winter, 8.4°C to 17.7°C in the spring, 17.4°C to 21.6°C in the summer and 10.3°C to 17.2°C in the fall (Table E1-1). Summer (July) temperature measurements and the fish community composition show the thermal guild classification for Springpole Lake represents cool / coldwater fish habitat (Hasnain et al. 2010). In situ DO measurements ranged from 8.07 to 14.52 mg/L, which generally met or were greater than the Ontario Provincial Water Quality Objectives (PWQOs) and the Canadian Water Quality Guidelines (CWQGs) for the protection of coldwater biota including early life stages in most months sampled except July and August. In situ pH measurements ranged from 6.57 to 8.35, which met the PWQOs and CQWGs for the general protection of aquatic biota. Conductivity measurements ranged from 31.8 to 72.2 microsiemens per centimetre (µS/cm) during the assessment period.

In 2023, in situ water temperatures ranged from -2°C to 1.0°C in the winter and 9.0°C to 14.0°C in the spring (Table E1-1). In situ DO measurements ranged from 10.39 to 13.07 mg/L, which exceeded the PWQOs and the CWQGs for the protection of coldwater biota including early life stages. In situ pH measurements ranged from 6.92 to 8.04, which met the PWQOs and CQWGs for the general protection of aquatic biota. Conductivity measurements ranged from 35.0 to 48.2 µS/cm during the assessment period.

3.1.5.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of surface water samples collected during the 2022 and 2023 field programs. A total of 101 samples and 12 duplicates were collected in 2022 and 43 samples and 5 duplicates were collected in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.1.6 Lower Trophic and Primary Productivity

3.1.6.1 Chlorophyll *a*

Chlorophyll *a* was collected at all six sample locations throughout Springpole Lake in June, August and September 2022 as well as March 2023. Average chlorophyll *a* (micrograms per litre [µg/L]) results are displayed graphically in Figure E2-1 to demonstrate trends. Results displayed moderate seasonal variability during typical growing season months, with August showing the highest average concentrations while lowest average concentrations were observed in June. Concentrations were lowest during March 2023 (winter). This trend differs from chlorophyll *a* concentrations collected from Birch Lake, where June concentrations were considerably higher than August or September results. Overall, chlorophyll *a* concentrations were found to be generally consistent between sampling locations and between Springpole Lake and Birch Lake.

In 2021, the greatest concentrations were observed in July and September, relative to the highest 2022 values in August. Both the 2021 and 2022 chlorophyll *a* results show natural seasonal variability representing oligotrophic conditions.

3.1.6.2 Phytoplankton

Phytoplankton samples were collected three times from Springpole Lake during the 2022 field program and once in 2023, as shown in Appendix E, Figures E2-2 through E2-5. Data are displayed as total phytoplankton biovolume (cubic micrometres [μm^3]) and density (cell/L). A total of seven classes of phytoplankton were identified in Springpole Lake, with *Cryptophyceae* (algae) representing most of the phytoplankton biovolume (μm^3) with some *Bacillariophyceae* (diatoms) and *Chrysophyceae* (golden-algae; Figures E2-2 and E2-3) in June and March. August and September sampling events showed consistently lower total biovolume (μm^3) and a higher prevalence of *Cyanophyceae* (blue-green algae) than June and March samples. March samples had the lowest total biovolume, as expected during winter. Relative community composition analysis showed *Bacillariophyceae*, *Cyanophyceae*, and *Dinophyceae* (dinoflagellates) dominated the water column by density (Figures E2-4 and E2-5) across all sampling events. Total phytoplankton biovolume at all sites was lower than samples collected from Birch Lake in June.

The data presented in Appendix E, Figure E2-2 through E2-5, show larger differences between years (2021 and 2022) but very consistent community structure, densities and biovolume between locations and lakes for either year. The individual basins of Springpole Lake and Birch Lake share similar lower trophic conditions.

3.1.6.3 Zooplankton

Zooplankton samples were collected from the Springpole Lake biota locations in June, August and September 2022 as well as March 2023. Total biomass (µg/L), total density (#/L) and percent relative zooplankton density were analyzed graphically to determine trends (Figures E2-10 to E-17). The data display seasonal variability for biomass and density, particularly during the August and March sample events where phytoplankton growth is at its highest and lowest, respectively. This likely caused the zooplankton communities to respond to the availability of food (phytoplankton) within short time frames. Springpole Lake varied between 4 to 12 orders of zooplankton, with L-15-B5 having the least diversity and L-15-B3 having the greatest diversity. *Calanoida*, *Cyclopoida*, *Daphniidae* and *Holopepidae* consistently dominated the zooplankton community, representing nearly all zooplankton biomass. Conversely, relative zooplankton density was co-dominated by *Ploima* and *Cyclopoida* in June, September and March but shifted to a higher prevalence of *Floculariaceae* and *Daphniidae* in August. L-15-B6 showed the highest zooplankton biomass of all sampling events in August and L-15-B5 tended to have lower biomass than other sites sampled.

Similar to the phytoplankton and chlorophyll *a* monitoring results, there are notable differences in zooplankton biomass and community structure between years but a strong similarity between locations and lakes among years, emphasizing that the lower trophic and primary productivity conditions are generally consistent across the lake basins.

3.1.7 Sediment Quality

Sediment and benthic invertebrate sampling during the fall 2022 field investigation was conducted in a western bay of L-15, approximately 50 m beyond the outlet channel mouth. Sediment samples were collected from one location (L-15-B3a) within Springpole Lake during the fall field program (Figure 2-4). Grab samples were collected at depths between 11 and 12 m, for consistency and comparability with the previous baseline studies, and the sediment appeared relatively similar between replicates, with the exception of replicate station S1 (Table F1-1). Sediment samples mostly consisted of silt (>85%) with some clay (10% or less) and fine sand (up to 6.3%) with trace amounts of gravel and sand (<1%; Table D1-1), whereas S1 had only 60% silt and 33% fine sand. Sample site S1 had the highest number of guideline exceedances, with a total of 36 across the five replicate stations, from the 2022 sampling program. Parameters with exceedances included total Kjeldahl nitrogen (TKN), total organic carbon (TOC), and total chromium, copper, iron and nickel, which all exceeded at least one sediment quality guideline (PSQGs or Canadian Sediment Quality Guidelines) across all replicate stations. Arsenic and cadmium also exceeded the PSQGs' lowest effect level in three of five replicates. These results are similar to those obtained in 2021 from Springpole Lake, where all parameters listed above showed exceedances in the deep basin locations; however, in 2021 total lead, manganese, phosphorus and zinc also exceeded guidelines. It should be noted that sediments are collected from nutrient and organic rich depositional environments, and that it is common for higher levels of some parameters to exceed guidelines due to natural conditions.

3.1.8 Benthic Invertebrate Community

One BIC sample location with five replicates was collected within Springpole Lake during the 2022 fall field program. Samples were collected within total water depths between 11 and 12 m. A summary of the taxonomic identification results is presented in Table F2-1. The average number of benthic invertebrates between replicates was approximately 60 (Figure F1-1), ranging from 38 to 96, and number of family taxa groups (richness) ranged from 5 to 7 (Figure F1-2). *Chaoboridae* (phantom midges) and *Chironomidae* (midges) dominated the BIC, ranging from 67-89% of total individuals within the community. Chironomid taxa averaged 5% of the total species across replicates (Figure F1-3). Individuals from the *Tanytarsus* genus were only found in replicate B1. EPT taxa were only present in replicate B2, making up 5% of total composition for that replicate (Figure F1-4). TID ranged from 550 to 1,391, with an average of 872 (Figure F1-5). Simpsons evenness and diversity averaged 0.44 and 0.57, respectively (Figures F1-6 and F1-7). Dominant species present were similar to 2021 results, where locations L-15-B3 to B6 (aligning with the deep-water basins) were dominated by phantom midges. Other sites, such as L-15-B1 and B2 had fewer individuals, which would be expected of these deeper water sites.

Springpole Lake saw similar taxa group counts to Birch Lake, however L-16 had fewer. Despite some replicate outliers in L-16 and Birch Lake, sample sites saw similar total abundance, TID, and evenness in all three waterbodies. Average diversity was slightly lower in Springpole Lake than Birch Lake, but higher than L-16 (Figure F1-5).

3.2 Birch Lake

Two deep basin locations within Birch Lake, consistent with the 2021 sample locations, and eight surface water locations within or at inflows of the lake (i.e., Dole Lake inflow) were sampled during 2022 and 2023 (Figure 2-1a). The deep basin locations, and SW-23 in 2023, had in situ water quality measurements taken, physicochemical profiles, at-depth laboratory water quality sampling, as well as lower trophic sampling of chlorophyll a, phytoplankton, and zooplankton. The other eight surface water locations had in situ measurements and water quality samples taken at 1 m subsurface.

The following field studies occurred during 2023 in Birch Lake:

- Winter water quality sampling; and
- Spring water quality and eDNA sampling.

3.2.1 Fish Habitat

Birch Lake is characterized as Habitat Type C, which represents large lake (lentic) environments. The main lake body of Birch Lake extend east and west of the Springpole Lake north basin and has numerous islands and embayments compared to Springpole Lake. Due to the greater surface area and fetch of Birch Lake, waves tend to be larger and may provide a greater mixing environment than Springpole Lake. Surface water flows from Birch Lake flows through the Birch River and Cromarty Lake to the southeast arm of Springpole Lake.

Nearshore substrate composition within Birch Lake is composed mostly of exposed bedrock and boulders, with some areas near tributary inflows and sheltered embayments consisting of soft fine-grained sediments. The presence of submergent and emergent macrophytes within the surveyed locations are qualitatively less than those observed within the surveyed locations in Springpole Lake. Vegetation in the upland zones include mainly mixed forest dominated by Black Spruce, Jack Pine (*Pinus banksiana*), and Tamarack, while vegetation near to the riparian zone include woody shrub species such as alder and other herbaceous species.

3.2.2 Fish Community

Fish community sampling occurred during the 2022 field season with two major components: 1) a spring lethal forage fish (small-bodied) sampling, and 2) eDNA sampling during spring and summer sampling events.

3.2.2.1 Standard Capture Techniques

The Birch Lake fish community was assessed during spring and summer 2022 with standard capture gear (i.e., gillnets, dip nets, seine nets, angling) during the spring small-bodied lethal and non-lethal sampling, and summer non-lethal fish community program (Figure 2-1a). Catch-per-unit effort tables for all sampling techniques across seasons are displayed in Tables B1-1 to B1-6.

A total of 583 individuals were captured during the spring program, including Blacknose Shiner, Bluntnose Minnow, Common Shiner, White Sucker, Finescale Dace, Logperch, Ninespine Stickleback, Northern Pike, Northern Redbelly Dace (*Chrosomus eos*), Rock Bass, Spottail Shiner, Trout-perch, Walleye and Yellow Perch. Of these, a total of 226 fish between Yellow Perch, Blacknose Shiner and Spottail Shiner were kept for analysis. The summer sampling effort used baited minnow traps and seine nets, capturing a total of 1,115 fish consisting of 14 total species: Blacknose Shiner, Bluntnose Minnow, Brook Stickleback (*Culaea inconstans*), Finescale Dace, Iowa Darter (*Etheostoma exile*), Logperch, Mimic Shiner (*Notropis volucellus*), Northern Pike, River Darter (*Percina shumardi*), Rock Bass, Spottail Shiner, Trout-perch, Walleye and Yellow Perch. The most abundant species in the catch were Walleye (n = 387) and Yellow Perch (n = 330), which agrees with the 2022 Springpole Lake BsM catch data. Historical Birch Lake BsM records also documented

Walleye as the most abundant species in the catch, but Yellow Perch consistently represented a smaller proportion of the catch (Appendix B).

All species captured were found in other baseline studies; however, Finescale Dace, Ninespine Stickleback, Northern Redbelly Dace, and River Darter had not been previously captured in Birch Lake. Table 3-1 provides a comprehensive list of fish species for all area watercourses and waterbodies. Birch Lake contains 28 fish species, 22 of which are categorized as small-bodied or forage species. Additional data regarding the Birch Lake fish community and movement patterns (from telemetry studies) of large-bodied species are described in other baseline reports (FMG & Portt 2018; Wood 2021; Wood 2022).

3.2.2.2 Environmental DNA Fish Community

Metabarcoding analysis identified between 19 and 20 species DNA in water samples from Birch Lake (Birch-eDNA-10, Birch-eDNA-11, and Birch-eDNA-12) taken during spring and summer 2022 (Tables C1-1 and C1-2). All were identified to species except *Cottidae* (sculpins) which were identified to genus and *Salmonidae* (Lake Trout or Lake Whitefish) to family. Shorthead Redhorse and Emerald Shiner DNA were found only during summer and Common Shiner DNA only in spring. A total of 21 species DNA were identified across both sampling events, all of which were previously documented with standard capture techniques.

Three of the identified species, Lake Chub, Iowa Darter and Northern Pearl Dace (*Margariscus nachtriebi*), were found only in S-16 (Birch-eDNA-10), a tributary to Birch Lake. Due to trace level contamination in field samples, however, interpretation between sample sites was omitted. See Section 3.13.3 for further discussion on QA / QC procedures.

Spring 2023 qPCR analysis of eDNA samples did not detect Lake Sturgeon DNA from any samples, including those taken in Springpole Lake, Birch Lake, Lake St. Joseph and in the Cat River System. Four locations were sampled in triplicate (12 samples total) in the Birch Lake area, one upstream at the inflow to Birch Lake from Shabumeni Lake (LS-eDNA-01), two in potential Lake Sturgeon habitat within Birch Lake (LS-eDNA-13 and LS-eDNA-14) and one downstream in the Birch River between Birch Lake and Springpole Lake (LS-eDNA-02; Figure 2-2). To date, no eDNA samples collected have contained Lake Sturgeon DNA.

3.2.3 Fish Tissue

A total of 10 composite samples from 2022 were sent to the lab for analysis from the spring small-bodied lethal sampling, five composites of Yellow Perch from both BIRCH-1 and BIRCH-2 sample locations (Table D1-1). There were no exceedances of fish tissue guidelines in these samples, with maximum values from aluminium, arsenic, cadmium, cobalt, copper, iron, mercury, methylmercury, and selenium being 0.72 mg/kg wwt, 0.167 mg/kg wwt, 0.0276 mg/kg wwt, 0.0086 mg/kg wwt, 0.512 mg/kg wwt, 15.5 mg/kg wwt, 0.0392 mg/kg wwt, 0.0202 mg/kg wwt and 0.423 mg/kg dwt, respectively (Table D1-1).

3.2.4 Fish Aging

Concurrent with the spring 2022 fish tissue collection, small-bodied fish aging samples were also collected. A total of 20 individuals were sent for aging from Birch Lake, ten from each location Birch-1 and Birch-2 (Figure 2-1a). Individual age results are displayed in Table D1-1 and age at length in Figures D3-1 to D3-7. Yellow Perch showed a positive trend between age and size (length). This shows that older fish tended to have greater TLEN, as expected.

3.2.5 Water Quality

3.2.5.1 Lake Profiles

Birch Lake physicochemical profiles were measured at two deep water locations during the 2022 field programs, shown in Figure 2-1a. The maximum water depth where profile measurements were collected was 38 m. Lake profile plots displayed temperature (°C) and DO (mg/L) measurements against depth collected within the eight sampling months (February, March, May, June, July, August, September and October; Figures E1-21 to E1-22). A thermocline was not present in February, March and May for either of the sampling sites, and in October at Birch-B2, which suggests Birch Lake was well mixed at these times of the year. The thermocline for Birch-B1 in October was at 31.5 m. In all seasons other than winter, at all sites, both temperature and DO show a declining trend with depth. Thermoclines were shallower than 10 m in June and July at Birch-B1 and June and August at Birch-B2.

During 2023, profiles were measured at the same two deep water locations and SW-23 (Figure 2-1a). The maximum water depth where profile measurements were collected was 39.5 m. Lake profile plots displayed temperature (°C) and DO (mg/L) measurements against depth collected within the three sampling months (February, March and May; Figures E1-7 to E1-8). A thermocline was not present in February or March, which suggests Birch Lake was well mixed at these times of the year. During the May sampling event, basins B1 and B2 had a thermocline, at 15 and 8 m, respectively. In all seasons other than winter, during all measurements, temperature and DO displayed a declining trend with depth.

3.2.5.2 In Situ Measurements

In 2022, in situ water temperatures ranged from 0.1°C to 1.1°C (winter), 6.1°C to 15.5°C (spring), 15.9°C to 19.9°C (summer) and 10.2°C to 16.6°C (fall; Table E1-1). Summer (July) temperature measurements and the fish community show the thermal guild classification for Birch Lake represents cool / coldwater fish habitat (Hasnain et al. 2010). In situ DO measurements ranged from 8.45 to 14.64 mg/L which generally met or was greater than the PWQOs and the CWQGs for the protection of coldwater biota including early life stages in all months sampled except August. There was one exception, however: SW-28 at the far NE corner of Birch Lake, where DO measured 6.65 mg/L in August, exceeding the CWQGs for coldwater biota. In situ pH measurements ranged from 6.16 to 7.92, which generally met the PWQOs and CQWGs for the general protection of aquatic biota, except during the May sampling program. All other measurements met the guideline and had a minimum pH value of 7.07. Conductivity measurements ranged from 39.8 to 66.9 µS/cm during the assessment period.

In 2023, in situ water temperatures ranged from -0.2°C to 0.7°C (winter) and 10.1°C to 12.9°C (spring; Table E1-1). In situ DO measurements ranged from 10.78 to 14.22 mg/L, which met the PWQOs and the CWQGs for the protection of coldwater biota including early life stages. In situ pH measurements ranged from 6.31 to 8.50, which generally met the PWQOs and CQWGs for the general protection of aquatic biota, except the site Birch-B2 during the May sampling program. All other measurements met the guideline and had a minimum pH value of 7.26. Conductivity measurements ranged from 0.7 to 51.9 µS/cm during the assessment period.

3.2.5.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of 72 samples and seven duplicates were collected in 2022, and 33 samples and two duplicates were collected in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.2.6 Lower Trophic and Primary Productivity

3.2.6.1 Chlorophyll *a*

Chlorophyll *a* was collected at two sample locations (Birch-B1 and Birch-B2) in 2022 throughout Birch Lake in June, August and September and at three sample locations (Birch-B1, Birch-B2 and SW-23) in March 2023. Average chlorophyll *a* (µg/L) results are displayed graphically in Figure E2-1 to demonstrate trends. Results showed seasonal variability with an increase in chlorophyll *a* concentrations observed in June and a considerable decline in August. This trend differs from chlorophyll *a* concentrations collected from Springpole Lake where June concentrations were consistently lower than August or September results. Overall, chlorophyll *a* concentrations were similar in Birch Lake to Springpole Lake.

3.2.6.2 Phytoplankton

Phytoplankton samples were collected twice from Birch Lake during the 2022 field program and once in 2023. Total phytoplankton biovolume (μm^3) and density (cell/L) results are displayed in Figures E2-6 to E2-9. A total of seven classes of phytoplankton were identified in Birch Lake, with *Bacillariophyceae* (diatoms) and *Cryptophyceae* (algae) constituting most of the phytoplankton biovolume (μm^3; Figures E2-6 and E2-7) in June. Seasonal variation shows a community shift in August and September with a heavier presence of *Cyanophyceae* (blue-green algae) in total phytoplankton biovolume (μm^3). Conversely, relative community composition analysis showed *Bacillariophyceae*, *Cryptophyceae* and *Dinophyceae* (dinoflagellates) dominated the water column by density (>25%, >10% and >25%, respectively) in June whereas *Cyanophyceae* contributed >40% in August (Figures E2-8 and E2-9). Total phytoplankton biovolume (μm^3) were considerably higher in June compared to August and September, and lowest in March.

3.2.6.3 Zooplankton

Zooplankton samples were collected from the Birch Lake biota locations in June, August and September 2022 and March 2023. Total biomass (µg/L), total density (#/L) and percent relative zooplankton density were analyzed graphically to determine trends (Figures E2-10 to E-17). The data display seasonal variability for biomass and density, particularly during the August and March sample events where phytoplankton growth is at its highest and lowest respectively. This likely caused the zooplankton communities to respond to the availability of food (phytoplankton) within short time frames. Birch Lake varied between 4 to 10 orders of zooplankton, where *Calanoida*, *Cyclopoida,* and *Daphniidae* constituted nearly all zooplankton biomass. Conversely, relative zooplankton density was co-dominated by *Ploima* and *Cyclopoida* in June, September and March but shifted to a higher prevalence of *Flosculariaceae* and *Daphniidae* in August. Birch Lake seasonal trends in zooplankton biomass, density, and relative density were very similar to those in Springpole Lake, particularly relative percent density of each order in collected samples.

3.2.7 Sediment Quality

Sediment and benthic invertebrate sampling occurred along the eastern edge of lake, adjacent to the proposed co-disposal facility location. Five total locations were sampled in this area during 2022, with one just beyond the outlet of S-16 (Figure 2-4). Grab samples were collected within similar depths at each location; however, the water depths varied by location between 0.6 and 12.5 m. As such, the sediment varied from location to location: primarily fine silts were found at Birch-1 and Birch-5, mostly sand was at Birch-2 and Birch-3, and a mix of all sediment types were at Birch-4 (Table F1-1).

Samples from Birch Lake varied widely in exceedances of nutrient and total metal quality guidelines, where Birch-2 had six total exceedances (TKN and TOC) over five replicates and BIRCH-1 and BIRCH-5 had 32 and 31, respectively. This is likely due to substrate differences, as BIRCH-2 had the lowest proportions of clay

and silt, averaging approximately 1% and 4%, respectively. As well, both BIRCH-1 and BIRCH-5 were situated in the large bay near the Springpole exploration camp, which experienced particulate deposition from the extensive burning during the 2021 forest fires, likely contributing to increased nutrient and metal loads in surface sediments. Additionally, manganese exceeded the PSQGs' SEL in two replicates of BIRCH-4, and the probable effect level of one replicate in both sites BIRCH-3 and 4. All grabs visually appeared to have abundant organic material. Despite substrate composition varying throughout the sample sites, nutrient and total metal parameter concentrations were similar to 2021, with the exception of manganese, which did not exceed guidelines in 2021.

3.2.8 Benthic Invertebrate Community

A total of five BIC samples were collected within Birch Lake during the 2022 fall field program. Samples were collected within total water depths between 0.6 and 12.5 m. A summary of the taxonomic identification results is presented in Table F2-1. Average individuals ranged from 42 to 315 and family taxa groups ranged from 6 to 19 across the 5 BIC sites (Figures F1-1 and F1-2). Location Birch-3 had the lowest abundance in Birch Lake, averaging 42 individuals per replicate, primarily composed of *Chironomidae*, while location Birch-2 had by far the largest abundance, averaging 315 individuals, again dominated by *Chironomidae*. Locations Birch-4 and 5 were similar to Birch-3 in abundance (52 and 57, respectively) while Birch-1 fell somewhere in between, averaging 93 individuals. All saw high percentages (20% to 75%) of *Chironomidae* (Figure F1-3). Location Birch-2 likely saw elevated numbers as it was in a shallow, sandy bay at the mouth of Stream 16. The WSP field crew attempted to sample outside of the bay, however a high percentage of cobble / boulder substrate prevented sample grabs. Abundance and density were significantly different between the sampling locations, where the Birch-B2 location was found to be significantly different from all others. No other locations statistically differed in Birch Lake in abundance or density. Being the site with the highest total numbers, Birch-B2 differed from Birch-B1 in both richness ($p = 0.006148$) and evenness ($p = 0.015$), Birch-B5 in evenness, and Birch-B4 in diversity ($p = 0.0175$) (Figures F1-2 to F1-7). Additionally, statistical analysis determined the percent of chironomids and EPT per location to be significantly different; however, further meaningful relationships between sites were not found.

Results from Birch-B1, B3, B4 and B5 are comparable to 2021, especially in total abundance. The 2022 sites, however, had higher numbers of taxa groups (richness) which is expected with shallower sampling sites. *Chaoboridae* and *Chironomidae* were again dominant, but *Nadididae* (present at the Birch-B1 basin in 2021) we less at the 2022 sites.

3.3 Stream 16 (S-16)

The Stream 16 (S-16) field studies completed during 2022 involved the following:

- Spring and summer fish community assessments during June and July;
- Summer habitat assessment in July; and
- An eDNA fish community assessment in spring (June) and summer (August), concurrent with in situ water quality measurements.

Stream 16 was not sampled during 2023.

3.3.1 Fish Habitat

S-16 is a small to moderate sized stream combining features of Habitat Type E, F, and G that is the culmination of outlets from L-3 and L-4 (Table 2-3). Lowest segment where it enters Birch varies from 0.5 to 1 m wetted width and depth ranging from 0.05 to 1 m. Channel is braided through thick dense shrubs and frequently disappears underground. At the outlet to Birch Lake a large Northern Pike was caught, and other species were captured including Northern Redbelly Dace, sculpin species, Iowa Darter and Northern Pearl Dace. After several hundred metres, this stream section reaches a beaver dam, upstream of which is a small

pond approximately 5 x 30 m wide. Old waterlines in surrounding landscape suggest water levels were approximately 1 to 1.5 m higher but water is circumventing the dam. Upstream of this pond the stream returns to a deeply embedded channel flowing through a wet meadow. Channel width averaged 0.5 m and typically 0.5 m deep, except for larger pools up to 1.5 m in depth. The wetted meadow continues for approximately 400 m, where a trail crossed the stream. Downstream of this all waters are fish bearing. It is expected fish can survive and move downstream from L-3 to this trail crossing. Less than 100 m downstream of the trail crossing the tributary from L-4 enters the stream. This is not considered fish bearing, with a maximum width of 0.2 m observed.

3.3.2 Fish Community

3.3.2.1 Standard Capture Techniques

The S-16 fish community was assessed during spring and summer 2022 via backpack electrofishing, catching Northern Pike (n = 1), Iowa Darter (n = 4), Northern Redbelly Dace (n = 7), Northern Pearl Dace (n = 5), and sculpin (n = 6; Figure 2-1a, Table 3-1, and Tables B1-1 to B1-6).

3.3.2.2 Environmental DNA Fish Community

Analysis of metabarcoding results for the outlet segment of S-16 (Birch-eDNA-10) are included in Section 3.2.2.2.

3.3.3 Water Quality

3.3.3.1 In Situ Measurements

In situ measurements were taken concurrently with eDNA sampling. Surface water temperatures ranged from 14.6°C to 20.6°C in spring and summer. In situ measurements of pH (7.80 to 7.91) and DO (10.31 to 8.47) met CWQGs and PWQOs, while conductivity ranged from 54.5 to 56.1 µS/cm during the assessment period. Temperature measurements and fish community suggest S-16 represents a coolwater fish habitat (Hasnain et al. 2010).

3.4 Lake 1

The Lake 1 (L-1) field studies completed during 2023 included:

- Water quality sample collection and multi-stage (top and bottom) water quality measurements during all three programs from February to May.

3.4.1 Fish Habitat

L-1 is a long, shallow lake aligned northwest to southeast, classified as Habitat Type A (Table 2-3). The lake is bordered by bedrock on the northeast side, with riparian vegetation consisting mostly of dense grasses and sedge in flooded conditions, with moderate abundance of alders, willows, and other herbaceous species. Beyond the approximately 10 m riparian boundary, mixed poplars, spruce, and pine dominate the forest upland, however, nearly all forest cover was burned during the July 2021 forest fires on the northern shore. The only outlet exits on the southeast corner, through a ruptured and old beaver dam. Evidence suggests the beaver dam held water levels approximately 1 to 2 m higher in recent years. LIDAR suggests a flow path between Birch Lake and L-1; however, no channel was present during 2022. A wetted area, consisting of marsh vegetation (Broadleaf Cattails) in a bedrock depression between the two lakes is present, but not a defined channel, even with record high flows during the 2022 assessment period.

3.4.2 Fish Community

The L-1 fish community was assessed during spring and summer 2022 with baited minnow traps (Figure 2-1b), catching Yellow Perch (n = 2) and Northern Pike (n = 1; Table 3-1 and Tables B1-1 to B1-6). Other small-bodied fish were observed from the boat during habitat assessments, including young-of-the-year Northern Pike, young-of-the-year Yellow Perch and unidentified fish; however these were not captured in minnow traps. Virile crayfish, *Aeshnidae* (Darner dragonfly nymphs), and leeches were also caught in minnow traps.

3.4.3 Water Quality

3.4.3.1 Lake Profiles

Lake profiles were recorded six times during 2022, in all programs from May to October. The maximum measured depth was 2.2 m at the profile location (Figure 2-1a). Lake profile plots using temperature (°C) and DO (mg/L) measurements against depth were created and show good mixing throughout the approximate 2 m depth (Figure E1-23). The June, August, September and October water levels were recorded below 2 m and only one reading was taken.

3.4.3.2 In Situ Measurements

In 2022, in situ water temperatures ranged from 0.3°C to 23.2°C from winter to fall. The in situ measurements were taken concurrently with the lake profiles. In situ measurements of pH (6.61 to 8.21) met PWQOs and CWQGs, DO (1.33 to 10.42 mg/L) were below CWQGs in February (2.99 mg/L) and March (1.33 mg/L), and conductivity ranged from 82.3 to 137.8 during the assessment period. Based on measured temperatures and fish species, the thermal regime of L-1 supports coolwater fish species (Hasnain et al. 2010; Coker et al. 2001).

In 2023, in situ water temperatures ranged from 0.7°C to 19.9°C from winter to spring. Measurements of pH (6.90 to 8.04) met PWQOs and CWQGs, DO (0.78 to 9.50 mg/L) were below CWQGs in February and March, and conductivity ranged from 91.5 to 133.5 µS/cm during the assessment period.

3.4.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of eight samples with two duplicates were collected in 2022, and three samples with zero duplicates in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.5 Lake 2

The Lake 2 (L-2) field studies completed during 2022 included:

- Spring and summer habitat assessment in June and July 2022;
- Spring and summer fish community assessments during June and July 2022; and
- Water quality sample collection taken during all SW programs from February to October 2022 and lake profiles taken during all programs except for February and March.

Lake 2 was not sampled during 2023.

3.5.1 Fish Habitat

L-2 is within the flow path between L-1 and Springpole Lake (L-15), with the inlet on the northeast edge of the lake and outlet on the south. It is Habitat Type B with a deep centre, maximum recorded depth of 22 m, quickly becoming hypoxic with depth (Table 2-3). The inlet is small, with little flow, and sheltered by a

shallow, marshy area full of aquatic macrophytes. Near shore areas on the west side of the lake are shallow, with a steep drop off, dominated by cobble, boulder, and sand substrate. The rest of the lake's shoreline is shallow, with high amounts of aquatic macrophytes, and sediment primarily composed of detritus. The outflow exits through muskeg and a beaver dam, across a site trail, and into Springpole Lake.

3.5.2 Fish Community

The L-2 fish community was assessed during spring and summer 2022 with baited minnow traps and seine nets (Figure 2-1c), catching Northern Pike (n = 2), Yellow Perch (n = 65), Golden Shiner (n = 1), Common Shiner (n = 24), and Blacknose Shiner (n = 45; Table 3-1 and Tables B1-1 to B1-6).

3.5.3 Water Quality

3.5.3.1 Lake Profiles

Lake profiles were recorded during 2022, from May to October during six sampling programs. The maximum depth was 22 m at the sample location (Figure 2-1a). Lake profile plots using temperature (°C) and DO (mg/L) measurements against depth were created and show drastic temperature and oxygen depletions with depth (Figure E1-24). A thermocline was present during all sampling events at 2.5, 1.5, 1.5, 1.5, 2.5, and 5.5 m in May, June, July, August, September and October, respectively. The DO was below the CCME guideline for aquatic health (6.5 mg/L) at 5, 4, 3, 2, 3 and 6 m in May, June, July, August, September and October, respectively (CCME 1999). During August, DO levels were less than 1 mg/L by 2 m and were reduced to anoxic conditions for the rest of the water column.

3.5.3.2 In Situ Measurements

In situ water temperatures ranged from 2.0°C to 19.8°C from winter to fall. Most in situ measurements were taken concurrently with the lake profiles except during February and March. In situ measurements of pH (6.50 to 8.13) met PWQOs and CWQGs, DO (5.04 to 10.1 mg/L) exceeded CWQGs in February (5.45 mg/L) and March (5.04 mg/L), and conductivity ranged from 80.8 to 131.1 µS/cm during the assessment period. Based on measured temperatures and fish species, the thermal regime of L-2 supports coolwater fish species (Hasnain et al. 2010; Coker et al. 2001).

3.5.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 field program. A total of eight samples were collected, with one duplicate. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.6 Lake 3

The Lake 3 (L-3) field studies completed during 2022 involved the following:

- Spring and summer habitat assessment in June and August;
- Spring fish community assessment during June; and
- Spring and summer water quality and lake profile samples during June (as part of the May sampling program delayed due to late ice-free conditions [i.e., breakup]) and August.

Lake 3 was not sampled during 2023.

3.6.1 Fish Habitat

L-3 is a wide, shallow lake with dense submergent vegetation, even at its deepest location, characteristic of Habitat Type A (Table 2-3). The sediment is primarily detritus with larger cobble along the shorelines. The

riparian vegetation consists mostly of dense grasses and sedge in flooded conditions, with moderate abundance of alders, willows, and other herbaceous species. Beyond these, mixed poplars, spruce, and pine dominate the forest upland. The outflow exits at the NW side of the lake, flow down to meet S-16. Species captured include Northern Redbelly Dace and Brook Stickleback.

3.6.2 Fish Community

Gill nets and minnow traps were used to assess the fish community in L-3 during spring (June) 2022. Two species were caught, Northern Redbelly Dace (n = 162) and Brook Stickleback (n = 1,150, Figure 2-1d, Table 3-1 and B1-1 to B1-6).

3.6.3 Water Quality

3.6.3.1 Lake Profiles

Lake profiles were recorded twice during 2022, June and August. The depth varied at the sample location, from 3 to 2 m in spring and summer (Figure 2-1a). Lake profile plots using temperature (°C) and DO (mg/L) measurements against depth were created and show good mixing with small drops in temperature and DO from top to bottom (Figure E1-25). A thermocline was present at 1.5 m in spring and the DO did not drop below the CCME guideline for aquatic health (6.5 mg/L; CCME 1999) during either season.

3.6.3.2 In Situ Measurements

The surface water sampling location in L-3 is titled SW-09, in situ water temperatures ranged from 13.5°C to 18.1°C from spring to summer. The in situ measurements were taken concurrently with the lake profiles. In situ measurements of pH (7.72 to 7.92) and DO (8.49 to 10.82 mg/L) met PWQOs and CWQGs while conductivity ranged from 58.9 to 68.4 µS/cm during the assessment period. Water quality measurements show the thermal regime of the lake supports coolwater fish species (Hasnain et al. 2010; Coker et al. 2001).

3.6.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 field program. A total of two samples were collected, with no duplicates. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.7 Lake 5

The Lake 5 (L-5) field studies completed during 2022 included:

- Spring habitat assessment in June 2022; and
- Spring and summer water quality and lake profile samples during June (as part of the May sampling program delayed due to late breakup) and August 2022.

Lake 5 was not sampled during 2023.

3.7.1 Fish Habitat

L-5 is a small, wide lake similar to L-17 in appearance, but with depths exceeding 4 m in some locations. It is surrounded by floating muskeg and bedrock outcroppings, characteristic of Habitat Type B (Table 2-3). The riparian vegetation consists mostly of dense grasses and sedge in flooded conditions, with moderate abundance of alders, willows, and other herbaceous species. Beyond the approximately 10 m riparian boundary, mixed poplars, spruce, and pine dominate the forest upland. Lake substrate primarily consisting of detritus with emergent and submergent vegetation.

3.7.2 Water Quality

3.7.2.1 Lake Profiles

Lake profiles were recorded twice during 2022: in June and August. The depth varied at the sample location, during the spring visit it was recorded at 5 m, while in the summer max depth was at 2 m (Figure 2-1a). The depth inconsistency suggests lower GPS accuracy and the sampling location being near a drop off to a deeper hole. Consequently, only a single lake profile plot using temperature (°C) and DO (mg/L) measurements against depth was created during spring and show a substantial temperature decrease with depth, while interestingly, DO increased with depth (Figure E1-26). A thermocline was present at 1.5 m and DO was less than the CCME guideline for aquatic health (6.5 mg/L; CCME 1999) at 1 m but greater than this threshold in the rest of the column.

3.7.2.2 In Situ Measurements

The surface water sampling location in L-5 is titled SW-26, in situ water temperatures ranged from 13.4°C to 18.2°C from spring to summer. The in situ measurements were taken concurrently with the lake profiles. These measurements suggest L-5 represents coolwater fish habitat (Hasnain et al. 2010). In situ measurements of pH (7.53 to 7.54) met PWQOs and CWQGs while DO (6.18 to 7.73 mg/L) exceeded CWQGs (6.5 mg/L) in spring. Conductivity ranged from 89.2 to 105.9 µS/cm during the assessment period.

3.7.2.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 field program. A total of two samples were collected, with one duplicate. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.8 Lake 16

The Lake 16 (L-16) field studies completed during 2023 included:

- Winter water quality and lake profile sample during March.

3.8.1 Fish Habitat

L-16 is a moderately deep lake characteristic of Habitat Type B (Table 2-3) impounded by a large beaver dam near the outlet to L-15. Surrounded by bedrock outcroppings, with a clear inflow and outflow through beaver impounded channels, L-16 consists of shallow near-shore areas that steeply drop into a deep centre approximately 8 m deep. The inflow enters the north side of the lake as a shallow stream through a wetted valley. Substrate consists of boulder, cobble, gravel, and sand in the nearshore areas and near the outflow, with the centre consisting of high amounts of organic material and fine silts. Dense submerged macrophytes were observed in the shallow nearshore areas, primarily on the eastern side of the lake, while the western side has steeper drop-offs and with the bedrock outcroppings.

3.8.2 Fish Community

Angling, gill nets, and minnow traps were used to assess the fish community in L-16 during spring (June) 2022 (Figure 2-1e). The only method that successfully captured fish was angling, and the only fish species caught was Northern Pike (n = 10, Table 3-1 and Tables B1-1 to B1-6). Fish were only captured along the northern and eastern shores of the lake, near the inflow and eastern edge. Low DO concentrations less than 4 m in spring and 2 m in summer likely limited fish use.

3.8.3 Water Quality

3.8.3.1 Lake Profiles

Lake profiles were recorded twice during 2022, June and August. The depth was approximately 8 m at the sample location (Figure 2-1a). Lake profile plots using temperature (°C) and DO (mg/L) measurements against depth were created and show drastic temperature and oxygen depletions with depth (Figure E1-27). A thermocline was present at 1.5 and 2.5 m, respectively, and the DO was less than the CCME guideline for aquatic health (6.5 mg/L; CCME 1999) at 4 m in spring and 2 m in summer.

Lake profiles were recorded once during March 2023. The depth was approximately 9 m at the sample location (Figure 2-1a). A lake profile plot using temperature (°C) and DO (mg/L) measurements against depth was created and show drastic oxygen depletions with depth (Figure E1-11). A thermocline was present at 1.0 m and the DO was less than the CCME guideline for aquatic health (6.5 mg/L; CCME 1999) at 2 m.

3.8.3.2 In Situ Measurements

In 2022, in situ water temperatures ranged from 13.2°C to 19°C from spring to summer. The in situ measurements were taken concurrently with the lake profiles. These measurements suggest L-16 represents coolwater fish habitat (Hasnain et al. 2010) which is supported by the presence of Northern Pike, a coolwater fish species. In situ measurements of pH (7.42 to 7.63) and DO (9.53 to 7.69 mg/L) met PWQOs and CWQGs while conductivity ranged from 76.2 to 82.8 µS/cm during the assessment period.

In 2023, in situ water temperature was 1.7°C, pH 7.08, DO 8.64 mg/L which met PWQOs and CWQGs, and conductivity was 57.9 µS/cm during the assessment.

3.8.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of two samples were collected in 2022, and one sample with a duplicate during 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.8.4 Sediment Quality

Sediment samples were collected from one location within L-16 during the fall field program (Figure 2-4). Grab samples were collected at depths between 2 and 5 m and the sediments were similar for all grabs, primarily consisting of silt (approximately 90% or greater) with some clay (10% or less) and trace amounts of gravel and sand (<1%; Table F1-1). Of note, total mercury exceeded the Canadian Sediment Quality Guidelines ISQG at replicates S1, S2, S4 and S5, and the PSQGs' lowest effect level at replicates S1 and S2. L-16 was the only site sampled in 2022 with results that exceeded total mercury guidelines, which is possibly due to deposition of ash particulate during the 2021 July forest fires.

3.8.5 Benthic Invertebrate Community

One BIC sample with five replicates was collected within L-16 during the fall field program. Samples were collected within total water depths between 2 and 5 m. A summary of the taxonomic identification results is presented in Table F2-1. The average number of individuals between replicates was approximately 92, ranging from 42 to 146, and the number of family taxa groups ranged from 2 to 4 (Figures F1-1 to F1-2). *Chaoboridae* (phantom midges) and *Chironomidae* (midges) dominated the counts, ranging from 97 to 100% of total individuals. Chironomid taxa averaged 36% of the total species across replicates (Figure F1-3). No individuals from the *Tanytarsus* genus and EPT taxa present consisted of <40% of the community (Figure F1-4). TID ranged from 608 to 2116 and averaged at 1330 (Figure F1-5). Simpsons evenness

averaged 0.60 and diversity 0.29 (Figures F1-6 to F1-7). Other than midges, only two families were present: *Naididae* (worms) and *Pionidae* (mites), both in very low numbers.

3.9 Lake 17

The Lake 17 (L-17) field studies completed during 2022 involved the following:

- Spring and summer habitat assessment in June and July;
- Spring and summer fish community assessments during June and July; and
- Spring and summer water quality sample collection and lake profiles taken in June and August.

Lake 17 was not sampled during 2023.

3.9.1 Fish Habitat

L-17 is a shallow, isolated pond characterized as Habitat Type A and is wetted through runoff from the surrounding terrain (Table 2-3). The riparian vegetation consists mostly of dense grasses and sedge in flooded conditions, with moderate abundance of alders, willows, and other herbaceous species. Beyond the approximately 10 m riparian boundary, mixed poplars, spruce, and pine dominate the forest upland, however nearly all forest cover was burned during the July 2021 forest fires.

3.9.2 Fish Community

The L-17 fish community was assessed during spring and summer 2022 with baited minnow traps, finding Brook Stickleback (n = 54) and Northern Redbelly Dace (n = 786; Figure 2-1f, Table 3-1 and Tables B1-1 to B1-6). As Finescale Dace were the only species recorded during 2021 it is likely that Northern Redbelly Dace, Finescale Dace, and *Chrosomus* spp. hybrids are present (FMG & Portt 2018, Wood 2021, and Wood 2022).

3.9.3 Water Quality

3.9.3.1 Lake Profiles

Lake profiles were recorded twice during 2022, June and August. The maximum depth was 3.5 m at the sample location (Figure 2-1a). Lake profile plots using temperature (°C) and DO (mg/L) measurements against depth were created and show drastic temperature and oxygen depletions with depth (Figure E1-28). A thermocline was present at 1.5 m in June and the DO dropping below the CCME guideline for aquatic health (6.5 mg/L; CCME 1999) at 3 m in June and 1 m in August. The August total water depth was less than 2 m and only one at-depth measurement was taken.

3.9.3.2 In Situ Measurements

In situ water temperatures ranged from 12.3°C to 17.4°C from spring to summer. In situ measurements of pH (7.20 to 7.09) met PWQOs and CWQGs, DO (10.10 to 6.26 mg/L) exceeded CWQGs in summer, and conductivity ranged from 81.4 to 102.5 µS/cm during the assessment period. Temperature measurements suggest L-17 represents a coldwater fish habitat (Hasnain et al. 2010), opposed to coolwater, however DO during summer does not meet the CWQGs for the protection of coldwater biota (6.5 mg/L) or for early coldwater life stages (9.5 mg/L). Further, the fish species recorded in 2021 and 2022 (Brook Stickleback, Northern Redbelly Dace, and Finescale Dace) suggest that L-17 is a coolwater habitat opposed to coldwater.

3.9.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 field program. A total of two samples were collected. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.10 Lake 18

The Lake 18 (L-18) field studies completed during 2022 included the following:

- Spring and summer habitat assessment in June and July 2022;
- Spring and summer fish community assessments during June and July 2022; and
- Spring and summer water quality sample collection and lake profiles taken in June and August 2022.

Lake 18 was not sampled during 2023.

3.10.1 Fish Habitat

L-18 is located south of Birch Lake and is represented by Habitat Type A (Table 2-3). The shoreline varies from bedrock formations, wetland, and dry, forested land. The riparian vegetarian consisted of grasses and sedges as well as cattails and is surrounded by mixed deciduous and coniferous forests with an understory composed of seedlings, and shrub species. The shallow margins of this lake support low to moderate abundance of emergent and submergent macrophytes. The southeastern upland area near the waterbody was impacted by the July 2021 forest fires to within approximately 50 m from the waterbody.

The outflow exits on the northeast corner of lake as intermittent channels through an old beaver dam, becoming a wetted habitat with grasses and sedges and no defined channel within 20 m of the shoreline. This area would not be considered fish habitat beyond this point. There is a small island in the northwest section of the lake and substate includes boulder, cobble, and sand in some areas to predominantly fine-grained organics with detritus in the remaining areas. There is no defined flow path between L-17 and L-18.

3.10.2 Fish Community

The L-18 fish community was assessed during spring and summer 2022 with baited minnow traps catching Brook Stickleback (n = 246) and Northern Redbelly Dace (n = 1,221; Figure 2-1g, Table 3-1 and Tables B1-1 to B1-6). As Finescale Dace were recorded in addition to Brook Stickleback and Northern Redbelly Dace during 2021 (FMG & Portt 2018, Wood 2021, and Wood 2022) it is likely that Northern Redbelly Dace, Finescale Dace, and *Chrosomus* spp. hybrids are present.

3.10.3 Water Quality

3.10.3.1 Lake Profiles

The maximum measured depth in June and August was less than 2 m, as such only one measurement at 1 m (mid-depth) was recorded (Figure 2-1a).

3.10.3.2 In Situ Measurements

In situ water temperatures ranged from 14.9°C to 19.1°C from spring to summer. In situ measurements were taken concurrently with the lake profiles with pH (7.44 to 7.48) and DO (10.24 to 8.25 mg/L) within the PWQOs and CWQGs. Conductivity ranged from 62.3 to 80.4 µS/cm during the assessment period. Measurements and fish community suggest L-18 represents a coolwater fish habitat (Hasnain et al. 2010).

3.10.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 field program. A total of two samples were collected. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.11 Lake 19

The Lake 19 (L-19) field studies completed during 2023 involved the following:

- Water quality sample collection and multi-stage (top and bottom) water quality measurements during all three programs from February to May.

3.11.1 Fish Habitat

L-19 is characterized as Habitat Type A (Table 2-3) and is located between Birch and Springpole lakes, surrounded by mixed deciduous and coniferous forests with an understory composed of shrub species (Figure 2-1a). LIDAR imaging suggests a lake outflow that ultimately exits into Dole Lake, but field observations suggest the exit location is an intermittent subterranean inflow with overland flow during high flow periods (spring melt or prolonged precipitation). No other lake outlet could be found, only other small subterranean inflows. Much of the surrounding forests were burned by the 2021 forest fires. L-19 has a maximum recorded depth of 1.5 m, and a lake bottom mostly covered by dense submerged macrophytes, including watermilfoil and pondweed species. The emergent macrophyte community along the shoreline is dominated by Water Horsetail.

3.11.2 Fish Community

The L-19 fish community was assessed during spring and summer 2022 with baited minnow traps, catching Bluntnose Minnow (n = 3,318), Brook Stickleback (n = 45), Fathead Minnow (*Pimephales promelas*; n = 429), Iowa Darter (n = 21), and Northern Redbelly Dace (n = 423; Figure 2-1h, Table 3-1 and Tables B1-1 to B1-6).

3.11.3 Water Quality

3.11.3.1 Lake Profiles

The maximum measured depth was 2 m at the sample location recorded in July 2022 while all other sampling events recorded a maximum depth between 1.5 to 2 m (Figure 2-1a). The profile had a thermocline at 1.5 m as temperature decreased from 22.4°C to 18.3°C and DO decreased from 9.72 to 5.56 mg/L (Figure E1-29), which further suggests cold groundwater / subterranean inputs to this waterbody.

3.11.3.2 In Situ Measurements

In 2022, in situ water temperatures ranged from 0.9°C to 22.4°C from winter to summer. In situ measurements were taken concurrently with the lake profiles. In situ measurements of pH (6.55 to 8.45) met PWQOs and CWQGs while DO (1.08 to 11.5 mg/L) exceeded the CWQGs for cold and warmwater communities (6.5 and 5.5 mg/L, respectively) during the months of February (1.08 mg/L) and March (3.72 mg/L). Conductivity ranged from 38.0 to 80.4 µS/cm during the assessment period. Measurements and fish community suggest L-19 represents a coolwater fish habitat (Hasnain et al. 2010).

In 2023, in situ water temperatures ranged from 1.3°C to 20.3°C over winter and spring. In situ measurements of pH (6.23 to 7.83) did not meet PWQOs and CWQGs at both bottom measurements during winter, while DO (0.65 to 9.06 mg/L) did not meet the CWQGs for cold and warmwater communities (6.5 and 5.5 mg/L, respectively) during the winter months. Conductivity ranged from 58.7 to 130.3 µS/cm during the assessment period.

3.11.3.3 Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of eight samples and two duplicates were collected in 2022, and three samples with zero duplicates in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.12 Regional Study Area

The RSA extends from the Birch Lake headwaters to Cat Lake First Nation and down toward Lake St. Joseph, encompassing potential impact areas of the Project (Figure 1-2). The focus of the aquatics monitoring program was to characterize fish community and water quality downstream of the Project location, primarily within the Springpole Lake / Birch River flowpath. As such, monitoring during 2022 and 2023 included water quality and eDNA surveys. The regional water quality monitoring was conducted at the RSW-1, RSW-2, and RSW-3 locations during both years (Figure 1-2). Full community eDNA surveys occurred in 2022 at the three RSW locations, and during 2023 a targetted Lake Sturgeon eDNA survey was conducted in spring at potential spawning locations (Figure 2-2).

3.12.1 Regional (RSW-1)

3.12.1.1 Fish Community (Environmental DNA)

Metabarcoding analysis identified 17 species DNA in water samples from Gull Lake at RSW-1 and RSW-2 (Gull-eDNA-13 and Gull-eDNA-14) taken during summer 2022 (Tables C1-1 and C1-2). These included White Sucker, Northern Pearl Dace, Emerald Shiner, Spottail Shiner, Northern Pike, Burbot, Brook Stickleback, Johnny Darter (*Etheostoma nigrum*), Yellow Perch, Logperch, Sauger, Walleye, Trout-perch (*Percopsis omiscomaycus*), *Coregonus*, Lake Trout and *Cottidae*. Of these, *Coregonus* (Lake Whitefish and Cisco) and *Cottidae* (sculpins) were identified only to genus.

3.12.1.2 Water Quality

Lake Profiles

Lake profiles were taken four times during 2022, from March to September, with a maximum measured depth of 8.5 m. Lake profile plots used temperature (°C) and DO (mg/L) measurements against depth collected within the four sampling months (March, June [for the May sampling program], July and September; Figure E1-30). A thermocline was present at 3.5, 5.5 and 6.5 m during March, June and July, respectively, and a thermocline was not present in September. During June and September (mixing periods), temperature and DO were consistent throughout the column, but in March and July, distinct declines were observed in DO. Temperature increased with depth in March, as expected since the waterbody had not experienced turnover at the time of sampling and declined in July. The DO decreased in both March and July, and was less than the CCME guideline for aquatic health (6.5 mg/L; CCME 1999) at 7 m.

A lake profile was taken once during March 2023 (Figure E1-12), with a maximum measured depth of 6.5 m. No thermocline was present. The DO decreased with depth but exceeded the CCME guideline for aquatic health (6.5 mg/L; CCME 1999).

In Situ Measurements

In 2022, in situ water temperatures ranged from 0.2°C to 22.5°C from winter to summer. The in situ measurements were taken concurrently with the lake profiles. In situ measurements of pH (6.93 to 7.84) and DO (9.90 to 12.11 mg/L) met PWQOs and CWQGs. Conductivity ranged from 43.1 to 49.5 µS/cm during the

assessment period. Measurements and fish community suggest RSW-1 represents a coolwater fish habitat (Hasnain et al. 2010).

In 2023, in situ water temperature was 0.2°C, pH 7.04, DO 11.77 mg/L which met PWQOs and CWQGs, and conductivity was 31.8 µS/cm during the assessment.

Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of ten samples with zero duplicates, across discrete depths, were collected in 2022, and one sample with zero duplicates were collected in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.12.2 Regional (RSW-2)

3.12.2.1 Fish Community (Environmental DNA)

Please see Section 3.12.1.1 for eDNA results in Gull Lake (RSW-1 and RSW-2).

3.12.2.2 Water Quality

Lake Profiles

Lake profiles were taken four times during 2022, from March to September, with a maximum measured depth of 4.5 m. Lake profile plots used temperature (°C) and DO (mg/L) measurements against depth collected within the four sampling months (March, June [for the May sampling program], July and September; Figure E1-31). A thermocline was present at 1.5 m during March but not during any other sampling event. Temperature and DO were consistent throughout the column during all sampling events. The DO satisfied the CCME guideline for aquatic health (6.5 mg/L; CCME 1999).

A lake profile was taken once during March 2023 (Figure E1-13), with a maximum measured depth of 2.5 m. No thermocline was present. The DO decreased with depth but exceeded the CCME guideline for aquatic health (6.5 mg/L; CCME 1999).

In Situ Measurements

In 2022, in situ water temperatures ranged from 0.1°C to 22.2°C from winter to summer. The in situ measurements were taken concurrently with the lake profiles. In situ measurements of pH (6.80 to 7.39) and DO (9.08 to 10.55) met PWQOs and CWQGs. Conductivity ranged from 35.6 to 37.1 µS/cm during the assessment period. Measurements and fish community suggest RSW-2 represents a coolwater fish habitat (Hasnain et al. 2010).

In 2023, in situ water temperature was 1.2°C, pH 6.78, DO 11.17 mg/L which met PWQOs and CWQGs, and conductivity was 26.1 µS/cm during the assessment.

Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of ten samples with zero duplicates, across discrete depths, were collected in 2022, and one sample with zero duplicates was collected in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.12.3 Regional (RSW-3)

3.12.3.1 Fish Community (Environmental DNA)

Metabarcoding analysis identified 18 species DNA in water samples from the Cat River system at RSW-3 (Cat-eDNA-15) taken during summer 2022 (Tables C1-1 and C1-2). These include White Sucker, Silver Redhorse (*Moxostoma anisurum*), Shorthead Redhorse, Common Shiner, Emerald Shiner, Blacknose Shiner, Spottail Shiner, Mimic Shiner, *Rhinichthys* (Eastern Blacknose Dace or Longnose Dace), Northern Pike, Burbot, Johnny Darter, Yellow Perch, Logperch, Sauger, Walleye, Trout-perch, and *Cottidae* (sculpins). The Silver Redhorse was identified at this location and not found at other locations sampled during the 2022 program.

3.12.3.2 Water Quality

Lake Profiles

Lake profiles were taken four times during 2022, from March to September, with a maximum measured depth of 8 m. Due to unsafe ice conditions, the March winter sample was taken outside of the main flow path and had a maximum depth of 3 m. Lake profile plots used temperature (°C) and DO (mg/L) measurements against depth collected within the four sampling months (March, June [for the May sampling program], July and September; Figure E1-32). A thermocline was not present during any sampling event, likely due to the well mixed site conditions. Temperature and DO were consistent throughout the column during all sampling events, also attributable to the well mixed conditions. The DO concentrations consistently satisfied the CCME guideline for aquatic health (6.5 mg/L; CCME 1999).

A lake profile was taken once during March 2023 (Figure E1-14), with a maximum measured depth of 3.5 m. No thermocline was present. The DO decreased with depth but exceeded the CCME guideline for aquatic health (6.5 mg/L; CCME 1999).

In Situ Measurements

In 2022, in situ water temperatures ranged from 0.1°C to 20.2°C from winter to summer. The in situ measurements were taken concurrently with the lake profiles. In situ measurements of pH (6.98 to 7.74) and DO (8.80 to 11.59 mg/L) met the PWQOs and CWQGs. Conductivity ranged from 42.5 to 51.5 µS/cm during the assessment period. Measurements and fish community suggest RSW-2 represents a coolwater fish habitat (Hasnain et al. 2010).

In 2023, in situ water temperature was 0.1°C, pH 6.95, DO 11.94 mg/L, which met PWQOs and CWQGs, and conductivity was 26.1 µS/cm during the assessment.

Analytical Measurements

Water quality was also assessed by laboratory analysis of water samples collected during the 2022 and 2023 field programs. A total of ten samples with zero duplicates, across discrete depths, were collected in 2022 and one sample with zero duplicates in 2023. For additional surface water quality monitoring results and data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.12.4 Lake Sturgeon Environmental DNA Survey

During spring 2023 four locations were sampled in triplicate (12 samples total) for Lake Sturgeon DNA, one in Seagrave Lake (LS-eDNA-08), one downstream of Zionz and Fawcett Lakes (LS-eDNA-05) in potential spawning habitat noted by local First Nations, and two downstream of Cedar Rapid Dam and Rat Rapids Dam (LS-eDNA-06 and LS-eDNA-07 respectively; Figure 2-2). Due to a large forest fire immediately

northeast of the Cat Lake First Nation community, the airspace was closed during sampling and noted locations near the community were unable to be sampled. These samples did not detected Lake Sturgeon DNA, including those downstream of the Rat Rapids and Cedar Channels dams. Likewise, Lake Sturgeon were not spotted during aerial reconnaissance during sampling. This included flying low (minimum 100 m above water) over the target spawning location during good weather. Spawning locations were shallow (<2 m water depth) and water clarify was high, allowing surveyers to see bottom clearly.

3.13 Quality Assurance and Control

3.13.1 Water Quality Analysis

Surface water QA / QC analysis was completed during the 2023 field program. For additional surface water quality monitoring results and QA / QCQC data analysis, please refer to the WSP surface water quality monitoring report (WSP 2024).

3.13.2 Sediment Quality Analysis

Field duplicates met the data quality objective for most sediment quality parameters (87.5%; Table F1-2). Silt particle size and some total metals (arsenic, chromium, molybdenum, nickel, and titanium) exceeded the data quality objective of 30% RPD. Most parameter exceedances were approximately 45% to 58% RPD except for molybdenum which was 163% RPD. This was likely due to matrix heterogeneity in the blind, split field duplicate sample.

3.13.3 Environmental DNA Analysis

A total of three and nine negative control samples were taken during spring and summer 2022 eDNA sampling, respectively. The results of three negative controls in each sampling round showed low-level (trace) contamination, with DNA concentrations less than 0.004 and 0.013 ng/µL, respectively. This contamination was likely from the field sampling, however in-lab sample handling and transfer of the Smith Root filters is also a possibility. Lab QA / QC procedures are outlined in Appendix C.

Metabarcoding is a qualitative rather than quantitative process meaning detection quantities cannot be linked between samples and controls. As such, the trace contamination in the negative controls limits interpretation of the results. While not all controls experienced contamination, results within Springpole and Birch lakes were not interpreted on a site-by-site basis, rather all were reviewed to represent lake wide DNA detections, similar to existing fish community results. Thorough decontamination and differing gear (i.e., different boats and equipment were used when sampling in Birch and Springpole lakes) was intended to prevent trace contamination detections from transferring between lakes / locations.

A 0.04% Northern Redbelly Dace metabarcoding result for a negative control taken in Springpole Lake was reported during the spring program. This is the only species detected within a negative control sample that did not have the species DNA present (Springpole Lake). The result was not from Birch Lake DNA as the negative control was taken before sampling in Birch Lake occurred. It is possible that the detection came from contaminated gear (i.e., boat) at the filtering location.

The lab that performed the metabarcoding analysis contacted WSP to share their recent experience and problems with the Smith Root filters, indicating that these filters have higher potential for contamination and sample degradation than other single-use filter products.

The 2023 sampling involved 6 negative control samples for a total of 45 samples. Target DNA was not amplified from the negative control samples.

Table 3-1: Fish Species Present in Local Waterbodies

Waterbody / Watercourse	Richness	Blacknose Shiner	Bluntnose Minnow	Brook Stickleback	Burbot	Cisco sp.	Common Shiner	Emerald Shiner	Fathead Minnow	Finescale Dace	Golden Shiner	Iowa Darter	Johnny Darter	Lake Chub	Lake Sturgeon	Lake Trout	Lake Whitefish	Logperch	Longnose Dace	Mimic Shiner	Mottled Sculpin (*Cottus bairdii*)	Moxostoma sp.	Ninespine Stickleback	Northern Pearl Dace	Northern Pike	Northern Redbelly Dace	Rock Bass	River Darter	Shorthead Redhorse	Slimy Sculpin (*Cottus cognatus*)	Spoonhead Sculpin (*Cottus ricei*)	Spottail Shiner	Trout-perch	Walleye	White Sucker	Yellow Perch
Birch Lake	30	X	X	X	X	X	X	X		X		X	X	X	H	X	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X
Springpole Lake (L-15)	26	X	X	X	X	X	X	X	X	X	X	X	X		H	X	X	X		X	X				X		X	X	X			X	X	X	X	X
Seagrave Lake	22	Xi	Xi	Xi	X	X	Xi	Xi				Xi	Xi		H	X	X	Xi		Xi	Xi				X		Xi		Xi			Xi	Xi	X	X	X
Birch River	9											X			H	Xi			X						X		X					X	Xi	Xi	X
Lake L-1	3																								X									X	X
Lake L-2	10	X						X			X													X	X				X			X	X	X	X
Lake L-3	3			X						X																X									
Lake L-4	0																																		
Lake L-5	6			X					X	X		X												X		X									
Lake L-6	0																																		
Lake L-6-Out	0																																		
Lake L-10	2																								X										X
Lake L-11	4			X								X													X										X
Lake L-12	2			X								X																							
Lake L-13	2			X								X																							
Lake L-14	2																								X										X
Lake L-16	2																								X										X
Lake L-17	1									X																									
Lake L-18	3			X						X																X									
Lake S-19	3			X					X																	X									
Stream S-7	2			X																															X
Stream S-9	13	X		X					X	X								X	X		X			X	X	X							X	X	X
Stream S-16/17	6			X								X												X	X									X	X	
Stream S-20	1									X																									
Stream S-25	0																																		
Stream S-26	2									X																								X	
Stream S-27	2	X																																	X
Stream S-28	1																		X																
Stream S-29	1																		X																

Notes:
Fish species presence include those caught during the baseline studies and MNRF Broadscale Monitoring studies within Birch Lake.
Species presence includes baseline survey results from 2009 to 2023.
X = fish species present; H = historical records of Lake Sturgeon presence within watershed exist (MNRF pers. comm.) and remnant depleted population may still exist; Xi = species inferred based on adjacent waterbodies and habitat type.

4.0 SUMMARY OF MAIN FINDINGS

This report documents the existing conditions measured during the 2022 spring, summer, and fall field investigations and 2023 winter and spring field investigations within the sampled inland waterbodies, Springpole Lake, Birch Lake, and the Regional Study Area sites. Sections 4.1 to 4.4 provide the key findings by study area:

4.1 Springpole Lake

- Springpole Lake (L-15) is a large lake environment that was separated into six distinct basins (Figure 2-3) for 2022 fish community analysis. The lake can be broadly separated into a large, broad northern basin and smaller, slim southeast arm that guides flow from the Cromarty Lake inlet to an outlet at the far eastern edge of the lake.
- Lake Sturgeon presence / absence netting conducted in spring 2022 did not capture any Lake Sturgeon.
- Metabarcoding results align with existing fish community data (Table 3-1), finding DNA from 27 total species in eDNA samples. Lake Sturgeon DNA was not detected in any samples.
- The BsM program captured an abundance of fish (1,191 individuals) of 15 species (Table B1-7). The northern three basins (NB01, NB02, and NB03) provide important summer habitat for coldwater species, including Lake Trout and Lake Whitefish, while the southern areas (NB46, CB07, and EB05) are dominated by coolwater fish communities. Lake Trout and other coldwater species are still present in the deep (>12 m) locations throughout the lake; however, NB02 had the greatest number of Lake Trout (8 at 50% of total catch) and the only juveniles / young adults (aged 2 and 3).
- Composite fish tissue samples were submitted from the spring lethal small-bodied sampling program and summer BsM program. All spring samples exceeded the CCME methylmercury guideline. In the BsM samples, all total mercury concentrations were less than the Ontario consumption guidelines developed for the general population (1.8 mg/kg), however eight Lake Trout, 11 Northern Pike, and two Walleye exceed those developed for women of child-bearing age and children (0.5 mg/kg), as well as the Health Canada maximum contaminant concentration (0.5 mg/kg).
- Northern Pike spawning habitat was assessed in spring 2022 and all locations visited would provide suitable spawning habitat for the species. None were observed actively spawning; however, some individuals were observed (potentially staging) in these locations.
- Sediment and benthic invertebrate sampling were conducted in the north basin of L-15 (L-15-B3a), approximately 50 m beyond the outlet channel from L-16. This sample location had the highest total exceedances of guidelines, 36 values across the 5 replicates, for all locations (L-15, L-16, and Birch Lake) sampled in 2022. Parameters include TKN, TOC and total chromium, copper, iron, and nickel, which all exceeded at least one guideline in all replicates. Total arsenic and cadmium also exceeded the PSQGs' lowest effect level.
- *Chaoborid* (phantom midges) and *Chironomidae* (midges) dominated the BICs, ranging from 67% to 89% of total individuals.
- No Lake Sturgeon DNA was detected in any eDNA samples during 2023, nor were any sighted at likely spawning locations.

4.2 Birch Lake

- Fish community sampling with standard capture techniques across spring and summer collected a total of 1,698 individuals from 18 species. Seine netting was the most effective technique in 2022. All species have been captured previously (Table 3-1).

- Metabarcoding results align with existing fish community data (Table 3-1), finding DNA from 21 total species in eDNA samples. Lake Sturgeon DNA was not detected in any samples.
- Ten fish tissue composite samples of Yellow Perch were submitted for analysis. These results show no parameters exceeded guidelines.
- Sediment samples from Birch Lake varied widely in exceedances of nutrients and total metals, where BIRCH-2 had six total exceedances (TKN and TOC) over five replicates and BIRCH-1 and BIRCH-5 had 32 and 31, respectively. This is likely due to substrate differences, as BIRCH-2 had the lowest amounts of clay and silt. Additionally, both BIRCH-1 and BIRCH-5 were situated in the large bay near an area of mainland that experienced extensive burning in the 2021 forest fires, likely contributing to increased nutrient and metal loads in surface sediment.
- In BIC samples, average individuals ranged from 42 to 315 and family taxa groups ranged from 6 to 19 across the five BIC sites (Figures F1-1 and F1-2). Location Birch-3 had the lowest abundance in Birch Lake, averaging 42 individuals per replicate, primarily composed of *Chironomidae* while location Birch-2 had by far the largest abundance, averaging 315 individuals, again dominated by *Chironomidae*. Location Birch-2 likely saw elevated numbers as it was in a shallow, sandy bay at the outlet of Stream 16.
- No Lake Sturgeon DNA was detected in any eDNA samples during 2023, nor were any sighted at likely spawning locations.

4.3 Inland Waterbodies

- Inland waterbodies were typically shallow (less than 4 m total depth), surrounded by grassy and sedge floodplains with a coniferous upland best represented by Habitat Type A (Table 2-3). All had a high abundance of submergent and emergent vegetation in nearshore areas.
- The inland lakes L-2 and L-16 differed from all others, having a deep centre basin with hypoxic conditions at depth. The L-16 fish community was made up of Northern Pike, being the only species captured. L-2 had a variety of species in near-shore areas, including Northern Pike, Yellow Perch and cyprinid species.
- Most other inland lakes were populated by Finescale Dace or Northern Redbelly Dace and Brook Stickleback except for L-19, which also included darter species, Bluntnose Minnow, Fathead Minnow and others. In most cases, minnow trapping was the most effective method of capture in these inland waterbodies; the comprehensive fish species list is provided in Table 3-1.
- In-field water quality measurements show the physiochemical parameters were generally within PWQOs' and CWQGs' protection of aquatic life criteria, but not for early life stages for coldwater species.

4.4 Regional Study Area Sites

- Metabarcoding results show similar species DNA in eDNA samples from both Gull Lake and the Cat River system upstream of Slate Falls, to those found in Springpole Lake. Silver Redhorse DNA was found in the Cat River system but was not detected at any other location, and Lake Sturgeon DNA was not detected in any samples.
- In-field water quality measurements show the physiochemical parameters were within PWQOs' and CWQGs' protection of aquatic life criteria, but not always for early life stages for coldwater species.
- No Lake Sturgeon DNA was detected in any eDNA samples during 2023, nor were any sighted at likely spawning locations.

5.0 CLOSURE

This 2023 Aquatic Resources Assessment Report was prepared by WSP Canada Inc. for the sole benefit of First Mining Gold Corporation for specific application to the Springpole Operation site. The quality of information, conclusions and estimates contained herein are consistent with the level of effort involved in WSP's services and based on: i) information available at the time of preparation, and ii) the assumptions, conditions and qualifications set forth in this document.

Sincerely,
WSP Canada Inc.

Prepared by:

Original Signed

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Attachment A Fish Habitat Assessments

Table A1-1: Summary of Fish Spawning Observations in Springpole Lake

Fish Species	Site Code	Date (dd/mm/yy)	Fish Habitat Observations	Target Fish Count	UTM (15U)	
					Easting	Northing
Northern Pike	A1	1/6/2022	Abundance of submergent vegetation, deeply flooded riparian, >2 m deep, YOY Walleye and Yellow Perch sighted, and Northern Pike caught upstream in L-16.	0	548071	5691528
Northern Pike	B1	6/6/2022	Submergent vegetation, highly flooded riparian, >2 m deep, YOY Yellow Perch sighted.	1	550142	5690898
Northern Pike	B2	6/6/2022	Submergent vegetation, highly flooded riparian, >2 m deep, YOY Yellow Perch sighted.	1	549548	5689785
Northern Pike	B3	6/6/2022	Highly productive area with an abundance of fish sighted, submergent vegetation, highly flooded riparian, >2 m deep, YOY Yellow Perch sighted.	1	547709	5689834
Northern Pike	B4	6/6/2022	Submergent vegetation, highly flooded riparian, >2 m deep, YOY Yellow Perch sighted.	0	549029	5689426
Northern Pike	C1	6/6/2022	Submergent vegetation, highly flooded riparian, >2 m deep.	1	549729	5687469
Northern Pike	C2	12/6/2022	Submergent vegetation, highly flooded riparian, >2m deep.	0	552568	5687500
Northern Pike	E1	17/6/2022	Submergent vegetation, highly flooded riparian, >2 m deep.	0	562920	5687681
Northern Pike	E2	17/6/2022	Submergent vegetation, highly flooded riparian, >2 m deep.	0	563320	5687802
Lake Trout	ISL 1	28/9/2021	Sparse weeds near island shore make for potential lake trout spawning habitat.	0	560118	5687266
Lake Trout	ISL 2	28/9/2021	Set of rocky islands with patches of deep cobble separated by silty substrate. Potential lake trout spawning habitat.	0	559777	5687277
Lake Trout	B5	28/9/2021	Cobble outcropping extending from island with cobble piles amongst silty substrate. Potential lake trout spawning habitat.	0	559397	5687683
Lake Trout	ISL 4	28/9/2021	Mainly silty substrate likely not suitable for lake trout spawning.	0	tbc	tbc

Table A1-2: Springpole Lake 2021 Mean Volume Weighted Hypolimnetic Dissolved Oxygen Concentration (MVWHDO)

Site	Month	MVWHDO (mg/L)	Optimum Habitat Volume (%)	Usable Habitat Volume (%)
L-15-B1	August	6.84	21.4	36.7
L-15-B1	September	6.57	16.4	99
L-15-B2	August	No sample		
L-15-B2	September	4.78	0	97.7
L-15-B3	August	4.17	0	31.2
L-15-B3	September	4.19	0	78
L-15-B4	August	0.69	0	0
L-15-B4	September	0.1	0	80.7
L-15-B5	August	1.47	0	0
L-15-B5	September	0.21	0	96.9
L-15-B6	June	6.41	15.4	48.5
L-15-B6	July	No hypolimnion		
L-15-B6	August	No sample		
L-15-B6	September	No hypolimnion		
BIRCH B1	August	3.34	0	1.9
BIRCH B1	September	No hypolimnion		
BIRCH B2	August	No sample		
BIRCH B2	September	1.02	0	80.2

547000 548000 549000 550000 551000 552000 553000

5694000 5693000 5692000

L-17 L-18 L-2 L-19 Dole Lake L-20 S-21 L-3 S-16 L-4 S-17 L-5 L-5-OUT T4 L-6 L-6-OUT Birch Lake L-16 Springpole Lake (North Basin) A1

X:\CA\CAO\AK300-OAK\MIS-FS1-Project\P2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\AquaticBaseline_2023\MXD\Northern_Pike_Spawning_Transects_MapSeries_1.mxd

LEGEND

- Springpole Lake
- Proposed Springpole Lake Dewatered Area
- Bathymetry Contours (2 m interval)

Habitat Suitable for Northern Pike Spawning

- Approximate Inferred Soft Substrate
- Approximate Inferred Emergent Vegetation
- Water Depth (0 to 2 m)

- 2022 Northern Pike Spawning Observation Transect
- 2023 Habitat Transect

Previous Baseline Studies

- Northern Pike Spawning Observation Transect

Lake Whitefish Spawning Sample Location

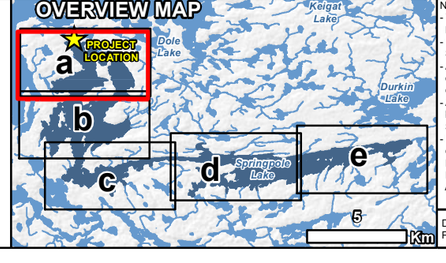
- No Spawning Behaviour Observed
- Spawning Behaviour Observed

Lake Trout Spawning Sample Location

- No Spawning Behaviour Observed
- Spawning Behaviour Observed

0 0.25 0.5 1 1.5 2 Kilometres

OVERVIEW MAP



NOTES:
- Topographic information extracted from LIO, MNRF.
- Springpole Lake bathymetry provided by Story Environmental Inc, 2017/2019.
- Approximate inferred soft substrate based on bathymetry with a slope less than or equal to 12 percent.
- Approximate inferred emergent vegetation based wetlands (LIO, MNRF) within Springpole Lake.
- Previous baseline study sample locations extracted from "Existing Conditions Report - Fish Community and Habitat" by First Mining Gold Corp., and C. Portt and Associates.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Springpole Lake Habitat Assessments

PROJECT N°: ONS2104	**FIGURE: A1-1a**
SCALE: 1:16,000	DATE: February 2024

547000 548000 549000 550000 551000 552000 553000

5691000 5690000 5689000 5688000

Birch Lake

Springpole Lake (North Basin)

S-20 S-9 S-23 S-26

B1 B2 B3 B4

T1 T2 T3 T7

X:\CA\CAOAK300-OAK\MIS-FS1-Project\P2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\AquaticBaseline_2023\MXD\Northern_Pike_Spawning_Transects_MapSeries_1.mxd

LEGEND

- Springpole Lake
- Proposed Springpole Lake Dewatered Area
- Bathymetry Contours (2 m interval)

Habitat Suitable for Northern Pike Spawning

- Approximate Inferred Soft Substrate
- Approximate Inferred Emergent Vegetation
- Water Depth (0 to 2 m)

- 2022 Northern Pike Spawning Observation Transect
- 2023 Habitat Transect

Previous Baseline Studies

- Northern Pike Spawning Observation Transect

Lake Whitefish Spawning Sample Location

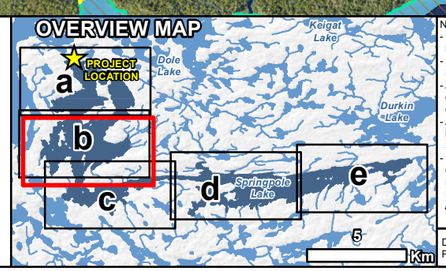
- No Spawning Behaviour Observed
- Spawning Behaviour Observed

Lake Trout Spawning Sample Location

- No Spawning Behaviour Observed
- Spawning Behaviour Observed

0 0.25 0.5 1 1.5 2 Kilometres

OVERVIEW MAP



NOTES:
- Topographic information extracted from LIO, MNRF.
- Springpole Lake bathymetry provided by Story Environmental Inc, 2017/2019.
- Approximate inferred soft substrate based on bathymetry with a slope less than or equal to 12 percent.
- Approximate inferred emergent vegetation based wetlands (LIO, MNRF) within Springpole Lake.
- Previous baseline study sample locations extracted from "Existing Conditions Report - Fish Community and Habitat" by First Mining Gold Corp., and C. Portt and Associates.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

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SPRINGPOLE GOLD PROJECT

Springpole Lake Habitat Assessments

PROJECT N°: ONS2104	**FIGURE: A1-1b**
SCALE: 1:16,000	DATE: February 2024

548000 549000 550000 551000 552000 553000 554000

5688000 5687000 5686000

T2 T1 T7 C1 C2

Springpole Lake (Southeast Arm)

Cromarty Lake

Seagrave Creek

LEGEND

- Springpole Lake
- Proposed Springpole Lake Dewatered Area
- Bathymetry Contours (2 m interval)

Habitat Suitable for Northern Pike Spawning

- Approximate Inferred Soft Substrate
- Approximate Inferred Emergent Vegetation
- Water Depth (0 to 2 m)
- 2022 Northern Pike Spawning Observation Transect
- 2023 Habitat Transect

Previous Baseline Studies

- Northern Pike Spawning Observation Transect

Lake Whitefish Spawning Sample Location

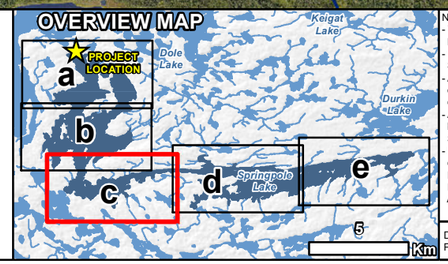
- No Spawning Behaviour Observed
- Spawning Behaviour Observed

Lake Trout Spawning Sample Location

- No Spawning Behaviour Observed
- Spawning Behaviour Observed

0 0.25 0.5 1 1.5 2 Kilometres

OVERVIEW MAP



NOTES:
- Topographic information extracted from LIO, MNRF.
- Springpole Lake bathymetry provided by Story Environmental Inc, 2017/2019.
- Approximate inferred soft substrate based on bathymetry with a slope less than or equal to 12 percent.
- Approximate inferred emergent vegetation based wetlands (LIO, MNRF) within Springpole Lake.
- Previous baseline study sample locations extracted from "Existing Conditions Report - Fish Community and Habitat" by First Mining Gold Corp., and C. Portt and Associates.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Springpole Lake Habitat Assessments

PROJECT N°: ONS2104	**FIGURE: A1-1c**
SCALE: 1:16,000	DATE: February 2024

X:\CA\CAOAK300-OAK\MIS-FS1-Project\P20211Projects\ONS2104_FMG_Springpole_EIS\11_GIS\Aquatic\Baseline_2023\MXD\Northern_Pike_Spawning_Transects_MapSeries_1.mxd

555000 556000 557000 558000 559000 560000

5689000 5688000 5687000 5686000

S-29 L-14 Springpole Lake (Southeast Arm) T5

X:\CA\CAOAK300-OAK\MIS-FS1-ProjectF\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\AquaticBaseline_2023\MXD\Northern_Pike_Spawning_Transects_MapSeries_1.mxd

LEGEND

- Springpole Lake
- Proposed Springpole Lake Dewatered Area
- Bathymetry Contours (2 m interval)

Habitat Suitable for Northern Pike Spawning

- Approximate Inferred Soft Substrate
- Approximate Inferred Emergent Vegetation
- Water Depth (0 to 2 m)
- 2022 Northern Pike Spawning Observation Transect
- 2023 Habitat Transect

Previous Baseline Studies

- Northern Pike Spawning Observation Transect

Lake Whitefish Spawning Sample Location

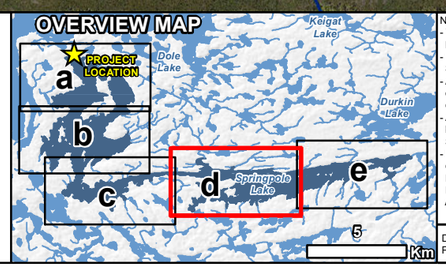
- No Spawning Behaviour Observed
- Spawning Behaviour Observed

Lake Trout Spawning Sample Location

- No Spawning Behaviour Observed
- Spawning Behaviour Observed

0 0.25 0.5 1 1.5 2 Kilometres

OVERVIEW MAP



NOTES:
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Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Springpole Lake Habitat Assessments

PROJECT N°: ONS2104	**FIGURE: A1-1d**
SCALE: 1:16,000	DATE: February 2024

561000 562000 563000 564000 565000 566000 567000

5689000 5688000 5687000

T6

E1

E2

Springpole Lake
(Southeast Arm)

Birch River

X:\CA\CAOAK300-OAKMIS-FS1-ProjectF\2021\Projects\ONS2104_FMG_Springpole_EIS\11_GIS\AquaticBaseline_2023\MXD\Northern_Pike_Spawning_Transects_MapSeries_1.mxd

LEGEND

- Springpole Lake
- Proposed Springpole Lake Dewatered Area
- Bathymetry Contours (2 m interval)

Habitat Suitable for Northern Pike Spawning

- Approximate Inferred Soft Substrate
- Approximate Inferred Emergent Vegetation
- Water Depth (0 to 2 m)

- 2022 Northern Pike Spawning Observation Transect
- 2023 Habitat Transect

Previous Baseline Studies

- Northern Pike Spawning Observation Transect

Lake Whitefish Spawning Sample Location

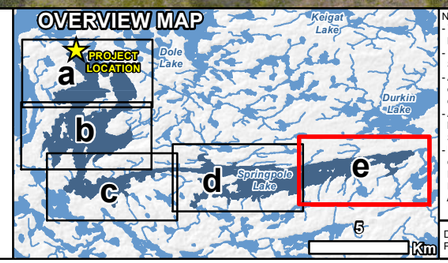
- No Spawning Behaviour Observed
- Spawning Behaviour Observed

Lake Trout Spawning Sample Location

- No Spawning Behaviour Observed
- Spawning Behaviour Observed

0 0.25 0.5 1 1.5 2 Kilometres

OVERVIEW MAP



NOTES:
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- Springpole Lake bathymetry provided by Story Environmental Inc, 2017/2019.
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- Approximate inferred emergent vegetation based wetlands (LIO, MNRF) within Springpole Lake.
- Previous baseline study sample locations extracted from "Existing Conditions Report - Fish Community and Habitat" by First Mining Gold Corp., and C. Portt and Associates.

Datum: NAD83
Projection: UTM Zone 15N

N W E S

First Mining Gold

wsp

SPRINGPOLE GOLD PROJECT

Springpole Lake Habitat Assessments

PROJECT N°: ONS2104	**FIGURE: A1-1e**
SCALE: 1:16,000	DATE: February 2024

Attachment B Fish Community Data, Including Legacy Observations

Table B1-1: Minnow Trap Catch and CPUE Summary

Year	Waterbody	Season	Sample ID	Date (yy/mm/dd)	Traps Set	Duration (hr)	Total Effort (hr)	Species																					
								Blacknose Shiner	Bluntnose Minnow	Brook Stickleback	Cottus sp.	Iowa Darter	Fathead Minnow	Finescale Dace	Iowa Darter	Longnose Dace	Mimic Shiner	Mottled Sculpin	Northern Pike	Northern Pearl Dace	Northern Redbelly Dace	River Darter	Rock Bass	Spottail Shiner	White Sucker	Yellow Perch	Total Catch	Total CPUE
2022	Lake 1	Spring	L-1-MT1	2022-06-09	11	24.30	267.30																			2	2	0.01
	Lake 2		L-2-MT1	2022-06-11	11	19.00	209.00																			15	15	0.07
	Lake 3		L-3-MT1	2022-06-07	20	15.50	310.00			1111											11						1122	3.62
	Lake 16		L-16-MT1	2022-06-02	3	26.50	79.50																				0	0.00
	Lake 17		L-17-MT1	2022-06-08	6	23.00	138.00			42											302						344	2.49
	Lake 18		L-18-MT1	2022-06-08	14	23.50	329.00			227											461						688	2.09
	Lake 19		L-19-MT1	2022-06-02	20	25.30	506.00		1936	42		18									94						2090	4.13
	Birch Lake 1	Summer	B1-MT1	2022-07-09	8	16.50	132.00		4	2													2			26	34	0.26
	Birch Lake 2		B2-MT1	2022-07-09	8	16.50	132.00		1	2																23	26	0.20
	Birch Lake 3		B3-MT1	2022-07-12	8	22.00	176.00			1												1				7	9	0.05
	Birch Lake 4		B4-MT1	2022-07-12	8	23.00	184.00		1	1													1			7	10	0.05
	Lake 1		L-1-MT1	2022-07-09	10	22.00	220.00												1								1	0.00
	Lake 2		L-2-MT1	2022-07-10	6	13.00	78.00																				0	0.00
	Lake 17		L-17-MT1	2022-07-08	8	17.00	136.00			12											484						496	3.65
	Lake 18		L-18-MT1	2022-07-08	10	15.00	150.00			19											760						779	5.19
	Lake 19		L-19-MT1	2022-07-09	8	31.00	248.00		1382	3		3	429								329						2146	8.65
2021	Springpole Lake	Spring	L15-MT1	2021-06-14	27	48.33	1304.91	1			1						9						2			35	48	0.04
	Birch Lake		BIRCH-MT1	2021-06-10	27	20.50	553.50	10	32	2														1		57	102	0.18
	Lake 17	Fall	L17-MT1	2021-09-29	21	2.00	42.00							930													930	22.14
	Lake 18		L18-MT1	2021-09-30	23	23.50	540.50			586				100							490						1176	2.18
	Lake 19		L19-MT1	2021-10-01	24	32.00	768.00			150			971								450						1571	2.05
2020	Springpole Lake	Summer	SPL-MT-01	2020-07-25	4	24.90	99.70																			4	4	0.04
	Springpole Lake		SPL-MT-02	2020-07-25	4	99.73	24.93																	3		5	8	0.32
	Springpole Lake		SPL-MT-03	2020-07-26	4	86.87	21.72																			9	9	0.41
	Springpole Lake		SPL-MT-04	2020-07-26	4	108.33	21.67																			2	2	0.09
	Springpole Lake		SPL-MT-05	2020-07-26	5	42.83	21.42		16									1								23	40	1.87
	Springpole Lake		SPL-MT-06	2020-07-26	2	94.67	23.67		6																	1	7	0.30
	Springpole Lake		SPL-MT-07	2020-07-26	4	47.43	23.72																				0	0.00
	Springpole Lake		SPL-MT-08	2020-07-26	2	94.67	23.67		1																		1	0.04
	Springpole Lake	Fall	SPL-MT-09	2020-09-12	4	217.75	43.55		10														2			4	16	0.37
	Springpole Lake		SPL-MT-10	2020-09-12	5	219.58	43.92		2																		2	0.05
	Springpole Lake		SPL-MT-11	2020-09-13	5	163.33	23.33		3																		3	0.13
	Springpole Lake		SPL-MT-12	2020-09-13	7	153.07	21.87		5														1				6	0.27
2019	Lake 2	Summer	L-2-OUT-DS-MT1	2019-07-18	8	44.00	352.00			0			0	0	0	0		0		0	0		0		0	29	29	0.08
	Lake 2	Summer	L-2-OUT-US-MT1	2019-07-17	8	24.50	196.00			0			0	0	0	0		0		0	0		0		0	0	0	0.00
	Lake 2	Fall	L-2-OUT-MT1	2019-09-18	9	22.00	198.00			0			0	0	0	0		0		2	0		0		3	5	10	0.05
	Lake 5	Summer	L-5-OUT-MT1	2019-07-19	6	18.20	109.00			7			0	2	1	0		0		0	0		0		0	0	10	0.09
	Lake 5	Fall	L-5-OUT-MT1	2019-09-13	15	21.70	324.90			99			49	153	0	0		0		1	0		0		0	0	302	0.93
	Lake 5	Summer	L-5-OUT-MT2	2019-07-19	6	19.30	116.00			1			0	8	0	0		0		0	1		0		0	0	10	0.09
	Lake 16	Summer	L-16-IN-MT1	2019-07-20	6	20.40	122.40			0			0	0	0	0		0		0	0		0		0	0	0	0.00
	Stream 9	Summer	S-9-US02-MT1	2019-07-17	10	23.50	235.00			1			1	18	0	0		0		58	47		0		0	0	125	0.53
	Stream 9	Fall	S-9-MT1	2019-09-12	10	22.40	224.00			3			39	75	0	0		0		18	132		0		4	0	271	1.21
	Stream 9	Fall	S-9-US02-MT1	2019-09-12	10	46.00	460.00			0			11	15	0	0		0		155	101		0		0	0	282	0.61
	Birch River	Summer	BR-MT1	2019-07-23	15	27.00	405.00			0			0	0	2	18		0		0	0		1		0	1	22	0.05
	Unnamed Stream	Summer	UNX07-MT1	2019-07-23	15	25.00	375.00			1			0	0	0	0		1		0	0		0		0	7	9	0.02
	Springpole Lake	Fall	SPL-MT1	2019-09-12	20	28.00	560.00			0			0	0	0	0		0		0	0		1		0	7	8	0.01
	Total Catch by Species							**11**	**3399**	**2312**	**1**	**21**	**1500**	**1301**	**3**	**18**	**9**	**2**	**1**	**234**	**3662**	**1**	**10**	**4**	**7**	**269**	**12765**	**64.62**

Table B1-2: Gillnet Catch and CPUE Summary

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	Net Length	Duration (hr)	Species																					Site Catch Total (n)	Site CPUE Total
							Blacknose Shiner	Bluntnose Minnow	Brook Stickleback	Burbot	Cisco	Common Shiner	Emerald Shiner	Finescale Dace	Golden Shiner	Lake Trout	Lake Whitefish	Logperch	Ninespine Stickleback	Northern Pike	Northern Redbelly Dace	Rock Bass	Shorthead Redhorse	Spottail Shiner	Trout Perch	Walleye	White Sucker	Yellow Perch		
2022	Springpole Lake	XL-GN1	Spring	2022-06-10	24.70	18.33																						0	0.00
	Springpole Lake	XL-GN2		2022-06-10	24.70	18.10																						0	0.00
	Springpole Lake	XL-GN3		2022-06-10	24.70	18.08																						0	0.00
	Springpole Lake	XL-GN4		2022-06-11	24.70	18.83																						0	0.00
	Springpole Lake	XL-GN5		2022-06-11	24.70	18.33																						0	0.00
	Springpole Lake	XL-GN6		2022-06-11	24.70	18.16																						0	0.00
	Springpole Lake	XL-GN7		2022-06-17	24.70	18.08																						0	0.00
	Springpole Lake	XL-GN8		2022-06-17	24.70	18.67																						0	0.00
	Springpole Lake	XL-GN9		2022-06-17	24.70	18.67										2									1			3	0.16
	Springpole Lake	XL-GN10		2022-06-20	24.70	17.67																						0	0.00
	Springpole Lake	XL-GN11		2022-06-20	24.70	17.67										1									2			3	0.17
	Springpole Lake	XL-GN12		2022-06-20	24.70	18.08																						0	0.00
	Springpole Lake	SW-08a-GN1		2022-06-10	7.00	6.00							1	1										18			21	41	6.83
	Springpole Lake	SW-08a-GN2		2022-06-11	7.00	6.08						4												2			1	7	1.15
	Birch Lake	BIRCH-1-GN1		2022-06-13	15.24	8.50		1				3		5				2	1	2		6		12	1	3	1	177	214	25.18
	Birch Lake	BIRCH-2-GN1		2022-06-13	7.00	7.50	3	3				1		7					1		2			18		1	231	267	35.60
	Lake 2	L-2-GN1		2022-06-11	24.70	2.00																						0	0.00
	Lake 3	L-3-GN1		2022-06-07	7.00	8.75			5												13							18	2.06
	Lake 3	L-3-GN2		2022-06-07	7.00	9.00			34												138							172	19.11
	Lake 16	L-16-GN1		2022-06-02	7.00	2.40																						0	0.00
	Lake 16	L-16-GN2		2022-06-02	7.00	2.25																						0	0.00
	Springpole Lake	EB-LG-GN1	Summer	2022-08-18	49.40	17.58				2	23					1	4								9			39	2.22
	Springpole Lake	EB-LG-GN2		2022-08-18	49.40	18.00				2	8														1			11	0.61
	Springpole Lake	EB-LG-GN3		2022-08-19	49.40	17.25																						0	0.00
	Springpole Lake	EB-LG-GN4		2022-08-19	49.40	17.25					3														11	10	2	26	1.51
	Springpole Lake	EB-LG-GN5		2022-08-20	49.40	19.00														4					9	3	1	17	0.89
	Springpole Lake	EB-LG-GN6		2022-08-20	49.40	19.50														6					23	7	2	38	1.95
	Springpole Lake	EB-LG-GN7		2022-08-20	49.40	20.00														3					24	3		30	1.50
	Springpole Lake	EB-LG-GN8		2022-08-21	49.40	17.50					1									2					10			13	0.74
	Springpole Lake	EB-LG-GN9		2022-08-21	49.40	18.42														6			1		16	3	7	33	1.79
	Springpole Lake	EB-LG-GN10		2022-08-21	49.40	16.50																			4	1		5	0.30
	Springpole Lake	EB-LG-GN11		2022-08-22	49.40	19.00					14																	14	0.74
	Springpole Lake	EB-LG-GN12		2022-08-23	49.40	21.25																						0	0.00
	Springpole Lake	EB-SM-GN1		2022-08-18	24.70	17.17																		2	2	26	2	32	1.86
	Springpole Lake	EB-SM-GN2		2022-08-20	24.70	17.92														1				1		5	33	40	2.23
	Springpole Lake	EB-SM-GN3		2022-08-21	24.70	17.00														3				14		5	34	56	3.29
	Springpole Lake	EB-SM-GN4		2022-08-21	24.70	17.50																		7		13	37	57	3.26
	Springpole Lake	EB-SM-GN5		2022-08-21	24.70	17.75																						0	0.00
	Springpole Lake	EB-SM-GN6		2022-08-21	24.70	19.25																						0	0.00
	Springpole Lake	EB-SM-GN7		2022-08-23	24.70	22.00					5									4				6	4	4	1	26	50	2.27
	Springpole Lake	NB-LG-GN1		2022-08-17	49.40	16.00				1	8					1												10	0.63
	Springpole Lake	NB-LG-GN2		2022-08-17	49.40	17.08														7			3			30	11	51	2.99
	Springpole Lake	NB-LG-GN3		2022-08-17	49.40	21.83				1	10					3	3											17	0.78
	Springpole Lake	NB-LG-GN4		2022-08-17	49.40	19.92					6					2	3									2		13	0.65
	Springpole Lake	NB-LG-GN5		2022-08-18	49.40	19.75				2	12					2	3			1						9		29	1.47
	Springpole Lake	NB-LG-GN6		2022-08-18	49.40	19.75														7						30	3	9	49	2.48
	Springpole Lake	NB-LG-GN7		2022-08-19	49.40	16.67					3						1			2						15	2		23	1.38

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	Net Length	Duration (hr)	Species																					Site Catch Total (n)	Site CPUE Total
							Blacknose Shiner	Bluntnose Minnow	Brook Stickleback	Burbot	Cisco	Common Shiner	Emerald Shiner	Finescale Dace	Golden Shiner	Lake Trout	Lake Whitefish	Logperch	Ninespine Stickleback	Northern Pike	Northern Redbelly Dace	Rock Bass	Shorthead Redhorse	Spottail Shiner	Trout Perch	Walleye	White Sucker	Yellow Perch		
2021	Springpole Lake	NB-LG-GN8	Summer	2022-08-19	49.40	19.50					21					1										1			23	1.18
	Springpole Lake	NB-LG-GN9		2022-08-20	49.40	17.25					14									1						2			17	0.99
	Springpole Lake	NB-LG-GN10		2022-08-21	49.40	16.50														2						13	4	1	20	1.21
	Springpole Lake	NB-LG-GN11		2022-08-22	49.40	17.00					2						1												3	0.18
	Springpole Lake	NB-LG-GN12		2022-08-22	49.40	16.50														5		1				21	2		29	1.76
	Springpole Lake	NB-LG-GN13		2022-08-22	49.40	16.00				2	7					1													10	0.63
	Springpole Lake	NB-LG-GN14		2022-08-23	49.40	18.00					8						2												10	0.56
	Springpole Lake	NB-LG-GN15		2022-08-23	49.40	16.75				1	20					3				1									25	1.49
	Springpole Lake	NB-SM-GN1		2022-08-17	24.70	20.83					8															3		1	12	0.58
	Springpole Lake	NB-SM-GN2		2022-08-17	24.70	20.50																		3	3	27		15	48	2.34
	Springpole Lake	NB-SM-GN3		2022-08-18	24.70	19.50					6									1						6			13	0.67
	Springpole Lake	NB-SM-GN4a		2022-08-19	24.70	16.67														3				3		5	2	48	61	3.66
	Springpole Lake	NB-SM-GN4b		2022-08-19	24.70	16.00					25					1													26	1.63
	Springpole Lake	NB-SM-GN5a		2022-08-21	24.70	16.50					27									1						5			33	2.00
	Springpole Lake	NB-SM-GN5b		2022-08-20	24.70	16.75					7					1													8	0.48
	Springpole Lake	NB-SM-GN6		2022-08-22	24.70	19.00												1						17		21	3	40	82	4.32
	Springpole Lake	NB-SM-GN7		2022-08-22	24.70	17.00								2	1					6						10	1		20	1.18
	Springpole Lake	NB-SM-GN8		2022-08-22	24.70	19.00											1									15			16	0.84
	Springpole Lake	NB-SM-GN9		2022-08-23	24.70	17.58														1				2		13	6		22	1.25
	Lake 17	L-17-GN1	Fall	2021-09-30	15.24	20.25								16															16	0.79
	Lake 17	L-17-GN2		2021-09-30	15.24	20.50								30															30	1.46
	Lake 17	L-17-GN3		2021-09-30	15.24	20.17																							0	0.00
	Lake 18	L-18-GN1		2021-09-30	15.24	23.50																							0	0.00
	Lake 18	L-18-GN2		2021-09-30	15.24	23.50																							0	0.00
	Lake 18	L-18-GN3		2021-09-30	15.24	23.50																							0	0.00
	Lake 19	L-19-GN1		2021-10-01	15.24	32.00																							0	0.00
	Lake 19	L-19-GN2		2021-10-01	15.24	32.00																							0	0.00
	Lake 19	L-19-GN3		2021-10-01	15.24	32.00																							0	0.00
2020	Springpole Lake	SPL-LG-01	Summer	2020-07-24	24.70	2.13														2						4			6	2.82
	Springpole Lake	SPL-LG-02		2020-07-24	24.70	3.22																							0	0.00
	Springpole Lake	SPL-LG-03		2020-07-24	24.70	1.67																				3	2		5	2.99
	Springpole Lake	SPL-SM-01		2020-07-24	24.70	2.22						3												1		1		7	12	5.41
	Springpole Lake	SPL-SM-02		2020-07-24	24.70	3.62		1				10												1				13	25	6.91
	Springpole Lake	SPL-SM-03		2020-07-24	24.70	1.83																		5		5		19	29	15.85
	Springpole Lake	SPL-SM-01		2020-07-24	24.70	2.22						3												1		1		7	12	5.41
	Springpole Lake	SPL-SM-02		2020-07-24	24.70	3.62		1				10												1				13	25	6.91
	Springpole Lake	SPL-SM-03		2020-07-24	24.70	1.83																		5		5		19	29	15.85
	Springpole Lake	SPL-LG-04		2020-07-25	24.70	2.25														1						5			6	2.67
	Springpole Lake	SPL-LG-05		2020-07-25	24.70	2.75																				4			4	1.45
	Springpole Lake	SPL-LG-08		2020-07-25	24.70	0.55																				1			1	1.82
	Springpole Lake	SPL-LG-09		2020-07-26	24.70	0.58																							0	0.00
	Springpole Lake	SPL-LG-10		2020-07-26	24.70	0.50																							0	0.00
	Springpole Lake	SPL-LG-11		2020-07-26	24.70	0.83																				2			2	2.41
	Springpole Lake	SPL-LG-12		2020-07-26	24.70	0.52																				1			1	1.92
	Springpole Lake	SPL-LG-13		2020-07-26	24.70	0.50																							0	0.00
	Springpole Lake	SPL-LG-14		2020-07-26	24.70	0.50														1									1	2.00
	Springpole Lake	SPL-SM-04	Fall	2020-09-12	24.70	0.47																						1	1	2.13
	Springpole Lake	SPL-SM-05		2020-09-12	24.70	0.77																						8	8	10.39
	Springpole Lake	SPL-SM-06		2020-09-12	24.70	0.50														1									1	2.00
	Springpole Lake	SPL-SM-07	Fall	2020-09-12	24.70	0.61																							0	0.00

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	Net Length	Duration (hr)	Species																						Site Catch Total (n)	Site CPUE Total
							Blacknose Shiner	Bluntnose Minnow	Brook Stickleback	Burbot	Cisco	Common Shiner	Emerald Shiner	Finescale Dace	Golden Shiner	Lake Trout	Lake Whitefish	Logperch	Ninespine Stickleback	Northern Pike	Northern Redbelly Dace	Rock Bass	Shorthead Redhorse	Spottail Shiner	Trout Perch	Walleye	White Sucker	Yellow Perch		
	Springpole Lake	SPL-SM-08	Fall	2020-09-12	24.70	1.25																							0	0.00
	Springpole Lake	SPL-SM-09		2020-09-12	24.70	0.98																						1	1	1.02
	Springpole Lake	SPL-SM-10		2020-09-13	24.70	1.76																							0	0.00
	Springpole Lake	SPL-SM-11		2020-09-13	24.70	1.68																						4	4	2.38
	Springpole Lake	SPL-SM-12		2020-09-13	24.70	1.43																						7	7	4.90
	Springpole Lake	SPL-SM-13		2020-09-13	24.70	1.38														1								18	19	13.77
	Springpole Lake	SPL-SM-14		2020-09-13	49.40	2.00														1								4	5	2.50
	Springpole Lake	SPL-SM-15		2020-09-13	24.70	1.10																							0	0.00
	Springpole Lake	SPL-LG-09		2020-09-13	24.70	1.85																							0	0.00
2019	L-2	L-2-OUT-RIN1	Summer	2019-07-17	12.50	24.00														1								3	4	0.17
	L-2	L-2-OUT-GN1		2019-07-17	15.24	24.00																	1			5			6	0.25
	Birch River	BR-GN1		2019-07-23	15.24	23.00																							0	0.00
	Birch River	BR-GN2		2019-07-23	15.24	24.08														2		1				5			8	0.33
	Birch River	BR-GN3		2019-07-23	15.24	24.25																				5			5	0.21
	Unnamed Stream	UNX07-GN1		2019-07-23	15.24	24.00																	2						2	0.08
	Unnamed Stream	UNX07-RIN1		2019-07-23	12.50	24.00														3								15	18	0.75
	Total Catch by Species						**3**	**6**	**39**	**11**	**238**	**34**	**1**	**61**	**1**	**19**	**18**	**3**	**2**	**82**	**153**	**8**	**7**	**119**	**10**	**442**	**54**	**838**	**2149**	**270.28**

Table B1-3: Electrofishing Catch and CPUE Summary

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	Duration (s)	Duration (min)	Species													
							Brook Stickleback	Finescale Dace	Iowa Darter	Mimic Shiner	Northern Pike	Northern Redbelly Dace	Northern Pearl Dace	Sculpin sp.	Spottail Shiner	Yellow Perch	YOY Shiner sp.	Site Catch Total (n)	Site CPUE Total
2022	Lake 16	L-16-EF1	Spring	2022-06-13	528	8.80			2		1	1	5	1				10	1.14
	Lake 16	L-16-EF1	Summer	2022-07-12	400	6.67			2			6		5				13	1.95
2019	L-5-OUT	L-5-OUT-EF1	Summer	2019-07-18	469	7.82	1	1	2									4	0.51
	L-16-IN	L-16-IN-EF1		2019-07-19	658	10.97												0	0.00
	S-9	S-9-EF1		2019-07-16	669	11.15	2	4				1						7	0.63
	S-9-US01	S-9-US01-EF1		2019-07-17	650	10.83												0	0.00
	UNX07	UNX07-EF1		2019-07-22	987	16.45												0	0.00
	Springpole Lake	SPL-EF-01	Fall	2020-09-27	335	5.58									1	1	7	9	1.61
	Springpole Lake	SPL-EF-02		2020-09-27	265	4.42									1	1		2	0.45
	Springpole Lake	SPL-EF-03		2020-09-27	192	3.20				3					4	8	3	18	5.63
		Total Catch by Species					**3**	**5**	**6**	**3**	**1**	**8**	**5**	**6**	**6**	**10**	**10**	**63**	**11.92**

Table B1-4: Angling Catch and CPUE Summary

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	# of Rods	Duration (hrs)	Sampling Effort (hrs)	Species		Site Catch Total (n)	Site CPUE Total
								Northern Pike	Walleye		
2022	Lake 16	L-16-AN1	Spring	2022-06-02	3	1	3	10		10	3.33
2019	Birch River	BR-KM22-AN1	Summer	2019-07-22	3	1.5	4.5	1	13	14	3.1
	Springpole Lake	SPL-AN1	Fall	2019-09-10	2	1	2	6		6	3
		SPL-AN2	Fall	2019-09-11	2	1.165	2.33	4		4	1.7
		SPL-AN3	Fall	2019-09-12	2	0.5	1	3		3	3
		SPL-AN4	Fall	2019-09-13	2	0.835	1.67	4		4	2.4
		SPL-AN5	Fall	2019-09-14	2	1	2	3		3	1.5
		SPL-AN-05	Fall	2020-09-13	2	0.5	1	30	60	3	3
		SPL-AN-06	Fall	2020-09-13	2	0.165	0.33	10	20	3	9
		SPL-AN-08	Fall	2020-09-13	2	0.35	0.7	21	42	1	1.4
		SPL-AN-09	Fall	2020-09-14	2	0.165	0.33	10	20	2	6
		SPL-AN-10	Fall	2020-09-14	2	0.3	0.6	18	36	3	5
		SPL-AN-11	Fall	2020-09-14	2	0.215	0.43	13	26	1	2.3
		SPL-AN-12	Fall	2020-09-14	2	0.465	0.93	28	56	4	4.3
	Total Catch by Species							**161**	**273**	**61**	**49.03**

Table B1-5: Seine Net Catch and CPUE Summary

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	# of Hauls	Species																		Site Catch Total (n)	Site CPUE Total
						Blacknose Shiner	Brook Stickleback	Common Shiner	Emerald Shiner	Golden Shiner	Finescale Dace	Iowa Darter	Johnny Darter	Logperch	Mimic Shiner	Northern Pike	River Darter	Rock Bass	Spottail Shiner	Trout Perch	Walleye	White Sucker	Yellow Perch	YOY Shiner sp.		
2022	Birch Lake	BIRCH-1-SN1	Summer	2022-07-10	1	109					27				25	1				1	1				164	164
	Birch Lake	BIRCH-2-SN1		2022-07-10	1	71						4			595				24	24					718	718
	Birch Lake	BIRCH-3-SN1		2022-07-13	1	42					48	1		4					4		1				100	100
	Birch Lake	BIRCH-4-SN1		2022-07-13	1	2	2				6	30		12			1		1						54	54
	Lake 2	L-2-SN1		2022-07-11	1	45		24		1						2							50		122	122
2021	Springpole Lake	L15-SN1	Spring	2021-06-15	1										91				51						142	142
	Springpole Lake	L15-SN2		2021-06-15	1	100													102						202	202
2019	Stream 9	S-9-US01-SN1	Fall	2019-09-11	3																				0	0
	Lake 16	L-16-IN-SN1		2019-09-14	3																				0	0
	Springpole Lake	SPL-SN1		2019-09-15	3								1			1		1	4			3	112		122	41
	Springpole Lake	SPL-SN2		2019-09-15	6				1			1	6						7			7	46		68	11
	Springpole Lake	SPL-SN3		2019-09-15	3														10				214	1	225	75
	Springpole Lake	SPL-SN4		2019-09-16	2								4						8				269		281	141
	Total Catch by Species					**369**	**2**	**24**	**1**	**1**	**81**	**36**	**11**	**16**	**711**	**4**	**1**	**1**	**211**	**25**	**2**	**10**	**691**	**1**	**2198**	**1769.5**

Table B1-6: Dip Net Catch and CPUE Summary

Year	Waterbody Name	Effort ID	Season	Date (yy/mm/dd)	Duration (hrs)	Effort (No. of Dips)	Species						Site Catch Total (n)	Site CPUE Total
							Blacknose Shiner	Finescale Dace	Mimic Shiner	Spottail Shiner	Yellow Perch	YOY Shiner sp.		
2022	Springpole Lake	SW-08a-DN1	Spring	2022-06-12	0.25	-	348	15		10			373	1492.00
	Springpole Lake	SW-07a-DN1		2022-06-10	0.5	-	134	20		24	2	106	286	572.00
	Lake 16	L-16-DN1		2022-06-02	0.33	-		61					61	184.85
2020	Springpole Lake	SPL-DP-01	Summer	2020-07-26	-	2				9	2		11	11.00
	Springpole Lake	SPL-DP-02		2020-07-26	-	2				16	2		18	18.00
	Springpole Lake	SPL-DP-03		2020-07-26	-	2				5		19	24	5.00
	Springpole Lake	SPL-DP-04		2020-07-26	-	2				12	12		24	24.00
	Springpole Lake	SPL-DP-05		2020-07-26	-	2			4		30		34	34.00
	Springpole Lake	SPL-DP-06		2020-07-26	-	2			6	5	1		12	12.00
	Total Catch by Species						**482**	**96**	**10**	**81**	**49**	**125**	**843**	**2352.85**

Table B1-7: Fyke Net Catch and CPUE Summary

Year	Waterbody	Effort ID	Season	Set Date (yy/mm/dd)	Lift Date (yy/mm/dd)	Effort (hrs)	Species						Total Catch	Total CPUE
							Blacknose Shiner	Catostomus sp.	Golden Shiner	Northern Pike	Spottail Shiner	Yellow Perch		
2019	Lake 2	L-2-OUT-DS-MFN1	Summer	2019-07-16	2019-07-18	44.00		9				72	81	1.84
	Lake 2	L-2-OUT-US-MFN1		2019-07-16	2019-07-17	24.75	17		93	3	2	4	119	4.81
	Lake 2	L-2-OUT-US-LF1		2019-07-16	2019-07-17	24.68							0	0
	Unnamed Stream	UNX07-MFN1		2019-07-22	2019-07-23	25.17							0	0
	Total Catch by Species						**17**	**9**	**93**	**3**	**2**	**76**	**200**	**6.65**

Table B1-8: BsM Species Catch Summary by Basin (2022)

Species (Common Name)	Basin						
	NB01	NB02	NB03	B46	CB07	EB05	Grand Total
Lake Trout	3	8	3	1		1	16
Lake Whitefish		7	5	2		4	18
Cisco	30	38	51	65	8	46	238
Burbot	3	2	2			4	11
Northern Pike	12	1	2	23	14	15	67
Walleye	54	2	15	157	64	96	388
Yellow Perch	12			173	68	76	329
Common White Sucker	2			21	18	10	51
Shorthead Redhorse	3				1		4
Spottail Shiner				25	7	23	55
Finescale Dace				2			2
Golden Shiner				1			1
Logperch				1			1
Rock Bass	1						1
Trout Perch				3	4	2	9
Grand Total	**120**	**58**	**78**	**474**	**184**	**277**	**1191**

Table B1-9: Springpole Lake BsM Species Catch Summary (2022)

Species (Common Name)	Total Catch (%)	Min TLEN (mm)	Max TLEN (mm)	Average TLEN (mm)
Walleye	32.58	79	650	378
Yellow Perch	27.62	48	245	116
Cisco	19.98	91	479	223
Northern Pike	5.63	90	784	520
Spottail Shiner	4.62	57	101	79
Common White Sucker	4.28	60	599	373
Lake Whitefish	1.51	315	586	515
Lake Trout	1.34	249	946	672
Burbot	0.92	374	669	539
Trout Perch	0.76	55	94	80
Shorthead Redhorse	0.34	480	536	514
Finescale Dace	0.17	56	59	58
Golden Shiner	0.08	109	109	109
Logperch	0.08	189	189	189
Rock Bass	0.08	133	133	133

Table B1-10: BsM Species CPUE for Large Mesh Nets by Basin (2022)

Species (Common Name)	Basin (Average CPUE/Station)						All Basin Total
	NB01	NB02	NB03	NB46	CB07	EB05	
Burbot	0.0938	0.0528	0.0506	0.0000	0.0000	0.1124	0.3096
Cisco	0.4688	1.0355	0.5260	1.0342	0.0435	1.2734	4.3813
Lake Trout	0.0625	0.2085	0.0506	0.0256	0.0000	0.0284	0.3757
Lake Whitefish	0.0000	0.1734	0.1315	0.0300	0.0000	0.1138	0.4487
Northern Pike	0.3564	0.0299	0.0253	0.3268	0.2004	0.3163	1.2550
Rock Bass	0.0303	0.0000	0.0000	0.0000	0.0000	0.0000	0.0303
Shorthead Redhorse	0.0878	0.0000	0.0000	0.0000	0.0271	0.0000	0.1150
Walleye	1.5146	0.0502	0.2278	1.6870	0.9543	1.3961	5.8300
White Sucker	0.0606	0.0000	0.0000	0.2571	0.2790	0.2584	0.8552
Yellow Perch	0.3220	0.0000	0.0000	0.2582	0.2190	0.0776	0.8768
Sum of Set Hours	131.16	151.00	75.50	179.34	178.84	263.66	979.50
CPUE Total	**2.9968**	**1.5502**	**1.0120**	**3.6189**	**1.7233**	**3.5763**	**14.4775**

Note: CPUE is Number of fish per 24.80 metre of panel per hour

Table B1-11: BsM Species Catch Summary by Depth Strata (2022)

Species	Depth Strata (m)					
	1 to 3	3 to 6	6 to 12	12 to 20	20 to 35	Grand Total by Species
Lake Trout				5	11	16
Lake Whitefish			2	6	10	18
Cisco		4	22	80	132	238
Burbot				2	9	11
Northern Pike	33	13	17	3	1	67
Walleye	114	166	79	19	10	388
Yellow Perch	186	111	32			329
Common White Sucker	9	28	14			51
Shorthead Redhorse	4					4
Spottail Shiner	25	24	6			55
Finescale Dace	2					2
Golden Shiner	1					1
Logperch		1				1
Rock Bass		1				1
Trout Perch		5	4			9
Grand Total by Strata	**374**	**353**	**176**	**115**	**173**	**1,191**

Table B1-12: Springpole Lake BsM Large Mesh Species Catch and CPUE Summary (2022)

Effort ID	Basin	Lift Date (dd/mm/yy)	Set Hours (hr)	Total Set Hours (hr)	Burbot	Cisco	Common Shinner	Common White Sucker	Finescale Dace	Golden Shiner	Lake Trout	Lake Whitefish	Logperch	Northern Pike	Rock Bass	Shorthead Redhorse	Spottail Shiner	Trout Perch	Walleye	Yellow Perch	Total Catch	Total CPUE
EB-LG-GN1	EB05	18/8/2022	17.58	35.16	2	23					1	4							9		39	1.1092
EB-LG-GN2	EB05	18/8/2022	18.00	36.00	2	8													1		11	0.3056
EB-LG-GN3	CB07	19/8/2022	17.25	34.50																	0	0.0000
EB-LG-GN4	CB07	19/8/2022	17.25	34.50		3		10											11	2	26	0.7536
EB-LG-GN5	EB05	20/8/2022	19.00	38.00				3						4					9	1	17	0.4474
EB-LG-GN6	EB05	20/8/2022	19.50	39.00				7						6					23	2	38	0.9744
EB-LG-GN7	CB07	20/8/2022	20.00	40.00				3						3					24		30	0.7500
EB-LG-GN8	EB05	21/8/2022	17.50	35.00		1								2					10		13	0.3714
EB-LG-GN9	CB07	21/8/2022	18.42	36.84				3						6		1			16	7	33	0.8958
EB-LG-GN10	CB07	21/8/2022	16.50	33.00				1											4		5	0.1515
EB-LG-GN11	EB05	22/8/2022	19.00	38.00		14															14	0.3684
EB-LG-GN12	EB05	23/8/2022	21.25	42.50																	0	0.0000
NB-LG-GN1	NB01	17/8/2022	16.00	32.00	1	8					1										10	0.3125
NB-LG-GN2	NB01	17/8/2022	17.08	34.16										7		3			30	11	51	1.4930
NB-LG-GN3	NB02	17/8/2022	21.83	43.66	1	10					3	3									17	0.3894
NB-LG-GN4	NB02	17/8/2022	19.92	39.84		6					2	3							2		13	0.3263
NB-LG-GN5	NB03	18/8/2022	19.75	39.50	2	12					2	3		1					9		29	0.7342
NB-LG-GN6	NB46	18/8/2022	19.75	39.50				3						7					30	9	49	1.2405
NB-LG-GN7	NB46	19/8/2022	16.67	33.34		3		2				1		2					15		23	0.6899
NB-LG-GN8	NB46	19/8/2022	19.50	39.00		21					1								1		23	0.5897
NB-LG-GN9	NB46	20/8/2022	17.25	34.50		14								1					2		17	0.4928
NB-LG-GN10	NB46	21/8/2022	16.50	33.00				4						2					13	1	20	0.6061
NB-LG-GN11	NB02	22/8/2022	17.00	34.00		2						1									3	0.0882
NB-LG-GN12	NB01	22/8/2022	16.50	33.00				2						5	1				21		29	0.8788
NB-LG-GN13	NB01	22/8/2022	16.00	32.00	2	7					1										10	0.3125
NB-LG-GN14	NB03	23/8/2022	18.00	36.00		8						2									10	0.2778
NB-LG-GN15	NB02	23/8/2022	16.75	33.50	1	20					3			1							25	0.7463
Total Catch by Species					**11**	**160**	**0**	**38**	**0**	**0**	**14**	**17**	**0**	**47**	**1**	**4**	**0**	**0**	**230**	**33**	**555**	**15.3051**

Note: CPUE by 24.80 m gang length

Table B1-13: Springpole Lake BsM Small Mesh Species Catch and CPUE Summary (2022)

Effort ID	Basin	Lift Date (dd/mm/yy)	Set Hours (hr)	Total Set Hours (hr)	Burbot	Cisco	Common Shinner	Common White Sucker	Finescale Dace	Golden Shiner	Lake Trout	Lake Whitefish	Logperch	Northern Pike	Rock Bass	Shorthead Redhorse	Spottail Shiner	Trout Perch	Walleye	Yellow Perch	Total Catch	Total CPUE
EB-SM-GN1	EB05	18/8/2022	17.17	34.34													2	2	26	2	32	0.93
EB-SM-GN2	CB07	20/8/2022	17.92	35.84										1			1		5	33	40	1.12
EB-SM-GN3	EB05	21/8/2022	17.00	34.00										3			14		5	34	56	1.65
EB-SM-GN4	EB05	21/8/2022	17.50	35.00													7		13	37	57	1.63
EB-SM-GN5	EB05	21/8/2022	17.75	35.50																	0	0.00
EB-SM-GN6	EB05	21/8/2022	19.25	38.50																	0	0.00
EB-SM-GN7	CB07	23/8/2022	22.00	44.00		5		1						4			6	4	4	26	50	1.14
NB-SM-GN1	NB01	17/8/2022	20.83	41.66		8													3	1	12	0.29
NB-SM-GN2	NB46	17/8/2022	20.50	41.00													3	3	27	15	48	1.17
NB-SM-GN3	NB03	18/8/2022	19.50	39.00		6								1					6		13	0.33
NB-SM-GN4a	NB46	19/8/2022	16.67	33.34				2						3			3		5	48	61	1.83
NB-SM-GN4b	NB03	19/8/2022	16.00	32.00		25					1										26	0.81
NB-SM-GN5a	NB46	21/8/2022	16.50	33.00		27								1					5		33	1.00
NB-SM-GN5b	NB01	20/8/2022	16.75	33.50		7					1										8	0.24
NB-SM-GN6	NB46	22/8/2022	19.00	38.00				3					1				17		21	40	82	2.16
NB-SM-GN7	NB46	22/8/2022	17.00	34.00				1	2	1				6					10	7	27	0.79
NB-SM-GN8	NB46	22/8/2022	19.00	38.00								1							15	2	18	0.47
NB-SM-GN9	NB46	23/8/2022	17.58	35.16				6						1			2		13	51	73	2.08
Total Catch by Species					**0**	**78**	**0**	**13**	**2**	**1**	**2**	**1**	**1**	**20**	**0**	**0**	**55**	**9**	**158**	**296**	**636**	**35.27**

Note: CPUE by 12.50 m gang length

Table B1-14: Springpole Lake MNRF BsM Analysis for Relative Abundance

Analysis	Depth Strata	Total Set Hours	Burbot	Cisco	Lake Trout	Lake Whitefish	Northern Pike	Rock Bass	Shorthead Redhorse	Walleye	White Sucker	Yellow Perch	CPUE Total	Total Catch
CPUE	1-3	76.34					0.1048		0.0131	0.4585	0.0786	0.2096	0.8646	66
	3-6	209.66		0.0191			0.0906	0.0048	0.0143	0.4054	0.0859	0.0668	0.6868	144
	6-12	143.34		0.0209		0.0070	0.0837			0.3000	0.0907	0.0209	0.5232	75
	12-20	152.84	0.0131	0.3468	0.0327	0.0393	0.0131			0.0916			0.5365	82
	20-35	320.32	0.0281	0.3091	0.0219	0.0281	0.0031			0.0312			0.4215	135
Species CPUE Total			0.0412	0.6958	0.0546	0.0743	0.2953	0.0048	0.0274	1.2867	0.2551	0.2973	3.0326	502
Area-Weighted CPUE	1-3	76.34					0.0130		0.0016	0.0570	0.0098	0.0260	0.1074	66
	3-6	209.66		0.0063			0.0297	0.0016	0.0047	0.1328	0.0281	0.0219	0.2250	144
	6-12	143.34		0.0061		0.0020	0.0244			0.0874	0.0264	0.0061	0.1524	75
	12-20	152.84	0.0021	0.0553	0.0052	0.0063	0.0021			0.0146			0.0856	82
	20-35	320.32	0.0019	0.0209	0.0015	0.0019	0.0002			0.0021			0.0286	135
Species Area-Weighted CPUE			0.0040	0.0886	0.0067	0.0102	0.0694	0.0016	0.0063	0.2939	0.0643	0.0540	0.5989	502

Table B1-15: Springpole Lake MNRF BsM Analysis for Relative Biomass

Analysis	Depth Strata	Total Set Hours	Burbot	Cisco	Lake Trout	Lake Whitefish	Northern Pike	Rock Bass	Shorthead Redhorse	Walleye	White Sucker	Yellow Perch	Biomass per Unit Effort	Total Biomass
Biomass per Unit Effort	1-3	76.34					112.08		18.97	337.29	102.70	15.76	587	44796
	3-6	209.66		10.86			103.80	0.21	21.94	359.34	94.51	2.99	594	124464
	6-12	143.34		10.64		7.95	123.98			292.88	115.61	1.23	552	79166
	12-20	152.84	22.11	32.69	129.37	62.19	23.55			94.98			365	55771
	20-35	320.32	29.07	60.33	80.89	43.24	6.90			40.30			261	83516
Species BPUE Total			51.18	114.52	210.26	113.38	370.32	0.21	40.91	1124.79	312.82	19.98	2358	387713
Area-Weighted CPUE	1-3	76.34					13.92		2.36	41.90	12.76	1.96	72.90	44796
	3-6	209.66		3.56			34.01	0.07	7.19	117.72	30.96	0.98	194.48	124464
	6-12	143.34		3.10		2.32	36.11			85.30	33.67	0.36	160.85	79166
	12-20	152.84	3.53	5.21	20.63	9.92	3.76			15.15			58.19	55771
	20-35	320.32	1.97	4.09	5.48	2.93	0.47			2.73			17.67	83516
Species Area-Weighted BPUE			5.50	15.96	26.11	15.16	88.26	0.07	9.54	262.80	77.39	3.30	504.10	387713

Table B1-16: Springpole Lake MNRF BsM Analysis Density Estimates

Analysis	Depth Strata	Total Set Hours	Lake Trout	Walleye	NB01 - Lake Trout	NB01 - Walleye	Springpole Lake - Lake Trout	Springpole Lake - Walleye
Fish per Hectare	1-3	76.34		0.8817	49	402	838	6840
	3-6	209.66		0.7797				
	6-12	143.34		0.5769				
	12-20	152.84	0.1817	0.1762				
	20-35	320.32	0.1214	0.0600				
Total Density (fish/ha)			0.3032	2.4744				
Biomass of Fish per Hectare	1-3	76.34		648.64	189780	351428	3229021	5979396
	3-6	209.66		691.04				
	6-12	143.34		563.23				
	12-20	152.84	718.73	182.64				
	20-35	320.32	449.38	77.51				
Total Density (fish biomass (g)/ha)			1168.10	2163.05				

Table B1-17: 2022 Springpole Lake BsM Survey Catch Data

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Burbot	374	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Burbot	380	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Burbot	406	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Burbot	535	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Burbot	550	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Burbot	561	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Burbot	660	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Burbot	569	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Burbot	595	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Burbot	630	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Burbot	669	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	167	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	93	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	102	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	176	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	175	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	200	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Cisco	192	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	130	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	134	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	142	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	146	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	146	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	150	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	163	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	166	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	167	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	168	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	169	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	170	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	170	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	171	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	440	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	172	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	172	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	173	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Cisco	174	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	174	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	174	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	174	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	174	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	174	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	174	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	175	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	175	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	176	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	176	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	176	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	177	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	178	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	179	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	179	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	179	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	179	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	179	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	180	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	297	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	180	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	180	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	181	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	182	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	182	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	182	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	183	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	184	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	184	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	185	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	185	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	185	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	186	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	186	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	187	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	188	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	188	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	188	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	188	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	189	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	189	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	189	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	189	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	190	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	190	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	190	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	190	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	190	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Cisco	191	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	191	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	191	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	191	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	192	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	372	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	193	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	193	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	193	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	193	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	193	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	193	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Cisco	194	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Cisco	194	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	194	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	194	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	194	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	195	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	195	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	195	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	195	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	195	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	196	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	196	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	200	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	200	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	200	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	200	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	200	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	200	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	201	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	202	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	203	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	205	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	205	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	206	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	206	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	206	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	208	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	208	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Cisco	184	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Cisco	179	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Cisco	153	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Cisco	155	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Cisco	184	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Cisco	168	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	209	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	210	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	211	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	212	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	212	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	212	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	380	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	213	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	213	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	213	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN11	Cisco	213	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	215	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	215	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	215	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	215	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	217	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	217	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	218	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	219	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	219	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Cisco	220	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	220	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	220	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	220	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	220	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	220	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	221	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	222	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	223	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	224	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	224	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	224	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	224	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	224	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	225	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	225	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Cisco	225	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Cisco	479	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Cisco	174	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Cisco	183	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	227	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	227	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	228	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	228	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	229	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	230	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Cisco	230	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	230	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	230	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN11	Cisco	232	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Cisco	234	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	234	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	234	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	235	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	237	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	237	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	240	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	240	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Cisco	240	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Cisco	241	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	242	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	245	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Cisco	245	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Cisco	448	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Cisco	444	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Cisco	243	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Cisco	246	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	250	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	378	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Cisco	253	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	253	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	411	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	252	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	263	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	265	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	266	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Cisco	267	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	271	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	273	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	274	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	213	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	296	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Cisco	279	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	280	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	286	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Cisco	294	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	410	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	275	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	298	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	172	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	262	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	315	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	320	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	323	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	305	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	193	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	378	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	263	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	385	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	306	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	391	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Cisco	404	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	390	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	276	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	415	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	448	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	456	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN11	Cisco	456	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Cisco	458	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Cisco	303	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Cisco	152	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Cisco	182	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Cisco	196	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Cisco	147	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Cisco	182	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Cisco	180	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	White Sucker	586	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	White Sucker	297	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	White Sucker	502	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	White Sucker	570	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	White Sucker	533	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	White Sucker	190	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	White Sucker	225	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	560	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	580	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	491	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	353	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	496	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	590	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	243	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	520	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	304	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	White Sucker	534	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	White Sucker	345	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	White Sucker	570	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	White Sucker	525	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	599	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	494	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	382	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	440	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	489	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	515	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	White Sucker	301	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	White Sucker	500	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	White Sucker	211	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	White Sucker	315	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN10	White Sucker	547	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	White Sucker	269	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	White Sucker	174	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	White Sucker	191	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	White Sucker	575	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	White Sucker	340	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	White Sucker	580	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	White Sucker	504	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	White Sucker	60	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	White Sucker	490	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	White Sucker	179	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	White Sucker	265	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	White Sucker	171	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	White Sucker	160	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	White Sucker	182	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	White Sucker	184	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	White Sucker	172	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	White Sucker	230	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	White Sucker	188	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	White Sucker	155	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	White Sucker	154	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Finescale Dace	56	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Finescale Dace	59	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Golden Shiner	109	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Lake Trout	249	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Lake Trout	272	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN13	Lake Trout	579	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Lake Trout	635	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4b	Lake Trout	680	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Lake Trout	688	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Lake Trout	695	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5b	Lake Trout	708	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN1	Lake Trout	715	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Lake Trout	738	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Lake Trout	743	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Lake Trout	744	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Lake Trout	761	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Lake Trout	770	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Lake Trout	823	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Lake Trout	946	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Lake Whitefish	467	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Lake Whitefish	315	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Lake Whitefish	452	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Lake Whitefish	460	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Lake Whitefish	500	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Lake Whitefish	534	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Lake Whitefish	528	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN14	Lake Whitefish	531	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Lake Whitefish	536	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Lake Whitefish	542	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Lake Whitefish	550	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Lake Whitefish	562	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN11	Lake Whitefish	570	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Lake Whitefish	542	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN3	Lake Whitefish	586	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Lake Whitefish	585	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Lake Whitefish	483	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Lake Whitefish	519	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Logperch	189	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	646	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	522	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	545	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	589	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	627	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	575	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Northern Pike	545	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Northern Pike	657	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	560	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	515	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	724	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	493	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	469	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	712	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Northern Pike	628	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Northern Pike	626	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Northern Pike	606	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Northern Pike	156	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Northern Pike	180	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Northern Pike	476	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Northern Pike	630	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Northern Pike	607	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Northern Pike	721	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Northern Pike	702	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Northern Pike	710	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Northern Pike	615	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Northern Pike	660	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Northern Pike	784	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Northern Pike	634	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Northern Pike	561	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Northern Pike	525	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Northern Pike	718	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Northern Pike	634	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Northern Pike	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Northern Pike	700	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Northern Pike	550	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Northern Pike	528	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Northern Pike	405	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Northern Pike	362	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Northern Pike	499	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Northern Pike	542	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Northern Pike	577	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Northern Pike	169	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Northern Pike	133	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Northern Pike	562	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Northern Pike	385	Gang 1

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Northern Pike	117	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Northern Pike	123	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Northern Pike	141	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Northern Pike	109	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Northern Pike	119	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Northern Pike	561	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Northern Pike	561	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Northern Pike	557	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Northern Pike	584	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Northern Pike	517	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Northern Pike	650	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Northern Pike	557	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Northern Pike	553	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Northern Pike	642	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Northern Pike	139	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Northern Pike	674	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Northern Pike	534	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Northern Pike	647	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Northern Pike	732	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN15	Northern Pike	750	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Northern Pike	752	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Rock Bass	133	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Shorthead Redhorse	535	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Shorthead Redhorse	480	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Shorthead Redhorse	536	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Shorthead Redhorse	503	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Spottail Shiner	81	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Spottail Shiner	72	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Spottail Shiner	57	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Spottail Shiner	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Spottail Shiner	71	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Spottail Shiner	65	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Spottail Shiner	73	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Spottail Shiner	74	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Spottail Shiner	65	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	84	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	82	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	62	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	62	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	82	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Spottail Shiner	72	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	80	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	83	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	66	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	85	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	65	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	75	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	70	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	71	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	80	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	71	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	71	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	71	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	66	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Spottail Shiner	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	87	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	72	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	82	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	83	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	101	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	84	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	93	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	85	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	85	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	101	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	85	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	74	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	85	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Spottail Shiner	78	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Spottail Shiner	84	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Spottail Shiner	81	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Spottail Shiner	89	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Spottail Shiner	82	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Spottail Shiner	84	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Spottail Shiner	93	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Spottail Shiner	60	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Spottail Shiner	69	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Trout Perch	55	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Trout Perch	83	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Trout Perch	80	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Trout Perch	85	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Trout Perch	62	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Trout Perch	83	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Trout Perch	94	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Trout Perch	87	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Trout Perch	89	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	502	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	315	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	345	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	260	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	434	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	395	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	290	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	284	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	251	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	200	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	245	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	230	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	165	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	165	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	100	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	96	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	325	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	365	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	330	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	300	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	214	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	205	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	230	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	194	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	173	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	113	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Walleye	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Walleye	574	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Walleye	504	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Walleye	450	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	445	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	460	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	410	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	494	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	492	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	509	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	480	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	501	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	437	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	465	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	364	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	519	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	536	*Note: Fish 22 onward was labelled 2-1, 2-2, 2-3, etc. on a separate sheet
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	527	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	425	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	390	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	433	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	415	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	436	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	482	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	448	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	293	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	318	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	473	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	510	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	435	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	270	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	530	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	435	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Walleye	299	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Walleye	535	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Walleye	566	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Walleye	557	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Walleye	436	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Walleye	453	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN3	Walleye	483	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	466	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	320	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	445	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	312	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	374	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	534	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	434	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	464	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	305	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	476	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	422	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	449	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	474	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	410	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	525	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	402	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	436	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	516	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	456	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	482	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	336	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	254	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	451	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	480	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	340	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	469	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	430	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	389	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	473	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Walleye	474	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	262	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	195	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	199	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	254	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	185	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	238	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	180	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	424	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	399	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	337	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	241	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	240	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	255	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	187	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	184	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	187	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	266	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	300	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	193	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	209	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	255	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	180	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	244	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	189	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	96	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Walleye	203	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	450	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	533	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	504	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	520	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	448	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	559	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	563	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	503	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	495	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	463	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	507	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	446	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	517	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	502	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN7	Walleye	434	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Walleye	249	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Walleye	263	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Walleye	301	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Walleye	270	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Walleye	255	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	650	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	515	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	451	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	427	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	252	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	453	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	445	Live Release
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	429	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	374	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	460	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Walleye	582	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	443	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	394	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	521	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	347	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	480	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	480	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	426	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	505	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	499	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	443	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	325	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	425	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	519	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	445	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	500	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	260	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	194	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	330	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	256	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	450	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	211	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	262	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	197	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN7	Walleye	275	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	541	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	488	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	393	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	252	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	480	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	451	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	476	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	584	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	630	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	455	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	515	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	515	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	460	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	464	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	560	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	480	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	191	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	503	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	325	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	448	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	430	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	523	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Walleye	540	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	410	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	510	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	460	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	510	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	263	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	255	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	250	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	301	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Walleye	260	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	284	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	455	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	296	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	283	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	262	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	288	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Walleye	182	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN10	Walleye	462	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN10	Walleye	430	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN10	Walleye	479	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN10	Walleye	391	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	374	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	425	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	434	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	506	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Walleye	450	Gang 2 - Live Release
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	461	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	580	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	506	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	485	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	497	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	296	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	323	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	327	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	260	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	415	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	480	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	507	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	545	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	430	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Walleye	446	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	618	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	355	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	450	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	480	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	515	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	420	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	439	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	322	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	433	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	364	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	253	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	451	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	347	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	334	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	422	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Walleye	325	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	355	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	251	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	206	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	84	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	210	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	108	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	425	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	325	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	471	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	325	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	351	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	279	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Walleye	281	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Walleye	105	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Walleye	79	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Walleye	186	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Walleye	274	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Walleye	313	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Walleye	497	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Walleye	501	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	632	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	594	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	570	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Walleye	520	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN4	Walleye	524	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	526	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	527	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	191	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	259	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	276	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	187	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	178	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	313	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	294	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	314	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Walleye	372	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	510	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	474	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	463	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	518	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	621	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	534	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	435	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	580	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	472	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	416	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	532	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	486	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	499	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	388	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	506	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	492	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	392	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	308	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	286	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	247	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN12	Walleye	266	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	476	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	512	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	505	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	295	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	259	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	190	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	506	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	450	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Walleye	366	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Walleye	530	Gang 2 - Live Release
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	532	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	547	
Summer	2022	Springpole Lake	Lake	GN	NG-LG-GN9	Walleye	537	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN2	Walleye	540	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	547	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	502	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN1	Walleye	535	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	550	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN5	Walleye	553	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	194	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	102	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	195	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	111	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	294	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	210	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	99	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	183	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	104	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	186	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	107	Gang 1

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	168	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	163	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	263	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	335	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	105	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	274	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	101	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	199	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Walleye	94	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	419	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	361	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	522	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	482	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	450	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	520	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	367	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	483	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	380	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN8	Walleye	583	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	191	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	195	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	191	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	538	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	200	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	482	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	565	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	479	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	329	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	351	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	350	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	254	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Walleye	164	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Walleye	564	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Walleye	544	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Walleye	79	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Walleye	100	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Walleye	570	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN5a	Walleye	577	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN8	Walleye	580	
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	179	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	139	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	147	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	153	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	131	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	155	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	142	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	124	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	136	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	120	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	130	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	111	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	120	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	128	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN2	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN1	Yellow Perch	164	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	170	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	180	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	161	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	160	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	161	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	187	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	157	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	193	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	152	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	163	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN2	Yellow Perch	164	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	190	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	219	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	171	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	180	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	168	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	166	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	174	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	152	
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN6	Yellow Perch	159	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Yellow Perch	57	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN1	Yellow Perch	97	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch		Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	93	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	143	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	89	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	92	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	97	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	93	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch		Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch		Gang 1 - Caudal Length
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	88	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	85	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	102	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	146	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch		Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch		Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	87	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	96	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	96	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	86	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	136	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	119	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	141	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	96	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	100	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	97	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	92	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	99	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	102	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN4a	Yellow Perch	85	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Yellow Perch	150	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN4	Yellow Perch	171	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Yellow Perch	172	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN6	Yellow Perch	177	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN5	Yellow Perch	174	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	92	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	140	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	99	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	101	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	153	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	135	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	126	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	104	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	98	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	108	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	98	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	183	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	94	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	131	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	98	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	96	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	150	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	144	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	101	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	87	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	115	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	110	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	100	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	96	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	55	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	102	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	138	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	151	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	164	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN2	Yellow Perch	134	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-LG-GN10	Yellow Perch	163	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	223	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	245	

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	173	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	174	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	234	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	180	
Summer	2022	Springpole Lake	Lake	GN	EB-LG-GN9	Yellow Perch	146	
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	98	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	170	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	51	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	52	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	131	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	141	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	93	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	54	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	95	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	141	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	141	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	136	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	134	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	139	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	142	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	136	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	148	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	81	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	98	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	98	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch		Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	133	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	136	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	96	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	52	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	100	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	171	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	162	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	156	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	139	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	104	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	52	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	55	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	126	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN4	Yellow Perch	153	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	158	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	157	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	137	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	106	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	48	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	53	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	58	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	56	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	86	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	50	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	52	Gang 1

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	59	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	53	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	53	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	56	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	83	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	95	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	95	Gang 1
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	54	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	57	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	166	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	58	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	58	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	95	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	52	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	53	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	52	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	147	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN3	Yellow Perch	162	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	166	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	116	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	84	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	93	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	87	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN7	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Yellow Perch	155	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN8	Yellow Perch	149	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	190	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	96	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	123	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	130	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	167	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	81	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	150	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	85	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	153	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	134	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	160	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	124	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	152	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	134	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	50	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	122	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	54	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	84	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	91	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	95	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	92	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	85	Gang 1

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	104	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	94	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	86	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	87	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	96	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	87	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	90	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	84	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	88	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	85	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	127	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	124	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	91	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN6	Yellow Perch	92	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	171	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	186	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	164	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	156	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	156	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	169	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	159	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	155	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	172	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	156	Gang 1
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	134	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	131	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	131	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	128	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	136	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	131	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	133	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	125	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	151	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	136	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	170	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	131	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	94	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	124	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	87	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	83	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch		Gang 2 - Caudal Length
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch		Gang 2 - Caudal Length
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch		Gang 2 - Caudal Length
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch		Gang 2 - Caudal Length
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	104	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	92	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	86	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	83	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	92	Gang 2

Program (season)	Year	Waterbody	Area/ Location/ Site	Gear	Effort ID	Species (Full Name)	Total Length (mm)	Notes/Comments
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	95	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	124	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	102	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	93	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	86	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	84	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	92	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	90	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	85	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	104	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	92	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	85	Gang 2
Summer	2022	Springpole Lake	Lake	GN	NB-SM-GN9	Yellow Perch	87	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	148	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	126	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	103	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	128	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	132	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	165	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	95	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	142	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	154	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	129	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	143	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	138	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	94	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	89	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	49	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	92	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	124	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	129	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	137	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	94	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	139	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	158	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	148	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	88	Gang 2
Summer	2022	Springpole Lake	Lake	GN	EB-SM-GN7	Yellow Perch	52	Gang 2

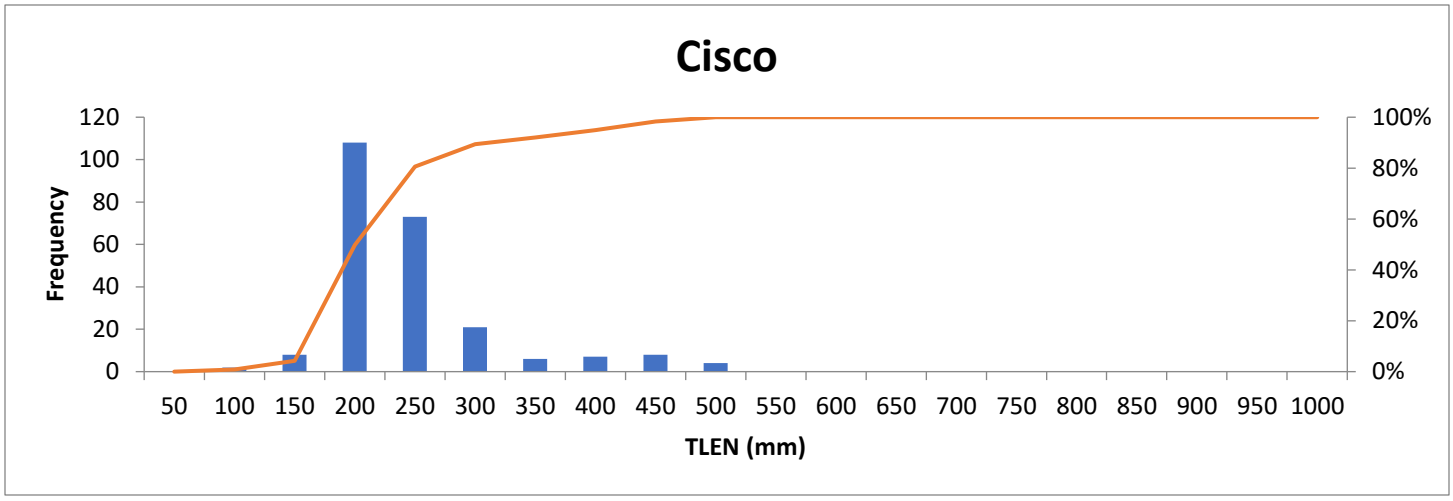

Figure B1-1: Length-Frequency Distributions and Cumulative Percent Length Composition for Cisco

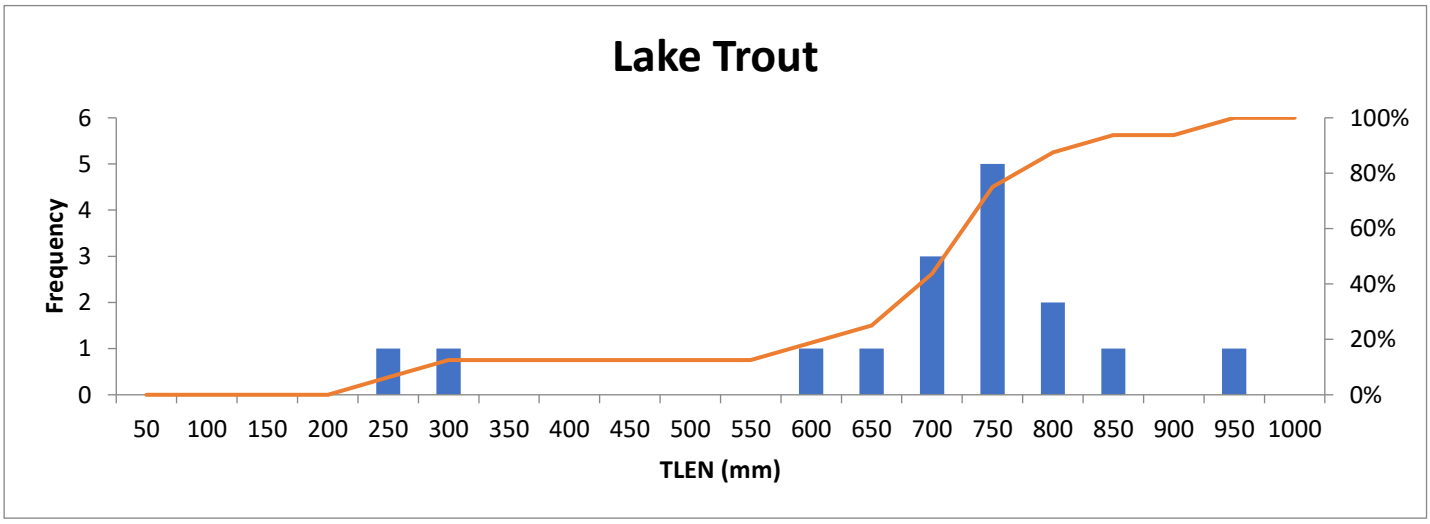

Figure B1-2: Length-Frequency Distributions and Cumulative Percent Length Composition for Lake Trout

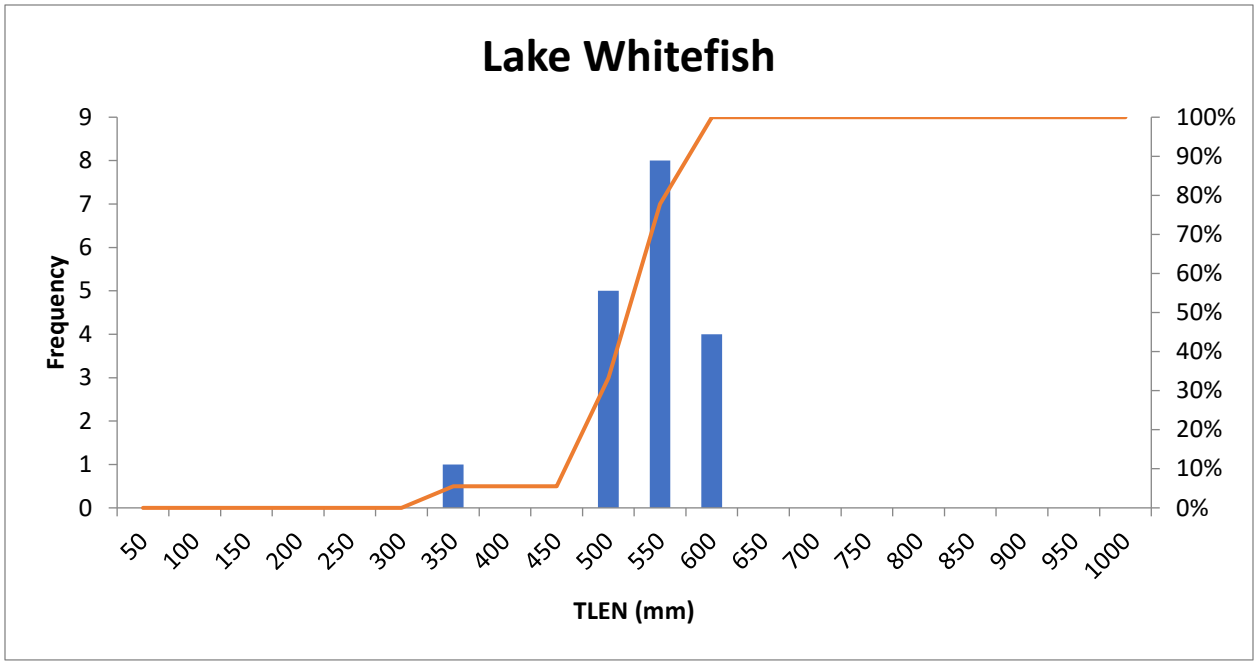

Figure B1-3: Length-Frequency Distributions and Cumulative Percent Length Composition for Lake Whitefish

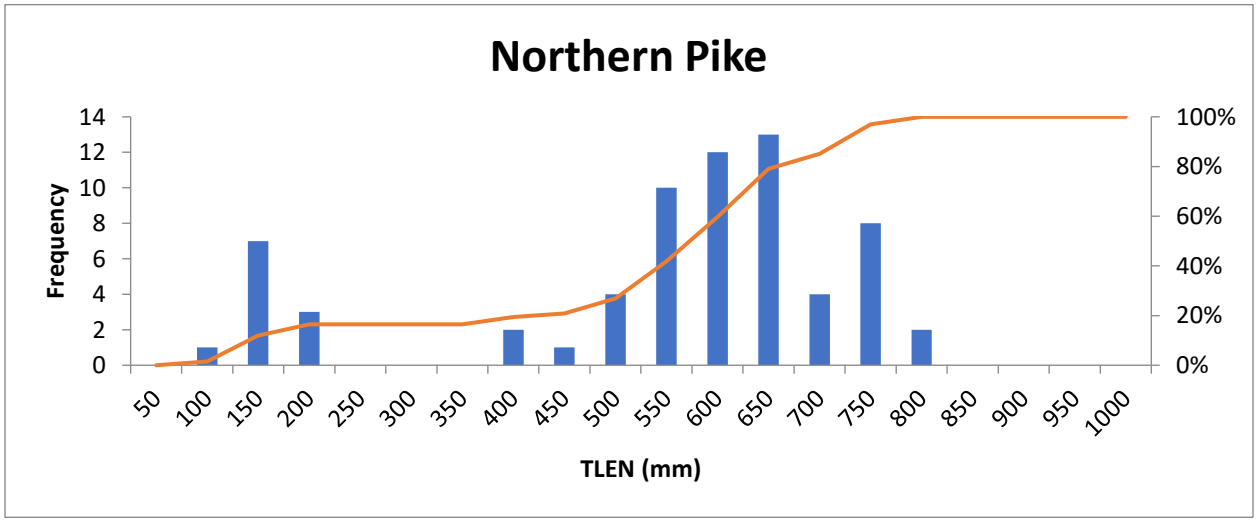

Figure B1-4: Length-Frequency Distributions and Cumulative Percent Length Composition for Northern Pike

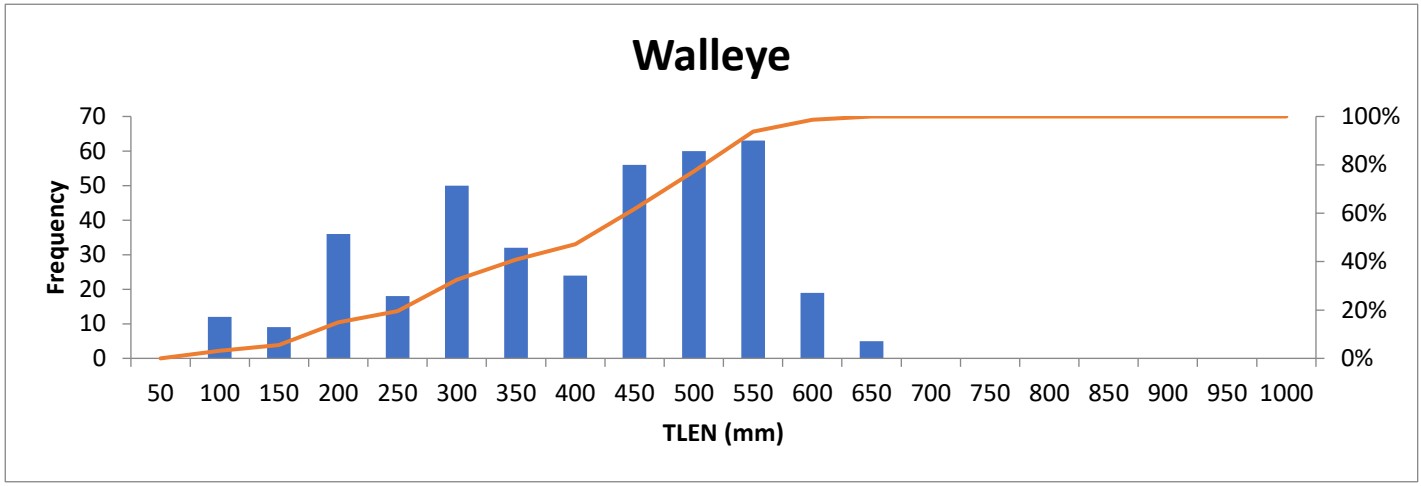

Figure B1-5: Length-Frequency Distributions and Cumulative Percent Length Composition for Walleye

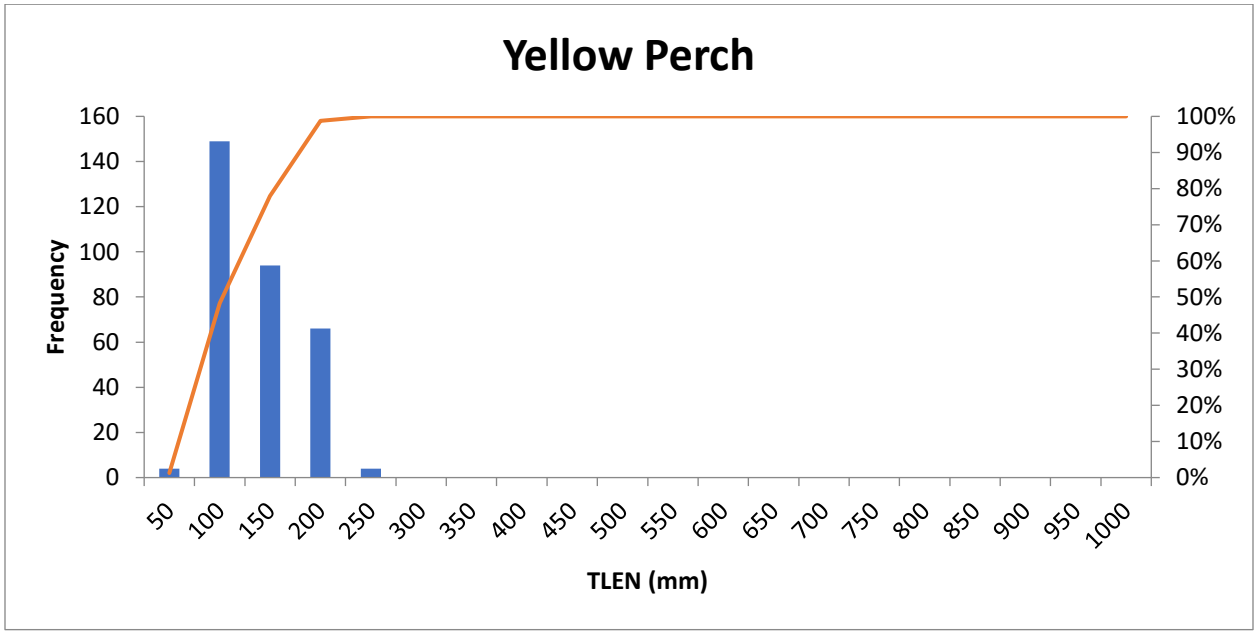

Figure B1-6: Length-Frequency Distributions and Cumulative Percent Length Composition for Yellow Perch

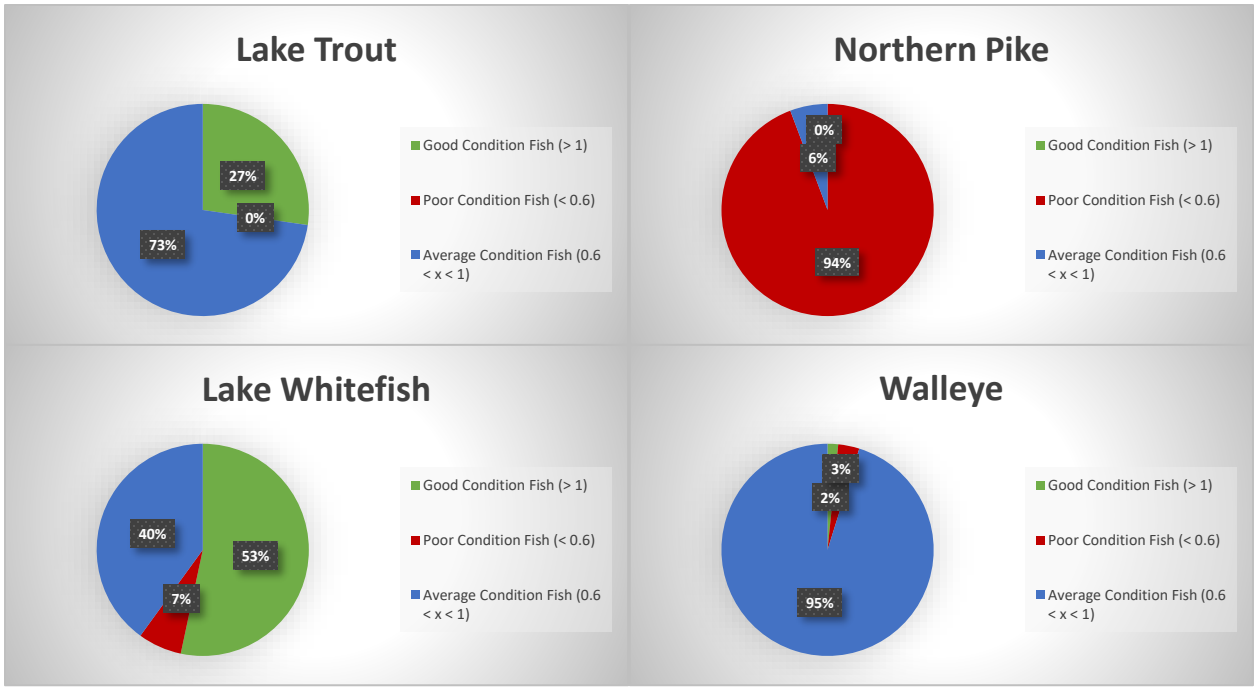

Figure B1-7: Condition Factor of Target Species from the 2022 Springpole Lake BsM Survey

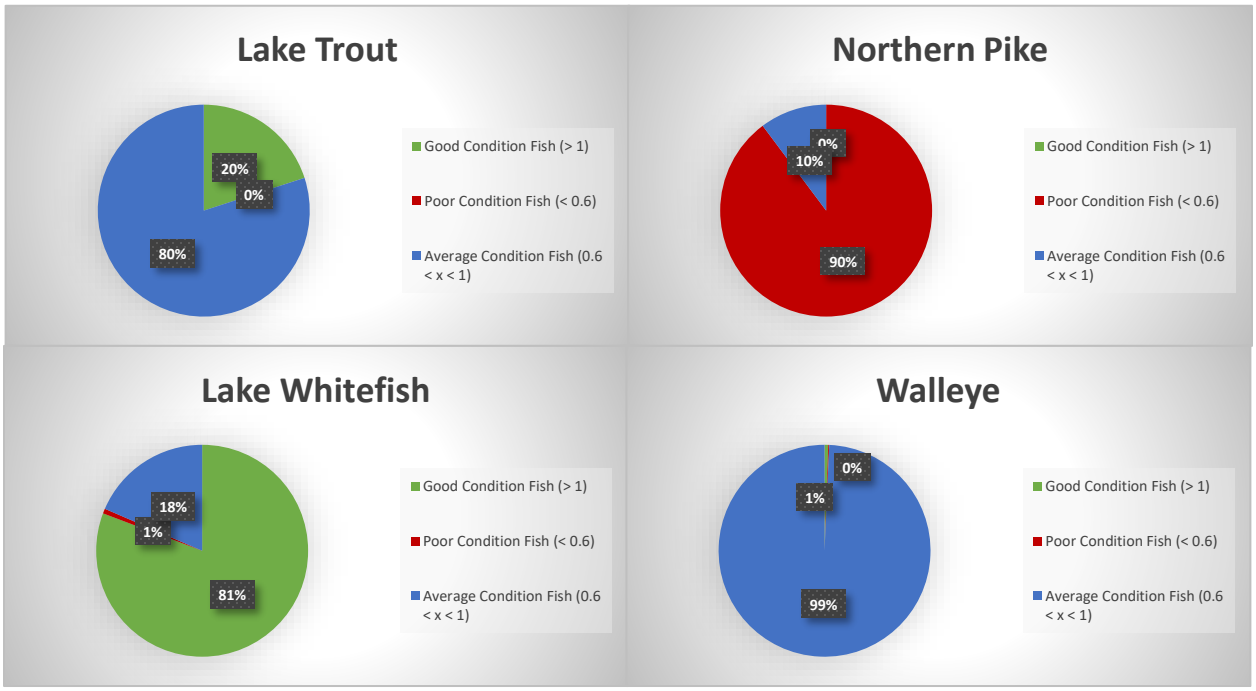

Figure B1-8: Condition Factor of Target Species from the three Birch Lake BsM Surveys

Attachment C Environmental DNA Metabarcoding Analysis

Table C1-1: Spring eDNA

Family	Genus	Species	Common Name	Springpole Lake	Birch Lake
Catostomidae	Catostomus	Catostomus commersonii	Common White Sucker	X	X
Catostomidae	Moxostoma	Moxostoma macrolepidotum	Shorthead Redhorse	X	
Cyprinidae	Chrosomus	Chrosomus eos	Northern Redbelly Dace		X
Cyprinidae	Chrosomus	Chrosomus neogaeus	Finescale Dace	X	X
Cyprinidae	Couesius	Couesius plumbeus	Lake Chub	X	X
Cyprinidae	Luxilus	Luxilus cornutus	Common Shiner	X	X
Cyprinidae	Notemigonus	Notemigonus crysoleucas	Golden Shiner	X	
Cyprinidae	Notropis	Notropis atherinoides	Emerald Shiner	X	
Cyprinidae	Notropis	Notropis heterolepis	Blacknose Shiner	X	
Cyprinidae	Notropis	Notropis hudsonius	Spottail Shiner	X	X
Cyprinidae	Notropis	Notropis volucellus	Mimic Shiner	X	
Cyprinidae	Pimephales	Pimephales notatus	Bluntnose Minnow	X	
Cyprinidae	Pimephales	Pimephales promelas	Fathead Minnow	X	X
Esocidae	Esox	Esox lucius	Northern Pike	X	X
Lotidae	Lota	Lota lota	Burbot	X	X
Gasterosteidae	Culaea	Culaea inconstans	Brook Stickleback	X	X
Centrarchidae	Ambloplites	Ambloplites rupestris	Rock Bass	X	
Percidae	Etheostoma	Etheostoma exile	Iowa Darter	X	X
Percidae	Etheostoma	Etheostoma nigrum	Johnny Darter	X	X
Percidae	Perca	Perca flavescens	Yellow Perch	X	X
Percidae	Percina	Percina caprodes	Logperch	X	X
			Sauger	X	
Percidae	Sander	Sander vitreus	Walleye	X	X
Percopsidae	Percopsis	Percopsis omiscomaycus	Trout-perch	X	X
Salmonidae	Salvelinus	Salvelinus namaycush	Lake Trout	X	X
Salmonidae	Only able to ID to family - Likely Lake Trout or Lake Whitefish			X	X
Salmonidae				X	
Cottidae	"Sculpin"			X	X
Cottidae				X	X

Table C1-2: Summer eDNA

Family	Genus	Species	Common Name	Springpole Lake	Birch Lake	Gull Lake	Cat River System
Catostomidae	Catostomus	Catostomus commersonii	Common White Sucker	X	X	X	X
Catostomidae	Moxostoma	Moxostoma anisurum	Silver Redhorse				X
Catostomidae	Moxostoma	Moxostoma macrolepidotum	Shorthead Redhorse	X	X		X
Cyprinidae	Chrosomus	Chrosomus eos	Northern Redbelly Dace		X		
Cyprinidae	Chrosomus	Chrosomus neogaeus	Finescale Dace		X		
Cyprinidae	Chrosomus	Northern Redbelly Dace / Finescale Dace			X		
Cyprinidae	Couesius	Lake Chub			X		
Cyprinidae	Luxilus	Luxilus cornutus	Common Shiner	X			X
Cyprinidae	Margariscus	Northern Pearl Dace			X	X	
Cyprinidae	Notropis	Notropis atherinoides	Emerald Shiner	X	X	X	X
Cyprinidae	Notropis	Notropis heterolepis	Blacknose Shiner				X
Cyprinidae	Notropis	Notropis hudsonius	Spottail Shiner	X	X	X	X
Cyprinidae	Notropis	Notropis volucellus	Mimic Shiner	X			X
Cyprinidae	Pimephales	Pimephales promelas	Fathead Minnow	X			
Cyprinidae	Rhinichthys	Eastern Blacknose Dace / Longnose Dace		X			X
Esocidae	Esox	Esox lucius	Northern Pike	X	X	X	X
Lotidae	Lota	Lota lota	Burbot	X	X	X	X
Gasterosteidae	Culaea	Culaea inconstans	Brook Stickleback	X	X	X	
Centrarchidae	Ambloplites	Ambloplites rupestris	Rock Bass	X			
Percidae	Etheostoma	Etheostoma exile	Iowa Darter	X	X		
Percidae	Etheostoma	Etheostoma nigrum	Johnny Darter	X	X	X	X
Percidae	Perca	Perca flavescens	Yellow Perch	X	X	X	X
Percidae	Percina	Percina caprodes	Logperch	X	X	X	X
Percidae	Sander	Sander canadensis	Sauger	X		X	X
Percidae	Sander	Sander vitreus	Walleye	X	X	X	X
Percopsidae	Percopsis	Percopsis omiscomaycus	Trout-perch	X	X	X	X
Salmonidae	Coregonus	Coregonus autumnalis/Coregonus clupeaformis	Lake Whitefish		X		
Salmonidae	Coregonus	Lake Whitefish / Cisco		X	X	X	
Salmonidae	Salvelinus	Salvelinus namaycush	Lake Trout	X	X	X	
Cottidae	Cottus	"Sculpin"		X	X	X	X
Cervidae	Alces	Alces alces	Moose			X	

FISH METABARCODING **RESULTS**

Order number:	NA-SO00134_SO01227
Report number:	NM-BOA127
Company:	WoodPLC - Northern Ontario
Contact:	Karl Weise
Project:	Gold Canyon Resources #2
Sample type:	Smith-Root filter
Date of report:	05-Dec-2022
Number of samples:	45 + 9 controls

Thank you for sending your samples for analysis by NatureMetrics. Your samples have been metabarcoded following our eDNA survey - Fish (excl. sharks & rays) pipeline. **A taxon-by-sample table of your samples is attached to this report (NA-SO00134_SO01227.Fish.xlsx)**. Each row in the table represents one taxon (OTU), shown with the lowest possible taxonomic assignment based on currently available reference data. Each column represents a sample, showing the proportion of sequence reads per detected OTU. Care should be taken in interpreting the numbers in terms of relative species abundance, but a high sequence proportion can be interpreted as lending greater confidence to a detection. This report contains biodiversity information that may be sensitive, particularly with respect to endangered or protected species. It is the responsibility of the client to ensure that due consideration is given to the data and that the information is shared in a responsible way.

Here we present an overview of the key results, followed by a more detailed report that starts with the taxonomic composition of the samples followed by a more detailed look at the steps taken to extract, amplify, sequence, and analyse your DNA. A glossary for terms in bold is provided at the end of the report to define key terms used within the report.

OVERVIEW OF YOUR RESULTS

- A total of 35 taxa were detected.
- Average taxon richness was 10.17 and ranged from 1 to 18.
- Most abundant sequence: walleye (*Sander vitreus*).
- Most commonly detected taxa: walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), white sucker (*Catostomus commersonii*).

FULL REPORT

Sample composition

A total of 35 taxa were detected (**Table 1**). 60% (21 taxa) were at least 99% similar to a species in the global reference databases, and species names are suggested. The remaining taxa were identified to the lowest possible taxonomic level: 31.4% to genus (11 taxa), and the remainder to family (3 taxa). The taxa belong to 8 orders, 10 families, and 22 genera.

The average taxon richness was 10.17 and ranged from 1 ('Springpole-eDNA-03-01') to 18 ('Cat-eDNA-15-03'). The relative proportion of the sequences found in each of the samples is shown in **Figure 1** and **Table 1** and the diversity is summarised in **Table 2** and **Table 3**.

Walleye (*Sander vitreus*), which accounted for 24.8% of the total sequence reads, was among the most abundant in terms of sequences. Among the most commonly detected taxa were walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), white sucker (*Catostomus commersonii*), which were detected in 46, 43, and 36 samples, respectively.

Non-target vertebrate taxa were detected in 1 of the samples. Non-target taxa are shown in Figure 1 and Table 1 but are not included in the summaries of taxon diversity (Table 2 and Table 3). These non-target detections should be treated with some caution as the fish/mammal analysis may not fully capture the non-fish/mammal vertebrate community present in the samples. Common environmental contaminants such as human and livestock sequences are excluded.

High-quality fish sequence data were obtained for 44 of the 45 eDNA samples.

Sample 'Springpole-eDNA-03-01' produced fewer than expected target reads; results for these samples are therefore considered tentative.

Three client negative control samples 'NegativeControl-01-01', 'NegativeControl-01-02', and 'NegativeControl-01-03' amplified and contained sequences from several target species; all other client controls failed to amplify.

All laboratory controls behaved as expected.

Table 1 (attached separately). Taxon-by-sample table.

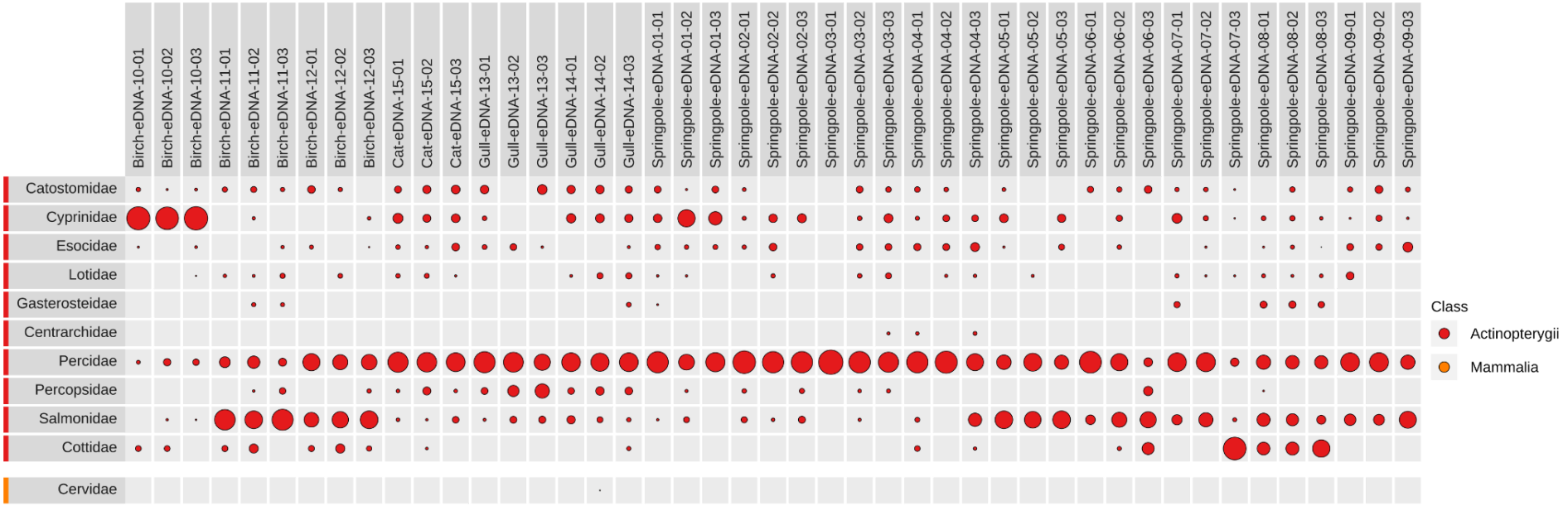

Figure 1. The proportion of the sequencing output allocated to the different families (rows) within each sample (columns). Each bubble per sample represents the proportion of DNA for each family for that sample. The size of the bubble is relative to the number of sequences from all families detected in that sample.

Figure 2 (attached separately). The proportion of the sequencing output allocated to the different taxa (rows) within each sample (columns). Each bubble per sample represents the proportion of DNA for each taxon for that sample. The size of the bubble is relative to the number of sequences from all taxa detected in that sample.

Table 2 (attached separately). Taxon richness among the samples.

Table 3 (attached separately). The frequency of occurrence of all detected families. Numbers correspond to the number of taxa belonging to those families in those samples.

METHODS

DNA from each filter was extracted using a commercial DNA extraction kit with a protocol modified to increase DNA yields. An extraction blank was also processed for the extraction batch. DNA was purified to remove PCR inhibitors using a commercial purification kit.

Comment: DNA yields were as expected.

Purified DNAs were amplified with PCR for a hypervariable region of the 12S rRNA gene to target fish as part of the eDNA survey - Fish (excl. sharks & rays) pipeline. Our standard analysis includes 12 replicate PCRs per sample.

All PCRs were performed in the presence of both a negative control and a positive control sample. Amplification success was determined by gel electrophoresis.

Comment: PCR reactions were successful for all 45 samples. Electrophoresis bands were strong and of the expected size. Overall, 7-12 successful PCRs replicates were obtained for each of the 45 samples submitted for sequencing. No bands were observed on electrophoresis gels for the extraction blank or negative controls.

PCR replicates were pooled and purified, and sequencing adapters were added. Success was determined by gel electrophoresis.

Comment: All samples were successfully indexed, electrophoresis bands were strong and of the expected size. No repeat reactions were necessary.

Amplicons were purified and checked by gel electrophoresis, these were then quantified using a Qubit high sensitivity kit according to the manufacturer's protocol.

Comment: All amplicons were successfully purified.

All purified index PCRs were pooled into a final library with equal concentrations. The final library was sequenced using an Illumina MiSeq V3 kit at 10.5 pM with a 20% PhiX spike in.

Comment: Negative controls were as expected. Very few sequences were discarded prior to dereplication, which is indicative of high-quality data with minimal PCR and sequencing errors. A total of 2,098,727 high-quality sequences, including 2,098,702 target sequences, were included in the final dataset.

Consensus taxonomic assignments were made for each OTU using sequence similarity searches against the NCBI nt (GenBank) reference database. Assignments were made to the lowest possible taxonomic level where there was consistency in the matches. Conflicts were flagged and resolved manually. Minimum similarity thresholds of 99%, 97%, and 95% were used for species-, genus- and higher-level assignments respectively. In cases where there were equally good matches to multiple species, public records from GBIF were used to assess which were most likely to be present in Canada. Higher-level taxonomic identifications or multiple potential identifications were reported in cases that could not be resolved in this way.

The OTU table was then filtered to remove low abundance OTUs from each sample (<0.04% or <10 reads, whichever is the greater threshold for the sample). Unidentified, non-target, and common contaminant sequences were then removed.

Note that unidentified or misidentified taxa can result from incomplete or incorrect reference databases, and taxa may be missed due to low quality DNA, environmental contaminants, or the dominance of other species in the sample.

Please note that the abundance of taxa cannot be directly inferred from the proportion of total sequence reads. While the proportion of sequence reads is a consequence of abundance, it is also impacted by biomass, activity, surface area, condition, distance from the physical sample, primer bias, and species-specific variation in the genome.

Table 4 (attached separately). Sample information table.

END OF REPORT

Report issued by: Ben Jones

Contact: team@naturemetrics.co.uk

GLOSSARY

adapter	short, artificially synthesised nucleotide sequence which attaches to the ends of the target DNA or RNA sequences prior to sequencing. They are typically used to aid in attachment of the target sequence to other functional molecules/sequences.
amplicon	A DNA sequence which is the product of PCR amplification.
bioinformatics	An interface between genetics, computational biology, statistics, and programming in which DNA or other biological data is processed, analysed and integrated into research or communications.
bioinformatics pipeline	Refers to a data processing pipeline that takes the raw sequence data from high-throughput sequencing (often 20 million sequences or more) and transforms it into usable ecological data. Key steps for metabarcoding pipelines include quality filtering, trimming, merging paired ends, removal of sequencing errors such as chimeras, clustering of similar sequences into molecular Operational Taxonomic Units, and matching one sequence from each cluster against a reference database. The output is a OTU-by-sample table showing how many sequences from each sample were assigned to each OTU.
BMWP	Short for biological monitoring working party, an index that can be used to measure water quality by scoring the presence of aquatic invertebrate indicator taxa. The index is reliant on taxa that are less tolerant of polluted water bodies (e.g. Ephemeroptera, Plecoptera, Trichoptera).
BOLD	Barcode Of Life Database; a specialised database of eukaryote COI reference sequences.
contaminant sequences	The sensitivity of high-throughput sequencing of eDNA means that contamination is always a concern that needs to be minimised. The sources of contamination are threefold: Natural - Examples of natural contaminants include: frequent visitors to site, faecal discharge from predators, livestock, wastewater, and fishing bait. This type of contamination is typically unavoidable and very difficult to quantify. Sequences of this type are typically flagged and conservatively removed from the sequencing output. Typical contaminant species include cow, pig, dog, cat, sheep, etc. Sampling - Human contamination of sampling equipment can reduce the efficiency of the sequencing. This type of

	contamination can be minimised by stringent contamination protocols, such as PPE. Laboratory - Residual DNA can contaminate other samples processed at the same time in other labs. At NatureMetrics this is mitigated by a designated eDNA laboratory, strict decontamination procedures, negative controls, and good laboratory practices.
dereplication	The identification of unique sequences so that only one copy of each sequence is reported.
eBioAtlas	A global partnership between IUCN and NatureMetrics to map the world's biodiversity using DNA from water samples as a foundation for the Global Biodiversity Framework and to enable IUCN Red List Assessments.
eDNA	Short for 'environmental DNA'. Refers to DNA deposited in the environment through excretion, shedding, mucous secretions, saliva etc. This can be collected in environmental samples (e.g. water, sediment) and used to identify the organisms that it originated from. eDNA in water is broken down by environmental processes over a period of days to weeks. It can travel some distance from the point at which it was released from the organism, particularly in running water. eDNA is sampled in low concentrations and can be degraded (i.e. broken into short fragments), which limits the analysis options.
extraction blank	A DNA extraction with no sample added to assess potential contamination during the DNA extraction process.
gel electrophoresis	The process in which DNA is separated according to size and electrical charge via an electric current, while in a gel. The process is used to confirm the successful amplification of a specifically sized fragment of DNA.
high-throughput sequencing	Technology developed in the 2000s that produces millions of sequences in parallel. Enables thousands of different organisms from a mixture of species to be sequenced at once, so community DNA can be sequenced. Various different technologies exist to do this, but the most commonly used platform is Illumina's MiSeq. Also known as Next-Generation Sequencing (NGS) or parallel sequencing.
inhibitors/inhibition	Naturally-occurring chemicals/compounds that cause DNA amplification to fail, potentially resulting in false negative results. Common inhibitors include tannins, humic acids and other organic compounds. Inhibitors can be overcome by either diluting the DNA (and the inhibitors) or by additional cleaning of the DNA, but

dilution carries the risk of reducing the DNA concentration below the limits of detection. At NatureMetrics, inhibition is removed using a commercial purification kit.

invasive

Invasive species are defined using GRIIS (Global Register of Introduced and Invasive Species) which is a checklist of Introduced and Invasive species for each country. The IUCN describes an Introduced species as a species outside of its natural range and dispersal potential, and an Invasive species as an introduced species which becomes established in a habitat, is an agent of change or threatens native biological diversity.

IUCN Red List

The IUCN (International Union for the Conservation of Nature) is a global union of government and civil organisations that disseminates information to assist conservation. The IUCN Red List of Threatened Species is an inventory of the conservation status of over 100,000 species worldwide. The Red List evaluates data such as population trends, geographic range and the number of mature individuals in order to categorise species based on their extinction risk:

Extinct (EX) - No individual of this species remains alive.

Extinct in the Wild (EW) - Surviving individuals are only found in captivity.

Critically Endangered (CE) - species faces an extremely high risk of extinction in the wild. e.g. Population size estimated at fewer than 50 mature individuals.

Endangered (EN) - species faces a very high risk of extinction in the wild. e.g. Population size estimated at fewer than 250 mature individuals.

Vulnerable (VU) - species faces a high risk of extinction in the wild. e.g. Population size estimated at fewer than 10,000 mature individuals and declining.

Near Threatened (NT) - species is below the threshold for any of the threatened categories (CE, E, V) but is close to this threshold or is expected to pass it in the near future.

Least Concern (LC) - species is not currently close to qualifying for any of the other categories. This includes widespread and abundant species.

Data Deficient (DD) - There is currently insufficient data available to make an assessment of extinction risk. This is not a threat category - when more data becomes available the species may be recategorised as threatened.

Jaccard similarity index

This index is a calculation that compares two samples to see which taxa are shared and which are distinct. The higher the percentage,

	the more similar two samples are in their community composition.
metabarcoding	Refers to identification of species assemblages from community DNA using barcode genes. PCR is carried out with non-specific primers, followed by high-throughput sequencing and bioinformatics processing. Can identify hundreds of species in each sample, and 100+ different samples can be processed in parallel to reduce sequencing cost.
NCBI nt	National Centre for Biotechnology Information nucleotide database; a general reference database.
negative control	Used to determine whether PCR reactions are contaminated.
NMDS	Non-metric multidimensional scaling (NMDS) is a method that allows visualisation of the similarity of each sample to one another. The dissimilarity between each sample is calculated, taking into account shared taxa (Jaccard similarity index), and then configured into a 2D ordinal space that allows the similarity-based relationship between each sample to be plotted. Samples which are closer together are more similar to one another in terms of community composition, while samples which are further apart are less similar. This type of clustering analysis allows you to see if certain types of samples, for example, those from a particular habitat type, are more clustered together and therefore more similar to one another compared to other groups.
nucleotide	An individual unit of genetic material which, when strung together constitutes a DNA (or RNA) strand/sequence.
OTU	Operational Taxonomic Unit; similar sequences are clustered into OTUs at a defined similarity threshold. OTUs are approximately equivalent to species and are treated as such in our analyses. Species-level taxonomic assignments may or may not be possible, depending on the availability of reference sequences and the similarity between closely related species in the amplified marker. It may be possible to refine the taxonomic assignment for an OTU later as more sequences are added to reference databases.
PCR	Polymerase Chain Reaction; a process by which millions of copies of a particular DNA segment are produced through a series of heating and cooling steps. Known as an 'amplification' process. One of the most common processes in molecular biology and a precursor to most sequencing-based analyses.

positive control	Used to determine whether the PCR is working correctly.
primers	Short sections of synthesised DNA that bind to either end of the DNA segment to be amplified by PCR. Can be designed to be totally specific to a particular species (so that only that species' DNA will be amplified from a community DNA sample), or to be very general so that a wide range of species' DNA will be amplified. Good design of primers is one of the critical factors in DNA-based monitoring.
rarefaction curve	A plot showing the number of taxa as a function of the sequencing depth (number of reads). Rarefaction curves grow rapidly at first as common species are found then reach a plateau as only the rarest species remain to be detected. Rarefaction curves can provide an indication as to whether the species being studied have been comprehensively sampled.
rarefy	A normalisation technique which transforms the data to remove biases associated with uneven sampling depth (number of reads) across samples. The sampling depth of each sample is standardised to a specified number of reads (usually that of the sample with the lowest depth) by random resampling.
reference databases	Over time, the DNA sequences of many species have been compiled into publicly accessible databases by scientists from around the world. These databases serve as a reference against which unknown sequences can be queried to obtain a species identification. The most commonly accessed database is NCBI, which is maintained by the US National Institute of Health. Anyone can search for DNA sequences at https://www.ncbi.nlm.nih.gov.
richness	The total number of taxa within a sample.
rRNA	Ribosomal RNA.
SAC species	Typically the presence of these species potentially elevates the conservation status of a site to a Special Area of Conservation (SAC). Special Areas of Conservation (SACs) are strictly protected sites designated under the EC Habitats Directive.
sequence(s)	A DNA sequence is made up of four nucleotide bases represented by the letters A, T, C & G. The precise order of these letters is used to compare genetic similarity among individuals or species and to identify species using reference databases. In high-throughput sequencing analyses (e.g. metabarcoding), many identical copies of the same sequence are obtained for each species in the sample. The number of copies obtained per species is known as the number of sequence reads, and this is often -

	although not always - related to the relative abundance of the species.
SILVA	SILVA is a database of small (16S/18S, SSU) and large subunit (23S/28S, LSU) ribosomal RNA sequences for all three domains of life (Bacteria, Archaea and Eukarya).
taxon (s.) / taxa (pl.)	Strictly, a taxonomic group. Here we use the term to describe groups of DNA sequences (OTUs) that are equivalent to species. We do not use the term species because we are unable to assign complete identifications to all of the groups at this time due to gaps in the available reference databases.
taxonomy	The branch of science concerned with classification of organisms. species (s./pl.) - A group of genetically similar organisms that show a high degree of overall similarity in many independent characteristics. Related species are grouped together into progressively larger taxonomic units, from genus to kingdom. Homo sapiens (human) is an example of a species. genus (s.) / genera (pl.) - A group of closely related species. Each genus can include one or more species. Homo is an example of a genus. family (s.) / families (pl.) - A group of closely related genera. Homo sapiens is in the Family Hominidae (great apes). order (s.) / orders (pl.) - A group of closely related families. Homo sapiens is in the Order Primates. class (s.) / classes (pl.) - A group of closely related orders. Homo sapiens is in the Class Mammalia. phylum (s.) / phyla (pl.) - A group of closely related classes. Homo sapiens is in the Phylum Chordata.
UKBAP species	UK Biodiversity Action Plan species have been identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan.
UNITE	A ribosomal RNA database for identification of fungi.

	Birch-eDNA-10-01	Birch-eDNA-10-02	Birch-eDNA-10-03	Birch-eDNA-11-01	Birch-eDNA-11-02	Birch-eDNA-11-03	Birch-eDNA-12-01	Birch-eDNA-12-02	Birch-eDNA-12-03	Cat-eDNA-15-01	Cat-eDNA-15-02	Cat-eDNA-15-03	Gull-eDNA-13-01	Gull-eDNA-13-02	Gull-eDNA-13-03	Gull-eDNA-14-01	Gull-eDNA-14-02	Gull-eDNA-14-03	Springpole-eDNA-01-01	Springpole-eDNA-01-02	Springpole-eDNA-01-03	Springpole-eDNA-02-01	Springpole-eDNA-02-02	Springpole-eDNA-02-03	Springpole-eDNA-03-01	Springpole-eDNA-03-02	Springpole-eDNA-03-03	Springpole-eDNA-04-01	Springpole-eDNA-04-02	Springpole-eDNA-04-03	Springpole-eDNA-05-01	Springpole-eDNA-05-02	Springpole-eDNA-05-03	Springpole-eDNA-06-01	Springpole-eDNA-06-02	Springpole-eDNA-06-03	Springpole-eDNA-07-01	Springpole-eDNA-07-02	Springpole-eDNA-07-03	Springpole-eDNA-08-01	Springpole-eDNA-08-02	Springpole-eDNA-08-03	Springpole-eDNA-09-01	Springpole-eDNA-09-02	Springpole-eDNA-09-03
Catostomus commersonii	2	1	1	1	1		2	1		1	2	1	2		2	2	2	2	2	1	2	1				1	2	2	2	1	2			2	2	2	2	2	1		2		2	3	2
Moxostoma anisurum										2	2	2																																	
Moxostoma macrolepidotum				2	2	2				1		1														2																			
Cyprinidae sp.	1	1	1									1							1	1	1								1	1							1						1	
Chrosomus sp.	3	3	3																																									
Chrosomus eos	1	2	2																																								
Chrosomus neogaeus	3	3	3																																								
Couesius sp.	2	2	2																																								
Luxilus chrysocephalus/Luxilus cornutus										1		1														1																		
Margariscus sp.	4	4	4										2																																
Notropis sp.										1		1				1	1	1	1	1	1			1						1												1			
Notropis atherinoides					2					1	1	1				1	1	1						2								2										1	1		
Notropis heterolepis										1		1																																
Notropis hudsonius									1	2	1	1				2	2	2	2	3	3	2	2	1		1		2	2	2							1	1	1	1	1	1	1	1	1
Notropis volucellus												1							1	1	1						2	1	1	1	2				2					1		2	
Pimephales promelas																				1						1			1							2				2				
Rhinichthys sp.										1	1																2																
Esox lucius	1		1			1	1		1	1	1	2	1	1	1			1	1	1	1	1	2			2	2	2	2	2	1		2		2			1		1	1	1	2	2	2
Lota lota			1	1	1	1		1		1	1	1				1	1	2	1	1			2			2	2		1	2		1					2	2	2	1	1	1	2		
Pungitius pungitius					1	1												2	1																	2			1	1	1			
Ambloplites rupestris																											2			2														
Etheostoma exile	1	2	2					1																				1	2	2							2	2	1			1	1	1	
Etheostoma nigrum				1	1		1	2	1	2	2	1	1	1	2	2	2	1	1			2			2	2	2	2	2			2			1	2		2	1	1				
Perca flavescens	1			1	1	1	1	1	1	1	2	2	1			1	1	1	1	1	2	2	2	3	2	2	2	2	2	2		2	1	2	2	2	2	2	1	2	2	2	2	2
Percina caprodes/Percina copelandi				1			2	1			1					1	1	1		1	1					2	1		2					1		2	1			1				
Sander canadensis										1				2	1		1				2																							
Sander vitreus		1	1	2	2	1	2	1	2	2	1	2	3	2	2	2	2	2	3	2	2	3	2	3		3	3	2	2	2	3	2	2	2	1	2	3	2	2	2	2	3	3	1
Percopsis omiscomaycus					1	1			1	1	1	1	1	2	2	2	2	2		1		1		1		1	1									1								
Salmonidae sp.			1	2	1	2	1	2	2	1	1	1	2			2	2		1	1						1				2				2						1	2		1	1	2
Coregonus sp.				3	3	3	2	2	2				1	2	2	1		1			1									2	2	2	1	2	2	2	2	2	2	2	2	2	2	3
Coregonus autumnalis/Coregonus clupeaformis						1																																						
Salvelinus namaycush		1			1	1												1		1		1	1	1		1		1		2	2		1		1		1	1	1	1	2	2	1	
Cottus sp.	1	1		1	1		1				1					1												1						2			3	2	2	3				
Myoxocephalus quadricornis/Myoxocephalus scorpius				1			1	2	1																									1										
Alces alces																	1																											

Class
- Actinopterygii
- Mammalia

FISH METABARCODING **RESULTS**

Order number:	NA-SO00023,SO01044,NA-SO00023_SO01044
Report number:	NM-JMS202
Company:	Wood Canada
Contact:	Karl Weise
Project:	WoodPLC - Northern Ontario
Sample type:	Smith-root filter
Date of report:	22-Sep-2022
Number of samples:	36 + 3 client negative controls

Thank you for sending your samples for analysis by NatureMetrics. Your samples have been **metabarcoded** following our **eDNA** survey - Fish pipeline. **A taxon-by-sample table of your samples is attached to this report (NM-JMS202.NA-SO00023_SO01044.Fish.xlsx)**. Each row in the table represents one **taxon** (**OTU**), shown with the lowest possible taxonomic assignment based on currently available reference data. Each column represents a sample, showing the proportion of **sequence** reads per detected OTU. Care should be taken in interpreting the numbers in terms of relative **species** abundance, but a high sequence proportion can be interpreted as lending greater confidence to a detection. This report contains biodiversity information that may be sensitive, particularly with respect to endangered or protected species. It is the responsibility of the client to ensure that due consideration is given to the data and that the information is shared in a responsible way.

Here we present an overview of the key results, followed by a more detailed report that starts with the taxonomic composition of the samples followed by a more detailed look at the steps taken to extract, amplify, sequence, and analyse your DNA. A glossary for terms in bold is provided at the end of the report to define key terms used within the report.

OVERVIEW OF YOUR RESULTS

- A total of 37 taxa were detected.
- Average taxon richness was 15.03 and ranged from 3 to 23.
- Most abundant sequences: walleye (*Sander vitreus*).
- Most commonly detected species: walleye (*Sander vitreus*), yellow perch (*Perca flavescens*) and northern pike (*Esox lucius*).

FULL REPORT

Sample composition

A total of 37 taxa were detected (**Table 1**). 62.2% (23 taxa) were at least 99% similar to a species in the global reference databases, and species names are suggested. The remaining taxa were identified to the lowest possible taxonomic level: 8.1% to genus (3 taxa), and the remainder to family (11 taxa). The taxa belong to 8 orders, 10 families, and 19 genera.

The average taxon richness was 15.03 and ranged from 3 ('Birch-eDNA-11-02') to 23 ('Springpole-eDNA-01-01'). The relative proportion of the sequences found in each of the samples is shown in **Figure 1** and **Table 1** and the diversity is summarised in **Table 2** and **Table 3**.

Walleye (*Sander vitreus*), which accounted for 21.4% of the total sequence reads, was among the most abundant in terms of sequences. Among the most commonly detected species were walleye (*Sander vitreus*), yellow perch (*Perca flavescens*) and northern pike (*Esox lucius*), which was detected in 34, 32 and 29 samples respectively.

High-quality vertebrate sequence data were obtained for 34 of the36 eDNA samples.

eDNA metabarcoding of vertebrates was not successful for 'Birch-eDNA-11-01', which failed to amplify despite troubleshooting. The total number of target sequences in sample 'Birch-eDNA-11-03' is below our threshold for reporting and the corresponding detections are not reported.

Client negative control samples 'NegativeControl-eDNA-01', 'NegativeControl-eDNA-02', and 'NegativeControl-eDNA-03' amplified and contained sequences from several target species.

All laboratory controls behaved as expected.

Table 1 (attached separately). Taxon-by-sample table.

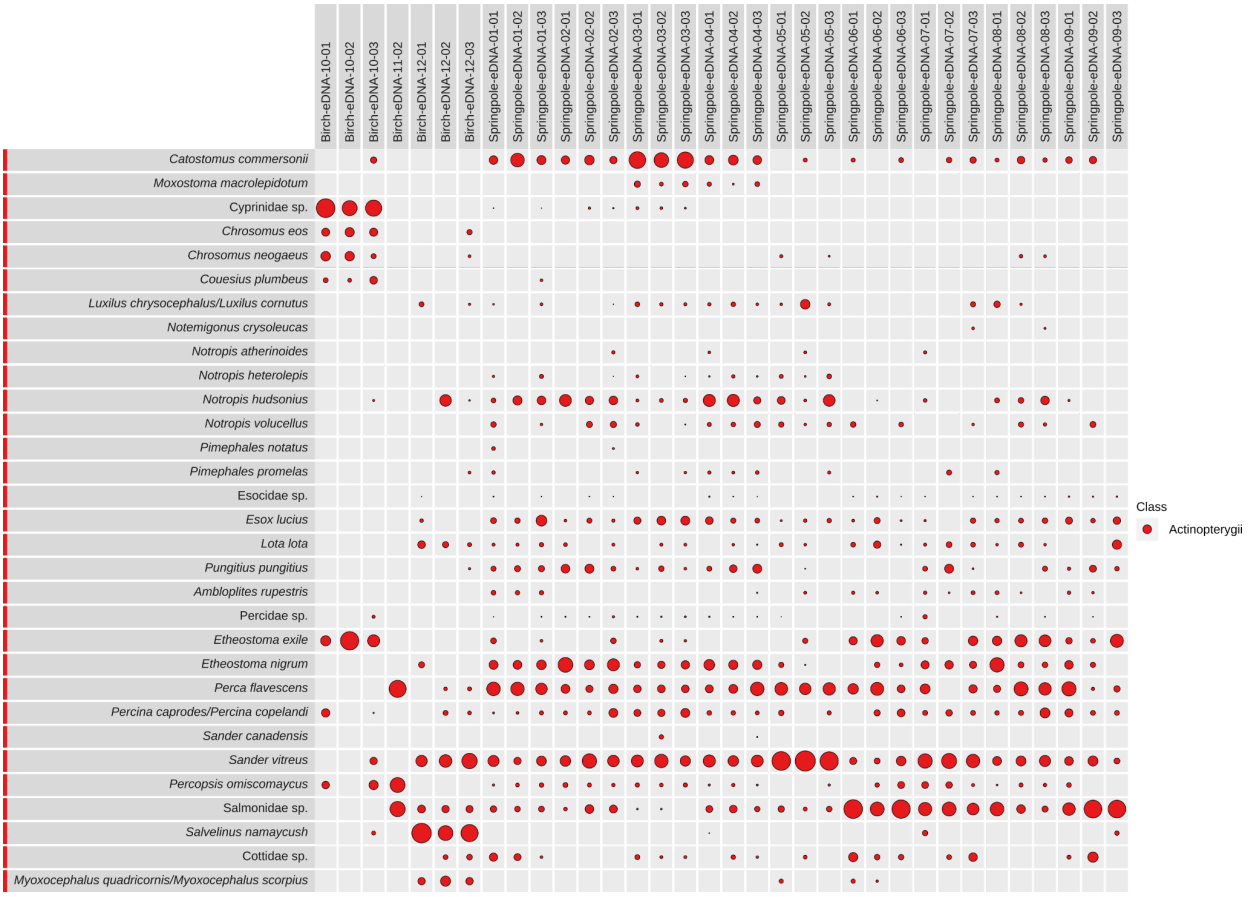

Figure 1. The proportion of the sequencing output allocated to the different taxa (rows) within each sample (columns). Each bubble per sample represents the proportion of DNA for each taxon for that sample. The size of the bubble is relative to the number of sequences from all taxa detected in that sample.

Table 2. Taxon richness among the samples.

Sample ID	Class	Order	Family	Genus	Taxa (Species)
Birch-eDNA-10-01	1	3	3	5	9 (5)
Birch-eDNA-10-02	1	2	2	3	6 (4)
Birch-eDNA-10-03	1	4	5	9	13 (9)
Birch-eDNA-11-02	1	3	3	2	3 (2)
Birch-eDNA-12-01	1	6	6	7	9 (5)
Birch-eDNA-12-02	1	5	5	7	9 (5)
Birch-eDNA-12-03	1	6	6	11	14 (9)
Springpole-eDNA-01-01	1	8	10	13	23 (15)
Springpole-eDNA-01-02	1	8	10	11	13 (10)
Springpole-eDNA-01-03	1	8	10	13	22 (14)
Springpole-eDNA-02-01	1	7	8	10	12 (9)
Springpole-eDNA-02-02	1	6	7	9	15 (9)
Springpole-eDNA-02-03	1	7	8	12	21 (14)
Springpole-eDNA-03-01	1	7	8	12	18 (12)
Springpole-eDNA-03-02	1	8	9	12	18 (12)
Springpole-eDNA-03-03	1	7	8	13	19 (14)
Springpole-eDNA-04-01	1	6	7	13	20 (14)
Springpole-eDNA-04-02	1	8	9	13	20 (13)
Springpole-eDNA-04-03	1	8	10	14	22 (15)
Springpole-eDNA-05-01	1	6	6	10	14 (9)
Springpole-eDNA-05-02	1	7	9	10	16 (13)
Springpole-eDNA-05-03	1	5	5	9	12 (9)
Springpole-eDNA-06-01	1	6	8	9	13 (8)
Springpole-eDNA-06-02	1	7	8	10	15 (9)
Springpole-eDNA-06-03	1	7	8	9	15 (9)
Springpole-eDNA-07-01	1	7	8	11	18 (12)
Springpole-eDNA-07-02	1	7	9	9	11 (8)
Springpole-eDNA-07-03	1	8	10	13	18 (12)
Springpole-eDNA-08-01	1	6	8	12	17 (11)
Springpole-eDNA-08-02	1	6	8	12	17 (12)
Springpole-eDNA-08-03	1	7	8	12	18 (13)
Springpole-eDNA-09-01	1	7	9	10	15 (10)
Springpole-eDNA-09-02	1	6	8	9	15 (9)
Springpole-eDNA-09-03	1	5	5	8	11 (7)

Table 3 (attached separately). The frequency of occurrence of all detected families. Numbers correspond to the number of taxa belonging to those families in those samples.

METHODS

DNA from each filter was extracted using a commercial DNA extraction kit with a protocol modified to increase DNA yields. An extraction blank was also processed for the extraction batch. DNA was purified to remove PCR inhibitors using a commercial purification kit.

Comment: DNA yields were as expected.

Purified DNAs were amplified with PCR for a hypervariable region of the 12S rRNA gene to target fish as part of the eDNA survey - Fish pipeline. Our standard analysis includes 12 replicate PCRs per sample.

All PCRs were performed in the presence of both a negative control and a positive control sample (a mock community with a known composition). Amplification success was determined by gel electrophoresis.

Comment: PCR reactions were successful for 35 of the 36 samples. Electrophoresis bands were strong and of the expected size. Sample 'Birch-eDNA-11-01' failed to amplify despite troubleshooting steps. Overall, 4-12 successful PCRs replicates were obtained for each of the 35 samples submitted for sequencing. No bands were observed on electrophoresis gels for the extraction blank or negative controls.

PCR replicates were pooled and purified, and sequencing adapters were added. Success was determined by gel electrophoresis.

Comment: All samples were successfully indexed, electrophoresis bands were strong and of the expected size. No repeat reactions were necessary.

Amplicons were purified and checked by gel electrophoresis, these were then quantified using a Qubit high sensitivity kit according to the manufacturer's protocol.

Comment: All amplicons were successfully purified.

All purified index PCRs were pooled into a final library with equal concentrations. The final library was sequenced using an Illumina MiSeq V3 kit at 10.5 pM with a 20% PhiX spike in.

Sequence data were processed using a custom bioinformatics pipeline for quality filtering, OTU clustering, and taxonomic assignment.

Comment: Both negative and positive controls were as expected. Very few sequences were discarded prior to dereplication, which is indicative of high-quality data with minimal PCR and sequencing errors. A total of 3,081,816 high-quality sequences, including 3,081,816 target sequences, were included in the final dataset.

Consensus taxonomic assignments were made for each OTU using sequence similarity searches against the NCBI nt (GenBank) reference database. Assignments were made to the lowest possible taxonomic level where there was consistency in the matches. Conflicts were flagged and resolved manually. Minimum similarity thresholds of 99%, 97%, and 95% were used for species-, genus- and higher-level assignments respectively. In cases where there were equally good matches to multiple species, public records from GBIF were used to assess which were most likely to be present in Canada.

Higher-level taxonomic identifications or multiple potential identifications were reported in cases that could not be resolved in this way.

The OTU table was then filtered to remove low abundance OTUs from each sample (<0.02% or <10 reads, whichever is the greater threshold for the sample). Unidentified, non-target, and common contaminant sequences were then removed.

Note that unidentified or misidentified taxa can result from incomplete or incorrect reference databases, and taxa may be missed due to low quality DNA, environmental contaminants, or the dominance of other species in the sample.

Please note that the abundance of taxa cannot be directly inferred from the proportion of total sequence reads. While the proportion of sequence reads is a consequence of abundance, it is also impacted by biomass, activity, surface area, condition, distance from the physical sample, primer bias, and species-specific variation in the genome.

Table 4 (attached separately). Sample information table.

END OF REPORT

Report issued by: Ben Jones

Contact: team@naturemetrics.co.uk

GLOSSARY

adapter	short, artificially synthesised nucleotide sequence which attaches to the ends of the target DNA or RNA sequences prior to sequencing. They are typically used to aid in attachment of the target sequence to other functional molecules/sequences.
amplicon	A DNA sequence which is the product of PCR amplification.
bioinformatics	An interface between genetics, computational biology, statistics, and programming in which DNA or other biological data is processed, analysed and integrated into research or communications.
bioinformatics pipeline	Refers to a data processing pipeline that takes the raw sequence data from high-throughput sequencing (often 20 million sequences or more) and transforms it into usable ecological data. Key steps for metabarcoding pipelines include quality filtering, trimming, merging paired ends, removal of sequencing errors such as chimeras, clustering of similar sequences into molecular Operational Taxonomic Units, and matching one sequence from each cluster against a reference database. The output is a OTU-by-sample table showing how many sequences from each sample were assigned to each OTU.
BMWP	Short for biological monitoring working party, an index that can be used to measure water quality by scoring the presence of aquatic invertebrate indicator taxa. The index is reliant on taxa that are less tolerant of polluted water bodies (e.g. Ephemeroptera, Plecoptera, Trichoptera).
BOLD	Barcode Of Life Database; a specialised database of eukaryote COI reference sequences.
contaminant sequences	The sensitivity of high-throughput sequencing of eDNA means that contamination is always a concern that needs to be minimised. The sources of contamination are threefold: Natural - Examples of natural contaminants include: frequent visitors to site, faecal discharge from predators, livestock, wastewater, and fishing bait. This type of contamination is typically unavoidable and very difficult to quantify. Sequences of this type are typically flagged and conservatively removed from the sequencing output. Typical contaminant species include cow, pig, dog, cat, sheep, etc. Sampling - Human contamination of sampling equipment can reduce the efficiency of the sequencing. This type of

	contamination can be minimised by stringent contamination protocols, such as PPE. Laboratory - Residual DNA can contaminate other samples processed at the same time in other labs. At NatureMetrics this is mitigated by a designated eDNA laboratory, strict decontamination procedures, negative controls, and good laboratory practices.
dereplication	The identification of unique sequences so that only one copy of each sequence is reported.
eBioAtlas	A global partnership between IUCN and NatureMetrics to map the world's biodiversity using DNA from water samples as a foundation for the Global Biodiversity Framework and to enable IUCN Red List Assessments.
eDNA	Short for 'environmental DNA'. Refers to DNA deposited in the environment through excretion, shedding, mucous secretions, saliva etc. This can be collected in environmental samples (e.g. water, sediment) and used to identify the organisms that it originated from. eDNA in water is broken down by environmental processes over a period of days to weeks. It can travel some distance from the point at which it was released from the organism, particularly in running water. eDNA is sampled in low concentrations and can be degraded (i.e. broken into short fragments), which limits the analysis options.
extraction blank	A DNA extraction with no sample added to assess potential contamination during the DNA extraction process.
gel electrophoresis	The process in which DNA is separated according to size and electrical charge via an electric current, while in a gel. The process is used to confirm the successful amplification of a specifically sized fragment of DNA.
high-throughput sequencing	Technology developed in the 2000s that produces millions of sequences in parallel. Enables thousands of different organisms from a mixture of species to be sequenced at once, so community DNA can be sequenced. Various different technologies exist to do this, but the most commonly used platform is Illumina's MiSeq. Also known as Next-Generation Sequencing (NGS) or parallel sequencing.
inhibitors/inhibition	Naturally-occurring chemicals/compounds that cause DNA amplification to fail, potentially resulting in false negative results. Common inhibitors include tannins, humic acids and other organic compounds. Inhibitors can be overcome by either diluting the DNA (and the inhibitors) or by additional cleaning of the DNA, but

dilution carries the risk of reducing the DNA concentration below the limits of detection. At NatureMetrics, inhibition is removed using a commercial purification kit.

invasive

Invasive species are defined using GRIIS (Global Register of Introduced and Invasive Species) which is a checklist of Introduced and Invasive species for each country. The IUCN describes an Introduced species as a species outside of its natural range and dispersal potential, and an Invasive species as an introduced species which becomes established in a habitat, is an agent of change or threatens native biological diversity.

IUCN Red List

The IUCN (International Union for the Conservation of Nature) is a global union of government and civil organisations that disseminates information to assist conservation. The IUCN Red List of Threatened Species is an inventory of the conservation status of over 100,000 species worldwide. The Red List evaluates data such as population trends, geographic range and the number of mature individuals in order to categorise species based on their extinction risk:

Extinct (EX) - No individual of this species remains alive.

Extinct in the Wild (EW) - Surviving individuals are only found in captivity.

Critically Endangered (CE) - species faces an extremely high risk of extinction in the wild. e.g. Population size estimated at fewer than 50 mature individuals.

Endangered (EN) - species faces a very high risk of extinction in the wild. e.g. Population size estimated at fewer than 250 mature individuals.

Vulnerable (VU) - species faces a high risk of extinction in the wild. e.g. Population size estimated at fewer than 10,000 mature individuals and declining.

Near Threatened (NT) - species is below the threshold for any of the threatened categories (CE, E, V) but is close to this threshold or is expected to pass it in the near future.

Least Concern (LC) - species is not currently close to qualifying for any of the other categories. This includes widespread and abundant species.

Data Deficient (DD) - There is currently insufficient data available to make an assessment of extinction risk. This is not a threat category - when more data becomes available the species may be recategorised as threatened.

Jaccard similarity index

This index is a calculation that compares two samples to see which taxa are shared and which are distinct. The higher the percentage,

	the more similar two samples are in their community composition.
metabarcoding	Refers to identification of species assemblages from community DNA using barcode genes. PCR is carried out with non-specific primers, followed by high-throughput sequencing and bioinformatics processing. Can identify hundreds of species in each sample, and 100+ different samples can be processed in parallel to reduce sequencing cost.
NCBI nt	National Centre for Biotechnology Information nucleotide database; a general reference database.
negative control	Used to determine whether PCR reactions are contaminated.
NMDS	Non-metric multidimensional scaling (NMDS) is a method that allows visualisation of the similarity of each sample to one another. The dissimilarity between each sample is calculated, taking into account shared taxa (Jaccard similarity index), and then configured into a 2D ordinal space that allows the similarity-based relationship between each sample to be plotted. Samples which are closer together are more similar to one another in terms of community composition, while samples which are further apart are less similar. This type of clustering analysis allows you to see if certain types of samples, for example, those from a particular habitat type, are more clustered together and therefore more similar to one another compared to other groups.
nucleotide	An individual unit of genetic material which, when strung together constitutes a DNA (or RNA) strand/sequence.
OTU	Operational Taxonomic Unit; similar sequences are clustered into OTUs at a defined similarity threshold. OTUs are approximately equivalent to species and are treated as such in our analyses. Species-level taxonomic assignments may or may not be possible, depending on the availability of reference sequences and the similarity between closely related species in the amplified marker. It may be possible to refine the taxonomic assignment for an OTU later as more sequences are added to reference databases.
PCR	Polymerase Chain Reaction; a process by which millions of copies of a particular DNA segment are produced through a series of heating and cooling steps. Known as an 'amplification' process. One of the most common processes in molecular biology and a precursor to most sequencing-based analyses.

positive control	Used to determine whether the PCR is working correctly.
primers	Short sections of synthesised DNA that bind to either end of the DNA segment to be amplified by PCR. Can be designed to be totally specific to a particular species (so that only that species' DNA will be amplified from a community DNA sample), or to be very general so that a wide range of species' DNA will be amplified. Good design of primers is one of the critical factors in DNA-based monitoring.
rarefaction curve	A plot showing the number of taxa as a function of the sequencing depth (number of reads). Rarefaction curves grow rapidly at first as common species are found then reach a plateau as only the rarest species remain to be detected. Rarefaction curves can provide an indication as to whether the species being studied have been comprehensively sampled.
rarefy	A normalisation technique which transforms the data to remove biases associated with uneven sampling depth (number of reads) across samples. The sampling depth of each sample is standardised to a specified number of reads (usually that of the sample with the lowest depth) by random resampling.
reference databases	Over time, the DNA sequences of many species have been compiled into publicly accessible databases by scientists from around the world. These databases serve as a reference against which unknown sequences can be queried to obtain a species identification. The most commonly accessed database is NCBI, which is maintained by the US National Institute of Health. Anyone can search for DNA sequences at https://www.ncbi.nlm.nih.gov.
richness	The total number of taxa within a sample.
rRNA	Ribosomal RNA
SAC species	Typically the presence of these species potentially elevates the conservation status of a site to a Special Area of Conservation (SAC). Special Areas of Conservation (SACs) are strictly protected sites designated under the EC Habitats Directive.
sequence(s)	A DNA sequence is made up of four nucleotide bases represented by the letters A, T, C & G. The precise order of these letters is used to compare genetic similarity among individuals or species and to identify species using reference databases. In high-throughput sequencing analyses (e.g. metabarcoding), many identical copies of the same sequence are obtained for each species in the sample. The number of copies obtained per species is known as the number of sequence reads, and this is often -

	although not always - related to the relative abundance of the species.
SILVA	SILVA is a database of small (16S/18S, SSU) and large subunit (23S/28S, LSU) ribosomal RNA sequences for all three domains of life (Bacteria, Archaea and Eukarya).
taxon (s.) / taxa (pl.)	Strictly, a taxonomic group. Here we use the term to describe groups of DNA sequences (OTUs) that are equivalent to species. We do not use the term species because we are unable to assign complete identifications to all of the groups at this time due to gaps in the available reference databases.
taxonomy	The branch of science concerned with classification of organisms. species (s./pl.) - A group of genetically similar organisms that show a high degree of overall similarity in many independent characteristics. Related species are grouped together into progressively larger taxonomic units, from genus to kingdom. Homo sapiens (human) is an example of a species. genus (s.) / genera (pl.) - A group of closely related species. Each genus can include one or more species. Homo is an example of a genus. family (s.) / families (pl.) - A group of closely related genera. Homo sapiens is in the Family Hominidae (great apes). order (s.) / orders (pl.) - A group of closely related families. Homo sapiens is in the Order Primates. class (s.) / classes (pl.) - A group of closely related orders. Homo sapiens is in the Class Mammalia. phylum (s.) / phyla (pl.) - A group of closely related classes. Homo sapiens is in the Phylum Chordata.
UKBAP species	UK Biodiversity Action Plan species have been identified as being the most threatened and requiring conservation action under the UK Biodiversity Action Plan.
UNITE	A ribosomal RNA database for identification of fungi.

Lake Sturgeon DETECTION **RESULTS**

Order number:	NA-SO00216
Report number:	NM-QBS096
Company:	WSP E&I Canada Ltd
BC Company:	Gold Canyon Resources
Contact:	Karl Weise / Dale Klodnicki
Project:	Springpole
BC Project:	Gold Canyon
Sample type:	NM filters
Date of report:	4th July 2023
Number of samples:	51

Thank you for sending your samples for analysis by NatureMetrics. Your samples have been processed using a Lake Sturgeon (*Acipenser fulvescens*) **qPCR** assay.

Summary of Results

All samples exhibited zero detection of Lake Sturgeon eDNA.

All extraction and PCR negative controls were blank, and the PCR positive controls amplified as standard.

Results are based on the samples as supplied by the client to the laboratory. Incorrect sampling methodology may affect the results. Note that a negative result does not preclude the presence of Lake Sturgeon eDNA at a level below the limits of detection.

Methods

eDNA was extracted from NatureMetrics filters using commercially available DNA extraction kits, and further purified to remove **inhibitors**. Inhibition was determined using an internal positive control (IPC) qPCR assay and no inhibition was observed in any of the samples. **qPCR** amplification targeting Lake Sturgeon eDNA was carried out in 12 replicates per sample, using the species-specific **primers** and **probe**. qPCR amplification was performed in the presence of both a **positive control** and **negative control** (template and extraction). A score is given for the number of positive replicates out of 12.

NMID	Kit ID	Sample ID	Lake Sturgeon (*n*/12)
32255	PSI-01-01099	LS-eDNA-01-01	Negative (0/12)
32256	PSI-01-01072	LS-eDNA-01-02	Negative (0/12)
32257	PSI-01-01078	LS-eDNA-01-03	Negative (0/12)
32258	PSI-01-01155	LS-eDNA-02-01	Negative (0/12)
32259	PSI-01-01177	LS-eDNA-02-02	Negative (0/12)
32260	PSI-01-01084	LS-eDNA-02-03	Negative (0/12)
32261	PSI-01-01108	LS-eDNA-03-01	Negative (0/12)
32262	PSI-01-01176	LS-eDNA-03-02	Negative (0/12)
32263	PSI-01-01082	LS-eDNA-03-03	Negative (0/12)
32264	PSI-01-01044	LS-eDNA-04-01	Negative (0/12)
32265	PSI-01-01066	LS-eDNA-04-02	Negative (0/12)
32266	PSI-01-01085	LS-eDNA-04-03	Negative (0/12)
32267	PSI-01-01058	LS-eDNA-05-01	Negative (0/12)
32268	PSI-01-01093	LS-eDNA-05-02	Negative (0/12)
32269	PSI-01-01159	LS-eDNA-05-03	Negative (0/12)
32270	PSI-01-01245	LS-eDNA-06-01	Negative (0/12)
32271	PSI-01-01209	LS-eDNA-06-02	Negative (0/12)
32272	PSI-01-01232	LS-eDNA-06-03	Negative (0/12)
32273	PSI-01-01165	LS-eDNA-07-01	Negative (0/12)
32274	PSI-01-01236	LS-eDNA-07-02	Negative (0/12)
32275	PSI-01-01127	LS-eDNA-07-03	Negative (0/12)
32276	PSI-01-01170	LS-eDNA-08-01	Negative (0/12)
32277	PSI-01-01225	LS-eDNA-08-02	Negative (0/12)
32278	PSI-01-01244	LS-eDNA-08-03	Negative (0/12)
32279	PSI-01-01180	LS-eDNA-09-01	Negative (0/12)
32280	PSI-01-01158	LS-eDNA-09-02	Negative (0/12)
32281	PSI-01-01171	LS-eDNA-09-03	Negative (0/12)
32282	PSI-01-01254	LS-eDNA-10-01	Negative (0/12)
32283	PSI-01-01149	LS-eDNA-10-02	Negative (0/12)
32284	PSI-01-01083	LS-eDNA-10-03	Negative (0/12)
32285	PSI-01-01229	LS-eDNA-11-01	Negative (0/12)

32286	PSI-01-01154	LS-eDNA-11-02	Negative (0/12)
32287	PSI-01-01152	LS-eDNA-11-03	Negative (0/12)
32288	PSI-01-01237	LS-eDNA-12-01	Negative (0/12)
32289	PSI-01-01130	LS-eDNA-12-02	Negative (0/12)
32290	PSI-01-01273	LS-eDNA-12-03	Negative (0/12)
32291	PSI-01-01247	LS-eDNA-13-01	Negative (0/12)
32292	PSI-01-01064	LS-eDNA-13-02	Negative (0/12)
32293	PSI-01-01070	LS-eDNA-13-03	Negative (0/12)
32294	PSI-01-01251	LS-eDNA-14-01	Negative (0/12)
32295	PSI-01-01089	LS-eDNA-14-02	Negative (0/12)
32296	PSI-01-01094	LS-eDNA-14-03	Negative (0/12)
32297	PSI-01-01053	LS-eDNA-15-01	Negative (0/12)
32298	PSI-01-01156	LS-eDNA-15-02	Negative (0/12)
32299	PSI-01-01266	LS-eDNA-15-03	Negative (0/12)
32300	PSI-01-01172	NC-eDNA-01-01	Negative (0/12)
32301	PSI-01-01274	NC-eDNA-01-02	Negative (0/12)
32302	PSI-01-01037	NC-eDNA-01-03	Negative (0/12)
32303	PSI-01-01234	NC-eDNA-02-01	Negative (0/12)
32304	PSI-01-01264	NC-eDNA-02-02	Negative (0/12)
32305	PSI-01-01202	NC-eDNA-02-03	Negative (0/12)

END OF REPORT

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Understanding your results

Positive

Target DNA has been detected in this sample, meaning that at least one of the 12 replicates has been amplified. This is not a quantitative test, so you should not interpret a high eDNA score (e.g. 12/12) as necessarily indicating a larger population than a low eDNA score (e.g. 1/12).

Negative

No target DNA has been detected in this sample, and the internal and external controls worked as expected. This tells us that if there had been target DNA in the sample, we would have detected it, so we can be confident in its absence from the sample provided.

Inconclusive

No target DNA has been detected in this sample, but the internal positive control showed significant PCR inhibition after sample treatment and sample dilution. Thus, the negative species assay may also have been impacted by inhibition.

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eDNA Short for 'environmental DNA'. Refers to DNA deposited in the environment through excretion, shedding, mucous secretions, saliva etc. This can be collected in environmental samples (e.g. water, sediment) and used to identify the organisms that it originated from. eDNA in water is broken down by environmental processes over a period of days to weeks. It can travel some distance from the point at which it was released from the organism, particularly in running water. eDNA is sampled in low concentrations and can be degraded (i.e. broken into short fragments), which limits the analysis options.

Inhibitors Naturally occurring chemicals/compounds that cause DNA amplification to fail, potentially resulting in false-negative results. Common inhibitors include tannins, humic acids and other organic compounds. Inhibitors can be overcome by either diluting the DNA (and the inhibitors), but dilution carries the risk of reducing the DNA concentration below the limits of detection.

negative control Used to determine if the DNA extraction (extraction blank) or the PCR reactions (template negative control) are contaminated.

positive control Used to determine whether the assay is working correctly.

primers Short sections of synthesized DNA that bind to either end of the DNA segment to be amplified by PCR.

probe A short section of synthesized DNA that binds to a specific section of the target species' DNA within the section flanked by the primers. The probe is designed to be totally specific to that species. The probe is

labelled such that it fluoresces during amplification, which is used to infer the presence of the target species' DNA in the sample.

qPCR Stands for 'quantitative PCR', a PCR reaction incorporating a coloured dye that fluoresces during amplification, allowing a machine to track the progress of the reaction. Often used with species-specific primers where detection of amplification is used to infer the presence of the target species' DNA in the sample. If the species is not present in the sample, no fluorescence will be detected.

Attachment D Fish Tissue and Aging Data

Table D1-1: Fish Species Aging Results

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2021	Springpole Lake	L-15-SN2-F230-BNS	Blacknose Shiner	230	40	43	0.71	2
2021	Springpole Lake	L-15-SN2-F232-BNS	Blacknose Shiner	232	43	46	0.94	1
2021	Springpole Lake	L-15-SN2-F246-BNS	Blacknose Shiner	246	45	50	1.16	1
2021	Springpole Lake	L-15-SN2-F252-BNS	Blacknose Shiner	252	60	64	2.65	2
2021	Springpole Lake	L-15-SN2-F254-BNS	Blacknose Shiner	254	52	56	1.50	2
2021	Springpole Lake	L-15-SN2-F262-BNS	Blacknose Shiner	262	47	52	1.28	2
2021	Springpole Lake	L-15-SN2-F263-BNS	Blacknose Shiner	263	37	39	0.54	0
2021	Springpole Lake	L-15-SN2-F265-BNS	Blacknose Shiner	265	43	45	1.01	1
2021	Springpole Lake	L-15-SN2-F269-BNS	Blacknose Shiner	269	38	41	0.75	1
2021	Springpole Lake	L-15-SN2-F270-BNS	Blacknose Shiner	270	47	50	1.38	1
2021	Springpole Lake	L-15-SN2-F272-BNS	Blacknose Shiner	272	50	54	1.59	2
2021	Springpole Lake	L-15-SN2-F275-BNS	Blacknose Shiner	275	55	60	1.95	2
2021	Springpole Lake	L-15-SN2-F281-BNS	Blacknose Shiner	281	48	53	1.54	2
2021	Springpole Lake	L-15-SN2-F286-BNS	Blacknose Shiner	286	55	59	1.95	3
2021	Springpole Lake	L-15-SN2-F287-BNS	Blacknose Shiner	287	56	62	2.26	2
2021	Springpole Lake	L-15-SN2-F289-BNS	Blacknose Shiner	289	52	57	1.81	2
2021	Springpole Lake	L-15-SN2-F297-BNS	Blacknose Shiner	297	46	50	1.33	1
2021	Springpole Lake	L-15-SN2-F299-BNS	Blacknose Shiner	299	47	51	1.23	1
2021	Springpole Lake	L-15-SN2-F300-BNS	Blacknose Shiner	300	43	48	0.98	1
2021	Springpole Lake	L-15-SN2-F321-BNS	Blacknose Shiner	321	50	55	1.63	2
2021	Birch Lake	BIRCH-MT1-F14-BNM	Bluntnose Minnow	14	75	82	5.53	1
2021	Birch Lake	BIRCH-MT1-F16-BNM	Bluntnose Minnow	16	60	65	2.53	0
2021	Birch Lake	BIRCH-MT1-F18-BNM	Bluntnose Minnow	18	67	74	3.84	1
2021	Birch Lake	BIRCH-MT1-F20-BNM	Bluntnose Minnow	20	53	58	1.47	1
2021	Birch Lake	BIRCH-MT1-F26-BNM	Bluntnose Minnow	26	82	90	6.19	2
2021	Lake 18	L-18-MT1-F136-BSB	Brook Stickleback	136	-	58	1.58	2
2021	Lake 18	L-18-MT1-F137-BSB	Brook Stickleback	137	-	71	2.69	2
2021	Lake 18	L-18-MT1-F139-BSB	Brook Stickleback	139	-	63	1.78	1
2021	Lake 18	L-18-MT1-F141-BSB	Brook Stickleback	141	-	68	2.23	1
2021	Lake 18	L-18-MT1-F143-BSB	Brook Stickleback	143	-	65	2.24	1
2021	Lake 18	L-18-MT1-F144-BSB	Brook Stickleback	144	-	61	1.80	1
2021	Lake 18	L-18-MT1-F148-BSB	Brook Stickleback	148	-	52	1.04	1
2021	Lake 18	L-18-MT1-F152-BSB	Brook Stickleback	152	-	55	1.26	1
2021	Lake 18	L-18-MT1-F153-BSB	Brook Stickleback	153	-	54	1.42	1
2021	Lake 18	L-18-MT1-F155-BSB	Brook Stickleback	155	-	46	0.73	0
2022	Springpole Lake	NB-LG-GN3	Burbot	7	-	380	508	5
2022	Springpole Lake	EB-LG-GN4	White Sucker	15	500	560	1940	10
2022	Springpole Lake	EB-LG-GN4	White Sucker	16	540	580	2340	10
2022	Springpole Lake	EB-LG-GN4	White Sucker	17	465	491	1430	7
2022	Springpole Lake	EB-LG-GN4	White Sucker	18	320	353	515	5
2022	Springpole Lake	EB-LG-GN4	White Sucker	21	460	496	1536	9
2022	Springpole Lake	EB-LG-GN4	White Sucker	22	545	590	2270	13
2022	Springpole Lake	EB-LG-GN4	White Sucker	23	226	243	138	3
2022	Springpole Lake	EB-LG-GN4	White Sucker	24	476	520	1500	8
2022	Springpole Lake	EB-LG-GN4	White Sucker	25	285	304	329	4
2022	Springpole Lake	EB-LG-GN4	White Sucker	26	490	534	1740	9
2022	Springpole Lake	EB-LG-GN5	White Sucker	11	469	500	1440	10
2022	Springpole Lake	EB-LG-GN5	White Sucker	12	194	211	82	2
2022	Springpole Lake	EB-LG-GN5	White Sucker	13	299	315	390	4
2022	Springpole Lake	EB-LG-GN6	White Sucker	26	560	599	2580	10
2022	Springpole Lake	EB-LG-GN6	White Sucker	27	450	494	1290	5
2022	Springpole Lake	EB-LG-GN6	White Sucker	28	356	382	660	5

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2022	Springpole Lake	EB-LG-GN6	White Sucker	29	409	440	1040	6
2022	Springpole Lake	EB-LG-GN6	White Sucker	30	449	489	1460	8
2022	Springpole Lake	EB-LG-GN6	White Sucker	31	480	515	1590	5
2022	Springpole Lake	EB-LG-GN6	White Sucker	32	278	301	270	3
2022	Springpole Lake	EB-LG-GN7	White Sucker	25	323	345	470	5
2022	Springpole Lake	EB-LG-GN7	White Sucker	26	530	570	1980	9
2022	Springpole Lake	EB-LG-GN7	White Sucker	27	500	525	1790	9
2022	Springpole Lake	NB-LG-GN6	White Sucker	40	465	502	1240	4
2022	Springpole Lake	NB-LG-GN7	White Sucker	22	525	570	2180	12
2022	Springpole Lake	NB-LG-GN7	White Sucker	23	490	533	1880	8
2022	Springpole Lake	NB-SM-GN4a	White Sucker	59	178	190	62	2
2022	Springpole Lake	NB-SM-GN4a	White Sucker	60	210	225	98	2
2021	Lake 19	L-19-MT1-F52-FHM	Fathead Minnow	52	47	50	1.07	1
2021	Lake 19	L-19-MT1-F53-FHM	Fathead Minnow	53	47	51	1.22	1
2021	Lake 19	L-19-MT1-F54-FHM	Fathead Minnow	54	55	60	2.08	1
2021	Lake 19	L-19-MT1-F55-FHM	Fathead Minnow	55	50	55	1.62	1
2021	Lake 19	L-19-MT1-F56-FHM	Fathead Minnow	56	55	60	2.01	1
2021	Lake 19	L-19-MT1-F57-FHM	Fathead Minnow	57	60	65	2.51	1
2021	Lake 19	L-19-MT1-F58-FHM	Fathead Minnow	58	60	65	2.89	3
2021	Lake 19	L-19-MT1-F59-FHM	Fathead Minnow	59	64	70	3.16	3
2021	Lake 19	L-19-MT1-F60-FHM	Fathead Minnow	60	68	73	4.01	3
2021	Lake 19	L-19-MT1-F61-FHM	Fathead Minnow	61	62	66	2.95	3
2021	Lake 19	L-19-MT1-F62-FHM	Fathead Minnow	62	64	69	3.21	3
2021	Lake 19	L-19-MT1-F63-FHM	Fathead Minnow	63	70	75	4.57	4
2021	Lake 19	L-19-MT1-F64-FHM	Fathead Minnow	64	62	68	2.79	1
2021	Lake 19	L-19-MT1-F65-FHM	Fathead Minnow	65	66	71	3.47	3
2021	Lake 19	L-19-MT1-F66-FHM	Fathead Minnow	66	62	67	3.01	1
2021	Lake 19	L-19-MT1-F67-FHM	Fathead Minnow	67	78	85	6.38	5
2021	Lake 19	L-19-MT1-F68-FHM	Fathead Minnow	68	78	85	5.85	4
2021	Lake 19	L-19-MT1-F69-FHM	Fathead Minnow	69	71	77	4.68	4
2021	Lake 19	L-19-MT1-F70-FHM	Fathead Minnow	70	73	78	5..25	3
2021	Lake 19	L-19-MT1-F71-FHM	Fathead Minnow	71	82	88	8.27	5
2021	Lake 17	L-17-MT1-F71-FSD	Finescale Dace	71	82	87	6.03	5
2021	Lake 17	L-17-MT1-F72-FSD	Finescale Dace	72	88	94	8.40	6
2021	Lake 17	L-17-MT1-F73-FSD	Finescale Dace	73	73	78	4.77	4
2021	Lake 17	L-17-MT1-F74-FSD	Finescale Dace	74	65	70	3.18	5
2021	Lake 17	L-17-MT1-F75-FSD	Finescale Dace	75	61	65	2.48	5
2021	Lake 17	L-17-MT1-F76-FSD	Finescale Dace	76	60	64	2.01	3
2021	Lake 17	L-17-MT1-F77-FSD	Finescale Dace	77	65	70	2.81	5
2021	Lake 17	L-17-MT1-F78-FSD	Finescale Dace	78	62	66	2.97	3
2021	Lake 17	L-17-MT1-F79-FSD	Finescale Dace	79	69	73	3.30	3
2021	Lake 17	L-17-MT1-F80-FSD	Finescale Dace	80	70	75	3.76	3
2021	Lake 17	L-17-MT1-F81-FSD	Finescale Dace	81	69	74	3.01	3
2021	Lake 17	L-17-MT1-F82-FSD	Finescale Dace	82	54	58	1.73	3
2021	Lake 17	L-17-MT1-F83-FSD	Finescale Dace	83	70	74	4.48	4
2021	Lake 17	L-17-MT1-F84-FSD	Finescale Dace	84	67	71	3.51	4
2021	Lake 17	L-17-MT1-F85-FSD	Finescale Dace	85	76	81	4.67	6
2021	Lake 17	L-17-MT1-F86-FSD	Finescale Dace	86	68	73	3.28	5
2021	Lake 17	L-17-MT1-F87-FSD	Finescale Dace	87	71	76	4.58	4
2021	Lake 17	L-17-MT1-F88-FSD	Finescale Dace	88	66	70	3.42	4
2021	Lake 17	L-17-MT1-F89-FSD	Finescale Dace	89	65	69	3.36	4
2021	Lake 17	L-17-MT1-F90-FSD	Finescale Dace	90	68	73	4.56	5
2021	Lake 17	L-17-MT1-F91-FSD	Finescale Dace	91	65	69	2.89	5
2022	Springpole Lake	EB-LG-GN1	Lake Trout	39	870	946	8610	19
2022	Springpole Lake	NB-LG-GN1	Lake Trout	5	650	715	2990	24

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2022	Springpole Lake	NB-LG-GN13	Lake Trout	10	527	579	1620	9
2022	Springpole Lake	NB-LG-GN15	Lake Trout	1	620	688	2820	17
2022	Springpole Lake	NB-LG-GN15	Lake Trout	2	660	738	3480	20
2022	Springpole Lake	NB-LG-GN15	Lake Trout	3	670	743	3490	14
2022	Springpole Lake	NB-LG-GN3	Lake Trout	1	710	761	2900	8
2022	Springpole Lake	NB-LG-GN3	Lake Trout	5	257	272	163	2
2022	Springpole Lake	NB-LG-GN3	Lake Trout	6	234	249	141	3
2022	Springpole Lake	NB-LG-GN4	Lake Trout	2	708	770	4770	20
2022	Springpole Lake	NB-LG-GN4	Lake Trout	6	580	635	1890	6
2022	Springpole Lake	NB-LG-GN5	Lake Trout	26	760	823	5820	22
2022	Springpole Lake	NB-LG-GN5	Lake Trout	27	705	744	4870	22
2022	Springpole Lake	NB-LG-GN8	Lake Trout	23	620	695	2423	16
2022	Springpole Lake	NB-SM-GN4a	Lake Trout	1	620	680	2610	16
2022	Springpole Lake	NB-SM-GN5b	Lake Trout	8	649	708	3310	17
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	34	490	542	1610	12
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	36	524	585	1150	12
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	37	433	483	1050	4
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	38	454	519	1230	7
2022	Springpole Lake	NB-LG-GN11	Lake Whitefish	1	520	570	2060	17
2022	Springpole Lake	NB-LG-GN14	Lake Whitefish	1	487	531	1600	21
2022	Springpole Lake	NB-LG-GN14	Lake Whitefish	10	285	315	295	6
2022	Springpole Lake	NB-LG-GN3	Lake Whitefish	2	509	550	2150	27
2022	Springpole Lake	NB-LG-GN3	Lake Whitefish	3	410	452	890	7
2022	Springpole Lake	NB-LG-GN3	Lake Whitefish	4	545	586	2110	15
2022	Springpole Lake	NB-LG-GN4	Lake Whitefish	1	484	536	1610	8
2022	Springpole Lake	NB-LG-GN4	Lake Whitefish	4	490	542	1580	14
2022	Springpole Lake	NB-LG-GN4	Lake Whitefish	7	478	528	1830	10
2022	Springpole Lake	NB-LG-GN5	Lake Whitefish	13	460	500	1440	6
2022	Springpole Lake	NB-LG-GN5	Lake Whitefish	14	504	562	2090	18
2022	Springpole Lake	NB-LG-GN5	Lake Whitefish	25	405	460	955	8
2022	Springpole Lake	NB-LG-GN7	Lake Whitefish	18	431	467	1140	5
2022	Springpole Lake	NB-SM-GN8	Lake Whitefish	12	482	534	1530	12
2021	Springpole Lake	L-15-SN1-F106-MS	Mimic Shiner	106	52	57	1.56	2
2021	Springpole Lake	L-15-SN1-F107-MS	Mimic Shiner	107	45	49	1.00	1
2021	Springpole Lake	L-15-SN1-F40-MS	Mimic Shiner	40	42	45	0.71	1
2021	Springpole Lake	L-15-SN1-F42-MS	Mimic Shiner	42	57	63	2.04	3
2021	Springpole Lake	L-15-SN1-F44-MS	Mimic Shiner	44	40	44	0.67	1
2021	Springpole Lake	L-15-SN1-F46-MS	Mimic Shiner	46	49	53	1.22	2
2021	Springpole Lake	L-15-SN1-F54-MS	Mimic Shiner	54	51	55	1.37	2
2021	Springpole Lake	L-15-SN1-F55-MS	Mimic Shiner	55	47	51	0.91	1
2021	Springpole Lake	L-15-SN1-F69-MS	Mimic Shiner	69	42	47	0.80	1
2021	Springpole Lake	L-15-SN1-F78-MS	Mimic Shiner	78	54	60	2.11	3
2022	Springpole Lake	EB-LG-GN5	Northern Pike	14	528	561	850	4
2022	Springpole Lake	EB-LG-GN5	Northern Pike	15	495	525	750	2
2022	Springpole Lake	EB-LG-GN5	Northern Pike	16	663	718	1750	7
2022	Springpole Lake	EB-LG-GN5	Northern Pike	17	595	634	1090	6
2022	Springpole Lake	EB-LG-GN6	Northern Pike	33	660	702	1960	5
2022	Springpole Lake	EB-LG-GN6	Northern Pike	34	670	710	2000	7
2022	Springpole Lake	EB-LG-GN6	Northern Pike	35	572	615	1200	5
2022	Springpole Lake	EB-LG-GN6	Northern Pike	36	618	660	1680	4
2022	Springpole Lake	EB-LG-GN6	Northern Pike	37	760	784	2870	7
2022	Springpole Lake	EB-LG-GN6	Northern Pike	38	594	634	1410	3
2022	Springpole Lake	EB-LG-GN7	Northern Pike	28	615	630	1420	6
2022	Springpole Lake	EB-LG-GN7	Northern Pike	29	560	607	1080	4
2022	Springpole Lake	EB-LG-GN7	Northern Pike	30	687	721	2150	6

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2022	Springpole Lake	EB-LG-GN8	Northern Pike	12	606	650	1530	5
2022	Springpole Lake	EB-LG-GN8	Northern Pike	13	520	557	900	3
2022	Springpole Lake	EB-LG-GN9	Northern Pike	28	491	528	724	3
2022	Springpole Lake	EB-LG-GN9	Northern Pike	29	394	405	366	2
2022	Springpole Lake	EB-LG-GN9	Northern Pike	30	340	362	265	1
2022	Springpole Lake	EB-LG-GN9	Northern Pike	31	469	499	632	2
2022	Springpole Lake	EB-LG-GN9	Northern Pike	32	508	542	793	3
2022	Springpole Lake	EB-LG-GN9	Northern Pike	33	535	577	909	4
2022	Springpole Lake	EB-SM-GN2	Northern Pike	2	84	90	4	0
2022	Springpole Lake	EB-SM-GN3	Northern Pike	1	157	169	23	0
2022	Springpole Lake	EB-SM-GN3	Northern Pike	56	525	562	850	3
2022	Springpole Lake	EB-SM-GN3	Northern Pike	59	125	133	12	0
2022	Springpole Lake	NB-LG-GN10	Northern Pike	13	650	700	1500	6
2022	Springpole Lake	NB-LG-GN10	Northern Pike	14	510	550	853	3
2022	Springpole Lake	NB-LG-GN2	Northern Pike	14	615	646	1510	4
2022	Springpole Lake	NB-LG-GN2	Northern Pike	15	491	522	820	3
2022	Springpole Lake	NB-LG-GN2	Northern Pike	24	512	545	1000	4
2022	Springpole Lake	NB-LG-GN2	Northern Pike	30	550	589	1130	5
2022	Springpole Lake	NB-LG-GN2	Northern Pike	31	590	627	1170	5
2022	Springpole Lake	NB-LG-GN2	Northern Pike	32	540	575	1120	3
2022	Springpole Lake	NB-LG-GN2	Northern Pike	35	513	545	870	4
2022	Springpole Lake	NB-LG-GN5	Northern Pike	10	693	732	2130	6
2022	Springpole Lake	NB-LG-GN6	Northern Pike	2	522	560	770	3
2022	Springpole Lake	NB-LG-GN6	Northern Pike	4	478	515	710	2
2022	Springpole Lake	NB-LG-GN6	Northern Pike	10	688	724	1820	5
2022	Springpole Lake	NB-LG-GN6	Northern Pike	11	464	493	610	2
2022	Springpole Lake	NB-LG-GN6	Northern Pike	32	436	469	470	1
2022	Springpole Lake	NB-LG-GN6	Northern Pike	38	666	712	1470	6
2022	Springpole Lake	NB-LG-GN6	Northern Pike	39	594	628	1360	5
2022	Springpole Lake	NB-LG-GN7	Northern Pike	20	592	626	1082	5
2022	Springpole Lake	NB-LG-GN7	Northern Pike	21	568	606	1130	5
2022	Springpole Lake	NB-LG-GN9	Northern Pike	15	608	647	1470	5
2022	Springpole Lake	NB-SM-GN3	Northern Pike	10	620	657	1625	7
2022	Springpole Lake	NB-SM-GN4a	Northern Pike	35	150	156	19	0
2022	Springpole Lake	NB-SM-GN4a	Northern Pike	36	163	180	30	0
2022	Springpole Lake	NB-SM-GN4a	Northern Pike	61	445	476	720	3
2022	Springpole Lake	NB-SM-GN5a	Northern Pike	33	710	752	2050	7
2021	Lake 18	L-18-MT1-F156-NRD	Northern Redbelly Dace	156	70	75	3.49	4
2021	Lake 18	L-18-MT1-F157-NRD	Northern Redbelly Dace	157	69	74	3.30	3
2021	Lake 18	L-18-MT1-F158-NRD	Northern Redbelly Dace	158	64	67	3.73	3
2021	Lake 18	L-18-MT1-F160-NRD	Northern Redbelly Dace	160	66	70	3.23	4
2021	Lake 18	L-18-MT1-F165-NRD	Northern Redbelly Dace	165	57	60	2.39	3
2021	Lake 18	L-18-MT1-F166-NRD	Northern Redbelly Dace	166	59	63	2.38	3
2021	Lake 18	L-18-MT1-F167-NRD	Northern Redbelly Dace	167	55	59	1.95	2
2021	Lake 18	L-18-MT1-F171-NRD	Northern Redbelly Dace	171	55	58	1.63	2
2021	Lake 18	L-18-MT1-F173-NRD	Northern Redbelly Dace	173	40	43	0.84	1
2021	Lake 18	L-18-MT1-F174-NRD	Northern Redbelly Dace	174	43	46	0.93	1
2021	Springpole Lake	L-15-SN1-F130-STS	Spottail Shiner	130	64	71	2.83	3
2021	Springpole Lake	L-15-SN1-F137-STS	Spottail Shiner	137	39	43	0.69	1
2021	Springpole Lake	L-15-SN1-F145-STS	Spottail Shiner	145	67	76	3.23	3
2021	Springpole Lake	L-15-SN1-F155-STS	Spottail Shiner	155	79	88	5.37	4
2021	Springpole Lake	L-15-SN1-F162-STS	Spottail Shiner	162	40	46	0.77	0
2021	Springpole Lake	L-15-SN1-F168-STS	Spottail Shiner	168	35	40	0.65	0
2021	Springpole Lake	L-15-SN1-F175-STS	Spottail Shiner	175	40	44	0.69	1
2021	Springpole Lake	L-15-SN2-F214-STS	Spottail Shiner	214	44	50	1.25	1

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2021	Springpole Lake	L-15-SN2-F219-STS	Spottail Shiner	219	35	38	0.52	0
2021	Springpole Lake	L-15-SN2-F220-STS	Spottail Shiner	220	41	45	0.92	0
2021	Springpole Lake	L-15-SN2-F222-STS	Spottail Shiner	222	45	49	1.10	0
2021	Springpole Lake	L-15-SN2-F226-STS	Spottail Shiner	226	37	41	0.69	0
2021	Springpole Lake	L-15-SN2-F339-STS	Spottail Shiner	339	45	51	1.54	1
2021	Springpole Lake	L-15-SN2-F340-STS	Spottail Shiner	340	50	54	1.53	1
2021	Springpole Lake	L-15-SN2-F341-STS	Spottail Shiner	341	47	52	1.55	1
2021	Springpole Lake	L-15-SN2-F343-STS	Spottail Shiner	343	55	62	2.25	1
2021	Springpole Lake	L-15-SN2-F353-STS	Spottail Shiner	353	44	48	1.16	1
2021	Springpole Lake	L-15-SN2-F354-STS	Spottail Shiner	354	50	55	1.72	1
2021	Springpole Lake	L-15-SN2-F356-STS	Spottail Shiner	356	43	47	1.14	0
2021	Springpole Lake	L-15-SN2-F361-STS	Spottail Shiner	361	47	53	1.63	1
2022	Springpole Lake	NB-LG-GN12	Walleye	5	588	621	2020	18
2022	Springpole Lake	NB-LG-GN2	Walleye	1	410	445	690	6
2022	Springpole Lake	NB-LG-GN2	Walleye	2	420	460	820	7
2022	Springpole Lake	NB-LG-GN2	Walleye	3	380	410	618	5
2022	Springpole Lake	NB-LG-GN2	Walleye	4	464	494	1010	10
2022	Springpole Lake	NB-LG-GN2	Walleye	5	461	492	870	17
2022	Springpole Lake	NB-LG-GN2	Walleye	6	483	509	1040	17
2022	Springpole Lake	NB-LG-GN2	Walleye	7	447	480	930	9
2022	Springpole Lake	NB-LG-GN2	Walleye	11	480	501	1110	15
2022	Springpole Lake	NB-LG-GN2	Walleye	12	408	437	660	6
2022	Springpole Lake	NB-LG-GN2	Walleye	13	443	465	950	9
2022	Springpole Lake	NB-LG-GN2	Walleye	16	341	364	397	3
2022	Springpole Lake	NB-LG-GN2	Walleye	19	488	519	1010	18
2022	Springpole Lake	NB-LG-GN2	Walleye	22	510	536	1210	19
2022	Springpole Lake	NB-LG-GN2	Walleye	23	497	527	1240	9
2022	Springpole Lake	NB-LG-GN2	Walleye	25	398	425	580	4
2022	Springpole Lake	NB-LG-GN2	Walleye	26	366	190	530	5
2022	Springpole Lake	NB-LG-GN2	Walleye	27	410	433	630	5
2022	Springpole Lake	NB-LG-GN2	Walleye	28	391	415	560	4
2022	Springpole Lake	NB-LG-GN2	Walleye	29	410	436	680	6
2022	Springpole Lake	NB-LG-GN2	Walleye	33	455	482	910	6
2022	Springpole Lake	NB-LG-GN2	Walleye	34	417	448	670	6
2022	Springpole Lake	NB-LG-GN2	Walleye	36	277	293	190	2
2022	Springpole Lake	NB-LG-GN2	Walleye	37	300	318	250	4
2022	Springpole Lake	NB-LG-GN2	Walleye	38	447	473	990	9
2022	Springpole Lake	NB-LG-GN2	Walleye	39	475	510	1000	15
2022	Springpole Lake	NB-LG-GN2	Walleye	40	407	435	630	6
2022	Springpole Lake	NB-LG-GN2	Walleye	47	249	270	130	2
2022	Springpole Lake	NB-LG-GN2	Walleye	48	500	530	1270	11
2022	Springpole Lake	NB-LG-GN2	Walleye	49	410	435	670	5
2022	Springpole Lake	NB-LG-GN2	Walleye	50	280	299	170	2
2022	Springpole Lake	NB-LG-GN4	Walleye	3	500	524	990	15
2022	Springpole Lake	NB-LG-GN4	Walleye	5	478	501	1030	11
2022	Springpole Lake	NB-SM-GN1	Walleye	1	540	574	1440	10
2022	Springpole Lake	NB-SM-GN1	Walleye	2	470	504	960	10
2022	Springpole Lake	NB-SM-GN1	Walleye	3	417	450	786	10
2022	Springpole Lake	NB-SM-GN2	Walleye	1	470	502	948	17
2022	Springpole Lake	NB-SM-GN2	Walleye	2	291	-	250	3
2022	Springpole Lake	NB-SM-GN2	Walleye	3	326	345	321	4
2022	Springpole Lake	NB-SM-GN2	Walleye	4	245	260	160	3
2022	Springpole Lake	NB-SM-GN2	Walleye	5	410	434	676	9
2022	Springpole Lake	NB-SM-GN2	Walleye	6	373	395	487	5
2022	Springpole Lake	NB-SM-GN2	Walleye	7	270	290	201	3

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2022	Springpole Lake	NB-SM-GN2	Walleye	8	272	284	208	3
2022	Springpole Lake	NB-SM-GN2	Walleye	9	245	251	123	2
2022	Springpole Lake	NB-SM-GN2	Walleye	10	194	200	136	2
2022	Springpole Lake	NB-SM-GN2	Walleye	11	235	245	128	2
2022	Springpole Lake	NB-SM-GN2	Walleye	12	220	230	86	2
2022	Springpole Lake	NB-SM-GN2	Walleye	20	156	165	30	1
2022	Springpole Lake	NB-SM-GN2	Walleye	22	153	165	32	1
2022	Springpole Lake	NB-SM-GN2	Walleye	34	300	325	318	3
2022	Springpole Lake	NB-SM-GN2	Walleye	35	340	365	400	4
2022	Springpole Lake	NB-SM-GN2	Walleye	36	314	330	291	3
2022	Springpole Lake	NB-SM-GN2	Walleye	37	280	300	208	3
2022	Springpole Lake	NB-SM-GN2	Walleye	38	203	214	168	3
2022	Springpole Lake	NB-SM-GN2	Walleye	39	193	205	65	1
2022	Springpole Lake	NB-LG-GN6	White Sucker	6	544	586	2260	9
2022	Springpole Lake	NB-LG-GN6	White Sucker	18	280	297	270	3
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	31	53	57	1.61	1
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	39	82	88	6.03	2
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	62	96	101	9.86	2
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	63	57	61	1.82	1
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	64	54	58	1.58	1
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	65	54	58	1.62	1
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	70	53	56	1.40	1
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	78	78	84	3.87	2
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	85	81	86	5.27	2
2022	Birch Lake	BIRCH-1-GN1	Yellow Perch	90	60	64	2.00	1
2022	Birch Lake	BIRCH-1-GN1-F31	Yellow Perch	31	53	57	1.61	1
2022	Birch Lake	BIRCH-1-GN1-F39	Yellow Perch	39	82	88	6.03	2
2022	Birch Lake	BIRCH-1-GN1-F62	Yellow Perch	62	96	101	9.86	2
2022	Birch Lake	BIRCH-1-GN1-F63	Yellow Perch	63	57	61	1.82	1
2022	Birch Lake	BIRCH-1-GN1-F64	Yellow Perch	64	54	58	1.58	1
2022	Birch Lake	BIRCH-1-GN1-F65	Yellow Perch	65	54	58	1.62	1
2022	Birch Lake	BIRCH-1-GN1-F70	Yellow Perch	70	53	56	1.40	1
2022	Birch Lake	BIRCH-1-GN1-F78	Yellow Perch	78	78	84	3.87	2
2022	Birch Lake	BIRCH-1-GN1-F85	Yellow Perch	85	81	86	5.27	2
2022	Birch Lake	BIRCH-1-GN1-F90	Yellow Perch	90	60	64	2.00	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	3	55	58	1.47	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	4	53	58	1.66	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	5	56	60	1.79	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	6	50	54	1.43	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	17	61	65	2.25	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	35	59	63	2.00	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	37	60	65	2.04	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	80	52	55	1.30	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	83	54	57	1.63	1
2022	Birch Lake	BIRCH-2-GN1	Yellow Perch	93	50	54	1.37	1
2022	Birch Lake	BIRCH-2-GN1-F17	Yellow Perch	17	61	65	2.25	1
2022	Birch Lake	BIRCH-2-GN1-F3	Yellow Perch	3	55	58	1.47	1
2022	Birch Lake	BIRCH-2-GN1-F35	Yellow Perch	35	59	63	2.00	1
2022	Birch Lake	BIRCH-2-GN1-F37	Yellow Perch	37	60	65	2.04	1
2022	Birch Lake	BIRCH-2-GN1-F4	Yellow Perch	4	53	58	1.66	1
2022	Birch Lake	BIRCH-2-GN1-F5	Yellow Perch	5	56	60	1.79	1
2022	Birch Lake	BIRCH-2-GN1-F6	Yellow Perch	6	50	54	1.43	1
2022	Birch Lake	BIRCH-2-GN1-F80	Yellow Perch	80	52	55	1.30	1
2022	Birch Lake	BIRCH-2-GN1-F83	Yellow Perch	83	54	57	1.63	1
2022	Birch Lake	BIRCH-2-GN1-F93	Yellow Perch	93	50	54	1.37	1

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2021	Birch Lake	BIRCH-MT1-F102-YLP	Yellow Perch	102	90	94	7.69	2
2021	Birch Lake	BIRCH-MT1-F105-YLP	Yellow Perch	105	100	104	12.32	2
2021	Birch Lake	BIRCH-MT1-F44-YLP	Yellow Perch	44	84	88	5.78	1
2021	Birch Lake	BIRCH-MT1-F47-YLP	Yellow Perch	47	77	80	4.12	1
2021	Birch Lake	BIRCH-MT1-F49-YLP	Yellow Perch	49	79	84	5.89	1
2021	Birch Lake	BIRCH-MT1-F55-YLP	Yellow Perch	55	53	57	1.81	0
2021	Birch Lake	BIRCH-MT1-F72-YLP	Yellow Perch	72	63	67	2.97	0
2021	Birch Lake	BIRCH-MT1-F91-YLP	Yellow Perch	91	57	60	1.83	0
2021	Birch Lake	BIRCH-MT1-F92-YLP	Yellow Perch	92	61	64	2.46	1
2021	Birch Lake	BIRCH-MT1-F99-YLP	Yellow Perch	99	73	75	4.10	2
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	17	160	170	57	3
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	18	170	180	62	4
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	20	156	161	48	3
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	21	153	160	44	4
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	41	154	161	30	4
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	42	180	187	70	5
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	43	150	157	30	3
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	44	185	193	70	4
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	45	145	152	30	3
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	46	155	163	30	3
2022	Springpole Lake	NB-LG-GN2	Yellow Perch	51	157	164	20	3
2022	Springpole Lake	NB-SM-GN1	Yellow Perch	4	155	164	43	4
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	13	166	179	56	4
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	14	125	139	23	3
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	15	138	147	36	4
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	16	146	153	41	3
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	17	127	131	24	2
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	18	146	155	39	3
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	19	131	142	30	2
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	21	115	124	21	1
2022	Springpole Lake	NB-SM-GN2	Yellow Perch	23	130	136	23	2
2019	Springpole Lake	SPL-AN1-F1	Northern Pike	1	480	530	490	4
2019	Springpole Lake	SPL-AN1-F2	Northern Pike	2	560	590	980	4
2019	Springpole Lake	SPL-AN1-F3	Northern Pike	3	557	601	1000	3
2019	Springpole Lake	SPL-AN1-F4	Northern Pike	4	458	501	520	2
2019	Springpole Lake	SPL-AN1-F5	Northern Pike	5	457	501	510	2
2019	Springpole Lake	SPL-AN1-F6	Northern Pike	6	525	556	750	4
2019	Springpole Lake	SPL-AN2-F1	Northern Pike	1	503	534	530	3
2019	Springpole Lake	SPL-AN2-F2	Northern Pike	2	482	514	480	2
2019	Springpole Lake	SPL-AN2-F3	Northern Pike	3	560	599	850	6
2019	Springpole Lake	SPL-AN2-F4	Northern Pike	4	645	682	1800	6
2019	Springpole Lake	SPL-AN3-F1	Northern Pike	1	590	625	1000	4
2019	Springpole Lake	SPL-AN3-F2	Northern Pike	2	490	525	600	3
2019	Springpole Lake	SPL-AN3-F3	Northern Pike	3	515	542	700	3
2019	Springpole Lake	SPL-AN4-F1	Northern Pike	1	415	445	320	2
2019	Springpole Lake	SPL-AN4-F2	Northern Pike	2	459	491	500	4
2019	Springpole Lake	SPL-AN4-F3	Northern Pike	3	560	596	740	5
2019	Springpole Lake	SPL-AN4-F4	Northern Pike	4	570	610	750	3
2019	Springpole Lake	SPL-AN5-F1	Northern Pike	1	455	491	520	2
2019	Springpole Lake	SPL-AN5-F2	Northern Pike	2	485	525	500	2
2019	Springpole Lake	SPL-AN5-F3	Northern Pike	3	622	670	1200	5
2019	Springpole Lake	SPL-MT1-F1	Yellow Perch	1	67	72	2.94	1
2019	Springpole Lake	SPL-MT1-F2	Yellow Perch	2	82	87	5.71	1
2019	Springpole Lake	SPL-MT1-F3	Yellow Perch	3	95	99	8.65	2
2019	Springpole Lake	SPL-MT1-F4	Yellow Perch	4	111	116	12.95	1

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2019	Springpole Lake	SPL-MT1-F5	Yellow Perch	5	86	91	5.61	1
2019	Springpole Lake	SPL-MT1-F6	Yellow Perch	6	91	96	7.35	1
2019	Springpole Lake	SPL-MT1-F7	Yellow Perch	7	80	84	4.67	1
2019	Springpole Lake	SPL-SN3-F155	Yellow Perch	155	82	85	5.7	1
2019	Springpole Lake	SPL-SN3-F156	Yellow Perch	156	78	83	5.46	1
2019	Springpole Lake	SPL-SN3-F157	Yellow Perch	157	68	72	3.43	0
2019	Springpole Lake	SPL-SN3-F158	Yellow Perch	158	61	65	2.5	0
2019	Springpole Lake	SPL-SN3-F159	Yellow Perch	159	60	64	2.26	0
2019	Springpole Lake	SPL-SN3-F160	Yellow Perch	160	52	56	1.56	0
2019	Springpole Lake	SPL-SN3-F161	Yellow Perch	161	48	52	1.23	0
2019	Springpole Lake	SPL-SN3-F162	Yellow Perch	162	47	50	1.14	0
2019	Springpole Lake	SPL-SN3-F163	Yellow Perch	163	47	50	1.06	0
2019	Springpole Lake	SPL-SN3-F164	Yellow Perch	164	46	50	1.07	0
2019	Springpole Lake	SPL-SN3-F165	Yellow Perch	165	45	49	0.97	0
2019	Springpole Lake	SPL-SN3-F166	Yellow Perch	166	46	50	1.17	0
2019	Springpole Lake	SPL-SN3-F167	Yellow Perch	167	45	49	0.95	0
2019	Springpole Lake	SPL-SN3-F168	Yellow Perch	168	44	47	0.76	0
2019	Springpole Lake	SPL-SN3-F169	Yellow Perch	169	41	44	0.67	0
2019	Springpole Lake	SPL-SN3-F170	Yellow Perch	170	42	45	0.78	0
2019	Springpole Lake	SPL-SN3-F171	Yellow Perch	171	44	46	0.91	0
2019	Springpole Lake	SPL-SN3-F172	Yellow Perch	172	45	49	1.07	0
2019	Springpole Lake	SPL-SN3-F173	Yellow Perch	173	42	45	0.78	0
2019	Springpole Lake	SPL-SN3-F174	Yellow Perch	174	42	45	0.77	0
2019	S-9	S-9-MT1-F35	Northern Redbelly Dace	35	62	66	2.48	2
2019	S-9	S-9-MT1-F36	Northern Redbelly Dace	36	60	64	2.34	1
2019	S-9	S-9-MT1-F37	Northern Redbelly Dace	37	57	61	1.98	2
2019	S-9	S-9-MT1-F38	Northern Redbelly Dace	38	58	61	2.28	2
2019	S-9	S-9-MT1-F39	Northern Redbelly Dace	39	57	60	1.97	1
2019	S-9	S-9-MT1-F40	Northern Redbelly Dace	40	52	55	1.58	2
2019	S-9	S-9-MT1-F41	Northern Redbelly Dace	41	49	53	1.2	1
2019	S-9	S-9-MT1-F42	Northern Redbelly Dace	42	50	53	1.32	1
2019	S-9	S-9-MT1-F43	Northern Redbelly Dace	43	47	51	1.07	1
2019	S-9	S-9-MT1-F44	Northern Redbelly Dace	44	46	49	0.93	2
2019	S-9	S-9-US02-MT1-F112	Northern Redbelly Dace	112	60	65	2.39	1
2019	S-9	S-9-US02-MT1-F113	Northern Redbelly Dace	113	59	62	1.89	1
2019	S-9	S-9-US02-MT1-F114	Northern Redbelly Dace	114	58	62	2.01	2
2019	S-9	S-9-US02-MT1-F115	Northern Redbelly Dace	115	57	61	1.9	2
2019	S-9	S-9-US02-MT1-F116	Northern Redbelly Dace	116	55	58	1.72	2
2019	S-9	S-9-US02-MT1-F117	Northern Redbelly Dace	117	55	58	1.45	2
2019	S-9	S-9-US02-MT1-F118	Northern Redbelly Dace	118	55	58	1.49	1
2019	S-9	S-9-US02-MT1-F119	Northern Redbelly Dace	119	50	53	1.34	2
2019	S-9	S-9-US02-MT1-F120	Northern Redbelly Dace	120	50	53	1.35	1
2019	S-9	S-9-US02-MT1-F121	Northern Redbelly Dace	121	48	51	1.22	1
2019	S-9	S-9-MT1-F1	Finescale Dace	1	84	90	7.09	4
2019	S-9	S-9-MT1-F2	Finescale Dace	2	83	87	6.09	3
2019	S-9	S-9-MT1-F3	Finescale Dace	3	77	82	5.29	2
2019	S-9	S-9-MT1-F4	Finescale Dace	4	70	74	3.77	3
2019	S-9	S-9-MT1-F5	Finescale Dace	5	68	72	3.55	2
2019	S-9	S-9-MT1-F6	Finescale Dace	6	67	72	3.28	2
2019	S-9	S-9-MT1-F7	Finescale Dace	7	70	75	3.45	2
2019	S-9	S-9-MT1-F8	Finescale Dace	8	53	57	2.01	3
2019	S-9	S-9-MT1-F9	Finescale Dace	9	52	55	1.37	2
2019	S-9	S-9-MT1-F10	Finescale Dace	10	50	53	1.46	2
2019	WB05	WB05-OUT-MT1-F50	Finescale Dace	50	79	84	6.38	4
2019	WB05	WB05-OUT-MT1-F51	Finescale Dace	51	75	81	5.83	3

Year	Waterbody	Sample ID	Species	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)	Age (yrs)
2019	WB05	WB05-OUT-MT1-F52	Finescale Dace	52	72	76	4.48	2
2019	WB05	WB05-OUT-MT1-F53	Finescale Dace	53	64	69	3.23	2
2019	WB05	WB05-OUT-MT1-F54	Finescale Dace	54	62	65	2.79	2
2019	WB05	WB05-OUT-MT1-F55	Finescale Dace	55	55	60	2.27	2
2019	WB05	WB05-OUT-MT1-F56	Finescale Dace	56	44	47	1.06	1
2019	WB05	WB05-OUT-MT1-F57	Finescale Dace	57	43	45	0.86	0
2019	WB05	WB05-OUT-MT1-F58	Finescale Dace	58	40	42	0.78	1
2019	WB05	WB05-OUT-MT1-F59	Finescale Dace	59	40	43	0.75	2
2019	S-9	S-9-US02-MT1-F74	Pearl Dace	74	121	129	20.11	3
2019	S-9	S-9-US02-MT1-F75	Pearl Dace	75	122	129	19.2	3
2019	S-9	S-9-US02-MT1-F76	Pearl Dace	76	114	123	15.9	3
2019	S-9	S-9-US02-MT1-F77	Pearl Dace	77	94	101	10.05	3
2019	S-9	S-9-US02-MT1-F78	Pearl Dace	78	92	98	7.62	3
2019	S-9	S-9-US02-MT1-F79	Pearl Dace	79	89	96	7.06	2
2019	S-9	S-9-US02-MT1-F80	Pearl Dace	80	76	82	4.45	2
2019	S-9	S-9-US02-MT1-F81	Pearl Dace	81	79	85	4.68	2
2019	S-9	S-9-US02-MT1-F82	Pearl Dace	82	76	83	4.36	2
2019	S-9	S-9-US02-MT1-F83	Pearl Dace	83	68	72	2.86	1
2019	S-9	S-9-US02-MT1-F84	Pearl Dace	84	43	46	0.84	1
2019	S-9	S-9-US02-MT1-F85	Pearl Dace	85	45	48	0.73	1

Table D1-2: Fish Species Tissue Results

Year	Waterbody	Sample ID	Species	Arsenic (mg/kg wwt)	Cadmium (mg/kg wwt)	Chromium (mg/kg wwt)	Copper (mg/kg wwt)	Lead (mg/kg wwt)	Manganese (mg/kg wwt)	Mercury (mg/kg wwt)	Methyl-mercury (mg/kg wwt)	Nickel (mg/kg wwt)	Selenium (mg/kg wwt)	Zinc (mg/kg wwt)	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)
2022	Springpole Lake	EB-LG-GN1	Lake Trout	0.05	<0.0010	<0.010	0.28	<0.0040	0.094	1.09	1.33	<0.040	0.483	3.22	39	870	946	8610
2022	Springpole Lake	NB-LG-GN1	Lake Trout	0.30	<0.0010	0.011	0.239	0.0092	0.186	0.897	0.49	<0.040	0.499	4.14	5	650	715	2990
2022	Springpole Lake	NB-LG-GN3	Lake Trout	0.93	<0.0010	<0.010	0.15	<0.0040	0.109	1.1	1.47	<0.040	0.522	3.02	1	710	761	2900
2022	Springpole Lake	NB-LG-GN4	Lake Trout	0.06	<0.0010	<0.010	0.18	<0.0040	0.076	0.212	0.27	<0.040	0.246	2.51	2	708	770	4770
2022	Springpole Lake	NB-LG-GN4	Lake Trout	0.50	<0.0010	<0.010	0.26	<0.0040	0.162	0.229	0.24	<0.040	0.498	3.3	6	580	635	1890
2022	Springpole Lake	NB-LG-GN5	Lake Trout	0.04	<0.0010	<0.010	0.20	<0.0040	0.167	0.287	0.16	<0.040	0.379	3.35	27	705	744	4870
2022	Springpole Lake	NB-LG-GN5	Lake Trout	0.03	<0.0010	<0.010	0.23	<0.0040	0.35	0.712	0.79	<0.040	0.321	2.66	26	760	823	5820
2022	Springpole Lake	NB-LG-GN8	Lake Trout	0.0769	0.0010	<0.010	0.26	0.0053	0.1	0.487	0.42	<0.040	0.3	3.45	23	620	695	2423
2022	Springpole Lake	NB-LG-GN13	Lake Trout	0.56	<0.0010	0.014	0.219	0.0099	0.291	0.326	0.42	<0.040	0.51	3.88	10	527	579	1620
2022	Springpole Lake	NB-LG-GN15	Lake Trout	0.09	<0.0010	<0.010	0.188	0.0045	0.122	0.746	0.53	<0.040	0.229	2.8	1	620	688	2820
2022	Springpole Lake	NB-LG-GN15	Lake Trout	0.17	<0.0010	<0.010	0.215	0.0057	0.124	0.918	0.90	<0.040	0.521	3.88	2	660	738	3480
2022	Springpole Lake	NB-LG-GN15	Lake Trout	0.09	<0.0010	<0.010	0.262	0.0073	0.174	0.304	0.33	<0.040	0.287	3.7	3	670	743	3490
2022	Springpole Lake	NB-SM-GN4a	Lake Trout	0.16	<0.0010	0.014	0.171	0.0178	0.164	0.549	0.38	<0.040	0.32	3.48	1	620	680	2610
2022	Springpole Lake	NB-SM-GN5b	Lake Trout	0.29	<0.0010	<0.010	0.267	0.0108	0.113	1.02	0.86	<0.040	0.427	3.27	8	649	708	3310
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	0.0505	0.0014	<0.010	0.15	<0.0040	0.104	0.131	0.12	<0.040	0.718	5.57	34	490	542	1610
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	0.18	<0.0010	<0.010	0.16	<0.0040	0.079	0.144	0.12	<0.040	0.546	3.01	36	524	585	1150
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	0.04	<0.0010	<0.010	0.22	<0.0040	0.114	0.0478	0.04	<0.040	0.485	3.47	37	433	483	1050
2022	Springpole Lake	EB-LG-GN1	Lake Whitefish	0.05	<0.0010	<0.010	0.16	<0.0040	0.143	0.128	0.09	<0.040	0.442	3.9	38	454	519	1230
2022	Springpole Lake	NB-LG-GN3	Lake Whitefish	0.42	<0.0010	<0.010	0.16	<0.0040	0.122	0.144	0.14	<0.040	0.569	3.33	2	509	550	2150
2022	Springpole Lake	NB-LG-GN3	Lake Whitefish	0.10	<0.0010	<0.010	0.171	0.0212	0.244	0.136	0.12	<0.040	0.489	4.74	3	410	452	890
2022	Springpole Lake	NB-LG-GN3	Lake Whitefish	0.246	0.0016	0.011	0.199	0.0092	0.309	0.223	0.20	<0.040	0.58	4.3	4	545	586	2110
2022	Springpole Lake	NB-LG-GN4	Lake Whitefish	0.25	<0.0010	0.015	0.174	0.0047	0.26	0.049	0.05	<0.040	0.693	3.54	1	484	536	1610
2022	Springpole Lake	NB-LG-GN4	Lake Whitefish	0.12	<0.0010	<0.010	0.184	0.019	0.518	0.123	0.12	<0.040	0.548	3.17	4	490	542	1580
2022	Springpole Lake	NB-LG-GN4	Lake Whitefish	0.529	0.0011	<0.010	0.138	0.009	0.369	0.0716	0.08	<0.040	0.573	3.29	7	478	528	1830
2022	Springpole Lake	NB-LG-GN5	Lake Whitefish	0.05	<0.0010	<0.010	0.156	0.0042	0.147	0.0545	0.05	<0.040	0.38	3.58	13	460	500	1440
2022	Springpole Lake	NB-LG-GN5	Lake Whitefish	0.12	<0.0010	<0.010	0.166	0.0049	0.587	0.0775	0.08	<0.040	0.453	2.96	14	504	562	2090
2022	Springpole Lake	NB-LG-GN5	Lake Whitefish	0.28	<0.0010	<0.010	0.20	<0.0040	1.07	0.0419	0.05	<0.040	0.502	3.43	25	405	460	955
2022	Springpole Lake	NB-LG-GN7	Lake Whitefish	0.09	<0.0010	<0.010	0.20	<0.0040	0.12	0.0427	0.04	<0.040	0.514	3.24	18	431	467	1140
2022	Springpole Lake	NB-LG-GN11	Lake Whitefish	0.33	<0.0010	<0.010	0.15	<0.0040	0.112	0.152	0.18	<0.040	0.546	3.2	1	520	570	2060
2022	Springpole Lake	NB-LG-GN14	Lake Whitefish	0.17	<0.0010	<0.010	0.14	<0.0040	0.072	0.146	0.15	<0.040	0.517	3.24	1	487	531	1600
2022	Springpole Lake	NB-LG-GN14	Lake Whitefish	0.53	<0.0010	<0.010	0.214	0.0091	0.31	0.0684	0.08	<0.040	0.48	4.28	10	285	315	295
2022	Springpole Lake	NB-SM-GN8	Lake Whitefish	0.18	<0.0010	<0.010	0.16	<0.0040	0.069	0.143	0.14	<0.040	0.409	2.91	12	482	534	1530
2022	Springpole Lake	EB-LG-GN5	Northern Pike	0.02	<0.0010	<0.010	0.118	0.0065	0.364	0.419	0.49	<0.040	0.234	7.62	14	528	561	850
2022	Springpole Lake	EB-LG-GN5	Northern Pike	0.02	<0.0010	<0.010	0.11	<0.0040	0.488	0.166	0.21	<0.040	0.217	5.73	15	495	525	750
2022	Springpole Lake	EB-LG-GN5	Northern Pike	0.03	<0.0010	<0.010	0.10	<0.0040	0.131	0.766	0.91	<0.040	0.199	10.1	16	663	718	1750
2022	Springpole Lake	EB-LG-GN5	Northern Pike	0.037	0.0014	<0.010	0.13	<0.0040	0.138	0.918	0.71	<0.040	0.223	5.2	17	595	634	1090
2022	Springpole Lake	EB-LG-GN6	Northern Pike	0.05	<0.0010	<0.010	0.132	0.006	0.177	0.61	0.59	<0.040	0.259	4.35	33	660	702	1960
2022	Springpole Lake	EB-LG-GN6	Northern Pike	0.07	<0.0010	<0.010	0.09	<0.0040	0.112	0.955	1.00	<0.040	0.208	3.39	34	670	710	2000
2022	Springpole Lake	EB-LG-GN6	Northern Pike	0.04	<0.0010	<0.010	0.103	0.0062	0.158	0.532	-	<0.040	0.227	8.22	35	572	615	1200
2022	Springpole Lake	EB-LG-GN6	Northern Pike	0.05	<0.0010	<0.010	0.14	<0.0040	0.265	0.386	0.35	<0.040	0.245	6.04	36	618	660	1680
2022	Springpole Lake	EB-LG-GN6	Northern Pike	0.08	<0.0010	<0.010	0.12	<0.0040	0.194	0.598	0.47	<0.040	0.246	4.59	37	760	784	2870
2022	Springpole Lake	EB-LG-GN6	Northern Pike	0.06	<0.0010	<0.010	0.11	<0.0040	0.151	0.29	0.28	<0.040	0.247	6	38	594	634	1410
2022	Springpole Lake	EB-LG-GN7	Northern Pike	0.04	<0.0010	<0.010	0.16	<0.0040	0.157	0.693	0.76	<0.040	0.198	5.29	28	615	630	1420
2022	Springpole Lake	EB-LG-GN7	Northern Pike	0.0366	0.0015	<0.010	0.14	<0.0040	0.334	0.78	0.95	<0.040	0.174	5.32	29	560	607	1080
2022	Springpole Lake	EB-LG-GN7	Northern Pike	0.06	<0.0010	<0.010	0.10	<0.0040	0.273	0.904	0.95	<0.040	0.238	3.74	30	687	721	2150
2022	Springpole Lake	EB-SM-GN2	Northern Pike	0.0385	0.0067	0.052	0.45	0.0204	9.11	0.073	-	<0.040	0.147	46.80	2	84	90	4
2022	Springpole Lake	EB-SM-GN3	Northern Pike	0.0265	0.0046	0.027	0.384	0.032	2.45	0.0846	0.05	<0.040	0.212	27.8	1	157	169	23
2022	Springpole Lake	EB-SM-GN3	Northern Pike	0.0288	0.0064	0.03	0.379	0.0516	3.52	0.0833	0.07	<0.040	0.208	40.7	59	125	133	12
2022	Springpole Lake	EB-SM-GN7	Northern Pike	0.0298	0.0070	0.021	0.415	0.0114	4.55	0.0966	0.09	<0.040	0.25	49.1	4	129	139	15
2022	Springpole Lake	NB-LG-GN7	Northern Pike	0.0321	0.0012	<0.010	0.15	<0.0040	0.188	0.415	0.33	<0.040	0.272	4.6	20	592	626	1082
2022	Springpole Lake	NB-LG-GN7	Northern Pike	0.05	<0.0010	<0.010	0.14	<0.0040	0.224	0.484	0.39	<0.040	0.313	6.05	21	568	606	1130
2022	Springpole Lake	NB-LG-GN9	Northern Pike	0.07	<0.0010	<0.010	0.155	0.0064	0.165	0.516	0.41	<0.040	0.286	9.29	15	608	647	1470
2022	Springpole Lake	NB-SM-GN4a	Northern Pike	0.044	0.0033	0.051	0.647	0.055	0.87	0.183	0.21	<0.040	0.254	9.46	35	150	156	19

Year	Waterbody	Sample ID	Species	Arsenic (mg/kg wwt)	Cadmium (mg/kg wwt)	Chromium (mg/kg wwt)	Copper (mg/kg wwt)	Lead (mg/kg wwt)	Manganese (mg/kg wwt)	Mercury (mg/kg wwt)	Methyl-mercury (mg/kg wwt)	Nickel (mg/kg wwt)	Selenium (mg/kg wwt)	Zinc (mg/kg wwt)	Fish #	Fork Length (mm)	Total Length (mm)	Total Weight (g)
2022	Springpole Lake	NB-SM-GN4a	Northern Pike	0.037	0.0029	0.103	0.402	0.102	0.914	0.104	0.095	0.049	0.233	5.33	36	163	180	30
2022	Springpole Lake	NB-SM-GN4a	Northern Pike	0.02	<0.0010	<0.010	0.12	<0.0040	0.226	0.128	0.11	<0.040	0.241	8.53	61	445	476	720
2022	Springpole Lake	NB-SM-GN7	Northern Pike	0.0324	0.0100	0.019	0.451	0.102	5.16	0.0772	0.08	<0.040	0.219	37.5	12	110	117	10
2022	Springpole Lake	NB-SM-GN7	Northern Pike	0.023	0.0062	0.031	0.428	0.031	8.8	0.0907	0.06	<0.040	0.203	33.7	18	115	123	9
2022	Springpole Lake	NB-SM-GN7	Northern Pike	0.013	0.0065	0.018	0.351	0.0409	3.01	0.0773	0.08	<0.040	0.201	31.2	19	133	141	13
2022	Springpole Lake	NB-SM-GN7	Northern Pike	0.0248	0.0095	0.021	0.45	0.0165	8.68	0.0926	0.05	<0.040	0.191	36	20	104	109	8
2022	Springpole Lake	NB-SM-GN7	Northern Pike	0.0159	0.0061	0.031	0.366	0.0226	5.38	0.0556	0.07	<0.040	0.18	33.7	21	112	119	9
2022	Springpole Lake	EB-LG-GN1	Walleye	0.08	<0.0010	<0.010	0.15	<0.0040	0.11	1.31	1.74	<0.040	0.29	3.16	24	551	580	1180
2022	Springpole Lake	EB-LG-GN1	Walleye	0.05	<0.0010	<0.010	0.14	<0.0040	0.089	1.77	1.94	<0.040	0.259	3.78	25	600	632	1900
2022	Springpole Lake	EB-LG-GN1	Walleye	0.06	<0.0010	<0.010	0.15	<0.0040	0.093	1.34	1.41	<0.040	0.281	3.94	26	557	594	1450
2022	Springpole Lake	EB-LG-GN1	Walleye	0.07	<0.0010	<0.010	0.13	<0.0040	0.086	1.02	1.17	<0.040	0.298	3.88	27	536	570	1460
2022	Springpole Lake	EB-LG-GN2	Walleye	0.05	<0.0010	<0.010	0.129	0.0046	0.092	0.855	0.94	<0.040	0.318	3.5	4	500	540	1320
2022	Springpole Lake	EB-SM-GN1	Walleye	0.11	<0.0010	0.024	0.263	0.0064	0.166	0.259	0.28	<0.040	0.256	4.29	1	248	262	142
2022	Springpole Lake	EB-SM-GN1	Walleye	0.06	<0.0010	0.012	0.29	0.0075	0.183	0.176	0.16	<0.040	0.235	4.8	2	181	195	51
2022	Springpole Lake	EB-SM-GN1	Walleye	0.05	<0.0010	0.011	0.227	0.0096	0.166	0.14	0.11	<0.040	0.178	3.53	3	184	199	54
2022	Springpole Lake	NB-LG-GN2	Walleye	0.05	<0.0010	<0.010	0.17	<0.0040	0.103	0.24	0.25	<0.040	0.343	4.46	16	341	364	397
2022	Springpole Lake	NB-LG-GN2	Walleye	0.04	<0.0010	0.034	0.244	0.004	0.177	0.192	0.18	<0.040	0.293	5.4	36	277	293	190
2022	Springpole Lake	NB-LG-GN2	Walleye	0.07	<0.0010	<0.010	0.17	0.0053	0.168	0.239	0.20	<0.040	0.338	4.62	37	300	318	250
2022	Springpole Lake	NB-LG-GN2	Walleye	0.04	<0.0010	<0.010	0.186	0.0046	0.178	0.185	0.18	<0.040	0.257	4.82	47	249	270	130
2022	Springpole Lake	NB-LG-GN2	Walleye	0.04	<0.0010	<0.010	0.21	<0.0040	0.137	0.218	0.14	<0.040	0.278	5.58	50	280	299	170
2022	Springpole Lake	NB-LG-GN2	Walleye	0.05	<0.0010	<0.010	0.221	0.0074	0.108	0.33	0.37	<0.040	0.312	4.28	1	410	445	690
2022	Springpole Lake	NB-LG-GN2	Walleye	0.05	<0.0010	<0.010	0.17	0.0091	0.113	0.34	0.15	<0.040	0.301	3.88	2	420	460	820
2022	Springpole Lake	NB-LG-GN2	Walleye	0.05	<0.0010	<0.010	0.135	0.0122	0.098	0.193	0.12	<0.040	0.282	3.87	3	380	410	618
2022	Springpole Lake	NB-LG-GN12	Walleye	0.0991	0.0013	<0.010	0.26	<0.0040	0.099	1.02	0.88	<0.040	0.447	3.85	5	588	621	2020
2022	Springpole Lake	NB-SM-GN2	Walleye	0.06	<0.0010	<0.010	0.214	0.033	0.43	0.222	0.19	<0.040	0.354	4.75	2	291	-	250
2022	Springpole Lake	NB-SM-GN2	Walleye	0.06	<0.0010	<0.010	0.138	0.0058	0.163	0.206	0.18	<0.040	0.296	4.28	3	326	345	321
2022	Springpole Lake	NB-SM-GN2	Walleye	0.06	<0.0010	<0.010	0.196	0.0056	0.278	0.159	0.13	<0.040	0.296	4.97	4	245	260	160
2022	Springpole Lake	NB-SM-GN2	Walleye	0.05	<0.0010	<0.010	0.17	<0.0040	0.116	0.396	0.27	<0.040	0.348	4.52	6	373	395	487
2022	Springpole Lake	NB-SM-GN2	Walleye	0.07	<0.0010	<0.010	0.177	0.0048	0.184	0.185	0.18	<0.040	0.297	4.38	7	270	290	201
2022	Springpole Lake	NB-SM-GN2	Walleye	0.06	<0.0010	<0.010	0.14	<0.0040	0.183	0.174	0.15	<0.040	0.254	3.56	8	272	284	208

Notes: Small Northern Pike were sent for 'whole body' tissue analysis and elevated contaminant levels reflect this

Table D1-3: Composite Fish Tissue Sample Summary

Year	Station	Composite ID	Species	No. Individuals per Sample	Total Length Range (mm)	Mean Total Length (mm)	Individual Weight Range (g)	Mean Individual Weight (g)	Hg (mg/kg wwt)	MeHg (mg/kg wwt)	Moisture (%)
2019	S-9	S-9-MT1-COMP1	Finescale Dace	24	55-72	63.71	1.63-3.22	2.39	0.0398	0.0391	74.3
2019	S-9	S-9-MT1-COMP2	Northern Redbelly Dace	31	52-63	59.32	1.06-2.35	1.79	0.0217	0.0278	75.2
2019	S-9	S-9-MT1-COMP3	Finescale Dace	16	66-86	72.43	2.68-6.84	3.47	0.0388	0.0517	76.6
2019	S-9-US02	S-9-US02-MT1-COMP1	Northern Pearl Dace	10	83-95	89.7	4.98-7.57	6.14	0.0314	0.0467	75.3
2019	S-9-US02	S-9-US02-MT1-COMP2	Northern Pearl Dace	10	86-96	90.3	4.71-7.26	6.07	0.0303	0.0284	73.9
2019	S-9-US02	S-9-US02-MT1-COMP3	Northern Pearl Dace	5	110-121	115.8	10.83-15.21	12.86	0.0518	0.0702	73.7
2019	S-9-US02	S-9-US02-MT1-COMP4	Northern Redbelly Dace	37	50-61	56.14	0.86-1.83	1.48	0.0187	0.0231	76.7
2019	S-9-US02	S-9-US02-MT1-COMP5	Northern Pearl Dace	11	84-91	86.82	4.43-6.81	5.38	0.0273	0.0383	79.2
2019	L-5-OUT	L-5-OUT-MT1-COMP1	Finescale Dace	16	62-75	68.75	2.72-4.56	3.35	0.0426	0.0554	79
2019	L-5-OUT	L-5-OUT-MT1-COMP2	Finescale Dace	13	68-80	74.77	3.30-5.24	4.37	0.042	0.0522	77.2
2019	L-5-OUT	L-5-OUT-MT1-COMP3	Finescale Dace	20	60-69	64.15	2.19-2.99	2.68	0.0335	0.0412	76.6
2019	Springpole Lake	SPL-SN1-COMP1	Yellow Perch	60	41-54	47.2	0.58-1.36	0.9	0.0241	0.0288	81.8
2019	Springpole Lake	SPL-SN1-COMP2	Yellow Perch	52	42-56	49.12	0.67-1.45	0.02	0.0142	0.012	83.4
2019	Springpole Lake	SPL-SN2-COMP1	Yellow Perch	46	45-60	52.28	0.80-1.98	1.21	0.0197	0.0193	78.7
2019	Springpole Lake	SPL-SN3-COMP1	Yellow Perch	43	46-60	52.81	0.75-1.82	1.27	0.0193	0.0174	79.6
2019	Springpole Lake	SPL-SN3-COMP2	Yellow Perch	58	43-57	48.88	0.56-1.35	0.94	0.0187	0.0214	80.4
2019	Springpole Lake	SPL-SN3-COMP3	Yellow Perch	42	49-62	53.02	0.99-2.09	1.26	0.0182	0.0128	79.2
2019	Springpole Lake	SPL-SN4-COMP1	Yellow Perch	52	42-57	48.96	0.59-1.56	1	0.0144	0.0172	83.3
2019	Springpole Lake	SPL-SN4-COMP2	Yellow Perch	53	42-61	48.81	0.67-1.93	1.02	0.0142	0.0183	83.2
2019	Springpole Lake	SPL-SN4-COMP3	Yellow Perch	53	42-53	47.58	0.59-1.84	1.03	0.0144	0.0138	83.9
2021	Springpole Lake	L-15-COMP-1-BNS	Blacknose Shiner	19	40-51	48.053	0.583-1.345	1.074	0.0538	0.0458	75.6
2021	Springpole Lake	L-15-COMP-2-BNS	Blacknose Shiner	15	51-53	51.867	0.583-1.557	1.268	0.04	0.0385	76.4
2021	Springpole Lake	L-15-COMP-3-BNS	Blacknose Shiner	15	53-54	53.667	1.265-1.6	1.422	0.0473	0.0444	75
2021	Springpole Lake	L-15-COMP-4-BNS	Blacknose Shiner	14	54-56	54.929	1.372-1.744	1.561	0.049	0.0365	76.2
2021	Springpole Lake	L-15-COMP-5-BNS	Blacknose Shiner	15	57-64	59.867	1.189-2.443	1.92	0.102	0.0641	75.5
2021	Springpole Lake	L-15-COMP-1-MS	Mimic Shiner	24	44-50	47.125	0.622-1.046	0.855	0.05	0.0463	74.1
2021	Springpole Lake	L-15-COMP-2-MS	Mimic Shiner	17	50-53	51.941	0.812-1.31	1.183	0.0616	0.052	75.3
2021	Springpole Lake	L-15-COMP-3-MS	Mimic Shiner	14	54-55	54.286	1.247-1.613	1.433	0.0701	0.0492	74.2
2021	Springpole Lake	L-15-COMP-4-MS	Mimic Shiner	13	55-59	56.769	1.476-1.789	1.661	0.0874	0.0613	72.2
2021	Springpole Lake	L-15-COMP-5-MS	Mimic Shiner	11	59-63	60.182	1.501-2.209	1.92	0.0933	0.0868	73.8
2021	Springpole Lake	L-15-COMP-1-STS	Spottail Shiner	28	39-46	43.393	0.495-1.011	0.729	0.0401	0.0379	74.9
2021	Springpole Lake	L-15-COMP-2-STS	Spottail Shiner	20	46-49	47.1	0.747-1.413	1.031	0.053	0.0464	75.6
2021	Springpole Lake	L-15-COMP-3-STS	Spottail Shiner	20	49-50	49.789	1.041-1.364	1.188	0.0568	0.0466	73.8

2021	Springpole Lake	L-15-COMP-4-STS	Spottail Shiner	20	50-53	51.35	1.170-1.6	1.361	0.0617	0.0509	76.3
2021	Springpole Lake	L-15-COMP-5-STS	Spottail Shiner	19	53-57	54.4	1.399-1.904	1.581	0.066	0.0597	75.3
2021	Springpole Lake	L-15-COMP-6-STS	Spottail Shiner	8	62-77	71.75	1.279-3.744	3.137	0.0579	0.0577	73.1
2021	Springpole Lake	L-15-COMP-7-STS	Spottail Shiner	8	77-94	85.625	3.301-7.829	5.554	0.0873	0.0903	74.6
2021	Birch Lake	BIRCH-COMP-1-BNM	Bluntnose Minnow	11	56-66	61.909	1.488-2.77	1.993	0.0216	0.0268	71.1
2021	Birch Lake	BIRCH-COMP-2-BNM	Bluntnose Minnow	8	66-76	72.25	2.497-4.002	3.419	0.0298	0.0289	74.3
2021	Birch Lake	BIRCH-COMP-3-BNM	Bluntnose Minnow	8	81-90	86	4.646-6.889	5.766	0.0286	0.024	74.3
2021	Birch Lake	BIRCH-COMP-1-YLP	Yellow Perch	11	57-63	59.833	1.595-2.224	1.917	0.033	0.0285	75.8
2021	Birch Lake	BIRCH-COMP-2-YLP	Yellow Perch	8	63-71	65.625	1.946-3.005	2.462	0.029	0.0299	76.8
2021	Birch Lake	BIRCH-COMP-3-YLP	Yellow Perch	8	77-80	78.375	2.685-4.97	4.336	0.0447	0.0288	75.6
2021	Birch Lake	BIRCH-COMP-4-YLP	Yellow Perch	8	80-83	81.875	4.445-5.551	5.035	0.0365	0.0317	75
2021	Birch Lake	BIRCH-COMP-5-YLP	Yellow Perch	8	84-85	84.375	4.856-6.405	5.613	0.035	0.0333	76.8
2021	Birch Lake	BIRCH-COMP-6-YLP	Yellow Perch	8	86-89	87.625	4.532-6.353	5.794	0.037	0.0236	78.9
2021	Birch Lake	BIRCH-COMP-7-YLP	Yellow Perch	8	89-95	92.125	5.183-8.46	6.82	0.0404	0.028	76.9
2021	L-17	L-17-COMP-1-FSD	Finescale Dace	16	65-75	70.563	2.55-4.51	3.343	0.0518	0.0523	75.9
2021	L-17	L-17-COMP-2-FSD	Finescale Dace	18	64-73	68.167	2.4-3.88	3.031	0.0787	0.0662	73.6
2021	L-17	L-17-COMP-3-FSD	Finescale Dace	12	75-85	79.417	3.68-5.49	4.487	0.0908	0.0382	78
2021	L-17	L-17-COMP-4-FSD	Finescale Dace	13	75-80	75.308	2.56-5.42	3.892	0.0682	0.0626	76.2
2021	L-17	L-17-COMP-5-FSD	Finescale Dace	11	74-85	81.636	3.41-6.13	4.929	0.0948	0.121	76.7
2021	L-18	L-18-COMP-1-BSB	Brook Stickleback	22	63-72	66.545	1.85-2.9	2.291	0.0465	0.0528	79.1
2021	L-18	L-18-COMP-2-BSB	Brook Stickleback	30	59-66	62.533	1.44-2.27	1.806	0.0514	0.0506	79.4
2021	L-18	L-18-COMP-3-BSB	Brook Stickleback	34	52-63	57.706	1.06-1.88	1.495	0.0542	0.0582	79.2
2021	L-18	L-18-COMP-4-BSB	Brook Stickleback	29	58-67	62.621	1.41-2.51	1.772	0.0577	0.0498	78.2
2021	L-18	L-18-COMP-5-NRD	Northern Redbelly Dace	19	61-66	63.895	2.23-3	2.635	0.0599	0.0723	78.2
2021	L-19	L-19-COMP-1-FHM	Fathead Minnow	8	80-88	83.5	5.75-7.79	6.446	0.0389	0.0475	73.2
2021	L-19	L-19-COMP-2-FHM	Fathead Minnow	10	75-79	77	4.53-5.51	5.065	0.029	0.0312	79.1
2021	L-19	L-19-COMP-3-FHM	Fathead Minnow	8	80-88	83.5	4.68-8.03	6.378	0.0376	0.0331	72.8
2021	L-19	L-19-COMP-4-FHM	Fathead Minnow	13	69-78	74	3.53-4.68	4.089	0.0302	0.0352	80
2021	L-19	L-19-COMP-5-FHM	Fathead Minnow	12	70-80	74.5	3.5-5.18	4.278	0.0292	0.0284	79.6
2022	Birch Lake	BIRCH-1-GN1-COMP1	Yellow Perch	22	56-65	59.9	1.45-2.47	1.87	0.0336	0.0191	76.2
2022	Birch Lake	BIRCH-1-GN1-COMP2	Yellow Perch	21	58-65	60.7	1.53-2.31	1.93	0.0354	0.0189	77.9
2022	Birch Lake	BIRCH-1-GN1-COMP3	Yellow Perch	19	58-88	61.3	1.51-5.83	2.02	0.0392	0.0162	76.8
2022	Birch Lake	BIRCH-1-GN1-COMP4	Yellow Perch	17	56-66	60.2	1.49-2.24	1.83	0.039	0.0183	76.4
2022	Birch Lake	BIRCH-1-GN1-COMP5	Yellow Perch	11	57-63	60.2	1.47-2.20	1.89	0.0342	0.0185	76.1
2022	Birch Lake	BIRCH-2-GN1-COMP1	Yellow Perch	18	54-63	58.4	1.36-2.00	1.67	0.038	0.0151	74.7
2022	Birch Lake	BIRCH-2-GN1-COMP2	Yellow Perch	20	55-62	57.7	1.28-1.99	1.57	0.0338	0.0172	75.7
2022	Birch Lake	BIRCH-2-GN1-COMP3	Yellow Perch	17	55-64	59.1	1.43-2.03	1.74	0.0372	0.019	75.1
2022	Birch Lake	BIRCH-2-GN1-COMP4	Yellow Perch	17	55-63	59.7	1.34-2.14	1.74	0.0385	0.0202	75.3
2022	Birch Lake	BIRCH-2-GN1-COMP5	Yellow Perch	18	56-66	59.2	1.23-2.18	1.73	0.0335	0.0188	76.8
2022	Springpole Lake	07A-DN1-COMP1	Blacknose Shiner	36	39-56	43.9	0.35-1.45	0.55	0.0721	0.0381	70.6
2022	Springpole Lake	07A-DN1-COMP2	Blacknose Shiner	51	33-51	39.4	0.18-0.77	0.39	0.0588	0.0344	71

D1-4: Contaminants of Concern in Small-Bodied Fish

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
2019	Finescale Dace	S-9	Sample Size (n)	40	40	2	2	2	2	2	2	2	2	2	2
			No. MDL (n)	-	-	0	0	2	0	0	0	0	2	0	0
			Minimum	55	1.63	0.018	0.0028	0.05	0.874	0.014	6.73	0.039	0.2	0.596	43.29
			Maximum	86	6.84	0.02	0.0044	0.05	1.088	0.015	7.07	0.04	0.2	0.688	49.09
			Mean	67	2.82	0.019	0.0036	0.05	0.981	0.015	6.9	0.039	0.2	0.642	46.19
			Median	70	2.78	0.019	0.0036	0.05	0.981	0.015	6.9	0.039	0.2	0.642	46.19
			Standard deviation	6.6	0.89	0.001	0.0011	-	0.152	0.0005	0.24	0.001	-	0.046	4.1
			Standard error	1.04	0.14	0.001	0.0008	-	0.107	0.0004	0.17	0.001	-	0.033	2.9
2019	Finescale Dace	L-5-OUT	Sample Size (n)	49	49	3	3	3	3	3	3	3	3	3	3
			No. MDL (n)	-	-	0	0	2	0	0	0	0	3	0	0
			Minimum	60	2.19	0.036	0.003	0.05	1.409	0.006	5.38	0.034	0.2	0.658	36.25
			Maximum	80	5.24	0.045	0.0053	0.016	1.487	0.01	6.55	0.043	0.2	0.785	44.52
			Mean	68	3.35	0.039	0.004	0.039	1.441	0.008	6.11	0.039	0.2	0.716	41.51
			Median	67	2.99	0.036	0.0036	0.05	1.427	0.009	6.39	0.042	0.2	0.704	43.76
			Standard deviation	5.28	0.79	0.005	0.0012	0.016	0.041	0.002	0.63	0.005	-	0.052	4.57
			Standard error	0.75	0.11	0.003	0.0007	0.009	0.023	0.001	0.37	0.003	-	0.03	2.64
2019	Northern Redbelly Dace	S-9	Sample Size (n)	31	31	1	1	1	1	1	1	1	1	1	1
			No. MDL (n)	-	-	0	0	1	0	0	0	0	1	0	0
			Minimum	52	1.06	0.024	0.003	0.05	0.702	0.015	5.33	0.022	0.02	5.848	41.2
			Maximum	63	2.35	0.024	0.003	0.05	0.702	0.015	5.33	0.022	0.02	5.848	41.2
			Mean	59	1.79	0.024	0.003	0.05	0.702	0.015	5.33	0.022	0.02	5.848	41.2
			Median	59	1.76	0.024	0.003	0.05	0.702	0.015	5.33	0.022	0.02	5.848	41.2
			Standard deviation	2.64	0.31	-	-	-	-	-	-	-	-	-	-
			Standard error	0.47	0.05	-	-	-	-	-	-	-	-	-	-
2019	Northern Redbelly Dace	S-9-US02	Sample Size (n)	37	37	1	1	1	1	1	1	1	1	1	1
			No. MDL (n)	-	-	0	0	0	0	0	0	0	1	0	0
			Minimum	50	0.86	0.031	0.0034	0.016	0.79	0.022	12.9	0.019	0.2	0.515	52.4
			Maximum	61	1.83	0.031	0.0034	0.016	0.79	0.022	12.9	0.019	0.2	0.515	52.4
			Mean	56	1.48	0.031	0.0034	0.016	0.79	0.022	12.9	0.019	0.2	0.515	52.4

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
			Median	56	1.53	0.031	0.003	0.016	0.79	0.022	12.9	0.019	0.2	0.515	52.4
			Standard deviation	2.16	0.2	-	-	-	-	-	-	-	-	-	-
			Standard error	0.36	0.03	-	-	-	-	-	-	-	-	-	-
2019	Pearl Dace	S-9-US02	Sample Size (n)	36	36	4	4	4	4	4	4	4	4	4	4
			No. MDL (n)	-	-	0	0	4	0	0	0	0	4	0	0
			Minimum	83	4.43	0.017	0.002	0.05	1.67	0.009	3.37	0.027	0.2	0.655	31.3
			Maximum	121	15.21	0.032	0.004	0.05	2.401	0.056	5.15	0.052	0.2	0.721	42.94
			Mean	93	6.82	0.025	0.003	0.05	1.954	0.024	4.01	0.035	0.2	0.686	36.88
			Median	89	5.92	0.025	0.002	0.05	1.872	0.015	3.75	0.031	0.2	0.683	36.64
			Standard deviation	10.15	2.64	0.006	0.001	-	0.328	0.022	0.81	0.011	-	0.024	4.9
			Standard error	1.69	0.44	0.003	0.001	-	0.164	0.011	0.4	0.006	-	0.012	2.45
2019	Yellow Perch	Springpole Lake	Sample Size (n)	459	459	9	9	9	9	9	9	9	9	9	9
			No. MDL (n)	-	-	0	0	3	0	1	0	0	9	9	0
			Minimum	41	0.56	0.038	0.0149	0.014	0.37	0.004	2.789	0.0142	0.2	1.72	23.38
			Maximum	62	2.09	0.075	0.0327	0.044	0.7	0.02	6.204	0.0241	0.2	2.02	46.53
			Mean	50	1.06	0.052	0.0201	0.023	0.45	0.007	3.712	0.0175	0.2	1.87	27.06
			Median	49	1.03	0.05	0.0181	0.02	0.43	0.007	3.569	0.0182	0.2	1.9	24.89
			Standard deviation	3.88	0.25	0.012	0.0054	0.011	0.1	0.005	1.031	0.0034	-	0.1	7.34
			Standard error	0.18	0.01	0.004	0.0018	0.005	0.03	0.002	0.344	0.0011	-	0.03	2.45
2021	Bluntnose Minnow	Birch Lake	Sample Size (n)	27	27	3	3	3	3	3	3	3	3	3	3
			No. MDL (n)	-	-	0	0	0	0	0	0	0	2	0	0
			Minimum	56	1.49	0.106	0.016	0.032	0.69	0.024	3.28	0.022	0.04	1.28	53.1
			Maximum	90	6.88	0.165	0.029	0.067	0.754	0.056	3.36	0.03	0.05	1.65	81.2
			Mean	72	3.53	0.141	0.023	0.048	0.721	0.039	3.33	0.027	-	1.483	70.4
			Median	72	3.25	0.154	0.023	0.044	0.72	0.038	3.34	0.029	-	1.52	76.9
			Standard deviation	10.64	1.67	0.031	0.007	0.018	0.032	0.016	0.04	0.004	-	0.188	15.136
			Standard error	2.05	0.32	0.018	0.004	0.01	0.019	0.009	0.02	0.003	-	0.108	8.739

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
2021	Yellow Perch	Birch Lake	Sample Size (n)	59	59	7	7	7	7	7	7	7	7	7	7
			No. MDL (n)	-	-	0	0	0	0	0	0	0	3	0	0
			Minimum	57	1.6	0.064	0.013	0.023	0.377	0.01	2.61	0.029	0.04	1.28	24.9
			Maximum	95	8.46	0.154	0.021	0.055	0.52	0.017	4.51	0.044	0.074	1.52	33.5
			Mean	77	4.39	0.111	0.017	0.036	0.449	0.014	3.47	0.037	0.062	1.409	29.871
			Median	81	4.83	0.119	0.016	0.032	0.452	0.016	3.39	0.037	0.066	1.42	29.8
			Standard deviation	11.72	1.86	0.032	0.003	0.012	0.051	0.003	0.6	0.005	0.014	0.087	2.988
			Standard error	1.51	0.24	0.012	0.001	0.004	0.02	0.001	0.23	0.002	0.007	0.033	1.129
2021	Finescale Dace	L-17	Sample Size (n)	70	70	5	5	5	5	5	5	0	5	5	5
			No. MDL (n)	-	-	0	0	0	0	0	0	-	4	0	0
			Minimum	64	2.4	0.015	0.002	0.013	0.497	0.012	4.73	-	0.04	0.512	34.8
			Maximum	85	6.13	0.019	0.004	0.03	0.683	0.015	7.59	-	0.05	0.763	45.4
			Mean	74	3.81	0.018	0.004	0.019	0.605	0.013	5.99	-	-	0.616	41.22
			Median	73	3.66	0.018	0.004	0.018	0.653	0.014	5.93	-	-	0.559	43.9
			Standard deviation	5.9	0.93	0.002	0.001	0.007	0.083	0.002	1.03	-	-	0.107	4.949
			Standard error	0.71	0.11	0.001	0.0004	0.003	0.037	0.001	0.46	-	-	0.048	2.213
2021	Brook Stickleback	L-18	Sample Size (n)	115	115	4	4	4	4	4	4	4	4	4	4
			No. MDL (n)	-	-	0	0	0	0	0	0	0	4	0	0
			Minimum	52	1.06	0.026	0.005	0.014	2.02	0.009	7.03	0.047	0.040	1.04	35.1
			Maximum	72	2.9	0.03	0.008	0.018	2.32	0.026	12.9	0.058	0.040	1.11	41.3
			Mean	62	1.8	0.029	0.007	0.015	2.16	0.017	9.56	0.053	-	1.085	38.075
			Median	62	1.77	0.03	0.007	0.015	2.15	0.016	9.16	0.053	-	1.095	37.951
			Standard deviation	4	0.37	0.002	0.001	0.002	0.127	0.007	2.79	0.005	-	0.031	3.281
			Standard error	0.37	0.03	0.001	0.001	0.001	0.064	0.003	1.39	0.002	-	0.016	1.64

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
2021	Northern Redbelly Dace	L-18	Sample Size (n)	19	19	1	1	1	1	1	1	1	1	1	1
			No. MDL (n)	-	-	0	0	0	0	0	0	0	1	0	0
			Minimum	61	2.23	0.036	0.007	0.03	1.94	0.014	5.4	0.06	0.040	0.719	66.1
			Maximum	66	3	0.036	0.007	0.03	1.94	0.014	5.4	0.06	0.040	0.719	66.1
			Mean	64	2.64	-	-	-	-	-	-	-	-	-	-
			Median	64	2.66	-	-	-	-	-	-	-	-	-	-
			Standard deviation	1.76	0.21	-	-	-	-	-	-	-	-	-	-
			Standard error	0.4	0.05	-	-	-	-	-	-	-	-	-	-
2021	Fathead Minnow	L-19	Sample Size (n)	51	51	5	5	5	5	5	5	5	5	5	5
			No. MDL (n)	-	-	0	0	1	0	0	0	0	5	0	0
			Minimum	69	3.5	0.025	0.005	0.01	0.965	0.013	1.51	0.029	0.040	1.06	25.7
			Maximum	88	8.03	0.039	0.007	0.021	1.17	0.02	2.62	0.039	0.040	1.55	32.8
			Mean	78	5.05	0.031	0.006	0.018	1.073	0.015	1.82	0.033	-	1.3	28.42
			Median	77	4.91	0.031	0.006	0.018	1.08	0.014	1.7	0.03	-	1.37	27.3
			Standard deviation	4.81	1.16	0.005	0.001	0.004	0.077	0.003	0.46	0.005	-	0.201	2.747
			Standard error	0.67	0.16	0.002	0.0003	0.002	0.034	0.001	0.2	0.002	-	0.09	1.228
2022	Yellow Perch	Birch Lake	Sample Size (n)	180	180	10	10	10	10	10	10	10	10	10	10
			No. MDL (n)	-	-	0	0	3	0	0	0	0	10	0	0
			Minimum	54	1.23	0.112	0.0182	0.01	0.433	0.004	3.65	0.0335	0.040	0.362	30.6
			Maximum	88	5.83	0.167	0.0276	0.023	0.512	0.0089	7.84	0.0392	0.040	0.423	44.4
			Mean	59.628	1.798	0.134	0.022	0.014	0.48	0.006	5.283	0.036	-	0.382	38.1
			Median	59	1.76	0.132	0.022	0.011	0.484	0.006	5.14	0.036	-	0.374	37.95
			Standard deviation	3.12	0.383	0.014	0.003	0.005	0.022	0.001	1.198	0.002	-	0.02	3.987
			Standard error	0.233	0.029	0.004	0.001	0.002	0.007	0	0.379	0.001	-	0.006	1.261

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
2022	Blacknose Shiner	Springpole Lake	Sample Size (n)	87	87	2	2	2	2	2	2	2	2	2	2
			No. MDL (n)	-	-	0	0	2	0	0	0	0	2	0	0
			Minimum	33	0.18	0.101	0.0241	0.010	0.681	0.0078	3.08	0.0588	0.040	0.488	125
			Maximum	56	1.45	0.127	0.0248	0.010	0.687	0.0109	3.92	0.0721	0.040	0.533	140
			Mean	41.268	0.46	0.114	0.024	-	0.684	0.009	3.5	0.065	-	0.511	132.5
			Median	41	0.43	0.114	0.024	-	0.684	0.009	3.5	0.065	-	0.511	132.5
			Standard deviation	4.654	0.176	0.018	0	-	0.004	0.002	0.594	0.009	-	0.032	10.607
			Standard error	0.514	0.019	0.013	0	-	0.003	0.001	0.42	0.006	-	0.023	7.5

Notes:
Concentrations less than the reportable detection limit were given the lowest reportable value for calculation of summary statistics (e.g., a concentration of <0.0010 was considered 0.0010).
No. MDL indicates the number of sample results reported less than the detection limit.
All results represent wet weight results, except for Selenium in 2019 and 2021 samples. These are reported in dry weight, or "dwt".

D1-5: Contaminants of Concern in Large-Bodied Fish

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
2019	Northern Pike	Springpole Lake	Sample Size (n)	20	20	20	20	20	20	20	20	20	20	20	20
			No. MDL (n)	-	-	0	14	10	0	18	0	0	20	11	0
			Minimum	445	320	0.0130	0.0012	0.012	0.099	0.004	0.158	0.083	0.2	0.930	4.71
			Maximum	682	1800	0.1520	0.0050	0.050	0.211	0.020	0.580	0.732	0.2	1.510	8.69
			Mean	556	737	0.0540	0.0041	0.033	0.152	0.018	0.331	0.337	-	1.230	6.38
			Median	538	650	0.0410	0.0050	0.037	0.151	0.020	0.299	0.329	-	1.230	6.13
			Standard deviation	63	338	0.0380	0.0015	0.018	0.025	0.005	0.132	0.192	-	0.140	1.35
			Standard error	14	76	0.0080	0.0003	0.004	0.006	0.001	0.030	0.043	-	0.040	0.30
2022	Northern Pike	Springpole Lake	Sample Size (n)	28	28	28	28	28	28	28	28	28	28	28	28
			No. MDL (n)	-	-	0	14	17	0	13	0	0	27	0	0
			Minimum	90	4	0.0130	0.0012	0.018	0.093	0.0060	0.112	0.056	0.040	0.147	3.39
			Maximum	784	2870	0.0810	0.0100	0.103	0.647	0.1020	9.110	0.955	0.049	0.313	49.10
			Mean	426	884	0.0390	0.0050	0.037	0.244	0.0340	2.007	0.378	-	0.226	16.26
			Median	543	965	0.0361	0.0062	0.030	0.145	0.0226	0.304	0.338	-	0.225	7.92
			Standard deviation	260	837	0.0170	0.0030	0.025	0.160	0.0320	2.914	0.304	-	0.035	15.38
			Standard error	49	158	0.0030	0.0010	0.005	0.030	0.0060	0.551	0.057	-	0.007	2.91
2022	Walleye	Springpole Lake	Sample Size (n)	23	23	23	23	23	23	23	23	23	23	23	23
			No. MDL (n)	-	-	23	22	19	0	9	0	0	23	0	0
			Minimum	195	51	0.0399	0.0010	0.011	0.129	0.0040	0.086	0.140	0.040	0.178	3.16
			Maximum	632	2020	0.1060	0.0013	0.034	0.290	0.0330	0.430	1.770	0.040	0.447	5.58
			Mean	392	629	0.0598	-	0.020	0.187	0.0086	0.153	0.486	-	0.296	4.27
			Median	355	321	0.0551	-	0.018	0.170	0.0061	0.137	0.239	-	0.296	4.28
			Standard deviation	142	615	0.0171	-	0.011	0.047	0.0074	0.076	0.476	-	0.052	0.62
			Standard error	30	128	0.0036	-	0.002	0.010	0.0015	0.016	0.099	-	0.011	0.13

Year	Fish Species	Sample Area	Descriptive Statistics	Total Length (mm)	Fresh Weight (g)	Arsenic	Cadmium	Chromium	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Zinc
2022	Lake Trout	Springpole Lake	Sample Size (n)	14	14	14	14	14	14	14	14	14	14	14	14
			No. MDL (n)	-	-	0	13	11	0	6	0	0	14	0	0
			Minimum	579	1620	0.0333	0.0010	0.011	0.146	0.0045	0.076	0.212	0.040	0.229	2.51
			Maximum	946	8610	0.9250	0.0010	0.014	0.275	0.0178	0.350	1.100	0.040	0.522	4.14
			Mean	730	3686	0.2386	-	0.013	0.223	0.0088	0.159	0.634	-	0.396	3.33
			Median	727	3150	0.1261	-	0.014	0.226	0.0083	0.143	0.631	-	0.403	3.33
			Standard deviation	86	1833	0.2597	-	0.002	0.041	0.0043	0.077	0.333	-	0.11	0.48
			Standard error	23	490	0.0700	-	0	0.010	0	0.020	0.090	-	0.03	0.13
2022	Lake Whitefish	Springpole Lake	Sample Size (n)	18	18	18	18	18	18	18	18	18	18	18	18
			No. MDL (n)	-	-	0	15	16	0	10	0	0	18	0	0
			Minimum	315	295	0.0409	0.0011	0.011	0.138	0.0042	0.069	0.042	0.040	0.380	2.91
			Maximum	586	2150	0.5310	0.0016	0.015	0.218	0.0212	1.070	0.223	0.040	0.718	5.57
			Mean	515	1462	0.2068	0.0014	0.013	0.172	0.0102	0.264	0.107	-	0.525	3.62
			Median	533	1555	0.1705	0.0014	0.013	0.164	0.00905	0.145	0.126	-	0.516	3.38
			Standard deviation	64	499	0.1578	0.0003	0.003	0.024	0.0065	0.253	0.051	-	0.086	0.70
			Standard error	15	118	0.0372	0.0001	0.001	0.006	0.0015	0.060	0.012	-	0.020	0.16

Notes:
2019 Selenium results reported in dry weight (dwt)

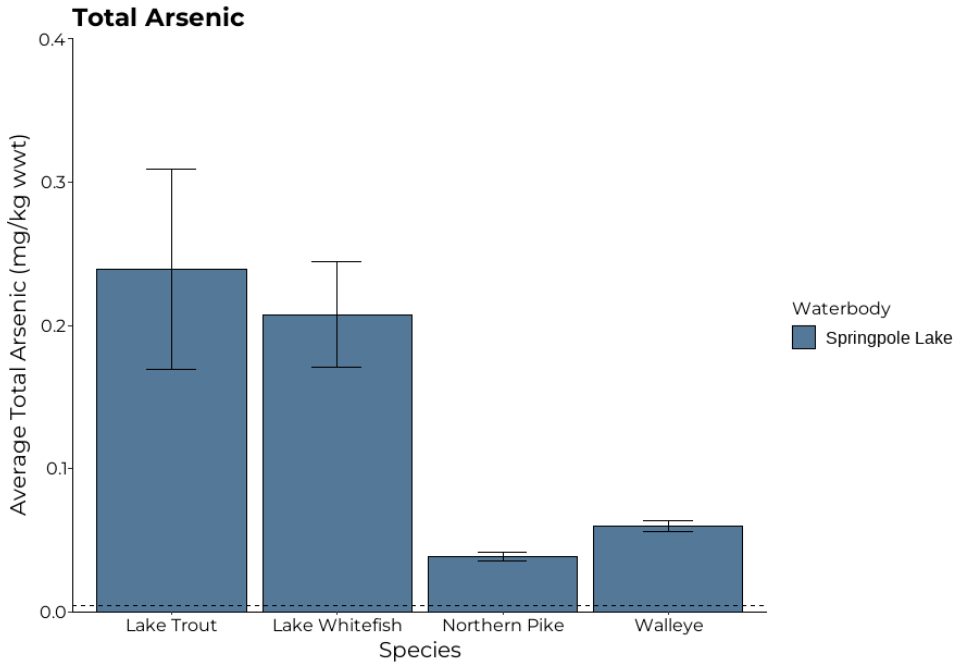

Figure D1-1: Average total (± standard error) arsenic concentration (mg/kg wwt) in fish tissue

Note: Dashed line represents the lowest detection limit during analysis (0.004 mg/kg wwt).

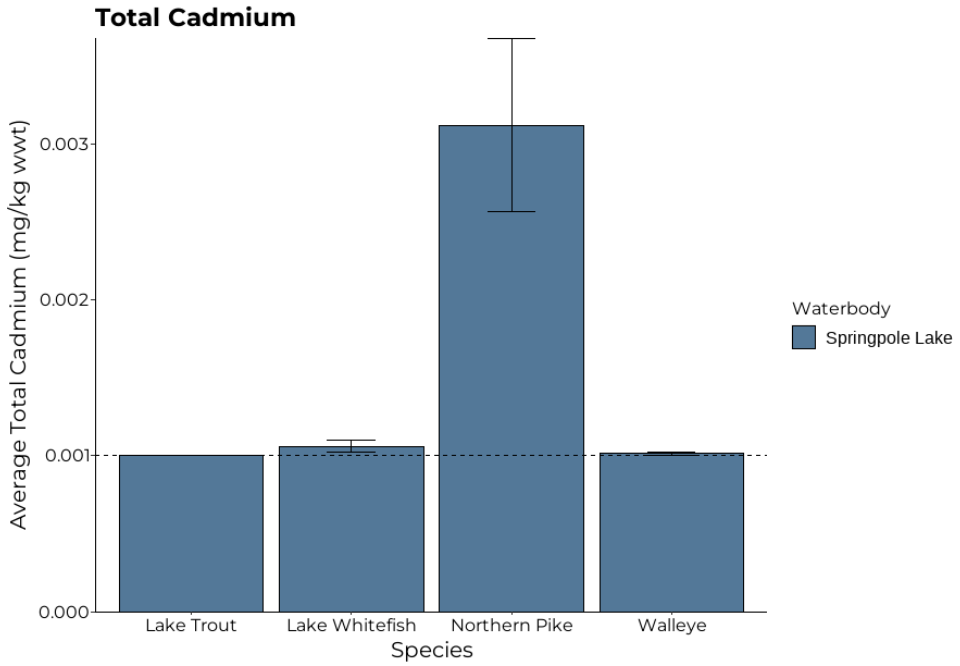

Figure D1-2: Average total (± standard error) cadmium concentration (mg/kg wwt) in fish tissue

Notes: Dashed line represents the lowest detection limit during analysis (0.001 mg/kg wwt). Sample sizes for average total arsenic and cadmium regarding the above species are as follows; Lake Trout (n=14), Lake Whitefish (n=18), Northern Pike (n=23) and Walleye (n=16).

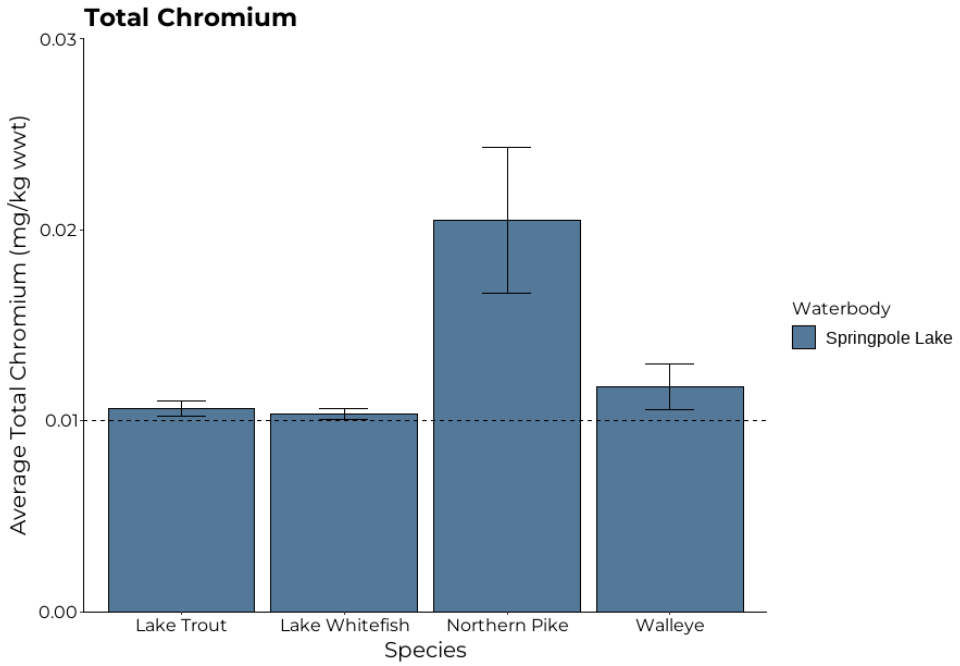

Figure D1-3: Average total (± standard error) chromium concentration (mg/kg wwt) in fish tissue

Note: Dashed line represents the lowest detection limit during analysis (0.01 mg/kg wwt).

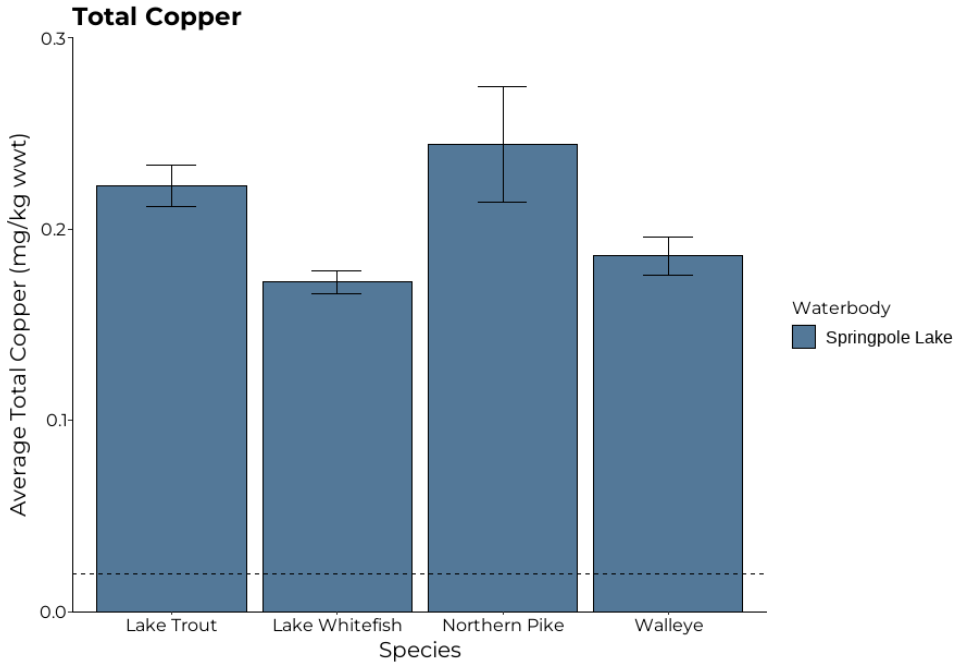

Figure D1-4: Average total (± standard error) copper concentration (mg/kg wwt) in fish tissue

Notes: Dashed line represents the lowest detection limit during analysis (0.02 mg/kg wwt). Sample sizes for average total chromium and copper regarding the above species are as follows; Lake Trout (n=14), Lake Whitefish (n=18), Northern Pike (n=23) and Walleye (n=16).

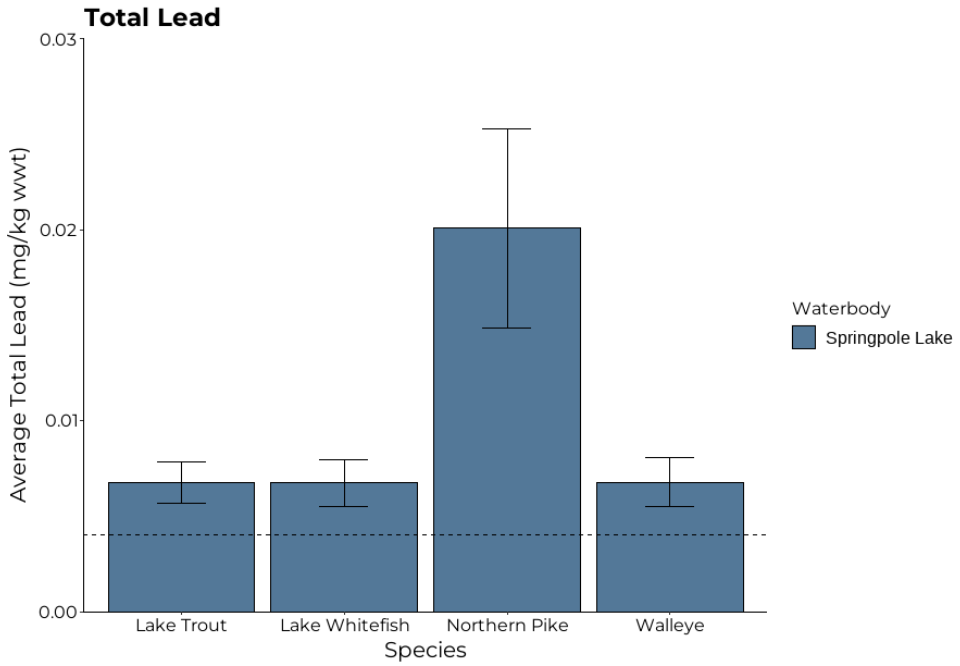

Figure D1-5: Average total (± standard error) lead concentration (mg/kg wwt) in fish tissue

Note: Dashed line represents the lowest detection limit during analysis (0.004 mg/kg wwt).

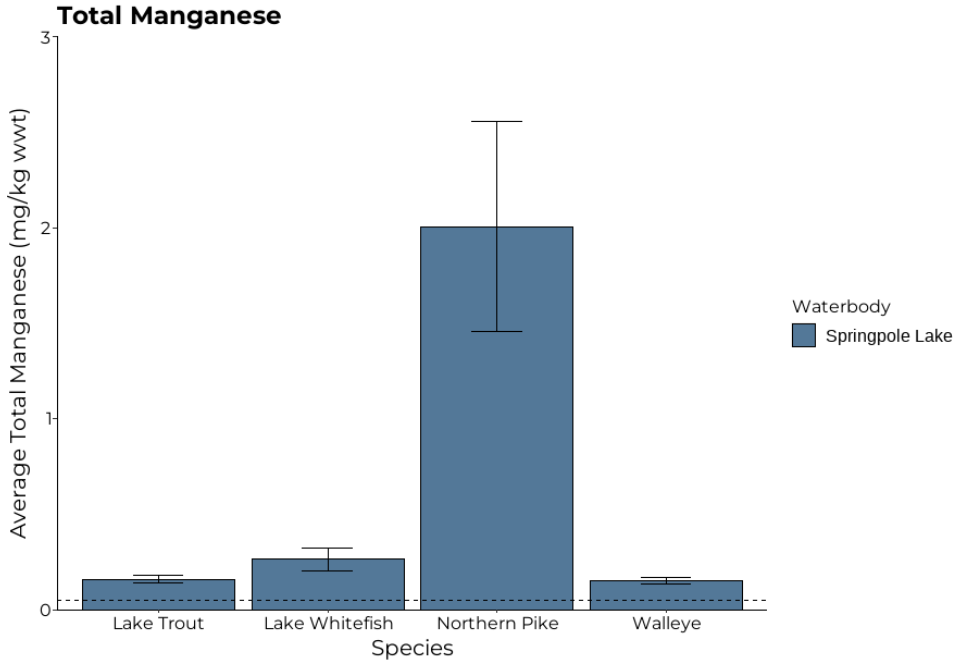

Figure D1-6: Average total (± standard error) manganese concentration (mg/kg wwt) in fish tissue

Notes: Dashed line represents the lowest detection limit during analysis (0.05 mg/kg wwt). Sample sizes for average total lead and manganese regarding the above species are as follows; Lake Trout (n=14), Lake Whitefish (n=18), Northern Pike (n=23) and Walleye (n=16).

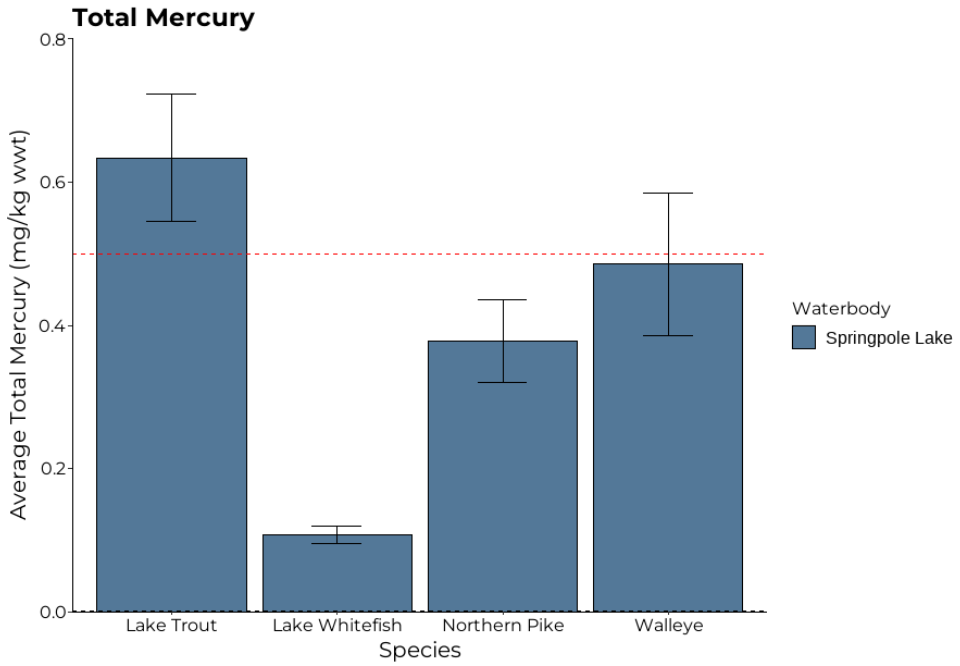

Figure D1-7: Average total (± standard error) mercury concentration (mg/kg wwt) in fish tissue

Notes: Black dashed line represents the lowest detection limit during analysis (0.001 mg/kg wwt). Red dashed line represents the Ontario consumption guidelines developed for women of child-bearing age and children (0.5 mg/kg wwt).

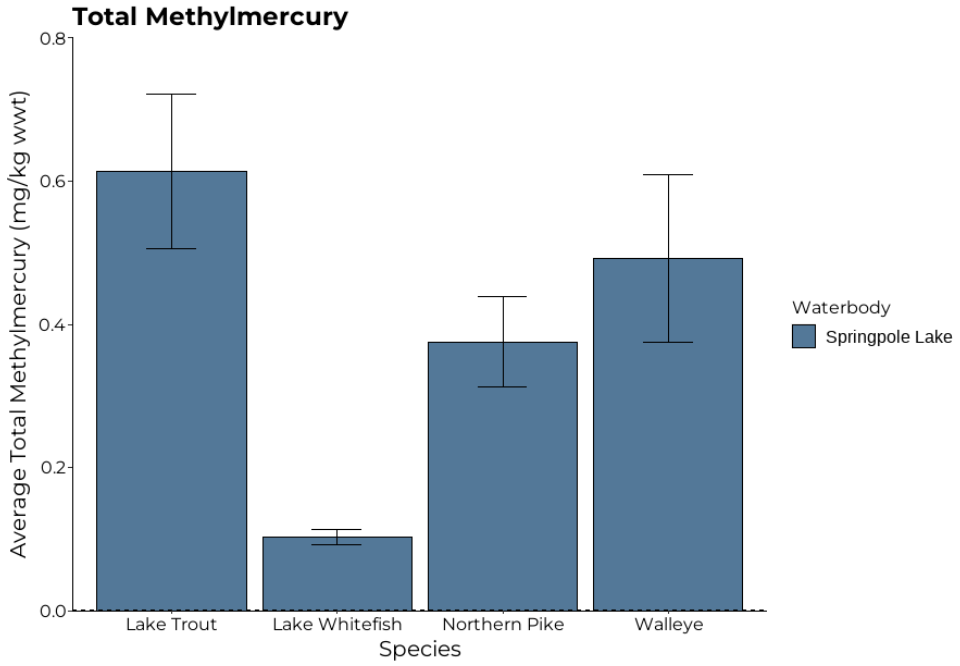

Figure D1-8: Average total (± standard error) methylmercury concentration (mg/kg wwt) in fish tissue

Notes: Black dashed line represents the lowest detection limit during analysis (0.001 mg/kg wwt). Sample sizes for average total

mercury and methylmercury regarding the above species are as follows; Lake Trout (n=14), Lake Whitefish (n=18), Northern Pike (n=23) and Walleye (n=16).

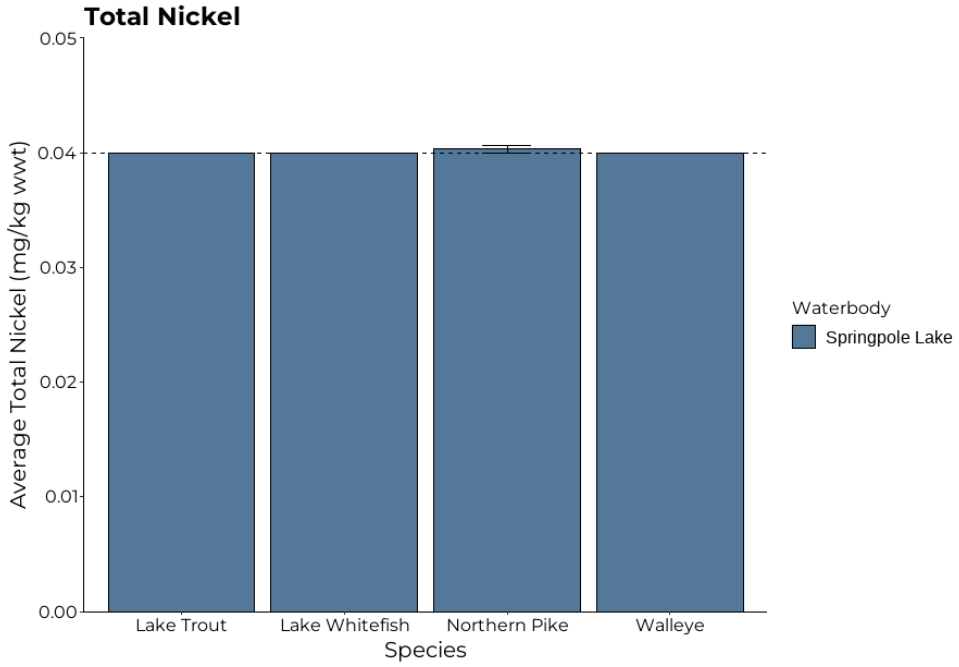

Figure D1-9: Average total (± standard error) nickel concentration (mg/kg wwt) in fish tissue

Note: Black dashed line represents the lowest detection limit during analysis (0.04 mg/kg wwt).

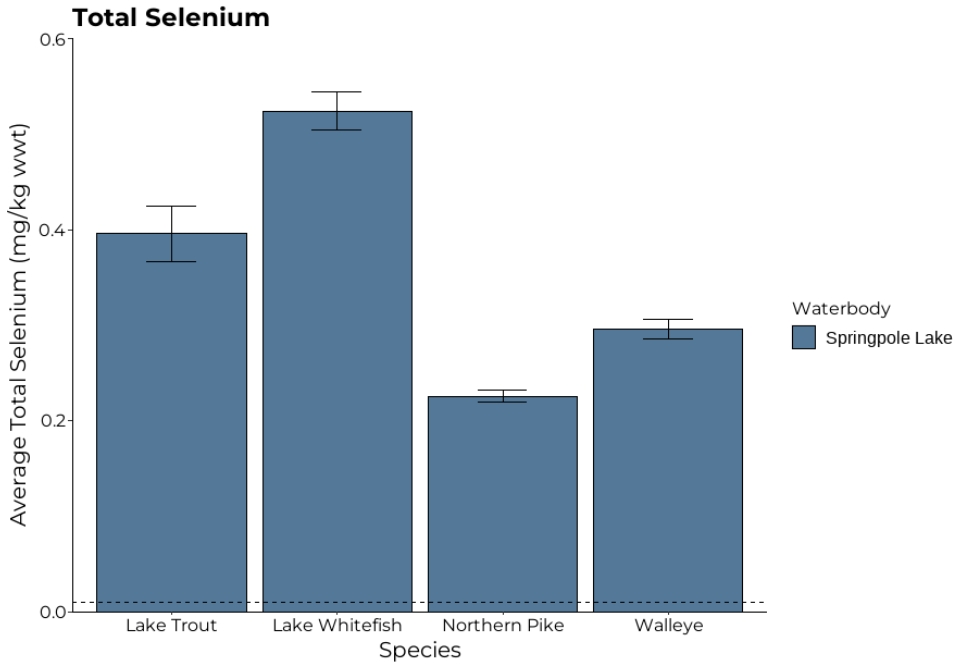

Figure D1-10: Average total (± standard error) selenium concentration (mg/kg wwt) in fish tissue

Notes: Dashed line represents the lowest detection limit during analysis (0.01 mg/kg wwt). Sample sizes for average total nickel and selenium regarding the above species are as follows; Lake Trout (n=14), Lake Whitefish (n=18), Northern Pike (n=23) and Walleye (n=16). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt).

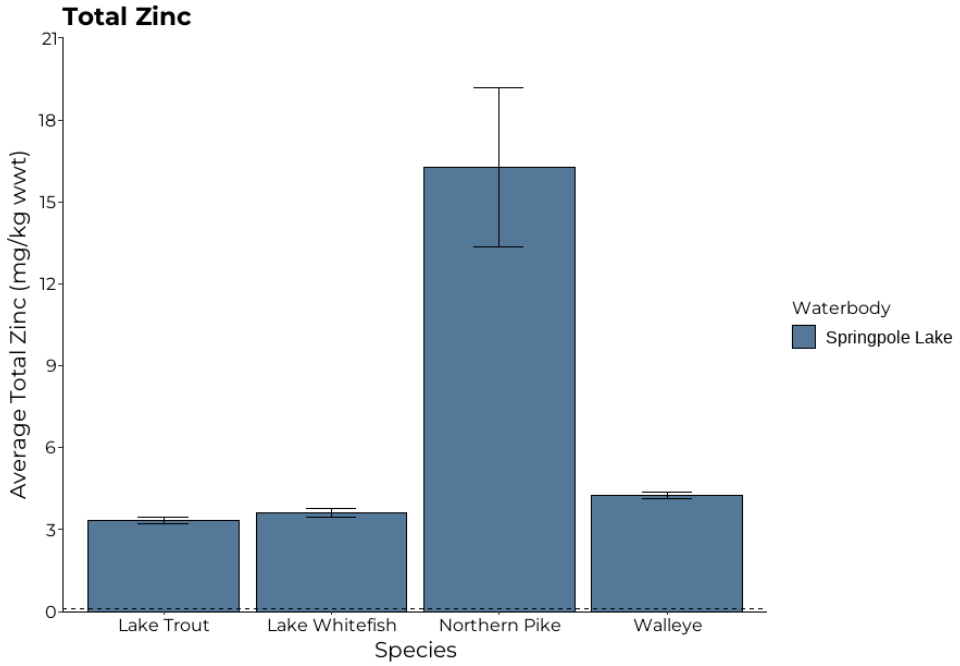

Figure D1-11: Average total (± standard error) zinc concentration (mg/kg wwt) in fish tissue

Notes: Dashed line represents the lowest detection limit during analysis (0.1 mg/kg wwt). Sample sizes for average total zinc regarding the above species are as follows; Lake Trout (n=14), Lake Whitefish (n=18), Northern Pike (n=23) and Walleye (n=16). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt).

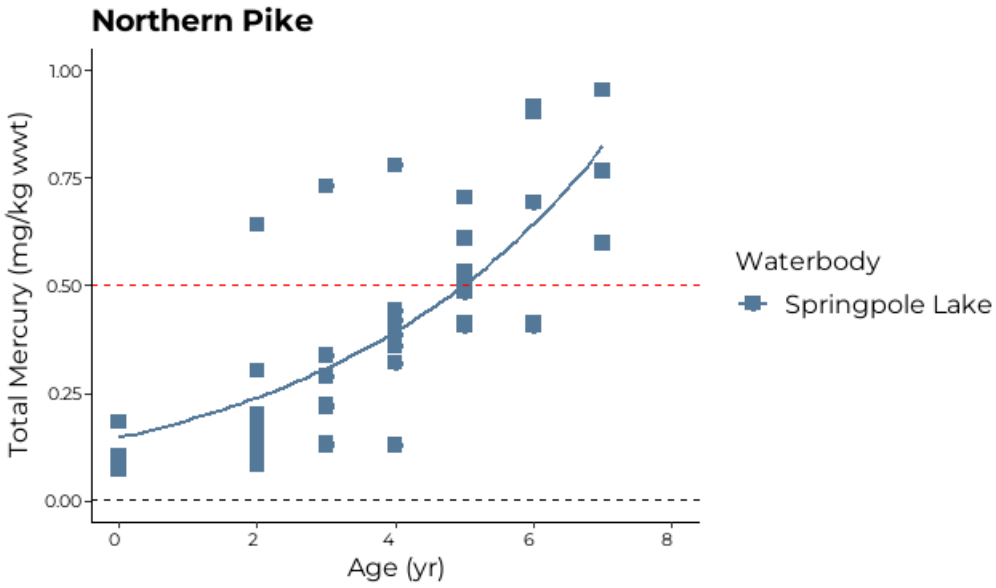

Figure D2-1: Northern Pike total mercury concentration (mg/kg wwt) and fish age (yr)

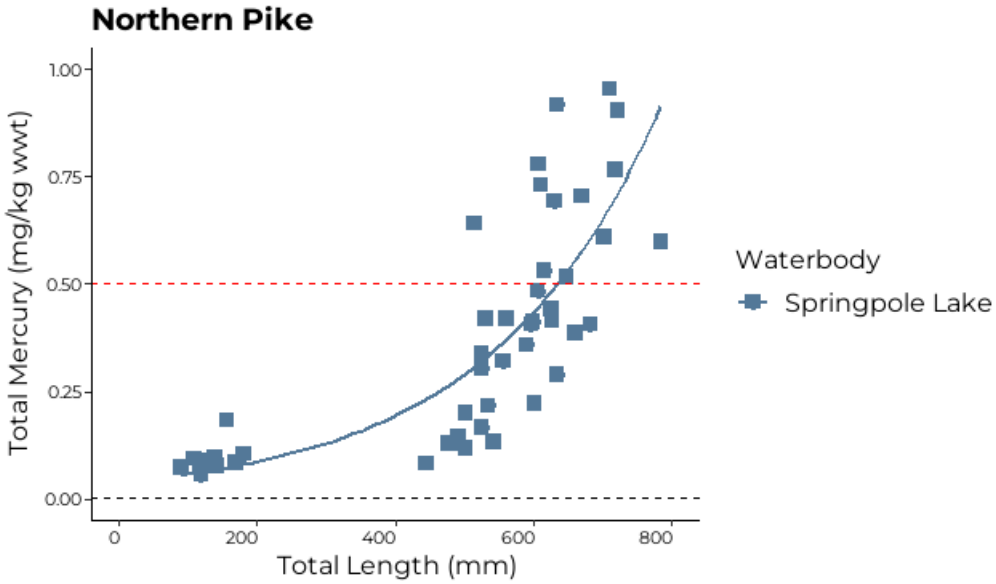

Figure D2-2: Northern Pike total mercury concentration (mg/kg wwt) and fish length (mm)

Notes: Sample sizes regarding the above species are as follows; (n=23). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt). The red dashed line represents the consumption guideline developed for women of child-bearing age and children (0.5 mg/kg wwt).

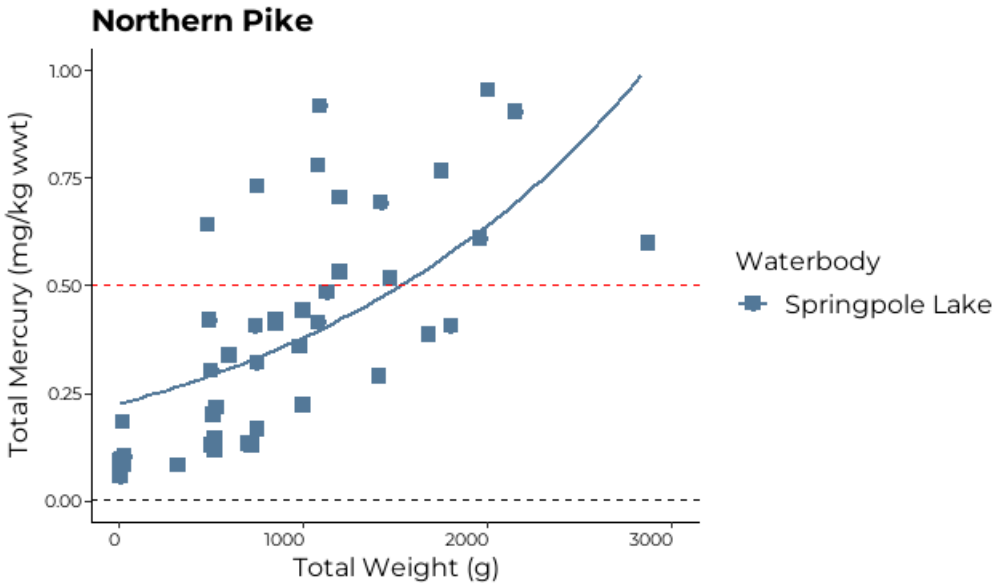

Figure D2-3: Northern Pike total mercury concentration (mg/kg wwt) and fish weight (g)

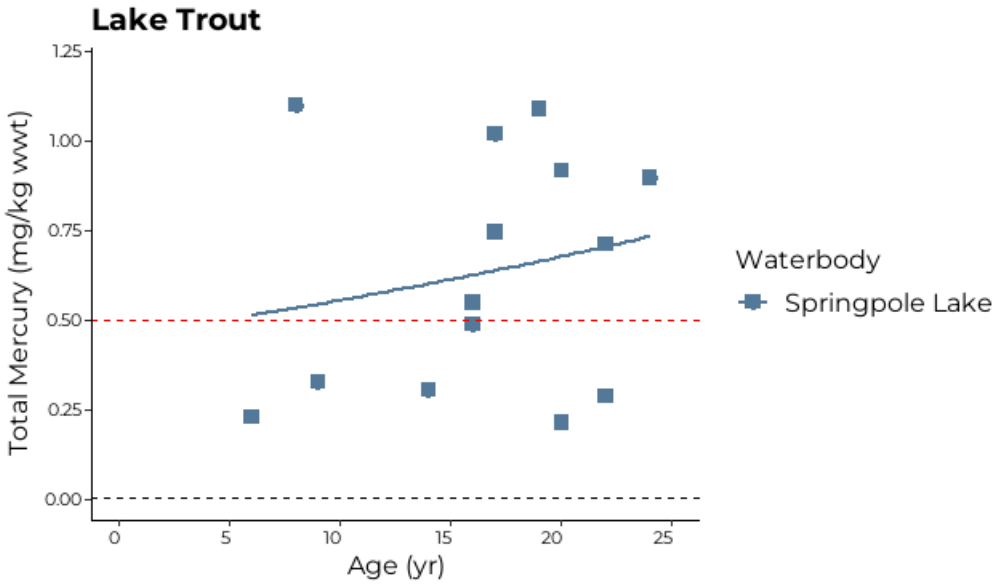

Figure D2-4: Lake Trout total mercury concentration (mg/kg wwt) and fish age (yr)

Sample sizes regarding the above species are as follows; Northern Pike (n=23) and Lake Trout (n=14). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt). The red dashed line represents the consumption guideline developed for women of child-bearing age and children (0.5 mg/kg wwt).

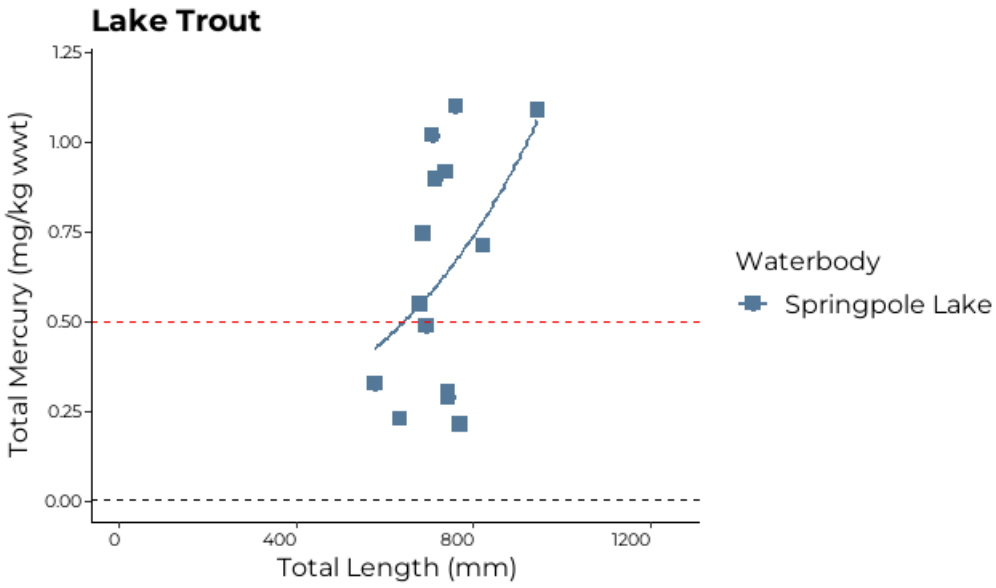

Figure D2-5: Lake Trout total mercury concentration (mg/kg wwt) and fish length (mm)

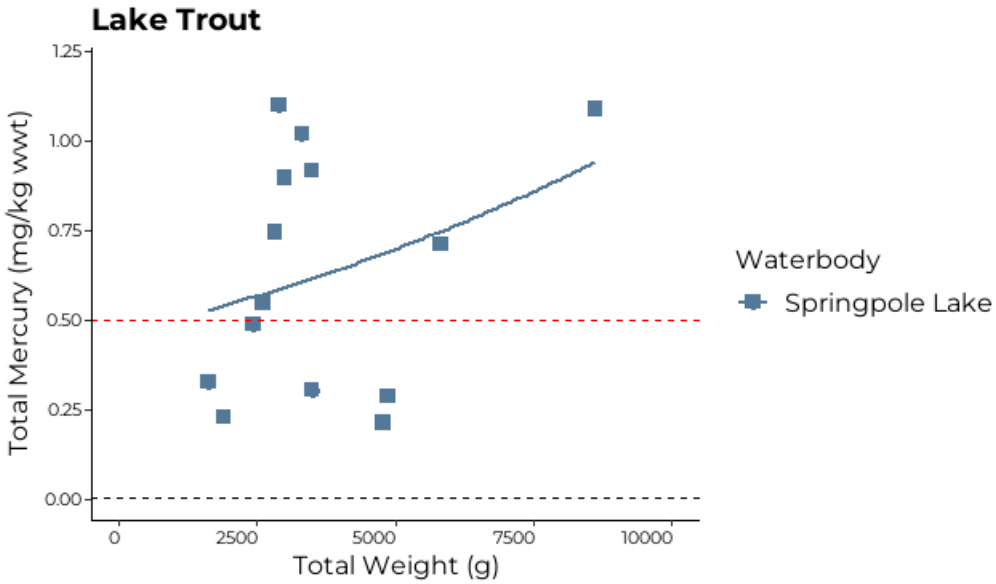

Figure D2-6: Lake Trout total mercury concentration (mg/kg wwt) and fish weight (g)

Sample sizes regarding the above species are as follows; (n=14). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt). The red dashed line represents the consumption guideline developed for women of child-bearing age and children (0.5 mg/kg wwt).

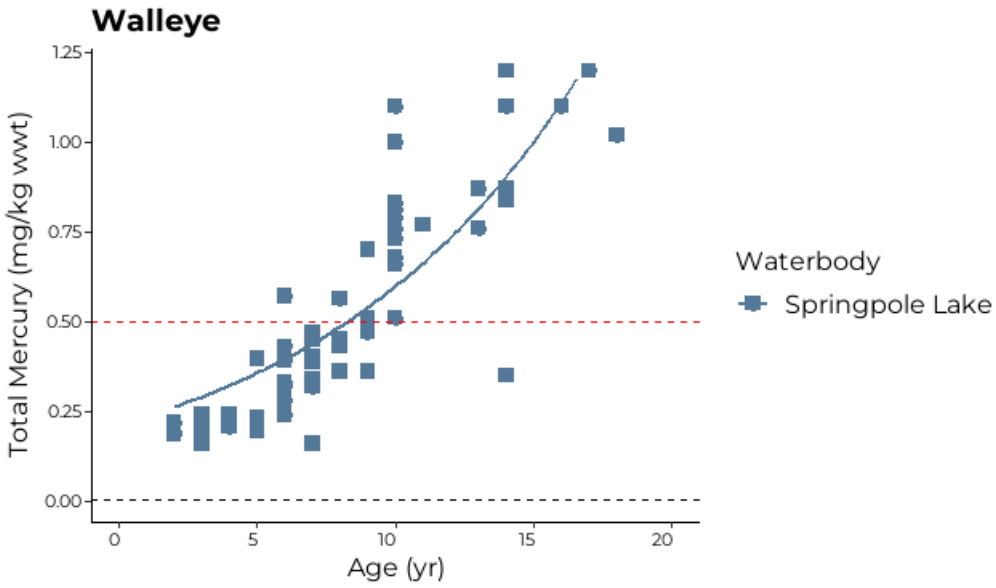

Figure D2-7: Walleye total mercury concentration (mg/kg wwt) and fish age (yr)

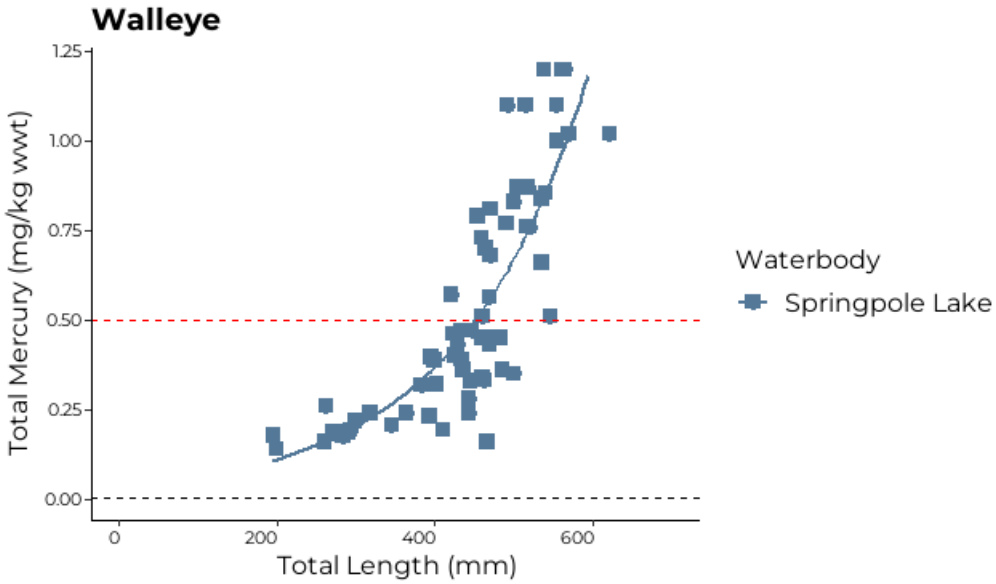

Figure D2-8: Walleye total mercury concentration (mg/kg wwt) and fish length (mm)

Sample sizes regarding the above species are as follows; (n=16). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt). The red dashed line represents the consumption guideline developed for women of child-bearing age and children (0.5 mg/kg wwt).

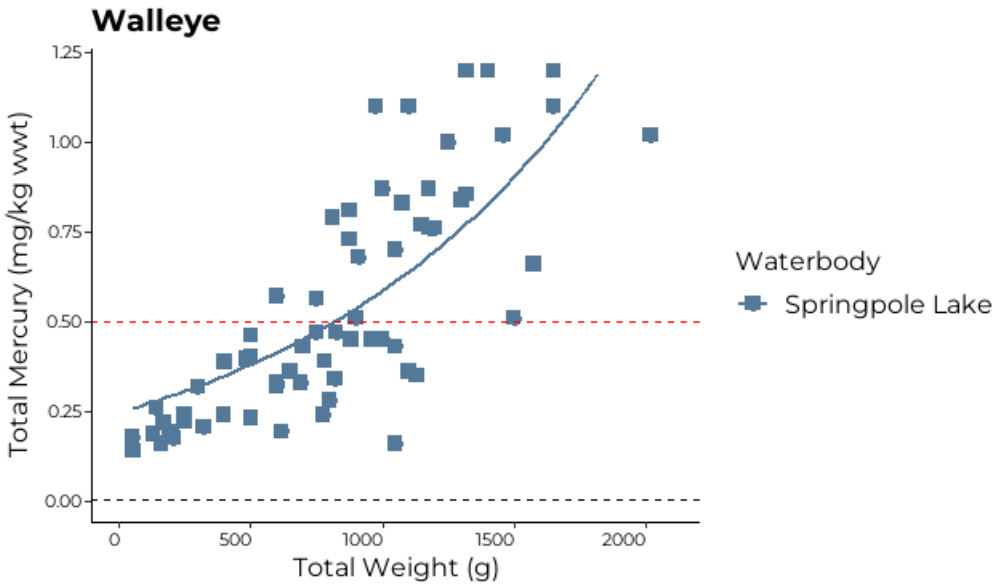

Figure D2-9: Walleye total mercury concentration (mg/kg wwt) and fish weight (g)

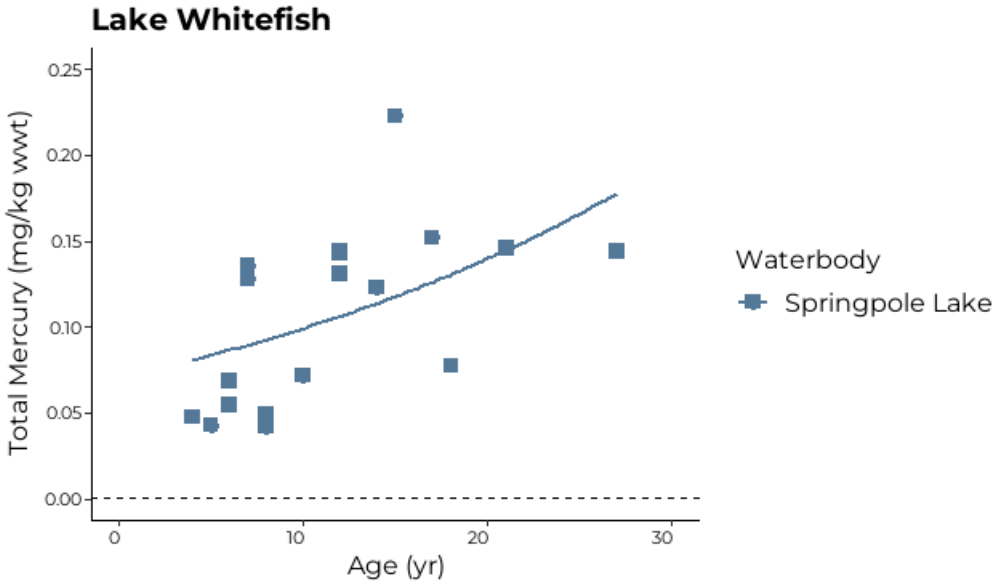

Figure D2-10: Lake Whitefish total mercury concentration (mg/kg wwt) and fish age (yr)

Sample sizes regarding the above species are as follows; Walleye (n=16) and Lake Whitefish (n=18). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt). The red dashed line represents the consumption guideline developed for women of child-bearing age and children (0.5 mg/kg wwt).

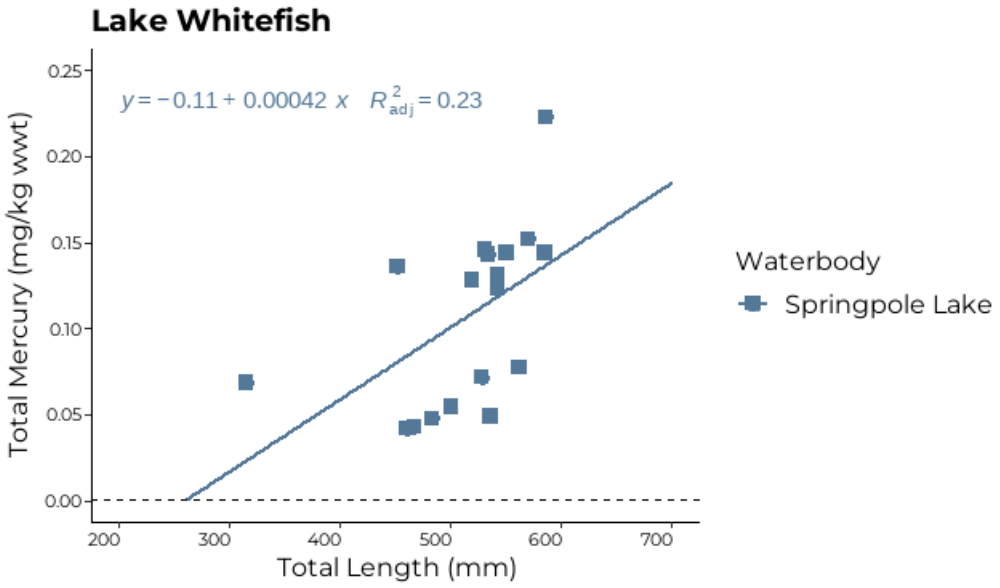

Figure D2-11: Lake Whitefish total mercury concentration (mg/kg wwt) and fish length (mm)

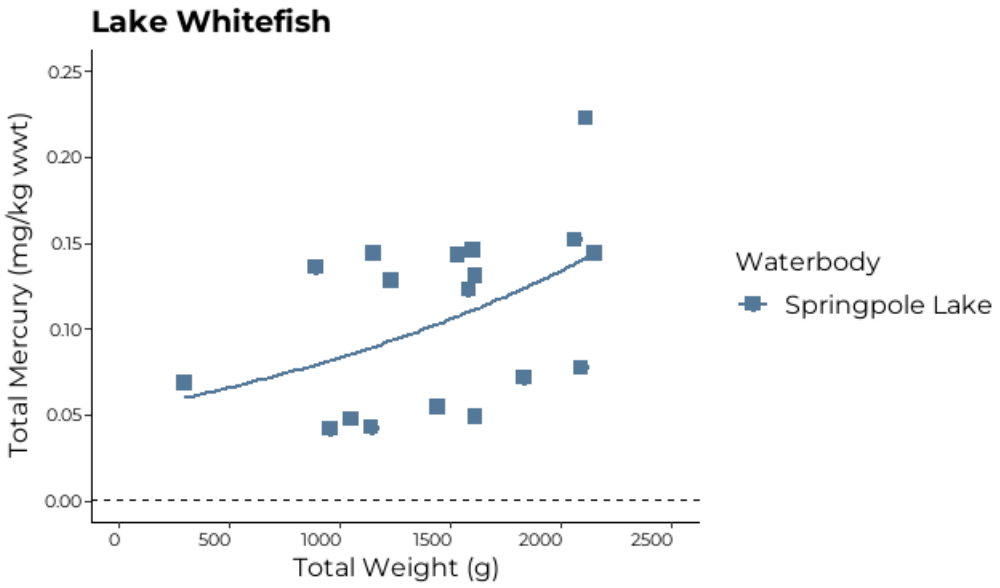

Figure D2-12: Lake Whitefish total mercury concentration (mg/kg wwt) and fish weight (g)

Sample sizes regarding the above species are as follows; (n=18). The black dashed line represents the lowest detection limit during analysis (0.0010 mg/kg wwt).

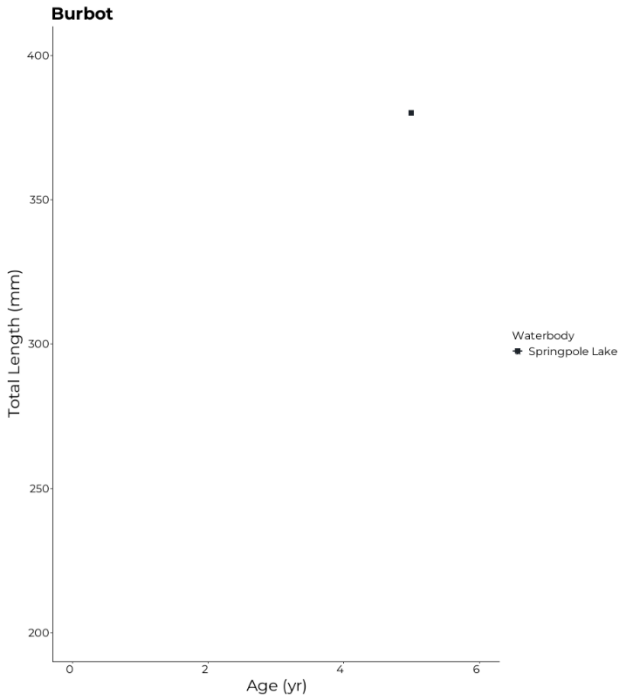

Figure D3-1: Burbot total length (mm) and age (yr)

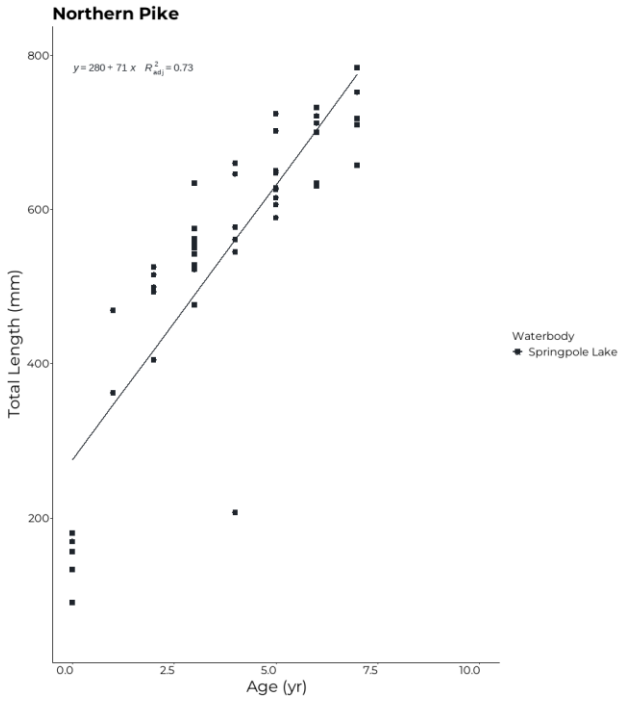

Figure D3-2: Northern Pike total length (mm) and age (yr)

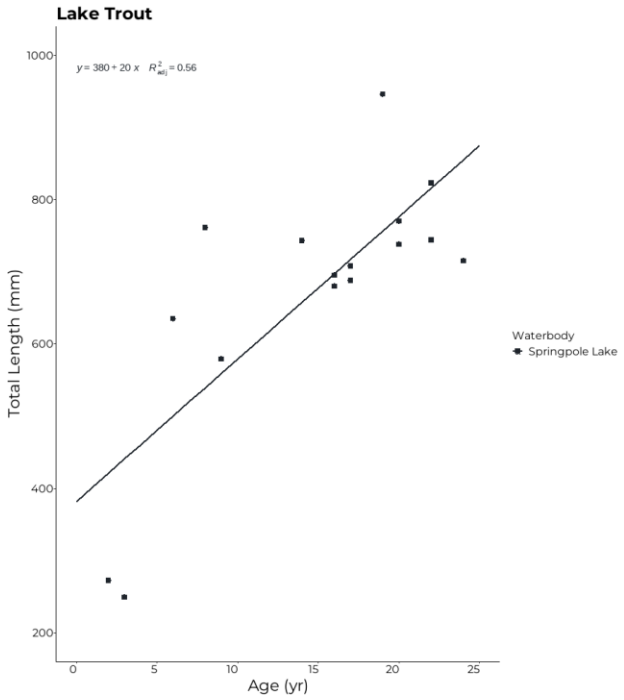

Figure D3-3: Lake Trout total length (mm) and age (yr)

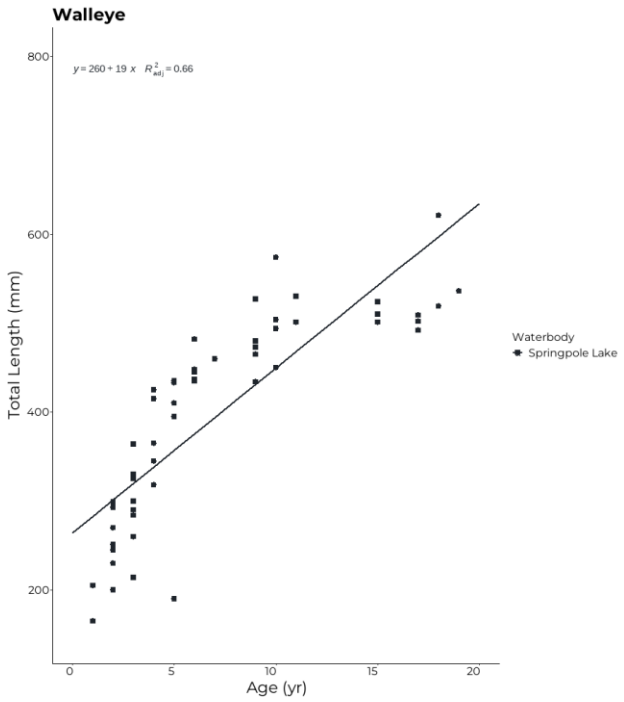

Figure D3-4: Walleye total length (mm) and age (yr)

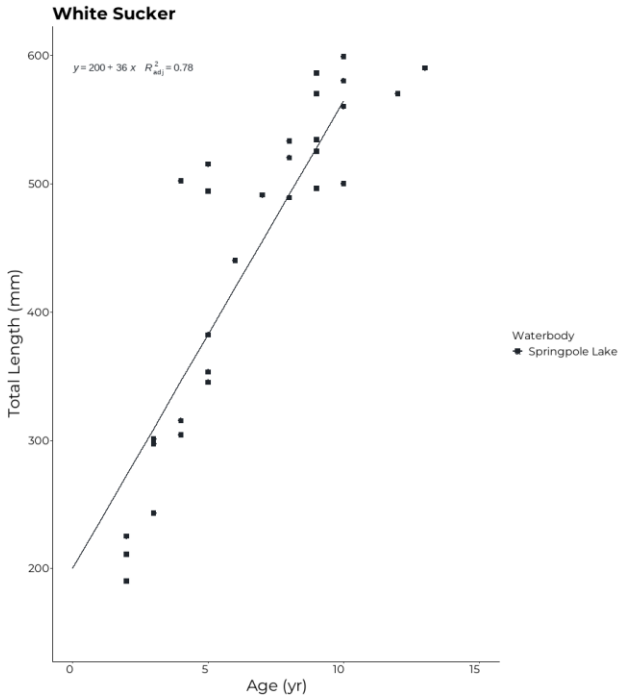

Figure D3-5: White Sucker total length (mm) and age (yr)

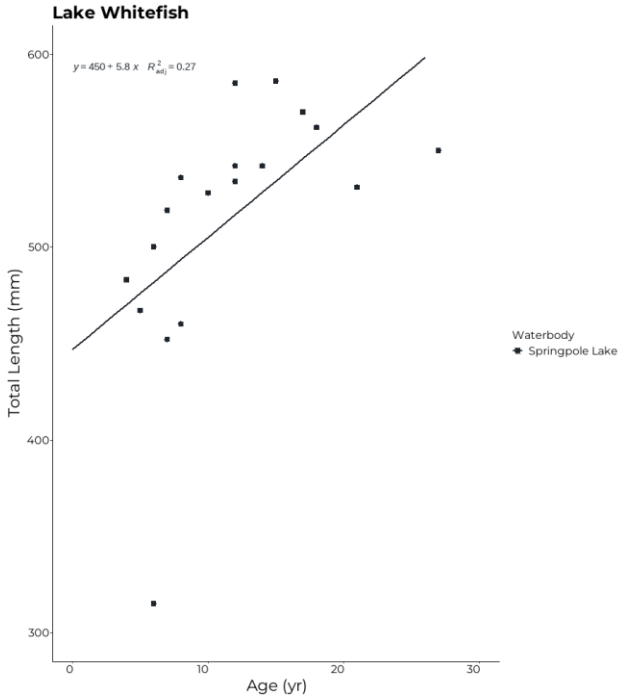

Figure D3-6: Lake Whitefish total length (mm) and age (yr)

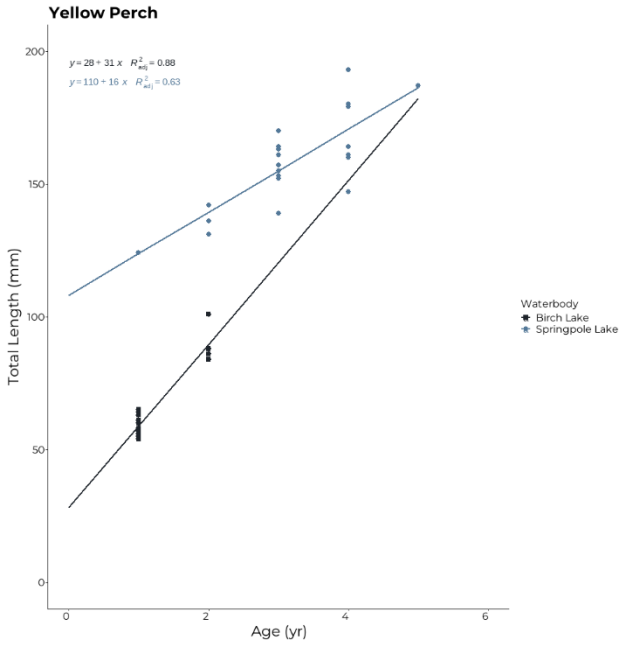

Figure D3-7: Yellow Perch total length (mm) and age (yr)

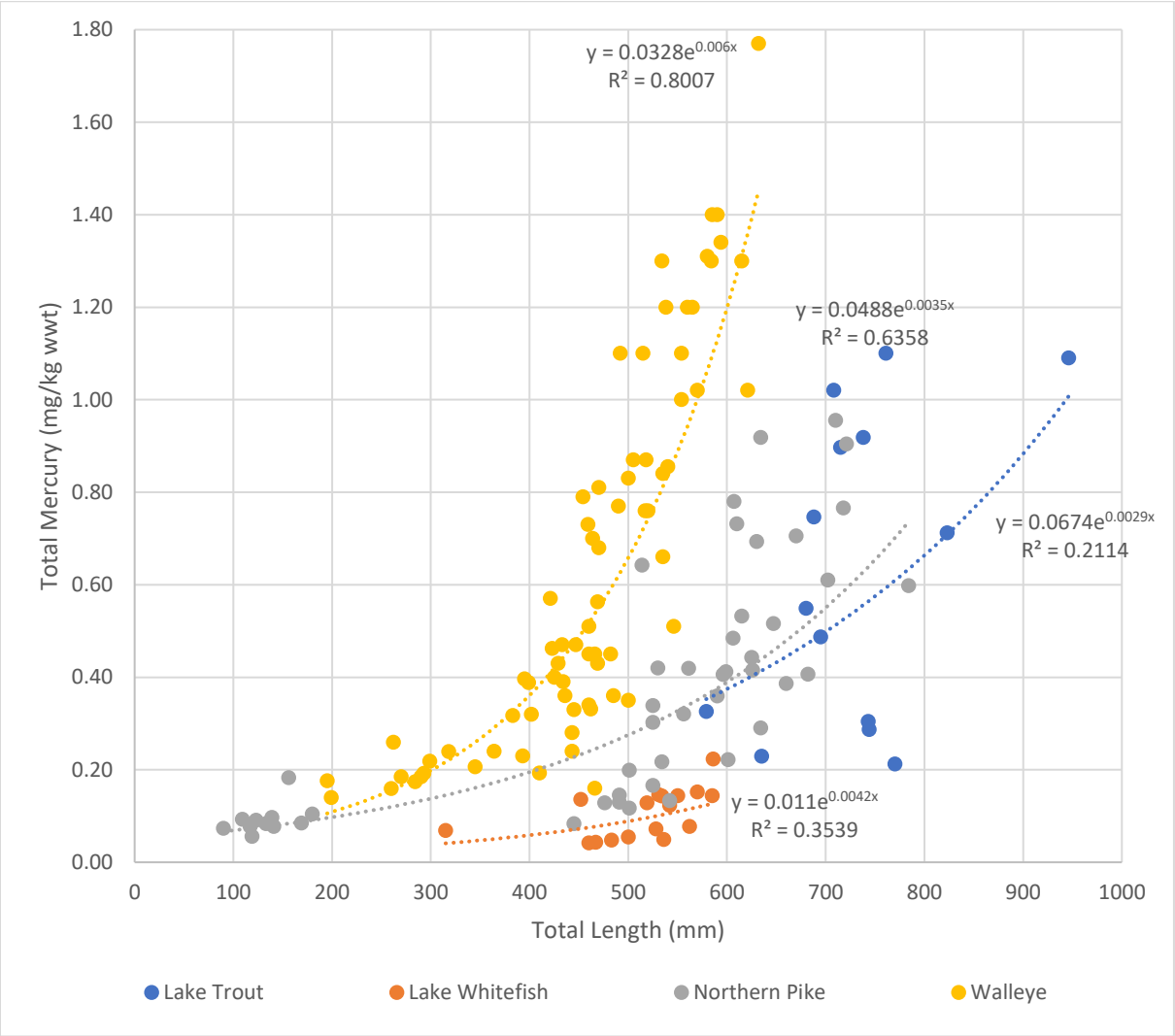

Figure D4-1: Regression of Total Mercury at Length for Large-body Fish Species

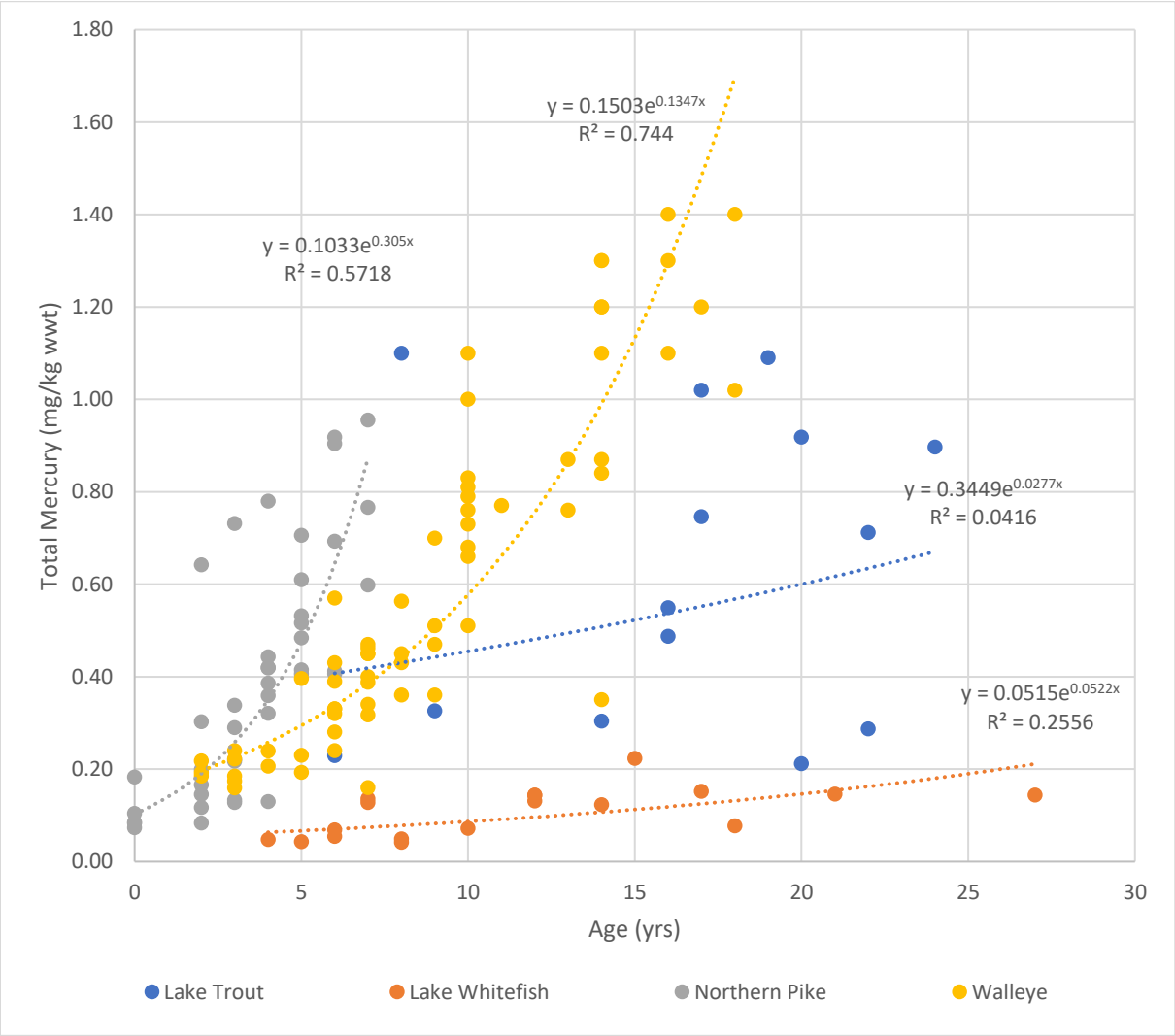

Figure D4-2: Regression of Total Mercury at Age for Large-body Fish Species

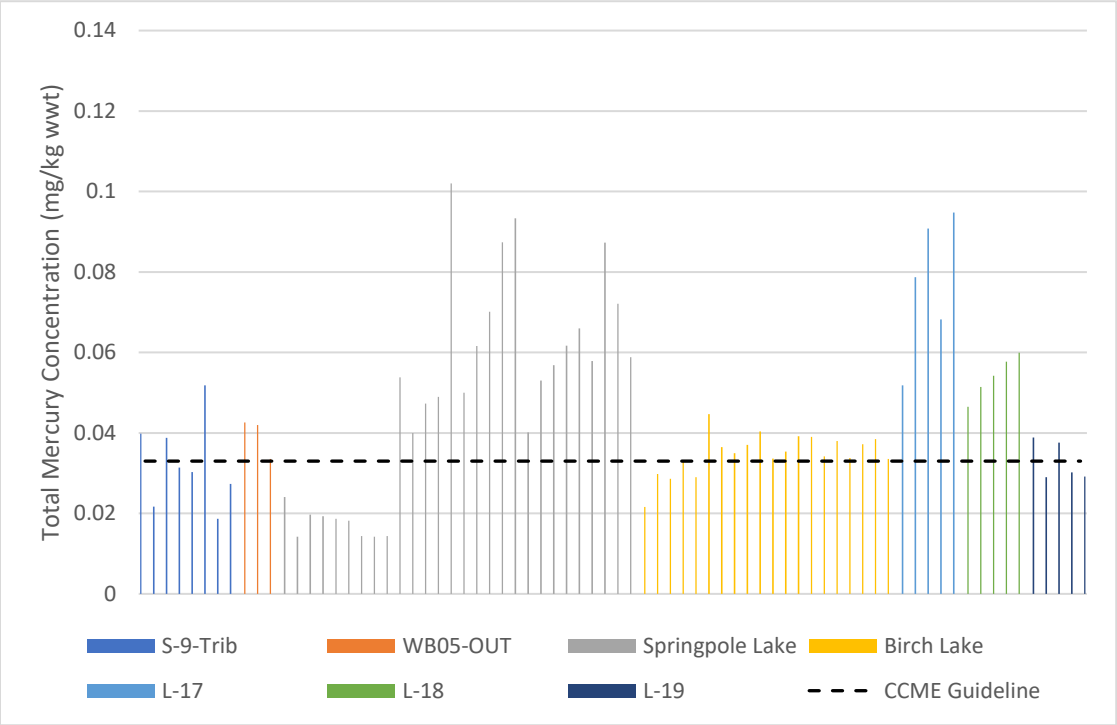

Figure D5-1: Total Mercury Concentrations in Small-body Fish Composite Samples

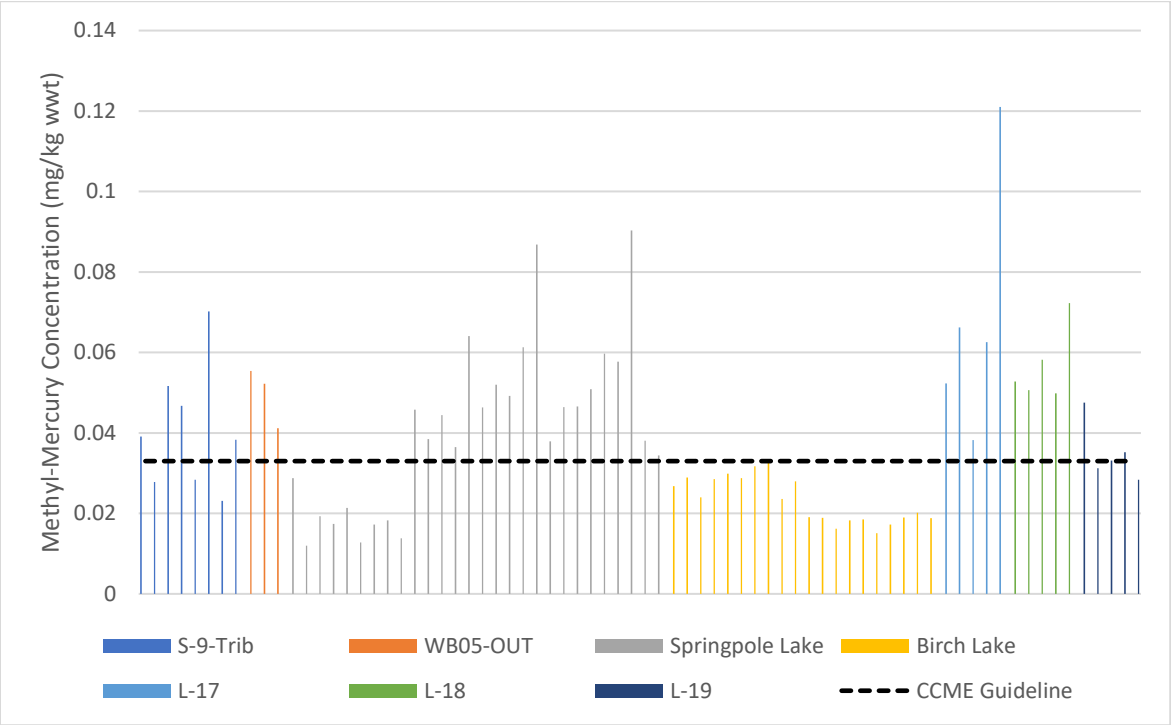

Figure D5-2: Methyl-mercury concentrations in Small-body Fish Composite Samples

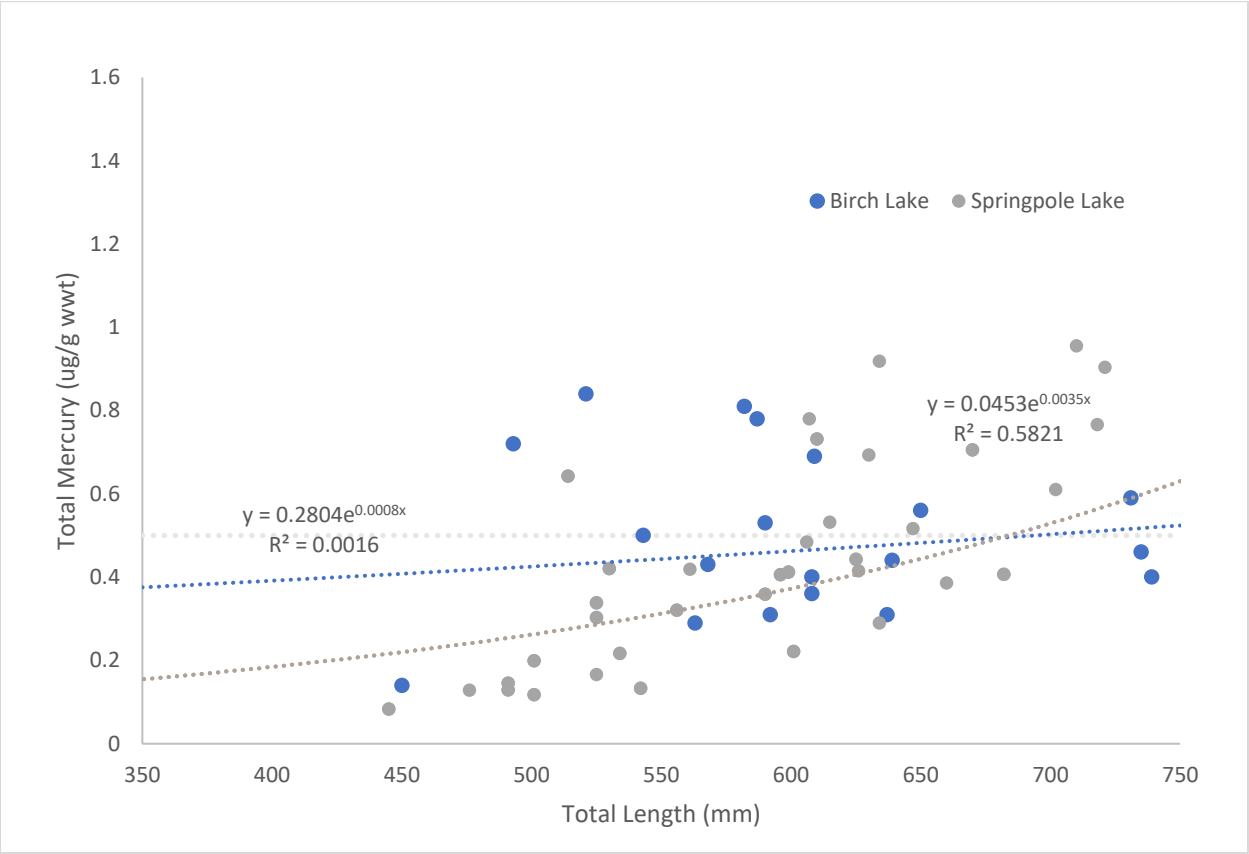

Figure D6-1: Northern Pike Total Mercury in Fish Tissue Comparison between Birch Lake BsM Data and Springpole Lake Baseline Information

Note: Northern Pike samples from Birch Lake includes BsM data collected in 2009, 2014 and 2019. Data from Springpole Lake includes samples collected during baseline studies and the 2022 BsM survey.

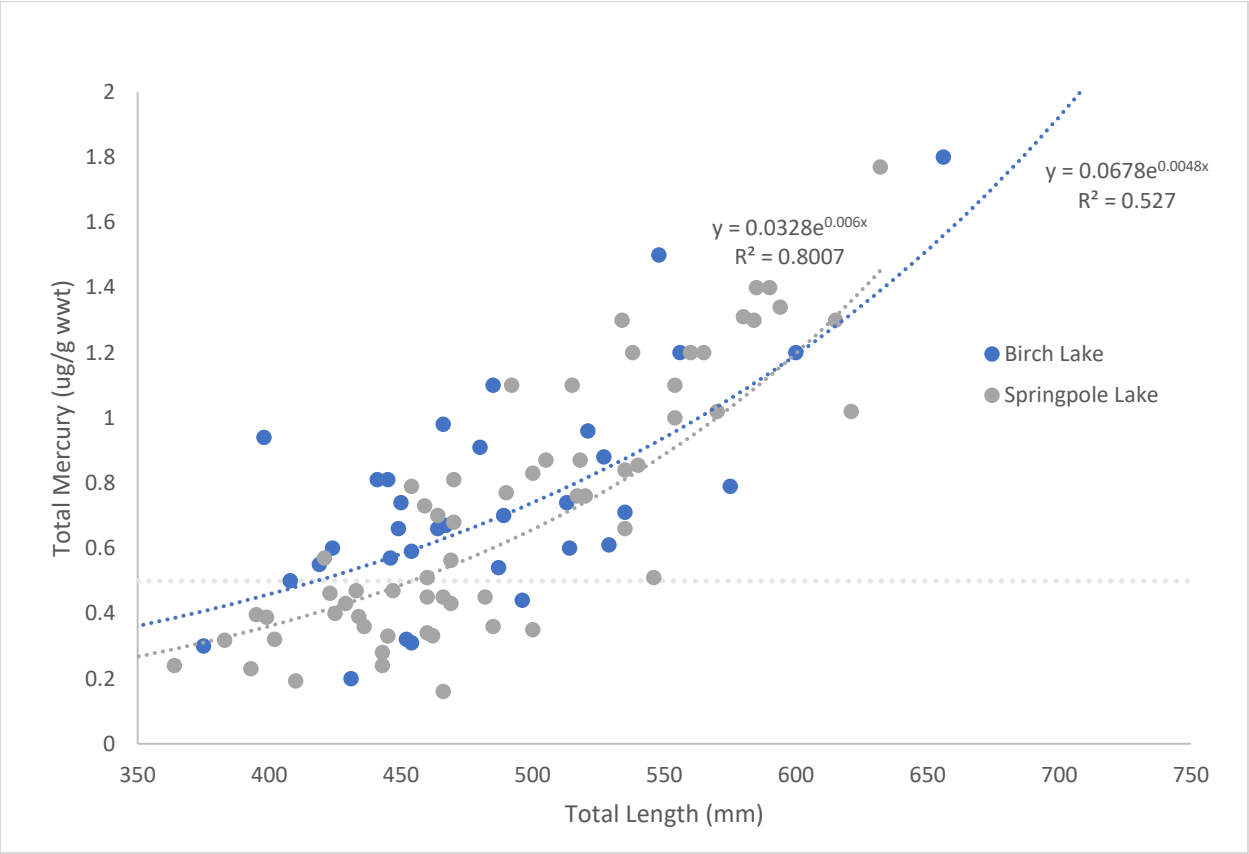

Figure D6-2: Walleye Total Mercury in Fish Tissue Comparison between Birch Lake BsM Data and Springpole Lake Baseline Information

Note: Walleye samples from Birch Lake includes BsM data collected in 2009, 2014 and 2019. Data from Springpole Lake includes samples collected from FMG and Portt (2018), Story Environmental (2019), and the 2022 BsM survey.

Attachment E Water Quality Profiles, In Situ Water Quality Measurements and Lower Trophic / Primary Productivity Results

Table E1-1: In Situ Water Quality

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	549742	5693020	14-02-2023	16:20	0.7	7.42	0.067	35.6	84.6	12.1
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	14-02-2023	15:40	0.7	7.41	0.066	35.1	83.2	11.42
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	14-02-2023	14:40	0.8	7.26	0.063	35.1	83.9	11.88
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	16-02-2023	14:30	-0.1	7.59	0.017	8.6	82.8	12.07
2023	Winter	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	16-02-2023		0.1	8.04	0.001	0.7	86.8	12.6
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	16-02-2023	15:00	0.2	7.47	0.061	32.1	87.7	12.75
2023	Winter	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	16-02-2023	16:20	0.2	7.75	0.007	3.5	92.5	13.35
2023	Winter	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	17-02-2023	8:10	0.6	7.59	0.059	33.1	88	12.64
2023	Winter	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	16-02-2023	11:05	-0.2	7.96	0.002	1.2	87.5	12.83
2023	Winter	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	16-02-2023	12:05	-0.2	8.26	0.004	1.8	84.2	12.41
2023	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	17-02-2023	10:10	-0.1	7.63	0.039	20.1	75.2	11.04
2023	Winter	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	-	-	-	-	-	-	-	-
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	17-02-2023	10:30	-0.2	7.58	0.011	5.6	78.7	11.55
2023	Winter	Surface Water	Birch Lake	West	SW-18	15U	546848	5692116	16-02-2023	11:50	-0.1	8.50	0.004	1.9	91.1	13.34
2023	Winter	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	16-02-2023	10:35	0.1	7.86	0.011	5.4	92.1	13.47
2023	Winter	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	16-02-2023	9:50	0.8	7.84	0.015	7.7	80.2	11.52
2023	Winter	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	17-02-2023	9:00	-0.2	7.53	0.02	10.2	84.8	12.47
2023	Winter	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	16-02-2023	11:25	-0.2	8.32	0.001	0.7	96.8	14.22
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	16-02-2023	15:35	0	7.62	0.061	31.7	84.8	12.39
2023	Winter	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	15-02-2023	10:30	0.7	7.34	0.061	32.7	80.9	11.59
2023	Winter	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	15-02-2023	9:25	0	7.84	0.042	22.2	90.7	13.24
2023	Winter	Surface Water	L-1	L-1	L-1	15U	549559	5694597	17-02-2023	9:45	0.7	7.07	0.189	101.2	12.5	1.7
2023	Winter	Surface Water	L-1	L-1	L-1	15U	549559	5694597	17-02-2023	9:45	0.8	6.96	0.205	110.3	5.6	0.78
2023	Winter	Surface Water	L-19	L-19	L-19	15U	551411	5694416	17-02-2023	9:20	1.3	6.68	0.012	77.5	13.5	1.75
2023	Winter	Surface Water	L-19	L-19	L-19	15U	551411	5694416	17-02-2023	9:20	2.9	6.46	0.059	119.5	4.9	0.65
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	549742	5693020	15-03-2023	14:30	0.9	7.31	0.066	35.8	87.3	12.38
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	15-03-2023	8:45	1	7.33	0.065	35.5	86.2	12.22
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	13-03-2023	15:45	0.9	6.92	0.069	37.1	88.4	12.57
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	15-03-2023	11:25	0.8	7.28	0.066	35.6	89.9	12.75
2023	Winter	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	14-03-2023	14:00	0.7	7.08	0.061	32.7	81.9	11.71
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	15-03-2023	10:25	0.6	7.33	0.067	35.6	89.6	12.83
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-01b	15U	550141	5692403	15-03-2023	13:15	0.6	7.34	0.067	35.7	89.4	12.75
2023	Winter	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	16-03-2023	9:40	0.1	7.64	0.061	32.6	97.8	13.89
2023	Winter	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	16-03-2023	11:30	0.7	7.34	0.059	31.6	90.9	12.84
2023	Winter	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	16-03-2023	13:45	0.1	7.39	0.064	33.8	97.8	14.13
2023	Winter	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	15-03-2023	17:30	0.5	7.37	0.059	31.6	92.7	13.3
2023	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	14-03-2023	11:50	0.1	7.01	0.061	32.2	85.1	12.28
2023	Winter	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	-	-	-	-	-	-	-	-
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	13-03-2023	17:10	0	7.21	0.061	32	84.3	12.25
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	13-03-2023	17:35	0.3	7.24	0.069	36.9	91.5	13.07
2023	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	14-03-2023	16:15	0	7.16	0.066	34.3	87.2	12.71
2023	Winter	Surface Water	Birch Lake	West	SW-18	15U	546848	5692116	16-03-2023	13:30	0.5	7.31	0.062	32.8	94.4	13.56
2023	Winter	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	15-03-2023	16:50	0.2	7.31	0.063	33.1	93.6	13.58
2023	Winter	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	16-03-2023	8:40	1.1	7.48	0.106	57.4	77.7	10.97

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2023	Winter	Surface Water	Springpole Lake	Outflow	SW-22	15U	565363	5687539	14-03-2023	15:45	1	7.14	0.061	33.2	84.4	11.94
2023	Winter	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	16-03-2023	10:30	0.5	7.27	0.061	32.6	91.9	13.24
2023	Winter	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	16-03-2023	13:00	0.5	7.26	0.063	33.5	95.2	13.7
2023	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	15-03-2023	9:45	0.7	7.31	0.066	35.3	87.4	12.47
2023	Winter	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	14-03-2023	15:15	0.7	7.03	0.062	33.2	85.3	12.17
2023	Winter	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	15-03-2023	17:10	0.5	7.35	0.06	32.2	92.1	13.25
2023	Winter	Surface Water	L-1	L-1	L-1	15U	549559	5694597	14-03-2023	16:45	1.1	6.96	0.169	91.5	19.2	2.69
2023	Winter	Surface Water	L-1	L-1	L-1	15U	549559	5694597	14-03-2023	16:45	1.7	6.90	0.198	110.4	7.3	0.95
2023	Winter	Surface Water	L-16	L-16	L-16	15U	547908	5691837	15-03-2023	16:10	1.7	7.08	0.104	57.9	62.4	8.64
2023	Winter	Surface Water	L-19	L-19	L-19	15U	551411	5694416	15-03-2023	16:30	2.8	6.52	0.186	107.5	19.1	2.3
2023	Winter	Surface Water	L-19	L-19	L-19	15U	551411	5694416	15-03-2023	16:30	4	6.23	0.217	130.3	4.3	0.55
2023	Winter	Surface Water	Gull Lake	Mid-Lake	RSW-1	15U	572027	5686785	14-03-2023	10:55	0.2	7.04	0.061	31.8	80.8	11.77
2023	Winter	Surface Water	Gull Lake	Outflow to Zionz	RSW-2	15U	576756	5691755	14-03-2023	10:05	1.2	6.78	0.048	26.1	79.1	11.17
2023	Winter	Surface Water	Cat River System	Upstream of Slate Falls	RSW-3	15U	596216	5671806	14-03-2023	9:00	0.1	6.95	0.05	26.1	81.9	11.94
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	549742	5693020	24-05-2023	14:10	9	7.36	0.061	42.6	103.5	11.97
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	25-05-2023	10:25	9	7.83	0.066	45.7	103.6	11.97
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	24-05-2023	14:15	9	7.82	0.061	42.6	103	11.88
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	25-05-2023	9:45	9.5	7.65	0.064	45.3	100.1	11.43
2023	Spring	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	25-05-2023	14:45	10.7	7.57	0.059	42.7	100.8	11.16
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	25-05-2023	8:41	9.4	7.50	0.065	45.3	100.5	11.52
2023	Spring	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	27-05-2023	12:15	10.6	7.61	0.066	47.8	100.6	11.21
2023	Spring	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	27-05-2023	9:30	10.1	6.31	0.065	46.7	97.9	11.02
2023	Spring	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	27-05-2023	17:35	12.9	7.69	0.065	49.9	102.9	10.92
2023	Spring	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	27-05-2023	11:15	11	7.59	0.064	47.2	98.5	10.86
2023	Spring	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	25-05-2023	15:40	14	7.63		44.8	100.6	10.39
2023	Spring	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	25-05-2023	16:40	15.3	7.73	0.056	45.2	101	10.14
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	25-05-2023	16:05	13.3	7.70	0.058	44.9	100.5	10.51
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	27-05-2023	10:50	11.4	7.63		48.2	99.4	10.83
2023	Spring	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	27-05-2023	16:15	11.6	7.94	0.066	49	100.8	10.99
2023	Spring	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	27-05-2023	15:40	15.5	7.86	0.114	93.1	102.3	10.17
2023	Spring	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	27-05-2023	11:45	10.1	7.57	0.066	47.4	100.4	11.28
2023	Spring	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	27-05-2023	10:20	11.6	7.57	0.065	48.9	99.6	10.78
2023	Spring	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	24-05-2023	17:15	10.2	7.96	0.061	43.7	105.9	11.9
2023	Spring	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	25-05-2023	14:10	11.7	7.78	0.06	44.5	102.2	11.12
2023	Spring	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	27-05-2023	16:50	12.8	7.67	-	51.9	104.6	11.07
2023	Spring	Surface Water	L-1	L-1	L-1	15U	549559	5694597	28-05-2023	9:30	19.9	8.04	0.148	133.5	99.6	9.06
2023	Spring	Surface Water	L-1	L-1	L-1	15U	549559	5694597	28-05-2023	9:30	18.7	7.94	0.148	130	101.9	9.5
2023	Spring	Surface Water	L-19	L-19	L-19	15U	551411	5694416	28-05-2023	8:35	20.3	7.83	0.065	58.7	100.2	9.06
2023	Spring	Surface Water	L-19	L-19	L-19	15U	551411	5694416	28-05-2023	8:35	19.6	7.72	0.067	60.6	56.97	-
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	09-02-2022	12:30	0.1	7.33	0.075	-	99.2	14.49
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	10-02-2022	14:00	0	7.57	0.011	-	94.4	13.84
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	10-02-2022	12:15	0.8	7.49	0.04	-	98	14.03
2022	Winter	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	09-02-2022	14:45	0	7.62	0.025	-	91.1	13.26
2022	Winter	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	11-02-2022	15:15	0.8	7.51	0.037	-	98.2	14.03
2022	Winter	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	11-02-2022	11:00	0.8	7.48	0.062	-	98	13.98
2022	Winter	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	12-02-2022	13:00	0.6	7.24	-	66.9	94.6	13.55

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2022	Winter	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	11-02-2022	10:15	0.1	7.56	0.053	-	100.4	14.64
2022	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	09-02-2022	16:45	0.1	7.74	0.009	-	89.4	13.06
2022	Winter	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	10-02-2022	10:00	0.2	7.09	0.06	-	89.9	13.07
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	10-02-2022	9:30	0.7	6.85	0.071	-	83.4	11.96
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	10-02-2022	11:00	-0.1	7.47	0.049	-	99.1	14.52
2022	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	09-02-2022	16:00	0	7.18	0.056	-	91.2	13.33
2022	Winter	Surface Water	Birch Lake	West	SW-18	15U	546848	5692116	11-02-2022	9:45	0.4	7.42	0.066	-	98.7	14.27
2022	Winter	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	11-02-2022	13:45	0.4	7.42	0.048	-	97.6	14.1
2022	Winter	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	11-02-2022	14:30	0.5	7.55	0.063	-	82.6	11.96
2022	Winter	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	12-02-2022	13:30	0.4	7.37	-	53.1	93	13.44
2022	Winter	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	11-02-2022	9:00	1.1	7.91	0.069	-	101.3	14.04
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	10-02-2022	13:30	0.3	7.44	0.021	-	96.4	14.01
2022	Winter	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	09-02-2022	13:45	0	7.52	0.065	-	98.2	14.36
2022	Winter	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	11-02-2022	14:00	0.1	7.39	0.042	-	98.2	14.29
2022	Winter	Surface Water	L-1	L-1	L-1	15U	549559	5694597	10-02-2022	16:00	1.1	6.61	0.186	-	21.2	2.99
2022	Winter	Surface Water	L-2	L-2	L-2	15U	550032	5694256	12-02-2022	10:30	2.3	6.50	-	131.1	39.6	5.45
2022	Winter	Surface Water	L-19	L-19	L-19	15U	551411	5694416	12-02-2022	11:15	2..5	6.55	-	154.4	8	1.08
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	24-03-2022	16:00	0.8	7.59	0.063	-	88.2	12.72
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	25-03-2022	9:00	0.7	7.05	0.062	-	86.6	12.41
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	25-03-2022	14:00	0.1	7.37	0.053	-	87.7	12.84
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	25-03-2022	10:00	0.3	7.05	0.062	-	87.2	12.93
2022	Winter	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	26-03-2022	9:00	0.6	6.73	0.056	-	79.1	11.4
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	25-03-2022	11:45	0.3	7.15	0.051	-	84.8	12.31
2022	Winter	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	27-03-2022	12:00	0.5	7.22	0.06	-	91.1	13.14
2022	Winter	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	27-03-2022	9:00	0.9	7.07	0.061	-	87.6	12.49
2022	Winter	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	26-03-2022	17:00	0.1	7.32	0.029	-	95	13.85
2022	Winter	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	26-03-2022	16:00	0.5	7.64	0.089	-	91.6	13.19
2022	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	26-03-2022	11:00	0.1	7.48	0.016	-	93.5	13.57
2022	Winter	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	27-03-2022	14:45	0.1	7.53	0.055	-	89.3	12.97
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	25-03-2022	12:30	0.3	7.08	0.054	-	77.9	11.27
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	25-03-2022	13:15	0.1	7.33	0.032	-	89.2	12.94
2022	Winter	Surface Water	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	26-03-2022	10:15	0.1	6.57	0.061	-	72.6	10.54
2022	Winter	Surface Water	Birch Lake	West	SW-18	15U	546848	5692116	26-03-2022	16:20	0.5	7.47	0.012	-	91	13.16
2022	Winter	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	27-03-2022	10:45	0.1	7.40	0.055	-	86.6	12.73
2022	Winter	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	27-03-2022	11:15	0.1	7.41	0.02	-	77.8	11.39
2022	Winter	Surface Water	Springpole Lake	Outflow	SW-22	15U	565363	5687539	28-03-2022	12:00	1.1	7.02	0.056	-	84.1	11.92
2022	Winter	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	27-03-2022	13:30	0.1	7.16	0.06	-	89.9	13.17
2022	Winter	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	26-03-2022	16:45	0.2	7.35	0.029	-	96	13.94
2022	Winter	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	24-03-2022	17:00	1.6	7.41	0.061	-	88.7	12.31
2022	Winter	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	28-03-2022	11:30	0.8	6.90	0.056	-	80	11.44
2022	Winter	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	27-03-2022	10:15	0.1	7.26	0.05	-	91.5	13.36
2022	Winter	Surface Water	L-1	L-1	L-1	15U	549559	5694597	26-03-2022	13:00	0.3	7.49	0.06	-	9.3	1.33
2022	Winter	Surface Water	L-2	L-2	L-2	15U	550032	5694256	26-03-2022	13:45	2	6.96	0.098	-	35.6	5.04
2022	Winter	Surface Water	L-19	L-19	L-19	15U	551411	5694416	26-03-2022	14:30	0.9	6.75	0.085	-	25.9	3.72
2022	Winter	Surface Water	L-20	L-20	L-20	15U	552476	5693629	28-03-2022	12:30	1.2	6.77	0.089	-	18.5	2.51
2022	Winter	Surface Water	Gull Lake	Mid-Lake	RSW-1	15U	572027	5686785	28-03-2022	10:30	0.2	6.93	0.052	-	83.2	12.11

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2022	Winter	Surface Water	Gull Lake	Outflow to Zionz	RSW-2	15U	576756	5691755	28-03-2022	10:00	0.1	6.80	0.049	-	73.4	10.55
2022	Winter	Surface Water	Cat River System	Upstream of Slate Falls	RSW-3	15U	596197	5671768	28-03-2022	9:30	0.1	6.98	0.051	-	79.5	11.59
2022	Spring	Biota	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	04-06-2022	9:00	8.7	7.67	-	61.7	100.6	11.71
2022	Spring	Biota	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	04-06-2022	14:40	9.1	7.78	-	62.2	104.3	12.04
2022	Spring	Biota	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	04-06-2022	11:00	8.9	7.66	-	61.1	101.1	11.71
2022	Spring	Biota	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	04-06-2022	13:20	8.4	7.52	-	58.9	98.9	11.6
2022	Spring	Biota	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	05-06-2022	11:00	10.8	7.43	-	50.9	98.2	10.87
2022	Spring	Biota	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	04-06-2022	12:30	8.5	7.54	-	59.5	99.1	11.58
2022	Spring	Biota	Birch lake	East	Birch-B1	15U	551072	5695883	03-06-2022	10:00	6.3	7.41	-	58.3	95.3	11.79
2022	Spring	Biota	Birch lake	West	Birch-B2	15U	546131	5695571	03-06-2022	8:30	7.5	7.28	-	55.2	96.6	11.57
2022	Spring	Biota	Birch Lake	West	SW-03	15U	547813	5695322	31-05-2022	13:45	7	6.69	-	62.5	95	11.53
2022	Spring	Biota	Birch Lake	West	SW-04	15U	543192	5693702	31-05-2022	11:10	8.8	6.53	-	58.6	98	11.4
2022	Spring	Biota	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	05-06-2022	13:00	10.7	7.46	-	52.2	98.1	10.92
2022	Spring	Biota	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	04-06-2022	17:00	10.4	7.44	-	51.9	99	11.07
2022	Spring	Biota	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	04-06-2022	16:45	10.6	7.52	-	53.9	100.8	11.21
2022	Spring	Biota	L-3	L-3	SW-09	15U	547851	5693454	05-06-2022	16:50	13.5	7.92	-	58.9	103.8	10.82
2022	Spring	Biota	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	04-06-2022	16:30	9.5	7.51	-	57.3	100.8	11.49
2022	Spring	Biota	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	05-06-2022	12:30	10.9	7.31	-	50	94.8	10.48
2022	Spring	Biota	Birch Lake	West	SW-18	15U	546848	5692116	31-05-2022	10:45	7.5	6.31	-	61.3	96.2	11.56
2022	Spring	Biota	Birch Lake	East	SW-20	15U	555129	5694365	31-05-2022	13:05	7.8	6.68	-	59.5	93.7	11.15
2022	Spring	Biota	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	31-05-2022	12:15	12.4	6.61	-	102.1	96.3	10.29
2022	Spring	Biota	Springpole Lake	Outflow	SW-22	15U	565363	5687539	05-06-2022	10:00	10	7.36	-	49.9	96.4	11.11
2022	Spring	Biota	Birch Lake	East	SW-23	15U	549891	5695936	31-05-2022	11:40	6.1	6.53	-	64.1	92.6	11.51
2022	Spring	Biota	Birch Lake	West	SW-24	15U	546385	5693619	31-05-2022	10:20	7.6	6.16	-	61.2	96.7	11.57
2022	Spring	Biota	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	03-06-2022	16:25	8.2	7.55	-	61.7	98.3	11.58
2022	Spring	Biota	L-5	L-5	SW-26	15U	548885	5692916	06-06-2022	9:30	13.4	7.53	-	89.2	69.2	6.18
2022	Spring	Biota	Springpole Lake	Outflow	SW-27	15U	565178	5687986	05-06-2022	10:30	10	7.36	-	49.8	93.8	10.6
2022	Spring	Biota	Birch Lake	North East	SW-28	15U	553004	5698795	31-05-2022	13:20	7.9	6.69	-	61.8	96.2	11.42
2022	Spring	Biota	L-1	L-1	L-1	15U	549559	5694597	01-06-2022	13:25	13.1	7.62	-	114.5	97.4	10.27
2022	Spring	Biota	L-2	L-2	L-2	15U	550032	5694256	01-06-2022	11:20	12.6	6.80	-	107.4	95.1	10.1
2022	Spring	Biota	L-16	L-16	L-16	15U	547908	5691837	01-06-2022	16:25	13.2	7.42	-	76.2	90.9	9.53
2022	Spring	Biota	L-17	L-17	L-17	15U	547685	5694283	05-06-2022	16:00	12.3	7.20	-	81.4	94.5	10.1
2022	Spring	Biota	L-18	L-18	L-18	15U	547250	5694639	05-06-2022	15:30	14.9	7.44	-	62.3	101.5	10.24
2022	Spring	Biota	L-19	L-19	L-19	15U	551411	5694416	02-06-2022	10:10	12.4	7.57	-	46.3	96.2	10.49
2022	Spring	Biota	Gull Lake	Mid-Lake	RSW-1	15U	572027	5686785	12-06-2022	14:30	16	7.50	-	43.5	98.6	9.74
2022	Spring	Biota	Gull Lake	Outflow to Zionz	RSW-2	15U	576756	5691755	12-06-2022	16:30	15.7	7.39	-	37.1	97	9.65
2022	Spring	Biota	Cat River System	Upstream of Slate Falls	RSW-3	15U	596216	5671806	07-06-2022	11:00	12.3	7.14	-	43.6	95.5	10.23
2022	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	16-06-2022	8:45	16.1	7.63	-	59.4	99.9	9.83
2022	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	20-06-2022	9:00	17.7	7.77	-	59.3	103	9.8
2022	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	16-06-2022	10:30	16	7.78	-	59	101.3	10
2022	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	16-06-2022	13:20	15.3	7.12	-	57.9	100.1	10.03
2022	Spring	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	17-06-2022	13:45	16.2	7.51	-	51.6	97.1	9.53
2022	Spring	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	20-06-2022	8:30	17.2	7.92	-	58.5	101.1	9.73
2022	Spring	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	18-06-2022	14:00	13.8	7.67	-	55.6	100.7	10.43
2022	Spring	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	18-06-2022	12:20	14.5	7.71	-	54.1	100.7	10.26
2022	Spring	Biota	Birch Lake	West	SW-03	15U	547813	5695322	18-06-2022	10:00	14.9	7.73	-	55	99.9	10.1

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2022	Spring	Biota	Birch Lake	West	SW-04	15U	543192	5693702	18-06-2022	9:25	14.7	7.75	-	53.4	99.5	10.08
2022	Spring	Biota	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	17-06-2022	10:55	15.3	7.43	-	52.9	93.8	9.39
2022	Spring	Biota	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	17-06-2022	9:30	15.7	7.43	-	51.7	93.5	9.28
2022	Spring	Biota	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	17-06-2022	9:10	15	7.46	-	54.1	94.3	9.5
2022	Spring	Biota	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	17-06-2022	8:45	15	7.69	-	57.8	99.1	9.98
2022	Spring	Biota	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	17-06-2022	11:15	15.1	7.32	-	52.3	91.3	9.18
2022	Spring	Biota	Birch Lake	West	SW-18	15U	546848	5692116	18-06-2022	9:00	14.1	7.79	-	54.5	100.6	10.34
2022	Spring	Biota	Birch Lake	East	SW-20	15U	555129	5694365	18-06-2022	15:25	13.1	7.64	-	54.9	100.9	10.6
2022	Spring	Biota	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	19-06-2022	12:20	17.9	8.13	-	92.3	100	9.48
2022	Spring	Biota	Springpole Lake	Outflow	SW-22	15U	565363	5687539	17-06-2022	12:15	15.4	7.38	-	51.1	94.6	9.45
2022	Spring	Biota	Birch Lake	East	SW-23	15U	549891	5695936	18-06-2022	13:30	12.8	7.60	-	55.4	98.7	10.44
2022	Spring	Biota	Birch Lake	West	SW-24	15U	546385	5693619	18-06-2022	9:40	14	7.73	-	54.3	100	10.3
2022	Spring	Biota	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	17-06-2022	8:30	14.4	7.71	-	59	98.1	10.01
2022	Spring	Biota	Springpole Lake	Outflow	SW-27	15U	565178	5687986	17-06-2022	12:00	15.6	7.44	-	51.1	95.9	9.55
2022	Spring	Biota	Birch Lake	North East	SW-28	15U	553004	5698795	18-06-2022	15:50	15.5	7.82	-	55.5	102.3	10.21
2022	Spring	Biota	L-1	L-1	L-1	15U	549559	5694597	17-06-2022	17:10	21.8	8.08	-	114.4	103.4	9.01
2022	Spring	Biota	L-2	L-2	L-2	15U	550032	5694256	19-06-2022	14:10	19.8	8.13	-	104.2	99.3	9.04
2022	Spring	Biota	L-19	L-19	L-19	15U	551411	5694416	19-06-2022	10:20	18.8	7.91	-	48.4	98.6	9.18
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	07-07-2022	15:35	19	8.29	-	72.2	105.4	9.78
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	08-07-2022	10:35	17.8	8.06	-	69.7	102.6	9.76
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	08-07-2022	8:10	18.2	8.35	-	70.1	100.8	9.57
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	08-07-2022	9:30	18.1	8.17	-	69.3	103.2	9.74
2022	Summer	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	07-07-2022	9:30	17.6	7.74	-	61.3	95.1	9.08
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	07-07-2022	13:45	17.8	8.11	-	69.1	102.2	9.73
2022	Summer	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	08-07-2022	13:40	19	7.62	-	65.1	105.5	9.97
2022	Summer	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	08-07-2022	12:35	17.7	7.77	-	63.5	102.7	9.81
2022	Summer	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	06-07-2022	14:00	17.3	7.75	-	51.6	101.9	9.79
2022	Summer	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	06-07-2022	10:50	17.2	7.82	-	51.1	101.2	9.72
2022	Summer	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	05-07-2022	16:45	17.5	7.64	-	49.5	92.1	8.8
2022	Summer	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	07-07-2022	12:30	18.1	7.74	-	61.3	94.5	8.94
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	05-07-2022	12:20	18.4	7.60	-	53.1	101.7	9.54
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	07-07-2022	13:15	18	8.15	-	68.6	102	9.66
2022	Summer	Surface Water	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	07-07-2022	10:35	17.9	7.25	-	61	91	8.63
2022	Summer	Surface Water	Birch Lake	West	SW-18	15U	546848	5692116	06-07-2022	10:30	17.2	7.72	-	51.5	99.1	9.54
2022	Summer	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	06-07-2022	13:00	18.3	7.88	-	50.9	102.8	9.7
2022	Summer	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	06-07-2022	12:10	18.7	8.02	-	57.4	102.1	9.52
2022	Summer	Surface Water	Springpole Lake	Outflow	SW-22	15U	565363	5687539	05-07-2022	16:00	17.4	7.54	-	49	94.1	9.01
2022	Summer	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	06-07-2022	11:45	15.9	7.85	-	52	98.2	9.75
2022	Summer	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	06-07-2022	10:05	16.6	7.84	-	51.3	99.3	9.67
2022	Summer	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	07-07-2022	14:35	18.2	8.15	-	69.8	104.7	9.86
2022	Summer	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	05-07-2022	15:20	17.7	7.55	-	49	94.8	9.04
2022	Summer	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	06-07-2022	13:30	17.4	7.31	-	52.3	102	9.75
2022	Summer	Surface Water	L-1	L-1	L-1	15U	549559	5694597	09-07-2022	14:30	23.2	8.15	-	137.8	102.1	9.19
2022	Summer	Surface Water	L-2	L-2	L-2	15U	550032	5694256	06-07-2022	15:10	19.2	7.88	-	100.3	101.9	9.42
2022	Summer	Surface Water	L-19	L-19	L-19	15U	551411	5694416	09-07-2022	12:30	22.4	7.97	-	59.4	102.4	9.72
2022	Summer	Surface Water	Gull Lake	Mid-Lake	RSW-1	15U	572027	5686785	20-07-2022	13:45	22.5	7.84	-	49.5	94.5	8.17

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2022	Summer	Surface Water	Gull Lake	Outflow to Zionz	RSW-2	15U	576756	5691755	20-07-2022	15:00	22.2	7.17	-	37.1	90.7	7.89
2022	Summer	Surface Water	Cat River System	Upstream of Slate Falls	RSW-3	15U	596216	5671806	14-07-2022	9:35	20.2	7.74	-	51.5	107.1	9.71
2022	Summer	BsM	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	24/08/2022	8:00	21.2	8.20	-	66.7	101	8.97
2022	Summer	BsM	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	24/08/2022	12:00	20.1	7.97	0.071	-	98.5	8.75
2022	Summer	BsM	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	24/08/2022	10:00	19.6	7.68	0.071	-	92.6	8.48
2022	Summer	BsM	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	24/08/2022	13:00	20.8	8.06	-	65.1	98.4	8.8
2022	Summer	BsM	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	24/08/2022	9:00	21.1	7.66	-	59.3	95.3	8.47
2022	Summer	BsM	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	24/08/2022	13:15	21.1	8.16	-	66	99.2	8.82
2022	Summer	BsM	Birch lake	East	Birch-B1	15U	551072	5695883	25/08/2022	12:10	19.3	7.72	-	58.4	92.9	8.57
2022	Summer	BsM	Birch lake	West	Birch-B2	15U	546131	5695571	25/08/2022	11:00	19.4	7.68	-	57.8	91.8	8.45
2022	Summer	BsM	Birch Lake	West	SW-03	15U	547813	5695322	25/08/2022	15:00	19.5	7.84	-	58.6	95.8	8.8
2022	Summer	BsM	Birch Lake	West	SW-04	15U	543192	5693702	25/08/2022	10:20	19.4	7.68	-	57.9	91.8	8.45
2022	Summer	BsM	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	23/08/2022	15:30	21.6	7.80	-	61	95.7	8.43
2022	Summer	BsM	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	23/08/2022	11:15	21	7.58	-	59.1	91.1	8.12
2022	Summer	BsM	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	23/08/2022	10:55	20.7	7.66	-	63.4	92	8.26
2022	Summer	BsM	L-3	L-3	SW-09	15U	547851	5693454	26/08/2022	8:45	18.1	7.72	-	68.4	90	8.49
2022	Summer	BsM	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	23/08/2022	10:30	20.7	7.84	-	64.9	95.5	8.56
2022	Summer	BsM	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	23/08/2022	15:00	21.1	7.85	-	60.1	97.7	8.68
2022	Summer	BsM	Birch Lake	West	SW-18	15U	546848	5692116	25/08/2022	10:00	19.9	7.86	-	59	95.1	8.66
2022	Summer	BsM	Birch Lake	East	SW-20	15U	555129	5694365	25/08/2022	14:10	19.9	7.92	-	59.3	96.7	8.81
2022	Summer	BsM	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	25/08/2022	13:30	20	8.05	-	101.5	94.4	8.58
2022	Summer	BsM	Springpole Lake	Outflow	SW-22	15U	565363	5687539	23/08/2022	13:40	20.7	7.36	-	58.7	90	8.07
2022	Summer	BsM	Birch Lake	East	SW-23	15U	549891	5695936	25/08/2022	11:45	19.4	7.63	-	58..7	92.44	8.51
2022	Summer	BsM	Birch Lake	West	SW-24	15U	546385	5693619	25/08/2022	9:30	19.6	7.80	-	58.5	94.5	8.65
2022	Summer	BsM	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	23/08/2022	8:45	20.1	7.58	-	64.8	95.9	8.69
2022	Summer	BsM	L-5	L-5	SW-26	15U	548885	5692916	26/08/2022	12:30	18.2	7.54	-	105.9	81.9	7.73
2022	Summer	BsM	Springpole Lake	Outflow	SW-27	15U	565178	5687986	23/08/2022	14:00	21.5	7.63	-	59.5	95.3	8.42
2022	Summer	BsM	Birch Lake	North East	SW-28	15U	553004	5698795	25/08/2022	14:30	19.4	7.75	-	59.1	94	6.65
2022	Summer	BsM	L-1	L-1	L-1	15U	549559	5694597	26/08/2022	10:15	18.5	8.21	-	125.7	96.2	9
2022	Summer	BsM	L-2	L-2	L-2	15U	550032	5694256	24/08/2022	17:30	19.8	7.88	-	119	89.5	8.17
2022	Summer	BsM	L-16	L-16	L-16	15U	547908	5691837	26/08/2022	17:30	19	7.63	-	92.8	82.8	7.69
2022	Summer	BsM	L-17	L-17	L-17	15U	547685	5694283	26/08/2022	8:15	17.4	7.09	-	102.5	65.4	6.26
2022	Summer	BsM	L-18	L-18	L-18	15U	547250	5694639	25/08/2022	17:25	19.1	7.48	-	80.4	88.9	8.25
2022	Summer	BsM	L-19	L-19	L-19	15U	551411	5694416	24/08/2022	16:30	19.7	8.45	-	58.3	107	9.8
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	13/9/2022	16:00	17.2	7.63	-	60.3	94.5	9.09
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	17/9/2022	10:30	15.6	7.34	-	58	88.9	8.84
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	14/9/2022	16:20	16.7	7.55	-	59.6	94.4	9.18
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	17/9/2022	9:20	15.3	7.36	-	57.4	88.7	8.89
2022	Fall	Surface Water	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	16/9/2022	11:00	16	7.22	-	52.7	85.9	8.48
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	17/9/2022	8:30	15.3	7.45	-	57.4	89.7	8.99
2022	Fall	Surface Water	Birch lake	East	Birch-B1	15U	551072	5695883	15/09/2022	13:00	16.4	7.40	-	54.4	89.3	8.73
2022	Fall	Surface Water	Birch lake	West	Birch-B2	15U	546131	5695571	15/09/2022	9:00	16.3	7.40	-	54	89.8	8.8
2022	Fall	Surface Water	Birch Lake	West	SW-03	15U	547813	5695322	15/09/2022	11:35	16.4	7.40	-	54.4	90.2	8.82
2022	Fall	Surface Water	Birch Lake	West	SW-04	15U	543192	5693702	15/09/2022	10:45	16.1	7.41	-	53.4	89.5	8.83
2022	Fall	Surface Water	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	16/9/2022	14:15	15.1	7.31	-	53.1	89.6	9.01
2022	Fall	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	16/9/2022	14:40	15.1	7.49	-	51.9	91	9.14

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	16/9/2022	15:45	15.1	7.56	-	56	92.3	9.28
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	16/9/2022	16:15	15.2	7.45	-	57.2	88.9	8.92
2022	Fall	Surface Water	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	16/9/2022	12:00	15.6	7.20	-	53.4	89.3	8.88
2022	Fall	Surface Water	Birch Lake	West	SW-18	15U	546848	5692116	15/09/2022	10:20	16.1	7.42	-	53.9	89	8.83
2022	Fall	Surface Water	Birch Lake	East	SW-20	15U	555129	5694365	15/09/2022	15:15	16.4	7.50	-	54.4	90.1	8.82
2022	Fall	Surface Water	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	15/09/2022	14:40	16	7.60	-	93.1	90.2	8.89
2022	Fall	Surface Water	Springpole Lake	Outflow	SW-22	15U	565363	5687539	16/9/2022	10:30	16.2	7.34	-	52.9	88.7	8.71
2022	Fall	Surface Water	Birch Lake	East	SW-23	15U	549891	5695936	15/09/2022	11:09	16.3	7.38	-	54.2	88.8	8.7
2022	Fall	Surface Water	Birch Lake	West	SW-24	15U	546385	5693619	15/09/2022	10:00	16.2	7.34	-	53.9	88.6	8.76
2022	Fall	Surface Water	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	16/9/2022	16:35	15.7	7.48	-	58.2	91.9	9.13
2022	Fall	Surface Water	Springpole Lake	Outflow	SW-27	15U	565178	5687986	16/9/2022	10:00	16.3	7.32	-	53	88.5	8.68
2022	Fall	Surface Water	Birch Lake	North East	SW-28	15U	553004	5698795	15/09/2022	15:45	16.6	7.40	-	55.2	88.3	8.59
2022	Fall	Surface Water	L-1	L-1	L-1	15U	549559	5694597	13/9/2022	12:35	16.7	8.09	-	120.5	97.4	9.46
2022	Fall	Surface Water	L-2	L-2	L-2	15U	550032	5694256	13/9/2022	14:30	16.1	7.85	-	111.4	92	8.95
2022	Fall	Surface Water	L-19	L-19	L-19	15U	551411	5694416	13/9/2022	13:45	15.7	7.66	-	54.6	96.9	9.67
2022	Fall	Surface Water	Gull Lake	Mid-Lake	RSW-1	15U	572027	5686785	14/9/2022	10:16	16.3	7.44	-	43.1	90.8	8.9
2022	Fall	Surface Water	Gull Lake	Outflow to Zionz	RSW-2	15U	576756	5691755	14/9/2022	12:00	15.4	7.23	-	35.6	90.7	9.08
2022	Fall	Surface Water	Cat River System	Upstream of Slate Falls	RSW-3	15U	596216	5671806	14/9/2022	14:00	17	7.22	-	42.5	90	8.8
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	L-15-B1	15U	0549742	5693020	10-06-2022	13:00	11.6	7.16	-	52.3	88.8	9.66
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	L-15-B2	15U	551075	5692495	10-06-2022	14:00	11.6	7.15	-	52.1	88.9	9.68
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	L-15-B3	15U	549977	5691720	10-06-2022	10:45	11.5	7.12	-	52.1	86.8	9.46
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	L-15-B4	15U	550203	5690377	10-06-2022	9:30	11.5	7.17	-	51.9	88	9.58
2022	Fall	Sed and Benthics	Springpole Lake	Springpole SE Arm	L-15-B5	15U	560004	5687594	10-07-2022	9:00	11.7	7.07	-	40.9	86.3	9.37
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	L-15-B6	15U	549079	5690237	10-06-2022	8:30	11.4	7.21	-	51.8	86.4	9.45
2022	Fall	Sed and Benthics	Birch lake	East	Birch-B1	15U	551072	5695883	10-08-2022	8:30	11.7	7.28	-	41.9	86	9.35
2022	Fall	Sed and Benthics	Birch lake	West	Birch-B2	15U	546131	5695571	10-08-2022	9:15	11.2	7.21	-	41.1	88.2	9.68
2022	Fall	Sed and Benthics	Birch Lake	West	SW-03	15U	547813	5695322	10-08-2022	13:30	10.7	7.32	-	40.7	90.9	10.09
2022	Fall	Sed and Benthics	Birch Lake	West	SW-04	15U	543192	5693702	10-08-2022	10:45	10.5	7.31	-	40	91.2	10.17
2022	Fall	Sed and Benthics	Springpole Lake	Springpole SE Arm	SW-07a	15U	552550	5687777	10-06-2022	16:20	10.5	7.45	-	46.9	93.9	10.47
2022	Fall	Sed and Benthics	Cromarty Lake	Cromarty Lake	SW-08	15U	548613	5686940	10-07-2022	11:45	9.1	7.44	-	38.6	93.2	10.73
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin Narrows	SW-08a	15U	549512	5687807	10-06-2022	16:00	10.4	7.44	-	47.4	93.3	10.43
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	SW-15	15U	551871	5689776	10-06-2022	15:30	11.5	7.29	-	31.8	88.9	9.7
2022	Fall	Sed and Benthics	Springpole Lake	Springpole SE Arm	SW-16	15U	555632	5688624	10-07-2022	11:00	10.3	7.21	-	40.6	87.3	9.78
2022	Fall	Sed and Benthics	Birch Lake	West	SW-18	15U	546848	5692116	10-08-2022	10:15	10.2	7.32	-	39.8	91.6	10.3
2022	Fall	Sed and Benthics	Birch Lake	East	SW-20	15U	555129	5694365	10-08-2022	12:15	11.2	7.30	-	41.5	87.9	9.64
2022	Fall	Sed and Benthics	Dole Lake	Dole Lake	SW-21	15U	552211	5694797	10-08-2022	11:45	10	7.55	-	69.5	89.6	10.12
2022	Fall	Sed and Benthics	Springpole Lake	Outflow	SW-22	15U	565363	5687539	10-07-2022	10:15	11.5	7.18	-	40.7	88.9	9.69
2022	Fall	Sed and Benthics	Birch Lake	East	SW-23	15U	549891	5695936	10-08-2022	11:15	11.7	7.13	-	42	84.4	9.15
2022	Fall	Sed and Benthics	Birch Lake	West	SW-24	15U	546385	5693619	10-08-2022	10:00	10.5	7.27	-	40.3	90.3	10.06
2022	Fall	Sed and Benthics	Springpole Lake	Springpole North Basin	SW-25	15U	548485	5691593	10-06-2022	15:00	11.4	7.15	-	52	89.1	9.73
2022	Fall	Sed and Benthics	Springpole Lake	Outflow	SW-27	15U	565178	5687986	10-07-2022	9:45	11.5	7.18	-	40.7	88.1	9.6
2022	Fall	Sed and Benthics	Birch Lake	North East	SW-28	15U	553004	5698795	10-08-2022	12:45	11.3	7.31	-	41.7	89.1	9.77
2022	Fall	Sed and Benthics	L-1	L-1	L-1	15U	549559	5694597	10-07-2022	16:00	8.3	8.14	-	82.3	91.1	10.42
2022	Fall	Sed and Benthics	L-2	L-2	L-2	15U	550032	5694256	10-07-2022	15:00	9.3	7.25	-	80.8	81.2	9.33
2022	Fall	Sed and Benthics	L-19	L-19	L-19	15U	551411	5694416	10-07-2022	14:15	7.3	7.29	-	38	95.2	11.5
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	SW-15	15U	551891	5689819	26-03-2021	14:00	0.8	7.50	0.07	70	81.5	11.58

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	L15 B1	15U	544752	5692997	26-03-2021	16:00	1.7	7.11	0.069	69	85.8	11.96
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	L15 B6	15U	549079	5690237	26-03-2021	09:00	2.1	7.27	0.066	66	85.7	11.83
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	L15 B4	15U	550203	5690377	26-03-2021	12:00	1.6	7.30	0.066	66	85	11.88
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	L15 B2	15U	551075	5692495	27-03-2021	08:30	1.9	7.13	0.066	66	83.3	11.5
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	L15 B3	15U	549977	5681720	27-03-2021	11:30	1.7	7.25	0.067	67	86.1	11.98
2021	Winter	Surface Water	Springpole Lake	Springpole East Arm	L15 B5	15U	560004	5687594	30-03-2021	9:00	1.9	7.23	0.062	62	82.4	11.41
2021	Winter	Surface Water	Springpole Lake	Springpole Bay	SW-25	15U	548485	5691593	27-03-2021	16:00	2	7.27	0.065	65	82.9	11.5
2021	Winter	Surface Water	Birch Lake	Birch West	SW-03	15U	547813	5685322	28-03-2021	9:00	1.8	7.36	0.063	63	91.6	12.73
2021	Winter	Surface Water	Dole Lake	Canoe grab	SW-21	15U	552120	5694873	28-03-2021	16:30	2.8	7.43	0.115	-	78.8	-
2021	Winter	Surface Water	Birch Lake	Birch East	SW-23	15U	548881	5695936	28-03-2021	17:00	1.4	7.21	0.06	60	85.8	11.69
2021	Winter	Surface Water	Birch Lake	Birch East	SW-20	15U	555129	5694365	29-03-2021	9:00	2.4	8.05	0.149	149	81.1	11.13
2021	Winter	Surface Water	Birch Lake	Birch East	SW-28	15U	553204	5698795	29-03-2021	10:30	1.8	7.26	0.061	61	89.6	12.45
2021	Winter	Surface Water	Birch Lake	Birch West	SW-04	15U	543192	5693702	29-03-2021	12:00	1.9	7.44	0.06	60	88.1	12.21
2021	Winter	Surface Water	Birch Lake	Birch West	SW-18	15U	546848	5692116	29-03-2021	13:30	2.2	7.40	0.062	62	88.6	12.21
2021	Winter	Surface Water	Birch Lake	Birch West	SW-24	15U	546385	5693619	29-03-2021	14:20	2	7.46	0.0157	157	88.2	12.19
2021	Winter	Surface Water	Springpole Lake	Springpole East Arm	SW-27	15U	565206	5687855	31-03-2021	8:30	1.8	6.90	0.082	82	81	11.28
2021	Winter	Surface Water	Birch River	Canoe grab	SW-22	15U	565364	5687539	31-03-2021	9:00	1.3	7.03	0.061	-	83.1	11.71
2021	Winter	Surface Water	Springpole Lake	Springpole East Arm	SW-16	15U	555603	5688624	31-03-2021	9:30	0.8	6.94	0.065	65	71.8	10.3
2021	Winter	Surface Water	Springpole Lake	Springpole East Arm	SW-07A	15U	552109	5687828	31-03-2021	11:00	2	7.35	0.062	62	87.9	12.06
2021	Winter	Surface Water	Cromarty Lake	Canoe grab	SW-08	15U	548613	5686940	31-03-2021	11:30	1.8	7.25	0.06	-	91.1	12.81
2021	Winter	Surface Water	Lake 18	Shore grab	L18	15U	547186	5694587	31-03-2021	12:30	2.9	6.88	0.111	111	33.3	4.25
2021	Winter	Surface Water	Jamie Lake	Canoe grab	SW-09	15U	547960	5673465	31-03-2021	13:00	3.4	6.90	0.083	-	48.5	6.42
2021	Winter	Surface Water	Lake 20	Canoe grab	L20	15U	552476	5683628	31-03-2021	14:30	3.9	6.01	0.101	101	0.07	0.09
2021	Winter	Surface Water	Lake 19	Canoe grab	L19	15U	551411	5694420	31-03-2021	15:00	3.4	6.97	0.121	121	49.9	6.64
2021	Winter	Surface Water	Birch Lake	Birch West	BIRCH-B1	15U	551072	5695883	21-03-2021	11:00	1.8	7.10	0.062	-	88.9	12.37
2021	Winter	Surface Water	Birch Lake	Birch East	BIRCH-B2	15U	551077	5695874	21-03-2021	15:00	2.2	7.24	0.061	-	85.6	11.83
2021	Winter	Surface Water	Lake 17	Lake 17	L17	15U	547679	5694300	31-03-2021	13:20	2.7	7.21	0.099	-	55	7.45
2021	Spring	Surface Water	Lake 18	Shore grab	L18	15U	547305	5694545	18-05-2021	10:45	20.2	7.84	-	78.6	99.9	9.02
2021	Spring	Surface Water	Lake 17	Shore grab	L17	15U	547718	5694248	19-05-2021	11:45	20.6	8.10	-	81.6	96.1	8.62
2021	Spring	Surface Water	Jamie Lake	Canoe grab	SW-09	15U	548019	5693461	19-05-2021	14:30	21.6	8.32	-	70.2	109.5	9.5
2021	Spring	Surface Water	Lake 1	Canoe grab	L1	15U	549500	5694580	20-05-2021	16:00	11.9	7.55	-	117.1	89.2	9.63
2021	Spring	Surface Water	Springpole Lake	Springpole Bay	L15 B1	15U	549761	5692989	21-05-2021	9:00	11.3	7.05	-	62.4	102.1	11.18
2021	Spring	Surface Water	Lake 5	Canoe grab	L5 (SW-26)	15U	549001	5693029	21-05-2021	10:30	14.8	7.96	-	106.4	88.3	8.97
2021	Spring	Surface Water	Lake 16	Shore grab	L16	15U	548011	5691677	21-05-2021	15:00	16.8	8.00	-	111.9	121.7	11.75
2021	Spring	Surface Water	Springpole Lake	Springpole Bay	L15 B4	15U	550203	569377	22-05-2021	12:30	10	7.20	-	62.3	98.6	11.15
2021	Spring	Surface Water	Springpole Lake	Springpole Bay	SW-15	15U	551880	5689794	22-05-2021	13:00	9.2	7.31	-	62.2	93.7	11.2
2021	Spring	Surface Water	Cromarty Lake	Canoe grab	SW-08	15U	548613	5686948	22-05-2021	14:30	14.5	7.46	-	55.6	98	10
2021	Spring	Surface Water	Springpole Lake	Springpole Bay	SW-25	15U	548494	5691594	22-05-2021	17:15	18.6	7.52	-	64.8	98.3	10.99
2021	Spring	Surface Water	Springpole Lake	Springpole East Arm	SW-16	15U	549976	569173	23-05-2021	-	13.5	7.12	-	54.8	98.6	10.26
2021	Spring	Surface Water	Springpole Lake	Springpole Bay	L15 B3	15U	549977	5691220	23-05-2021	8:30	10.3	6.54	-	92.2	98	11.04
2021	Spring	Surface Water	Birch River	Canoe grab	SW-22	15U	565364	5687539	23-05-2021	10:50	14.9	6.86	-	59.2	99.7	10.04
2021	Spring	Surface Water	Springpole Lake	Springpole East Arm	SW-27	15U	565175	5687984	23-05-2021	12:00	12.3	6.98	-	1.4	97.3	10.39
2021	Spring	Surface Water	Springpole Lake	Springpole Bay	L15 B5	15U	560004	5687594	23-05-2021	12:50	11.5	7.03	-	58.3	99.5	10.38
2021	Spring	Surface Water	Springpole Lake	Springpole East Arm	SW-07A	15U	552550	5687777	23-05-2021	14:00	14.5	7.21	-	57	99.8	10.16
2021	Spring	Surface Water	Birch Lake	Birch West	SW-24	15U	546385	5693619	23-05-2021	16:00	12.6	7.12	0.0596	59.6	102.1	10.86
2021	Spring	Surface Water	Birch Lake	Birch West	SW-18	15U	546846	5692116	23-05-2021	16:30	9.9	7.04	0.0566	56.6	100.1	11.32

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2021	Spring	Surface Water	Birch Lake	Birch West	SW-04	15U	543192	5693782	23-05-2021	17:00	11.2	7.29	0.0582	58.2	100.8	11.07
2021	Spring	Surface Water	Birch Lake	Birch West	SW-03	15U	547813	5685322	24-05-2021	8:30	9.6	6.31	0.0573	57.3	99.1	11.29
2021	Spring	Surface Water	Birch Lake	Birch East	SW-28	15U	553304	5698795	24-05-2021	10:00	9.7	7.01	0.0586	58.6	98.2	11.72
2021	Spring	Surface Water	Birch Lake	Birch East	SW-20	15U	555129	5694365	24-05-2021	-	9.6	7.26	0.0573	57.3	99.3	11.32
2021	Spring	Surface Water	Birch Lake	Birch West	BIRCH B2	15U	551077	5695874	24-05-2021	12:00	11.5	7.25	0.0619	61.9	100.8	10.94
2021	Spring	Surface Water	Dole Lake	Canoe grab	SW-21	15U	552120	5694873	24-05-2021	13:00	13.6	7.72	-	104.6	101.7	10.56
2021	Spring	Surface Water	Lake 19	Canoe grab	L19	15U	551411	5694420	24-05-2021	14:30	18.2	7.83	0.059	59	105.2	9.93
2021	Spring	Surface Water	Birch Lake	Birch East	SW-23	15U	548881	5695936	24-05-2021	17:00	9.7	7.63	0.0579	57.9	98.5	11.2
2021	Spring	Biota	Springpole Lake	Singpole East Arm	SW-16	15U	555640	5688631	12-06-2021	13:30	17.3	6.60	-	55.8	91	8.75
2021	Spring	Biota	Springpole Lake	Singpole East Arm	SW-07a	15U	532558	5687719	12-06-2021	12:45	17.4	9.94	-	57.6	92.2	8.87
2021	Spring	Biota	Cromarty Lake	Cromarty Lake	SW-08	15U	548609	5686943	12-06-2021	15:56	17.2	8.00	-	56.3	90.7	8.73
2021	Spring	Biota	Springpole Lake	Springpole Bay	SW-15	15U	551885	5689788	12-06-2021	16:50	16.2	7.87	-	61.2	98.6	9.69
2021	Spring	Biota	Birch River	Birch River	SW-22	15U	565365	5687546	12-06-2021	10:10	14.7	6.87	-	55.2	88.7	9
2021	Spring	Biota	Springpole Lake	Singpole East Arm	SW-27	15U	565143	5687989	12-06-2021	11:30	15.3	7.62	-	53.3	91.8	9.19
2021	Spring	Biota	Springpole Lake	Springpole Bay	SW-25	15U	548494	5691594	13-06-2021	12:01	16.7	7.70	-	62.6	97.4	9.48
2021	Spring	Biota	Lake 18	Shore Grab	L18	15U	547300	5694545	15-06-2021	14:45	23.2	7.80	-	64.6	98.6	8.45
2021	Spring	Biota	Lake 17	Shore Grab	L17	15U	547718	5694248	11-06-2021	10:10	14.5	7.42	-	72.8	68.2	6.94
2021	Spring	Biota	Lake 1	Canoe Grab	L1	15U	549562	5694604	11-06-2021	14:45	16.5	7.35	-	108.8	82.7	8.08
2021	Spring	Biota	Lake 5	Canoe Grab	L5 (SW-26)	15U	549604	5693026	11-06-2021	10:45	16.7	7.27	-	100.1	84.8	8.25
2021	Spring	Biota	Lake 19	Canoe Grab	L19	15U	551413	5694419	15-06-2021	11:15	19.5	7.87	0.059	59.3	104.4	9.58
2021	Spring	Biota	Lake 3	L-3	SW-09	15U	547847	5693452	14-06-2021	17:30	19	8.08	-	71.5	102.6	9.54
2021	Spring	Biota	Springpole Lake	Springpole East Arm	L15-B5	15U	560081	5687589	17-06-2021	07:55	16.6	7.92	-	55.6	95.5	9.27
2021	Spring	Biota	Lake 16	L-16	L16	15U	548018	5691619	14-06-2021	10:05	17.3	7.65	-	83.9	93.8	9.01
2021	Spring	Biota	Springpole Lake	Springpole Bay	L15-B2	15U	5510841	5692489	14-06-2021	11:00	16.4	7.59	-	62.7	98.7	9.66
2021	Spring	Biota	Springpole Lake	Springpole Bay	L15-B6	15U	549084	5690246	13-06-2021	13:00	17	8.00	-	63	94.4	9.14
2021	Spring	Biota	Springpole Lake	Springpole Bay	L15-B4	15U	549084	5690246	13-06-2021	13:00	17.2	7.75	-	62.5	94.9	9.2
2021	Spring	Biota	Springpole Lake	Springpole Bay	L15-B3	15U	54998	5691731	13-06-2021	11:00	16.5	7.85	-	62.5	97.1	9.45
2021	Spring	Biota	Springpole Lake	Springpole Bay	L15-B1	15U	549761	5693008	13-06-2021	8:00	16.4	6.48	-	66.3	97	9.49
2021	Spring	Biota	Dole Lake	Dole Lake	SW-21	15U	552211	5694805	09-06-2021	16:00	20.9	8.12	-	107.3	97.8	8.74
2021	Spring	Biota	Birch Lake	Birch East	SW-23	15U	549880	5695924	09-06-2021	17:30	16.9	7.55	0.0583	58.3	101.5	9.84
2021	Spring	Biota	Birch Lake	Birch West	SW-18	15U	546848	5692115	10-06-2021	10:55	16.1	7.81	0.0577	57.7	98	9.66
2021	Spring	Biota	Birch Lake	Birch East	SW-20	15U	555133	5694360	08-06-2021	12:30	19.9	7.90	0.0592	59.2	107.4	9.76
2021	Spring	Biota	Birch Lake	Birch East	SW-28	15U	553004	5698795	08-06-2021	15:58	21.3	7.93	0.0603	60.3	106.7	9.45
2021	Spring	Biota	Birch Lake	Birch East	SW-19b	15U	551083	5695879	08-06-2021	17:45	18.3	6.43	0.0597	59.7	105.8	9.98
2021	Spring	Biota	Birch Lake	Birch West	SW-03	15U	547809	5695317	10-06-2021	9:00	15.4	8.12	0.0578	57.8	96.8	9.69
2021	Spring	Biota	Birch Lake	Birch West	SW-24	15U	546385	5693620	10-06-2021	10:05	16.2	7.82	0.0579	57.9	97.8	9.62
2021	Spring	Biota	Birch Lake	Birch West	SW-04	15U	543190	5693704	15-06-2021	09:35	16.8	7.60	0.0575	57.5	97.7	9.44
2021	Spring	Biota	Birch Lake	Birch East	BIRCH-B1	15U	551072	5695877	08-06-2021	14:00	17.3	7.74	0.0591	59.1	102.8	9.88
2021	Spring	Biota	Birch Lake	Birch West	BIRCH-B2	15U	546129	5695576	15-06-2021	8:30	16	7.93	0.0574	57.4	97.7	9.67
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L15-B1	15U	549756	5693041	28-07-2021	09:30	21.5	8.26	0.062	62	100.5	8.89
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L15-B2	15U	551082	5692486	01-08-2021	08:50	20.3	7.79	0.062	62	96.4	8.67
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L15-B3	15U	549969	5691751	28-07-2021	11:40	22	8.29	0.062	62	101.3	8.85
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L15-B4	15U	550186	5690390	29-07-2021	10:15	20.8	7.91	0.062	62	97.5	8.73
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	L15-B5	15U	559987	5687597	31-07-2021	09:30	20.5	7.60	0.057	57	92.2	8.31
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L15-B6	15U	549060	5690232	29-07-2021	08:45	20.7	7.90	0.062	62	97.1	8.71
2021	Summer	Surface Water	Lake 1	Canoe Grab	L1	15U	549567	5694608	31-07-2021	17:22	21.6	7.99	0.117	-	95.3	8.4

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2021	Summer	Surface Water	Round Lake (Lake 2)	Shoreline profile	L2	15U	-	-	29-07-2021	15:25	22.5	8.38	0.113	-	114.1	9.87
2021	Summer	Surface Water	Lake 5	Shoreline profile	L5 (SW-26)	15U	549001	5693026	01-08-2021	10:45	20.6	7.68	0.101	-	100.3	9.04
2021	Summer	Surface Water	Lake 16	Shoreline sample	L16	15U	548014	5691622	01-08-2021	12:25	20.6	7.69	0.094	-	89.6	8.04
2021	Summer	Surface Water	Birch Lake	Birch East	BIRCH-B1	15U	551079	5695907	30-07-2021	09:50	20.3	7.80	0.058	58	96.3	8.7
2021	Summer	Surface Water	Birch Lake	Birch West	BIRCH-B2	15U	546139	5695588	27-07-2021	11:30	20.8	7.92	0.058	58	97.3	8.7
2021	Summer	Surface Water	Birch Lake	Birch West	SW-03	15U	547824	5695355	27-07-2021	10:15	21	7.99	0.058	58	97.8	8.72
2021	Summer	Surface Water	Birch Lake	Birch West	SW-04	15U	543173	5693716	27-07-2021	14:50	21.2	8.02	0.058	58	99.6	8.85
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	SW-07a	15U	552548	5687789	31-07-2021	14:10	20.9	7.77	0.058	58	94.7	8.46
2021	Summer	Surface Water	Cromarty Lake	Cromarty Lake	SW-08	15U	548609	5686934	29-07-2021	13:30	21.5	7.75	0.058	-	95.1	8.4
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	SW-15	15U	551871	5689793	29-07-2021	12:20	21.3	8.18	0.061	61	100.8	8.94
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	SW-16	15U	555648	5688616	31-07-2021	13:35	20.7	7.77	0.058	58	94.6	8.48
2021	Summer	Surface Water	Birch Lake	Birch West	SW-18	15U	546848	5692116	27-07-2021	14:05	21.4	8.09	0.058	58	100.6	8.9
2021	Summer	Surface Water	Birch lake	Birch East	SW-20	15U	555143	5694373	30-07-2021	12:22	20.6	7.93	0.058	58	96.7	8.69
2021	Summer	Surface Water	Dole Lake	Birch East	SW-21	15U	552235	5694804	30-07-2021	11:30	20.5	8.47	0.105	-	98.4	8.85
2021	Summer	Surface Water	Birch River	Birch River	SW-22	15U	565361	5687541	31-07-2021	12:00	20.7	7.63	0.057	-	91.7	8.21
2021	Summer	Surface Water	Birch Lake	Birch East	SW-23	15U	549887	5695935	30-07-2021	09:15	19.9	8.34	0.058	58	95.4	8.66
2021	Summer	Surface Water	Birch Lake	Birch West	SW-24	15U	546390	5693628	27-07-2021	13:40	21.5	8.02	0.058	58	99.9	8.82
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	SW-25	15U	548464	5691600	28-07-2021	14:15	21.6	8.43	0.062	62	100.8	8.88
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	SW-27	15U	565183	5687989	31-07-2021	10:50	20.7	7.68	0.057	57	92.2	8.26
2021	Summer	Surface Water	Birch Lake	Birch East	SW-28	15U	553016	5698795	30-07-2021	13:30	20.8	7.86	0.058	58	96.4	8.63
2021	Summer	Surface Water	Birch Lake	Birch West	SW-03	15U	547812	5695322	28-08-2021	10:36	18	7.71	0.058	58	92.3	8.75
2021	Summer	Surface Water	Birch Lake	Birch West	SW-24	15U	546385	5693619	28-08-2021	11:17	18	7.71	0.058	58	91.6	8.67
2021	Summer	Surface Water	Birch Lake	Birch West	SW-18	15U	546848	5692116	28-08-2021	11:47	17.8	7.66	0.058	58	91.9	8.73
2021	Summer	Surface Water	Birch Lake	Birch West	SW-04	15U	543192	5693702	28-08-2021	13:11	18.1	7.74	0.058	58	93.8	8.6
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	SW-15	15U	551879	5689794	29-08-2021	9:21	18	7.81	0.061	61	93.8	8.89
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	SW-25	15U	548485	5691593	29-08-2021	10:40	18.2	7.66	0.062	62	92.9	8.76
2021	Summer	Surface Water	Lake 16	Shore grab	L16	15U	548008	5691627	29-08-2021	11:26	17.4	7.79	0.094	-	86.1	8.25
2021	Summer	Surface Water	Lake 5	Canoe grab	L5 (SW-26)	15U	548885	5692917	29-08-2021	14:09	18.8	7.85	0.102	-	107.2	9.97
2021	Summer	Surface Water	Lake 18	Shore grab	L18	15U	547250	5694639	30-08-2021	14:36	19.3	7.81	0.077	77	92.8	8.55
2021	Summer	Surface Water	Jamie Lake	Canoe grab	SW-09	15U	547851	5693455	30-08-2021	15:57	18.5	8.26	0.072	-	103.3	9.67
2021	Summer	Surface Water	Lake 1	Canoe grab	L1	15U	549559	5694597	30-08-2021	17:16	19.7	8.16	0.122	-	92	8.4
2021	Summer	Surface Water	Birch River	Canoe grab	SW-22	15U	565178	5687986	31-08-2021	10:03	18.2	7.82	0.057	-	91.7	8.64
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	SW-27	15U	565178	5687986	31-08-2021	10:53	18.5	7.97	0.057	57	94.1	8.82
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	SW-16	15U	555632	5688624	31-08-2021	13:06	18.9	7.91	0.058	58	97.7	9.09
2021	Summer	Surface Water	Springpole Lake	Springpole East Arm	SW-07A	15U	552550	5687777	31-08-2021	13:49	18.8	8.00	0.059	59	100.3	9.33
2021	Summer	Surface Water	Cromarty Lake	Canoe grab	SW-08	15U	548613	5686939	31-08-2021	15:04	22	8.05	0.06	-	104.9	9.17
2021	Summer	Surface Water	Birch Lake	Birch East	SW-28	15U	553004	5698795	01-09-2021	9:04	18.2	8.20	0.059	59	94.4	8.89
2021	Summer	Surface Water	Birch Lake	Birch East	SW-20	15U	555129	5694365	01-09-2021	10:25	18.8	8.29	0.058	58	99.1	9.23
2021	Summer	Surface Water	Dole Lake	Canoe grab	SW-21	15U	552211	5694797	01-09-2021	11:13	19.1	8.14	0.106	-	96.2	8.89
2021	Summer	Surface Water	Lake 19	Canoe grab	L19	15U	551411	5694420	01-09-2021	12:08	19.6	8.61	0.071	71	112.1	10.27
2021	Summer	Surface Water	Birch Lake	Birch East	SW-23	15U	549891	5695936	01-09-2021	13:55	18.9	8.84	0.058	58	95.1	8.85
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L-15-B3	15U	549992	5691768	28-08-2021	15:04	18.4	7.84	0.062	-	94.4	8.86
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L-15-B1	15U	549742	5693020	28-08-2021	16:39	18.5	7.87	0.062	-	95.2	8.92
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L-15-B4	15U	550208	5690373	29-08-2021	10:00	18.1	7.76	0.062	-	93.7	8.86
2021	Summer	Surface Water	Springpole Lake	Springpole Bay	L-15-B5	15U	559964	5687621	31-08-2021	11:54	18.9	7.70	0.057	-	95.2	8.62
2021	Summer	Surface Water	Birch Lake	Birch East	BIRCH-B1	15U	551080	5695887	01-09-2021	12:52	18.5	7.97	0.058	-	94.2	8.82

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2021	Fall	Biota	Birch Lake	Birch West	SW-03	15U	547812	5695322	22-09-2021	15:45	15.28	7.49	0.058	58	128.1	12.84
2021	Fall	Biota	Birch Lake	Birch West	SW-04	15U	543192	5693702	22-09-2021	16:00	15.26	7.48	0.058	58	127.3	12.77
2021	Fall	Biota	Springpole Lake	Springpole East Arm	SW-07A	15U	552550	5687777	22-09-2021	13:30	13.79	7.44	0.057	57	108.5	11.2
2021	Fall	Biota	Cromarty Lake	Canoe grab	SW-08	15U	548613	5686939	27-09-2021	12:30	13.31	7.42	0.057	-	98.4	10.33
2021	Fall	Biota	Jamie Lake	Canoe grab	SW-09	15U	547851	5693455	29-09-2021	10:15	14.2	7.47	0.069	-	103.4	10.63
2021	Fall	Biota	Birch Lake	Birch West	SW-18	15U	546848	5692116	22-09-2021	14:15	15.01	7.40	0.058	58	126	12.7
2021	Fall	Biota	Springpole Lake	Springpole Bay	SW-15	15U	551879	5689794	27-09-2021	11:45	14.37	7.34	0.062	62	106.1	10.7
2021	Fall	Biota	Springpole Lake	Springpole East Arm	SW-16	15U	555632	5688624	28-09-2021	18:00	15.47	7.26	0.058	58	103.4	10.31
2021	Fall	Biota	Birch Lake	Birch East	SW-20	15U	555129	5694365	24-09-2021	13:45	14.86	7.38	0.058	58	95.4	9.67
2021	Fall	Biota	Dole Lake	Canoe grab	SW-21	15U	552211	5694797	24-09-2021	16:45	14.91	7.61	0.106	-	98.6	9.96
2021	Fall	Biota	Birch River	Canoe grab	SW-22	15U	565364	5687539	28-09-2021	16:30	15.07	7.20	0.057	-	98.3	9.9
2021	Fall	Biota	Birch Lake	Birch East	SW-23	15U	549891	5695936	24-09-2021	17:30	15.11	7.34	0.038	58	101.2	10.2
2021	Fall	Biota	Birch Lake	Birch West	SW-24	15U	546385	5693619	22-09-2021	13:45	15.27	7.35	0.058	58	127.5	12.79
2021	Fall	Biota	Springpole Lake	Springpole Bay	SW-25	15U	548485	5691593	23-09-2021	9:45	14.71	7.26	0.062	62	94.1	9.54
2021	Fall	Biota	Springpole Lake	Springpole East Arm	SW-27	15U	565178	5687986	28-09-2021	15:30	15.36	7.28	0.057	57	99.6	9.96
2021	Fall	Biota	Birch Lake	Birch East	SW-28	15U	553004	5698795	24-09-2021	13:15	15.3	7.24	0.059	59	69.1	6.82
2021	Fall	Biota	Lake 17	Lake 17	L17	15U	547676	5694293	29-09-2021	12:45	13.72	6.98	0.101	-	89.1	9.26
2021	Fall	Biota	Lake 19	Canoe grab	L19	15U	551443	5694480	01-10-2021	16:30	16.91	8.00	0.072	72	113.2	10.95
2021	Fall	Biota	Lake 18	Lake 18	L18	15U	547320	5694732	30-09-2021	12:00	16.21	6.84	0.076	-	103.5	10.17
2021	Fall	Biota	Birch Lake	Birch West	BIRCH-B2	15U	546131	5695571	22-09-2021	10:45	14.98	7.17	0.058	-	120.2	12.14
2021	Fall	Biota	Birch Lake	Birch East	BIRCH-B1	15U	551072	5695883	01-10-2021	-	15.63	7.11	0.058	-	102.7	10.21
2021	Fall	Biota	Springpole Lake	Springpole Bay	L-15-B1	15U	549742	5693020	26-09-2021	-	14.82	7.37	0.062	-	102.1	10.36
2021	Fall	Biota	Springpole Lake	Springpole Bay	L-15-B2	15U	551082	5692486	26-09-2021	-	14.49	7.27	0.062	-	96.4	9.82
2021	Fall	Biota	Springpole Lake	Springpole Bay	L-15-B3	15U	549977	5691720	23-09-2021	11:15	15.03	7.35	0.062	-	116.7	11.77
2021	Fall	Biota	Springpole Lake	Springpole Bay	L-15-B4	15U	550203	5690377	25-09-2021	13:45	14.59	7.11	0.062	-	110.6	11.24
2021	Fall	Biota	Springpole Lake	Springpole Southeastern Arm	L-15-B5	15U	560004	5687594	28-09-2021	-	14.66	7.32	0.057	-	95.4	9.67
2021	Fall	Biota	Springpole Lake	Springpole Bay	L-15-B6	15U	549079	5690237	25-09-2021	9:00	14.44	6.92	0.062	-	105.4	10.75
2021	Fall	Surface Water	Birch Lake	Birch East	SW-20	15U	555129	5694365	18-10-2021	15:30	12.8	7.45	0.0596	59.6	87.7	9.28
2021	Fall	Surface Water	Birch Lake	Birch East	SW-23	15U	549912	5695925	18-10-2021	11:30	13.1	7.38	0.0598	59.8	87.9	9.23
2021	Fall	Surface Water	Birch Lake	Birch East	SW-28	15U	553002	5698811	18-10-2021	15:45	13	7.54	0.0603	60.3	92.2	9.7
2021	Fall	Surface Water	Birch Lake	Birch West	SW-03	15U	547813	5695322	18-10-2021	16:40	12.9	7.65	0.0596	59.6	93.5	9.87
2021	Fall	Surface Water	Birch Lake	Birch West	SW-18	15U	546866	5692117	18-10-2021	10:30	12.1	7.32	0.0593	59.3	91.1	9.79
2021	Fall	Surface Water	Birch Lake	Birch West	SW-24	15U	546376	5693615	18-10-2021	10:10	12.6	7.34	0.0595	59.5	90.9	9.66
2021	Fall	Surface Water	Birch River	Canoe grab	SW-22	15U	565366	5687545	16-10-2021	11:13	13.2	8.19	-	59.4	86.5	9.08
2021	Fall	Surface Water	Springpole Lake	Springpole East Arm	SW-16	15U	555637	5688630	16-10-2021	12:30	12.4	7.40	-	59.2	87.6	9.36
2021	Fall	Surface Water	Springpole Lake	Springpole East Arm	SW-07A	15U	552557	5687792	16-10-2021	13:15	11.7	7.59	-	59.3	91.4	9.91
2021	Fall	Surface Water	Cromarty Lake	Canoe grab	SW-08	15U	548605	5686923	16-10-2021	14:05	11.7	8.12	-	58.7	90.4	10.03
2021	Fall	Surface Water	Jamie Lake	Canoe grab	SW-09	15U	547851	5693467	17-10-2021	12:00	9.1	7.63	-	73.7	88.5	10.22
2021	Fall	Surface Water	Lake 1	Canoe Grab	L1	15U	549539	5694599	17-10-2021	15:30	10.9	7.82	-	126.9	87.6	9.66
2021	Fall	Surface Water	Lake 16	L16	L16	15U	548001	5691671	16-10-2021	15:30	12	7.86	-	98.5	87.9	9.35
2021	Fall	Surface Water	Lake 17	L17	L17	15U	547678	5694287	17-10-2021	10:30	10.4	7.11	-	105.9	60	6.7
2021	Fall	Surface Water	Lake 18	L18	L18	15U	547306	5694713	17-10-2021	9:30	9.9	7.70	-	80.2	81.3	9.18
2021	Fall	Surface Water	Lake 19	Canoe Grab	L19	15U	551411	5694473	18-10-2021	14:30	9.4	8.03	0.074	74.2	99.7	11.41
2021	Fall	Surface Water	Lake 5	L5	L5(SW-26)	15U	548885	5692917	16-10-2021	16:00	11.1	7.83	-	110.2	85.9	9.44
2021	Fall	Surface Water	Springpole Lake	Springpole East Arm	SW-27	15U	565192	5687989	16-10-2021	10:30	12.9	7.41	-	58.5	87.3	9.21
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	SW-15	15U	551875	5699804	14-10-2021	15:15	13.6	7.72	-	63.4	91.9	9.55

Sampling Year	Program (Season)	Program	Waterbody	Area/Location/Site	ID	Coordinates			Date (dd/mm/yy)	Time (Military)	Water Temperature (°C)	pH	Conductivity (ms/cm[c])	Conductivity (us/cm)	DO (%)	DO (mg/L)
2021	Fall	Surface Water	Dole Lake	Canoe Grab	SW-21	15U	552211	5694797	18-10-2021	14:00	12.2	8.31	-	109.8	91.7	9.8
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	SW-25	15U	548484	5691602	15-10-2021	16:00	13.6	7.66	-	63.6	91.8	9.55
2021	Fall	Surface Water	Birch Lake	Birch West	SW-04	15U	543211	5693705	18-10-2021	11:00	12.4	7.44	0.0594	59.4	92.2	9.85
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	L-15-B1	15U	549772	5693018	15-10-2021	16:30	13.4	7.71	-	63.7	93.2	9.67
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	L-15-B2	15U	551081	5692504	14-10-2021	13:25	13.9	7.91	-	63.8	93.3	9.69
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	L-15-B3	15U	550884	5691755	15-10-2021	14:30	13.6	7.51	-	63.7	90.7	9.43
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	L-15-B4	15U	550198	5690397	14-10-2021	16:00	13.8	7.51	-	63.6	87.8	9.09
2021	Fall	Surface Water	Springpole Lake	Springpole East Arm	L-15-B5	15U	559997	5697639	16-10-2021	9:30	13.3	7.41	-	57.8	86.2	9.02
2021	Fall	Surface Water	Springpole Lake	Springpole Bay	L-15-B6	15U	549087	5690242	15-10-2021	13:15	13.6	7.59	-	63.5	90.2	9.39
2021	Fall	Surface Water	Birch Lake	Birch East	Birch B2	15U	551085	5695911	18-10-2021	12:00	13.2	7.24	-	59.9	87.5	9.18
2021	Fall	Surface Water	Birch Lake	Birch West	Birch B1	15U	546123	5695596	18-10-2021	9:30	12.9	7.53	-	59.3	88.5	9.35
2021	Fall	Habitat Mapping	Springpole Lake	Springpole East Arm	ISL-1	15U	560118	5687266	28-09-2021	12:00	14.71	7.08	0.057	57	95.5	9.68
2021	Fall	Habitat Mapping	Springpole Lake	Springpole East Arm	ISL-2	15U	559777	5687277	28-09-2021	12:00	14.47	6.98	0.057	57	94	9.57
2021	Fall	Habitat Mapping	Springpole Lake	Springpole East Arm	ISL-3	15U	559397	5687683	28-09-2021	12:00	14.47	6.98	0.057	57	94	9.57
2019	Summer		Waterbody 2	WB02-OUT-DS	L2-OUT-DS-MF1	15U	550065	5693978	18-07-2019	11:20	21.4	6.53	N/R	64.5	103.2	8.58
2019	Summer		Stream 9	S-9	S9	15U	-	-	16-07-2019	11:40	20.7	6.19	N/R	61.5	70.7	5.99
2019	Summer		Stream 9	S-9-US	S9-US01-EF	15U	552890	5690556	17-07-2019	12:20	20.1	6.13	N/R	85.7	8.7	0.68
2019	Summer		Waterbody 5	WB05-OUT	L5-OUT	15U	-	-	18-07-2019	15:00	16.9	6.09	N/R	87	66.3	6.03
2019	Summer		Waterbody 5	WB05-OUT U/S cel	L5-OUT	15U	-	-	19-07-2019	9:00	15.3	6.13	N/R	83.6	36.3	6.42
2019	Summer		Birch River	BR-KM22	BR-KM22-GN1	15U	565146	5687843	22-07-2019	13:20	21	6.71	N/R	53.7	98.7	8.44
2019	Summer		Springpole Lake	10 m from outflow		15U	-	-	18-07-2019	15:15	21.9	7.04	N/R	65	110.5	8.87
2019	Summer		Stream 9	S-9-US02	S9-US02	15U	-	-	17/07/19	9:30	19.6	5.83	-	16.3	41.2	3.45
2019	Summer		Springpole Lake	UNX07	UNX07-MF1	15U	566238	5688926	22-07-2019	11:20	11.7	4.56	N/R	23.4	84.2	8.75
2019	Summer		Springpole Lake	UNX07	UNX07-GN1	15U	566184	5688926	22-07-2019	11:35	20.7	6.81	N/R	52.4	100.8	8.44
2019	Summer		Springpole Lake	UNX07-KM20.1	UNX07-KM20.1	15U	-	-	22-07-2019	11:00	11.1	4.50	N/R	22.7	77.1	8.02
2019	Summer		Springpole Lake	UNX07	UNX07	15U	-	-	23-07-2019	10:00	12.2	4.81	N/R	23.4	78.9	8.1
2019	Summer		Waterbody 16	WB16-IN	L16-IN	15U	-	-	19-07-2019	13:40	10.9	5.97	N/R	57.7	36.1	3.86
2019	Summer		Waterbody 16	WB16	L16	15U	-	-	19-07-2019	14:00	22.8	6.86	N/R	96.5	96.6	7.94
2019	Fall		Stream 9	S-9-US	S9-US01	15U	552881	5690537	11-09-2019	15:30	12.35	6.82	N/R	154	18.9	2.03
2019	Fall		Stream 9	S-9-US	S9-US02	15U	552452	5690331	12-09-2019	11:00	12.09	7.40	N/R	125	82	8.78
2019	Fall		Stream 9	S-9	S9	15U	552233	5390200	10-09-2019	12:25	10.38	7.12	N/R	123	50.4	5.61
2019	Fall		Waterbody 2	WB02-OUT US xing	L2-OUT	15U	-	-	17-09-2019	9:00	12.74	7.38	0.225	172	48.5	5.09
2019	Fall		Waterbody 2	WB02-OUT	L2-OUT	15U	550065	5693966	17-09-2019	9:30	9.57	7.16	N/R	145	65.6	7.59
2019	Fall		Waterbody 5	WB05-OUT	L5-OUT	15U	549155	5693173	13-09-2019	10:00	11.1	7.48	N/R	157	50.7	5.55
2019	Fall		Waterbody 6	WB06-OUT	L6-OUT	15U	547853	5692119	14-09-2019	13:30	8.68	7.35	0.21	145	60.4	7.04
2019	Fall		Waterbody 16	WB16-IN	L16-IN	15U	547823	5692110	14-09-2019	12:00	8.16	7.24	N/R	143	57.8	6.76
2019	Fall		Springpole Lake	off dock camp	-	-	-	-	17-07-2019	-	16.62	8.14	0.189	158	97.7	9.47

Notes:
"-" represents no measurement taken
pH does not meet the PWQO and CWQG
DO % below PWQO (47%)
DO mg/L below CWQG (5.5 - 9.5 mg/L)
DO mg/L above CWQG (5.5 - 9.5 mg/L)

Table E2-1: Springpole and Birch Lake Phytoplankton Sample Results

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2023	Springpole Lake	L-15-B1	March	Chrysophyceae	small chrysophytes		Single Cell	15000	64	960000
2023	Springpole Lake	L-15-B1	March	Dinophyceae	Gymnodinium	sp.	Single Cell	2000	4500	9000000
2023	Springpole Lake	L-15-B1	March	Cyanophyceae	Aphanocapsa	sp.	Colony	2000	1000	2000000
2023	Springpole Lake	L-15-B1	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	25000	2880	72000000
2023	Springpole Lake	L-15-B1	March	Cryptophyceae	Unidentified		Single Cell	44000	324	14256000
2023	Springpole Lake	L-15-B1	March	Chlorophyceae	Unidentified		Single Cell	10000	125	1250000
2023	Springpole Lake	L-15-B1	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	15000	120	1800000
2023	Springpole Lake	L-15-B1	March	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	960	960000
2023	Springpole Lake	L-15-B2	March	Cyanophyceae	Pseudanabaena	sp.	Filament	1000	440	440000
2023	Springpole Lake	L-15-B2	March	Dinophyceae	Peridinium	sp.	Single Cell	1000	10000	10000000
2023	Springpole Lake	L-15-B2	March	Chrysophyceae	small chrysophytes		Single Cell	74000	64	4736000
2023	Springpole Lake	L-15-B2	March	Chlorophyceae	Unidentified		Single Cell	15000	125	1875000
2023	Springpole Lake	L-15-B2	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	1000	12000	12000000
2023	Springpole Lake	L-15-B2	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	15000	120	1800000
2023	Springpole Lake	L-15-B2	March	Cryptophyceae	Unidentified		Single Cell	34000	324	11016000
2023	Springpole Lake	L-15-B3	March	Chrysophyceae	small chrysophytes		Single Cell	39000	64	2496000
2023	Springpole Lake	L-15-B3	March	Dinophyceae	Gymnodinium	sp.	Single Cell	1000	12000	12000000
2023	Springpole Lake	L-15-B3	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	2880	28800000
2023	Springpole Lake	L-15-B3	March	Cryptophyceae	Unidentified		Single Cell	44000	324	14256000
2023	Springpole Lake	L-15-B3	March	Chlorophyceae	Unidentified		Single Cell	5000	125	625000
2023	Springpole Lake	L-15-B3	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	5000	120	600000
2023	Springpole Lake	L-15-B3	March	Cyanophyceae	Aphanizomenon	sp.	Filament	2000	960	1920000
2023	Springpole Lake	L-15-B4	March	Chrysophyceae	small chrysophytes		Single Cell	113000	64	7232000
2023	Springpole Lake	L-15-B4	March	Bacillariophyceae	Cyclotella	sp.	Single Cell	10000	500	5000000
2023	Springpole Lake	L-15-B4	March	Cyanophyceae	Aphanizomenon	sp.	Filament	2000	960	1920000
2023	Springpole Lake	L-15-B4	March	Cryptophyceae	Unidentified		Single Cell	83000	324	26892000
2023	Springpole Lake	L-15-B4	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	5000	120	600000
2023	Springpole Lake	L-15-B4	March	Bacillariophyceae	Melosira	sp.	Filament	2000	3600	7200000
2023	Springpole Lake	L-15-B4	March	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	108	540000
2023	Springpole Lake	L-15-B4	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	15000	2880	43200000
2023	Springpole Lake	L-15-B4	March	Chlorophyceae	Unidentified		Single Cell	39000	125	4875000
2023	Springpole Lake	L-15-B5	March	Bacillariophyceae	Cyclotella	sp.	Single Cell	10000	500	5000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2023	Springpole Lake	L-15-B5	March	Bacillariophyceae	Nitzschia	sp.	Single Cell	1000	640	640000
2023	Springpole Lake	L-15-B5	March	Chlorophyceae	Scenedesmus	quadricauda	Single Cell	4000	160	640000
2023	Springpole Lake	L-15-B5	March	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	960	960000
2023	Springpole Lake	L-15-B5	March	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	108	540000
2023	Springpole Lake	L-15-B5	March	Chlorophyceae	Unidentified		Single Cell	10000	125	1250000
2023	Springpole Lake	L-15-B5	March	Cryptophyceae	Unidentified		Single Cell	29000	324	9396000
2023	Springpole Lake	L-15-B5	March	Chrysophyceae	small chrysophytes		Single Cell	59000	64	3776000
2023	Springpole Lake	L-15-B5	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	5000	5625	28125000
2023	Springpole Lake	L-15-B5	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	10000	120	1200000
2023	Springpole Lake	L-15-B6	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	5000	120	600000
2023	Springpole Lake	L-15-B6	March	Chlorophyceae	Unidentified		Single Cell	5000	125	625000
2023	Springpole Lake	L-15-B6	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	2880	28800000
2023	Springpole Lake	L-15-B6	March	Chrysophyceae	small chrysophytes		Single Cell	83000	64	5312000
2023	Springpole Lake	L-15-B6	March	Cryptophyceae	Unidentified		Single Cell	44000	324	14256000
2023	Springpole Lake	SW-01B	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	25000	2880	72000000
2023	Springpole Lake	SW-01B	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	25000	120	3000000
2023	Springpole Lake	SW-01B	March	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	108	540000
2023	Springpole Lake	SW-01B	March	Chrysophyceae	small chrysophytes		Single Cell	162000	64	10368000
2023	Springpole Lake	SW-01B	March	Chlorophyceae	Unidentified		Single Cell	59000	125	7375000
2023	Springpole Lake	SW-01B	March	Cryptophyceae	Unidentified		Single Cell	113000	324	36612000
2023	Springpole Lake	SW-01B	March	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	960	960000
2023	Springpole Lake	SW-01B	March	Bacillariophyceae	Cyclotella	sp.	Single Cell	5000	500	2500000
2023	Springpole Lake	SW-01B	March	Dinophyceae	Gymnodinium	sp.	Single Cell	10000	4500	45000000
2023	Birch Lake	BIRCH-B1	March	Cryptophyceae	Unidentified		Single Cell	10000	324	3240000
2023	Birch Lake	BIRCH-B1	March	Cyanophyceae	Aphanizomenon	sp.	Filament	5000	2160	10800000
2023	Birch Lake	BIRCH-B1	March	Chrysophyceae	small chrysophytes		Single Cell	34000	64	2176000
2023	Birch Lake	BIRCH-B1	March	Bacillariophyceae	Melosira	sp.	Filament	18000	4800	86400000
2023	Birch Lake	BIRCH-B1	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	5625	56250000
2023	Birch Lake	BIRCH-B2	March	Cyanophyceae	Aphanizomenon	sp.	Filament	6000	1040	6240000
2023	Birch Lake	BIRCH-B2	March	Cryptophyceae	Unidentified		Single Cell	15000	324	4860000
2023	Birch Lake	BIRCH-B2	March	Chrysophyceae	small chrysophytes		Single Cell	59000	64	3776000
2023	Birch Lake	BIRCH-B2	March	Bacillariophyceae	Melosira	sp.	Filament	10000	7360	73600000
2023	Birch Lake	BIRCH-B2	March	Bacillariophyceae	Asterionella	formosa	Single Cell	1000	720	720000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2023	Birch Lake	BIRCH-B2	March	Chlorophyceae	Unidentified		Single Cell	5000	125	625000
2023	Birch Lake	BIRCH-B2	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	5000	2880	14400000
2023	Birch Lake	SW-23	March	Chrysophyceae	small chrysophytes		Single Cell	44000	64	2816000
2023	Birch Lake	SW-23	March	Bacillariophyceae	Cyclotella	sp.	Single Cell	1000	4000	4000000
2023	Birch Lake	SW-23	March	Bacillariophyceae	Melosira	sp.	Filament	11000	6400	70400000
2023	Birch Lake	SW-23	March	Cryptophyceae	Cryptomonas	sp.	Single Cell	5000	5625	28125000
2023	Birch Lake	SW-23	March	Cryptophyceae	Unidentified		Single Cell	54000	324	17496000
2023	Birch Lake	SW-23	March	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	108	540000
2023	Birch Lake	SW-23	March	Chlorophyceae	Unidentified		Single Cell	10000	125	1250000
2023	Birch Lake	SW-23	March	Chlorophyceae	Monoraphidium	sp.	Single Cell	5000	120	600000
2023	Birch Lake	SW-23	March	Dinophyceae	Peridinium	sp.	Single Cell	1000	150000	150000000
2022	Springpole Lake	L-15-B1	June	Cyanophyceae	Aphanizomenon	sp.	Filament	3000	1280	3840000
2022	Springpole Lake	L-15-B1	June	Bacillariophyceae	Synedra	sp.	Single Cell	34000	675	22950000
2022	Springpole Lake	L-15-B1	June	Dinophyceae	Gymnodinium	sp.	Single Cell	15000	4500	67500000
2022	Springpole Lake	L-15-B1	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	137000	500	68500000
2022	Springpole Lake	L-15-B1	June	Cyanophyceae	Planktolyngbya	sp.	Filament	5000	960	4800000
2022	Springpole Lake	L-15-B1	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	20000	120	2400000
2022	Springpole Lake	L-15-B1	June	Chrysophyceae	Dinobryon	suecicum	Single Cell	15000	144	2160000
2022	Springpole Lake	L-15-B1	June	Cyanophyceae	Pseudanabaena	sp.	Filament	20000	1060	21200000
2022	Springpole Lake	L-15-B1	June	Cyanophyceae	Limnothrix	sp.	Filament	1000	990	990000
2022	Springpole Lake	L-15-B1	June	Bacillariophyceae	Melosira	sp.	Filament	7000	11840	82880000
2022	Springpole Lake	L-15-B1	June	Bacillariophyceae	Synedra	ulna	Single Cell	1000	4800	4800000
2022	Springpole Lake	L-15-B1	June	Dinophyceae	Peridinium	sp.	Single Cell	1000	18750	18750000
2022	Springpole Lake	L-15-B1	June	Chrysophyceae	Dinobryon	sp.	Single Cell	29000	540	15660000
2022	Springpole Lake	L-15-B1	June	Chrysophyceae	Mallomonas	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B1	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B1	June	Cryptophyceae	Unidentified		Single Cell	547000	324	177228000
2022	Springpole Lake	L-15-B1	June	Bacillariophyceae	Asterionella	formosa	Single Cell	49000	720	35280000
2022	Springpole Lake	L-15-B1	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	83000	12000	996000000
2022	Springpole Lake	L-15-B1	June	Chrysophyceae	small chrysophytes		Single Cell	1800000	64	115200000
2022	Springpole Lake	L-15-B1	June	Bacillariophyceae	Diatoma	sp.	Single Cell	2000	1250	2500000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	167000	500	83500000
2022	Springpole Lake	L-15-B4	June	Dinophyceae	Peridinium	sp.	Single Cell	1000	18750	18750000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B4	June	Chrysophyceae	Dinobryon	sp.	Single Cell	118000	540	63720000
2022	Springpole Lake	L-15-B4	June	Chrysophyceae	small chrysophytes		Single Cell	2030000	64	129920000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Asterionella	formosa	Single Cell	49000	720	35280000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Diatoma	sp.	Single Cell	4000	1250	5000000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	26000	1440	37440000
2022	Springpole Lake	L-15-B4	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B4	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	25000	12000	300000000
2022	Springpole Lake	L-15-B4	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	25000	120	3000000
2022	Springpole Lake	L-15-B4	June	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	108	540000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	15000	630	9450000
2022	Springpole Lake	L-15-B4	June	Chrysophyceae	Bitrichia	sp.	Single Cell	5000	360	1800000
2022	Springpole Lake	L-15-B4	June	Dinophyceae	Gymnodinium	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B4	June	Cyanophyceae	Pseudanabaena	sp.	Filament	20000	800	16000000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Melosira	sp.	Filament	13000	8960	116480000
2022	Springpole Lake	L-15-B4	June	Chlorophyceae	Pediastrum	privum	Colony	1000	1600	1600000
2022	Springpole Lake	L-15-B4	June	Cryptophyceae	Unidentified		Single Cell	391000	324	126684000
2022	Springpole Lake	L-15-B4	June	Bacillariophyceae	Synedra	sp.	Single Cell	34000	675	22950000
2022	Springpole Lake	L-15-B4	June	Cyanophyceae	Limnothrix	sp.	Filament	6000	3150	18900000
2022	Birch Lake	BIRCH-B1	June	Chrysophyceae	Synura	sp.	Single Cell	5000	1200	6000000
2022	Birch Lake	BIRCH-B1	June	Chlorophyceae	Scenedesmus	sp.	Single Cell	20000	54	1080000
2022	Birch Lake	BIRCH-B1	June	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	108	540000
2022	Birch Lake	BIRCH-B1	June	Cryptophyceae	Unidentified		Single Cell	313000	324	101412000
2022	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	343000	500	171500000
2022	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	10000	630	6300000
2022	Birch Lake	BIRCH-B1	June	Chrysophyceae	Mallomonas	sp.	Single Cell	10000	4500	45000000
2022	Birch Lake	BIRCH-B1	June	Chrysophyceae	Dinobryon	sp.	Single Cell	15000	540	8100000
2022	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Asterionella	formosa	Single Cell	53000	810	42930000
2022	Birch Lake	BIRCH-B1	June	Dinophyceae	Gymnodinium	sp.	Single Cell	10000	4500	45000000
2022	Birch Lake	BIRCH-B1	June	Dinophyceae	Peridinium	sp.	Single Cell	6000	18750	112500000
2022	Birch Lake	BIRCH-B1	June	Cyanophyceae	Planktothrix	sp.	Filament	1000	4480	4480000
2022	Birch Lake	BIRCH-B1	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	44000	120	5280000
2022	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Synedra	sp.	Single Cell	39000	900	35100000
2022	Birch Lake	BIRCH-B1	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	20000	12000	240000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Synedra	ulna	Single Cell	1000	8640	8640000
2022	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Melosira	sp.	Filament	137000	10880	1490560000
2022	Birch Lake	BIRCH-B1	June	Chrysophyceae	small chrysophytes		Single Cell	938000	64	60032000
2022	Birch Lake	BIRCH-B1	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Birch Lake	BIRCH-B1	June	Cyanophyceae	Pseudanabaena	sp.	Filament	8000	1000	8000000
2022	Birch Lake	BIRCH-B1	June	Euglenophyceae	Euglena	sp.	Single Cell	1000	8000	8000000
2022	Birch Lake	BIRCH-B2	June	Chrysophyceae	Dinobryon	sp.	Single Cell	20000	540	10800000
2022	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	5000	630	3150000
2022	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Synedra	ulna	Single Cell	7000	6500	45500000
2022	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	127000	500	63500000
2022	Birch Lake	BIRCH-B2	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Synedra	sp.	Single Cell	34000	720	24480000
2022	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Melosira	sp.	Filament	66000	7040	464640000
2022	Birch Lake	BIRCH-B2	June	Cyanophyceae	Limnothrix	sp.	Filament	1000	1170	1170000
2022	Birch Lake	BIRCH-B2	June	Dinophyceae	Peridinium	sp.	Single Cell	4000	18750	75000000
2022	Birch Lake	BIRCH-B2	June	Chrysophyceae	Mallomonas	sp.	Single Cell	10000	4500	45000000
2022	Birch Lake	BIRCH-B2	June	Cyanophyceae	Pseudanabaena	sp.	Filament	10000	1840	18400000
2022	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Asterionella	formosa	Single Cell	78000	810	63180000
2022	Birch Lake	BIRCH-B2	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	74000	12000	888000000
2022	Birch Lake	BIRCH-B2	June	Chrysophyceae	small chrysophytes		Single Cell	938000	64	60032000
2022	Birch Lake	BIRCH-B2	June	Cryptophyceae	Unidentified		Single Cell	626000	324	202824000
2022	Birch Lake	BIRCH-B2	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	25000	120	3000000
2022	Birch Lake	BIRCH-B2	June	Dinophyceae	Gymnodinium	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B2	June	Dinophyceae	Peridinium	sp.	Single Cell	3000	18750	56250000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Fragilaria	sp.	Single Cell	8000	800	6400000
2022	Springpole Lake	L-15-B2	June	Dinophyceae	Gymnodinium	sp.	Single Cell	15000	4500	67500000
2022	Springpole Lake	L-15-B2	June	Chrysophyceae	small chrysophytes		Single Cell	1090000	64	69760000
2022	Springpole Lake	L-15-B2	June	Cyanophyceae	Planktothrix	sp.	Filament	1000	16250	16250000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Synedra	sp.	Single Cell	34000	900	30600000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	15000	630	9450000
2022	Springpole Lake	L-15-B2	June	Cryptophyceae	Unidentified		Single Cell	547000	324	177228000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Melosira	sp.	Filament	10000	9600	96000000
2022	Springpole Lake	L-15-B2	June	Chrysophyceae	Dinobryon	suecicum	Single Cell	5000	144	720000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B2	June	Cyanophyceae	Limnothrix	sp.	Filament	2000	1170	2340000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	279000	500	139500000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Asterionella	formosa	Single Cell	47000	720	33840000
2022	Springpole Lake	L-15-B2	June	Chrysophyceae	Mallomonas	sp.	Single Cell	10000	4500	45000000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Navicula	sp.	Single Cell	2000	18000	36000000
2022	Springpole Lake	L-15-B2	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	15000	3200	48000000
2022	Springpole Lake	L-15-B2	June	Cyanophyceae	Pseudanabaena	sp.	Filament	16000	1040	16640000
2022	Springpole Lake	L-15-B2	June	Chrysophyceae	Synura	sp.	Single Cell	10000	1200	12000000
2022	Springpole Lake	L-15-B2	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	29000	120	3480000
2022	Springpole Lake	L-15-B2	June	Bacillariophyceae	Diatoma	sp.	Single Cell	1000	1250	1250000
2022	Springpole Lake	L-15-B2	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	78000	12000	936000000
2022	Springpole Lake	L-15-B2	June	Chrysophyceae	Dinobryon	sp.	Single Cell	54000	540	29160000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	255000	500	127500000
2022	Springpole Lake	L-15-B6	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	1600	1600000
2022	Springpole Lake	L-15-B6	June	Cyanophyceae	Pseudanabaena	sp.	Filament	5000	880	4400000
2022	Springpole Lake	L-15-B6	June	Chrysophyceae	Dinobryon	suecicum	Single Cell	5000	144	720000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Diatoma	sp.	Single Cell	7000	1250	8750000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Melosira	sp.	Filament	5000	9600	48000000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Asterionella	formosa	Single Cell	66000	720	47520000
2022	Springpole Lake	L-15-B6	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	49000	120	5880000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	12000	3200	38400000
2022	Springpole Lake	L-15-B6	June	Chrysophyceae	Mallomonas	sp.	Single Cell	10000	4500	45000000
2022	Springpole Lake	L-15-B6	June	Chrysophyceae	Synura	sp.	Single Cell	49000	1200	58800000
2022	Springpole Lake	L-15-B6	June	Chrysophyceae	Dinobryon	sp.	Single Cell	74000	540	39960000
2022	Springpole Lake	L-15-B6	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	78000	12000	936000000
2022	Springpole Lake	L-15-B6	June	Euglenophyceae	Euglena	sp.	Single Cell	1000	9000	9000000
2022	Springpole Lake	L-15-B6	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	15000	540	8100000
2022	Springpole Lake	L-15-B6	June	Dinophyceae	Peridinium	sp.	Single Cell	2000	18750	37500000
2022	Springpole Lake	L-15-B6	June	Chrysophyceae	small chrysophytes		Single Cell	1800000	64	115200000
2022	Springpole Lake	L-15-B6	June	Dinophyceae	Gymnodinium	sp.	Single Cell	10000	4500	45000000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Synedra	sp.	Single Cell	20000	900	18000000
2022	Springpole Lake	L-15-B6	June	Cryptophyceae	Unidentified		Single Cell	469000	324	151956000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Synedra	ulna	Single Cell	2000	15660	31320000
2022	Springpole Lake	L-15-B6	June	Cyanophyceae	Limnothrix	sp.	Filament	4000	2790	11160000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	10000	630	6300000
2022	Springpole Lake	L-15-B6	June	Bacillariophyceae	Surirella	sp.	Single Cell	1000	4000	4000000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	8000	1920	15360000
2022	Springpole Lake	L-15-B3	June	Chlorophyceae	Scenedesmus	sp.	Single Cell	10000	128	1280000
2022	Springpole Lake	L-15-B3	June	Chrysophyceae	Dinobryon	suecicum	Single Cell	5000	144	720000
2022	Springpole Lake	L-15-B3	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	78000	12000	936000000
2022	Springpole Lake	L-15-B3	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	5000	120	600000
2022	Springpole Lake	L-15-B3	June	Dinophyceae	Gymnodinium	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B3	June	Chlorophyceae	Closterium	sp.	Single Cell	1000	12960	12960000
2022	Springpole Lake	L-15-B3	June	Cyanophyceae	Limnothrix	sp.	Filament	1000	2700	2700000
2022	Springpole Lake	L-15-B3	June	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2022	Springpole Lake	L-15-B3	June	Dinophyceae	Peridinium	sp.	Single Cell	2000	18750	37500000
2022	Springpole Lake	L-15-B3	June	Chrysophyceae	Synura	sp.	Single Cell	34000	1200	40800000
2022	Springpole Lake	L-15-B3	June	Cyanophyceae	Pseudanabaena	sp.	Filament	10000	1000	10000000
2022	Springpole Lake	L-15-B3	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	4800	4800000
2022	Springpole Lake	L-15-B3	June	Chlorophyceae	Unidentified		Single Cell	5000	1000	5000000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Synedra	ulna	Single Cell	1000	7500	7500000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	15000	630	9450000
2022	Springpole Lake	L-15-B3	June	Chrysophyceae	Dinobryon	sp.	Single Cell	74000	540	39960000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Synedra	sp.	Single Cell	29000	900	26100000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Diatoma	sp.	Single Cell	4000	1250	5000000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	289000	500	144500000
2022	Springpole Lake	L-15-B3	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B3	June	Chrysophyceae	Mallomonas	sp.	Single Cell	10000	4500	45000000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Melosira	sp.	Filament	4000	8000	32000000
2022	Springpole Lake	L-15-B3	June	Chrysophyceae	small chrysophytes		Single Cell	1410000	64	90240000
2022	Springpole Lake	L-15-B3	June	Bacillariophyceae	Asterionella	formosa	Single Cell	60000	720	43200000
2022	Springpole Lake	L-15-B5	June	Cryptophyceae	Unidentified		Single Cell	547000	324	177228000
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Melosira	sp.	Filament	5000	14400	72000000
2022	Springpole Lake	L-15-B5	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	1600	1600000
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Nitzschia	sp.	Single Cell	15000	630	9450000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Synedra	sp.	Single Cell	29000	900	26100000
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Diatoma	sp.	Single Cell	1000	800	800000
2022	Springpole Lake	L-15-B5	June	Dinophyceae	Gymnodinium	sp.	Single Cell	15000	4500	67500000
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Synedra	ulna	Single Cell	3000	7740	23220000
2022	Springpole Lake	L-15-B5	June	Cyanophyceae	Pseudanabaena	sp.	Filament	3000	740	2220000
2022	Springpole Lake	L-15-B5	June	Chrysophyceae	small chrysophytes		Single Cell	1720000	64	110080000
2022	Springpole Lake	L-15-B5	June	Dinophyceae	Peridinium	sp.	Single Cell	2000	18750	37500000
2022	Springpole Lake	L-15-B5	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	29000	500	14500000
2022	Springpole Lake	L-15-B5	June	Euglenophyceae	Euglena	sp.	Single Cell	1000	6000	6000000
2022	Springpole Lake	L-15-B5	June	Chrysophyceae	Dinobryon	sp.	Single Cell	69000	540	37260000
2022	Springpole Lake	L-15-B5	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	25000	120	3000000
2022	Springpole Lake	L-15-B5	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	93000	12000	1116000000
2022	Springpole Lake	L-15-B5	June	Chrysophyceae	Mallomonas	sp.	Single Cell	15000	4500	67500000
2022	Springpole Lake	L-15-B5	June	Chrysophyceae	Synura	sp.	Single Cell	20000	1200	24000000
2022	Springpole Lake	L-15-B5	June	Bacillariophyceae	Asterionella	formosa	Single Cell	44000	810	35640000
2022	Springpole Lake	L-15-B5	June	Chlorophyceae	Unidentified		Single Cell	10000	1000	10000000
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Aphanocapsa	sp.	Colony	15000	27000	405000000
2022	Springpole Lake	L-15-B1	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	29000	5625	163125000
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Merismopedia	sp.	Single Cell	16000	8	128000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Planctonema	lauterbornii	Filament	2000	1920	3840000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Scenedesmus	quadricauda	Single Cell	20000	160	3200000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Scenedesmus	sp.	Single Cell	20000	160	3200000
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Gomphosphaeria	sp.	Colony	1000	27000	27000000
2022	Springpole Lake	L-15-B1	August	Chrysophyceae	small chrysophytes		Single Cell	391000	64	25024000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Crucigenia	tetrapedia	Single Cell	20000	36	720000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Crucigenia	quadrata	Single Cell	20000	12	240000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Oocystis	sp.	Colony	25000	4500	112500000
2022	Springpole Lake	L-15-B1	August	Dinophyceae	Peridinium	sp.	Single Cell	1000	125000	125000000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Botryococcus	sp.	Colony	1000	8000	8000000
2022	Springpole Lake	L-15-B1	August	Chrysophyceae	Dinobryon	sp.	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B1	August	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B1	August	Bacillariophyceae	Fragilaria	sp.	Single Cell	10000	1280	12800000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Cyanodictyon	sp.	Colony	10000	27000	270000000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Elakatothrix	sp.	Single Cell	15000	180	2700000
2022	Springpole Lake	L-15-B1	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	126000	1440	181440000
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Anabaena	sp.	Filament	2000	3240	6480000
2022	Springpole Lake	L-15-B1	August	Cryptophyceae	Unidentified		Single Cell	172000	324	55728000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Cosmarium	sp.	Single Cell	5000	500	2500000
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Chroococcus	sp.	Single Cell	69000	64	4416000
2022	Springpole Lake	L-15-B1	August	Cyanophyceae	Aphanizomenon	sp.	Filament	5000	2400	12000000
2022	Springpole Lake	L-15-B1	August	Chlorophyceae	Unidentified		Single Cell	59000	125	7375000
2022	Springpole Lake	L-15-B1	August	Bacillariophyceae	Asterionella	formosa	Single Cell	46000	720	33120000
2022	Springpole Lake	L-15-B1	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	44000	1800	79200000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Oocystis	sp.	Colony	20000	4500	90000000
2022	Springpole Lake	L-15-B2	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	20000	5625	112500000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Crucigenia	sp.	Single Cell	16000	36	576000
2022	Springpole Lake	L-15-B2	August	Chrysophyceae	small chrysophytes		Single Cell	156000	64	9984000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Scenedesmus	sp.	Single Cell	20000	160	3200000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Spondylosium	sp.	Filament	1000	3000	3000000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Staurastrum	sp.	Single Cell	2000	6750	13500000
2022	Springpole Lake	L-15-B2	August	Bacillariophyceae	Asterionella	formosa	Single Cell	12000	720	8640000
2022	Springpole Lake	L-15-B2	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	75000	1440	108000000
2022	Springpole Lake	L-15-B2	August	Chrysophyceae	Dinobryon	sp.	Single Cell	54000	540	29160000
2022	Springpole Lake	L-15-B2	August	Chrysophyceae	Bitrichia	sp.	Single Cell	5000	250	1250000
2022	Springpole Lake	L-15-B2	August	Cryptophyceae	Unidentified		Single Cell	313000	324	101412000
2022	Springpole Lake	L-15-B2	August	Cyanophyceae	Aphanocapsa	sp.	Colony	7000	27000	189000000
2022	Springpole Lake	L-15-B2	August	Cyanophyceae	Anabaena	sp.	Filament	2000	4320	8640000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Crucigenia	quadrata	Single Cell	16000	12	192000
2022	Springpole Lake	L-15-B2	August	Cyanophyceae	Chroococcus	sp.	Single Cell	147000	64	9408000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Unidentified		Single Cell	34000	125	4250000
2022	Springpole Lake	L-15-B2	August	Cyanophyceae	Aphanizomenon	sp.	Filament	5000	1920	9600000
2022	Springpole Lake	L-15-B2	August	Chrysophyceae	Stichogloea	sp.	Colony	10000	8000	80000000
2022	Springpole Lake	L-15-B2	August	Bacillariophyceae	Attheya	sp.	Single Cell	1000	8000	8000000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Botryococcus	sp.	Colony	2000	64000	128000000
2022	Springpole Lake	L-15-B2	August	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	640	640000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B2	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	34000	1800	61200000
2022	Springpole Lake	L-15-B2	August	Dinophyceae	Ceratium	sp.	Single Cell	2000	36000	72000000
2022	Springpole Lake	L-15-B2	August	Bacillariophyceae	Melosira	sp.	Filament	5000	6400	32000000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Scenedesmus	sp.	Single Cell	10000	160	1600000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Schroederia	sp.	Single Cell	5000	180	900000
2022	Springpole Lake	L-15-B6	August	Chrysophyceae	Dinobryon	suecicum	Single Cell	5000	96	480000
2022	Springpole Lake	L-15-B6	August	Bacillariophyceae	Asterionella	formosa	Single Cell	41000	720	29520000
2022	Springpole Lake	L-15-B6	August	Cyanophyceae	Anabaena	sp.	Filament	3000	3600	10800000
2022	Springpole Lake	L-15-B6	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	15000	1800	27000000
2022	Springpole Lake	L-15-B6	August	Cyanophyceae	Aphanizomenon	sp.	Filament	6000	1920	11520000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Coelastrum	sp.	Colony	1000	15625	15625000
2022	Springpole Lake	L-15-B6	August	Cyanophyceae	Aphanocapsa	sp.	Colony	3000	27000	81000000
2022	Springpole Lake	L-15-B6	August	Cyanophyceae	Chroococcus	sp.	Single Cell	123000	64	7872000
2022	Springpole Lake	L-15-B6	August	Cyanophyceae	Gomphosphaeria	sp.	Colony	5000	27000	135000000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Quadrigula	sp.	Single Cell	8000	180	1440000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Oocystis	sp.	Colony	15000	4500	67500000
2022	Springpole Lake	L-15-B6	August	Cyanophyceae	Merismopedia	sp.	Single Cell	157000	8	1256000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Spondylosium	sp.	Filament	1000	2000	2000000
2022	Springpole Lake	L-15-B6	August	Bacillariophyceae	Melosira	sp.	Filament	1000	2560	2560000
2022	Springpole Lake	L-15-B6	August	Chrysophyceae	Dinobryon	sp.	Single Cell	63000	540	34020000
2022	Springpole Lake	L-15-B6	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	92000	1440	132480000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Botryococcus	sp.	Colony	4000	27000	108000000
2022	Springpole Lake	L-15-B6	August	Cryptophyceae	Unidentified		Single Cell	235000	324	76140000
2022	Springpole Lake	L-15-B6	August	Bacillariophyceae	Synedra	sp.	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B6	August	Chlorophyceae	Unidentified		Single Cell	142000	125	17750000
2022	Springpole Lake	L-15-B6	August	Chrysophyceae	small chrysophytes		Single Cell	626000	64	40064000
2022	Springpole Lake	L-15-B6	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	15000	5625	84375000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Crucigenia	quadrata	Single Cell	20000	12	240000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Cosmarium	sp.	Single Cell	1000	9000	9000000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Scenedesmus	spinosus	Single Cell	10000	160	1600000
2022	Springpole Lake	L-15-B4	August	Dinophyceae	Gymnodinium	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Botryococcus	sp.	Colony	1000	27000	27000000
2022	Springpole Lake	L-15-B4	August	Cyanophyceae	Merismopedia	sp.	Single Cell	137000	8	1096000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	800	800000
2022	Springpole Lake	L-15-B4	August	Cyanophyceae	Gomphosphaeria	sp.	Colony	3000	27000	81000000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Oocystis	sp.	Colony	25000	4500	112500000
2022	Springpole Lake	L-15-B4	August	Cyanophyceae	Chroococcus	sp.	Single Cell	20000	64	1280000
2022	Springpole Lake	L-15-B4	August	Dinophyceae	Peridinium	sp.	Single Cell	2000	125000	250000000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Euastrum	sp.	Single Cell	1000	15000	15000000
2022	Springpole Lake	L-15-B4	August	Cryptophyceae	Unidentified		Single Cell	391000	324	126684000
2022	Springpole Lake	L-15-B4	August	Cyanophyceae	Aphanocapsa	sp.	Colony	25000	27000	675000000
2022	Springpole Lake	L-15-B4	August	Cyanophyceae	Aphanizomenon	sp.	Filament	2000	1600	3200000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Unidentified		Single Cell	103000	125	12875000
2022	Springpole Lake	L-15-B4	August	Cyanophyceae	Anabaena	sp.	Filament	3000	2160	6480000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	256	1280000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Elakatothrix	sp.	Single Cell	5000	320	1600000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Crucigenia	tetrapedia	Single Cell	34000	36	1224000
2022	Springpole Lake	L-15-B4	August	Chrysophyceae	small chrysophytes		Single Cell	391000	64	25024000
2022	Springpole Lake	L-15-B4	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	15000	5625	84375000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Pediastrum	tetras	Colony	5000	1600	8000000
2022	Springpole Lake	L-15-B4	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	35000	1440	50400000
2022	Springpole Lake	L-15-B4	August	Chrysophyceae	Dinobryon	bavaricum	Single Cell	1000	540	540000
2022	Springpole Lake	L-15-B4	August	Chlorophyceae	Staurodesmus	sp.	Single Cell	1000	5000	5000000
2022	Springpole Lake	L-15-B4	August	Bacillariophyceae	Asterionella	formosa	Single Cell	44000	720	31680000
2022	Springpole Lake	L-15-B4	August	Chrysophyceae	Dinobryon	sp.	Single Cell	49000	540	26460000
2022	Springpole Lake	L-15-B4	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	29000	1800	52200000
2022	Springpole Lake	L-15-B3	August	Chlorophyceae	Oocystis	sp.	Colony	20000	4500	90000000
2022	Springpole Lake	L-15-B3	August	Cyanophyceae	Chroococcus	sp.	Single Cell	108000	64	6912000
2022	Springpole Lake	L-15-B3	August	Cyanophyceae	Aphanocapsa	sp.	Colony	10000	8000	80000000
2022	Springpole Lake	L-15-B3	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	83000	1440	119520000
2022	Springpole Lake	L-15-B3	August	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2022	Springpole Lake	L-15-B3	August	Chlorophyceae	Crucigenia	tetrapedia	Single Cell	25000	36	900000
2022	Springpole Lake	L-15-B3	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	44000	1800	79200000
2022	Springpole Lake	L-15-B3	August	Chlorophyceae	Unidentified		Single Cell	25000	125	3125000
2022	Springpole Lake	L-15-B3	August	Cyanophyceae	Anabaena	sp.	Filament	2000	4320	8640000
2022	Springpole Lake	L-15-B3	August	Bacillariophyceae	Stephanodiscus	sp.	Single Cell	1000	32000	32000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B3	August	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	256	1280000
2022	Springpole Lake	L-15-B3	August	Cyanophyceae	Aphanizomenon	sp.	Filament	2000	1600	3200000
2022	Springpole Lake	L-15-B3	August	Chrysophyceae	small chrysophytes		Single Cell	313000	64	20032000
2022	Springpole Lake	L-15-B3	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	5625	56250000
2022	Springpole Lake	L-15-B3	August	Bacillariophyceae	Asterionella	formosa	Single Cell	30000	720	21600000
2022	Springpole Lake	L-15-B3	August	Dinophyceae	Ceratium	sp.	Single Cell	1000	36000	36000000
2022	Springpole Lake	L-15-B3	August	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B3	August	Chrysophyceae	Dinobryon	sp.	Single Cell	97000	540	52380000
2022	Springpole Lake	L-15-B3	August	Chlorophyceae	Botryococcus	sp.	Colony	2000	15625	31250000
2022	Springpole Lake	L-15-B3	August	Chrysophyceae	Stichogloea	sp.	Colony	5000	8000	40000000
2022	Springpole Lake	L-15-B3	August	Cyanophyceae	Gomphosphaeria	sp.	Colony	10000	27000	270000000
2022	Springpole Lake	L-15-B3	August	Chlorophyceae	Staurastrum	sp.	Single Cell	2000	6750	13500000
2022	Springpole Lake	L-15-B5	August	Dinophyceae	Ceratium	hirundinella	Single Cell	1000	36000	36000000
2022	Springpole Lake	L-15-B5	August	Chlorophyceae	Schroederia	sp.	Single Cell	29000	180	5220000
2022	Springpole Lake	L-15-B5	August	Bacillariophyceae	Nitzschia	sp.	Single Cell	5000	180	900000
2022	Springpole Lake	L-15-B5	August	Bacillariophyceae	Melosira	sp.	Filament	3000	6400	19200000
2022	Springpole Lake	L-15-B5	August	Chlorophyceae	Tetraedron	minimum	Single Cell	5000	256	1280000
2022	Springpole Lake	L-15-B5	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	74000	12000	888000000
2022	Springpole Lake	L-15-B5	August	Euglenophyceae	Trachelomonas	sp.	Single Cell	1000	4500	4500000
2022	Springpole Lake	L-15-B5	August	Chrysophyceae	small chrysophytes		Single Cell	860000	64	55040000
2022	Springpole Lake	L-15-B5	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	5000	4000	20000000
2022	Springpole Lake	L-15-B5	August	Chlorophyceae	Unidentified		Single Cell	15000	125	1875000
2022	Springpole Lake	L-15-B5	August	Chrysophyceae	Dinobryon	bavaricum	Single Cell	1000	540	540000
2022	Springpole Lake	L-15-B5	August	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	640	640000
2022	Springpole Lake	L-15-B5	August	Cyanophyceae	Aphanizomenon	sp.	Filament	4000	1760	7040000
2022	Springpole Lake	L-15-B5	August	Chrysophyceae	Dinobryon	sp.	Single Cell	54000	540	29160000
2022	Springpole Lake	L-15-B5	August	Cryptophyceae	Unidentified		Single Cell	469000	324	151956000
2022	Springpole Lake	L-15-B5	August	Bacillariophyceae	Asterionella	formosa	Single Cell	44000	720	31680000
2022	Springpole Lake	L-15-B5	August	Cyanophyceae	Merismopedia	sp.	Single Cell	78000	8	624000
2022	Springpole Lake	L-15-B5	August	Cyanophyceae	Anabaena	sp.	Filament	4000	4320	17280000
2022	Birch Lake	BIRCH-B1	August	Chlorophyceae	Spondylosium	sp.	Filament	2000	5000	10000000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	103000	1440	148320000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Synedra	sp.	Single Cell	10000	540	5400000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Birch Lake	BIRCH-B1	August	Chlorophyceae	Schroederia	sp.	Single Cell	5000	180	900000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	10000	1500	15000000
2022	Birch Lake	BIRCH-B1	August	Cyanophyceae	Anabaena	sp.	Filament	7000	5400	37800000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Melosira	sp.	Filament	2000	2560	5120000
2022	Birch Lake	BIRCH-B1	August	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Asterionella	formosa	Single Cell	49000	540	26460000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Synedra	ulna	Single Cell	1000	12960	12960000
2022	Birch Lake	BIRCH-B1	August	Chlorophyceae	Oocystis	sp.	Colony	15000	4500	67500000
2022	Birch Lake	BIRCH-B1	August	Cyanophyceae	Merismopedia	sp.	Single Cell	59000	8	472000
2022	Birch Lake	BIRCH-B1	August	Cyanophyceae	Gomphosphaeria	sp.	Colony	10000	27000	270000000
2022	Birch Lake	BIRCH-B1	August	Cyanophyceae	Chroococcus	sp.	Single Cell	59000	64	3776000
2022	Birch Lake	BIRCH-B1	August	Cyanophyceae	Aphanocapsa	sp.	Colony	5000	27000	135000000
2022	Birch Lake	BIRCH-B1	August	Cyanophyceae	Aphanizomenon	sp.	Filament	7000	1440	10080000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	20000	1800	36000000
2022	Birch Lake	BIRCH-B1	August	Chrysophyceae	Stichogloea	sp.	Colony	1000	15625	15625000
2022	Birch Lake	BIRCH-B1	August	Chlorophyceae	Elakatothrix	sp.	Single Cell	20000	180	3600000
2022	Birch Lake	BIRCH-B1	August	Bacillariophyceae	Attheya	sp.	Single Cell	2000	8000	16000000
2022	Birch Lake	BIRCH-B1	August	Chlorophyceae	Unidentified		Single Cell	64000	125	8000000
2022	Birch Lake	BIRCH-B1	August	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2022	Birch Lake	BIRCH-B1	August	Dinophyceae	Peridinium	sp.	Single Cell	3000	31500	94500000
2022	Birch Lake	BIRCH-B1	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	15000	5625	84375000
2022	Birch Lake	BIRCH-B1	August	Chrysophyceae	small chrysophytes		Single Cell	156000	64	9984000
2022	Birch Lake	BIRCH-B1	August	Chrysophyceae	Dinobryon	sp.	Single Cell	15000	540	8100000
2022	Birch Lake	BIRCH-B2	August	Chlorophyceae	Cosmarium	sp.	Single Cell	1000	4000	4000000
2022	Birch Lake	BIRCH-B2	August	Cyanophyceae	Anabaena	sp.	Filament	10000	3240	32400000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Tabellaria	sp.	Single Cell	84000	1440	120960000
2022	Birch Lake	BIRCH-B2	August	Cyanophyceae	Aphanizomenon	sp.	Filament	17000	1280	21760000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Attheya	sp.	Single Cell	1000	4000	4000000
2022	Birch Lake	BIRCH-B2	August	Cyanophyceae	Aphanocapsa	sp.	Colony	10000	27000	270000000
2022	Birch Lake	BIRCH-B2	August	Cyanophyceae	Chroococcus	sp.	Single Cell	59000	64	3776000
2022	Birch Lake	BIRCH-B2	August	Chlorophyceae	Unidentified		Single Cell	54000	125	6750000
2022	Birch Lake	BIRCH-B2	August	Chlorophyceae	Oocystis	sp.	Colony	2000	4500	9000000
2022	Birch Lake	BIRCH-B2	August	Cyanophyceae	Merismopedia	sp.	Single Cell	235000	8	1880000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Birch Lake	BIRCH-B2	August	Chrysophyceae	small chrysophytes		Single Cell	156000	64	9984000
2022	Birch Lake	BIRCH-B2	August	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	10000	1500	15000000
2022	Birch Lake	BIRCH-B2	August	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2022	Birch Lake	BIRCH-B2	August	Chrysophyceae	Dinobryon	bavaricum	Single Cell	10000	540	5400000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Asterionella	formosa	Single Cell	29000	630	18270000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Cyclotella	sp.	Single Cell	54000	1800	97200000
2022	Birch Lake	BIRCH-B2	August	Cryptophyceae	Cryptomonas	sp.	Single Cell	5000	5625	28125000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Melosira	sp.	Filament	4000	13120	52480000
2022	Birch Lake	BIRCH-B2	August	Bacillariophyceae	Synedra	sp.	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	5000	1500	7500000
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Monoraphidium	sp.	Single Cell	15000	120	1800000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Synedra	sp.	Single Cell	1000	540	540000
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Oocystis	sp.	Colony	15000	4500	67500000
2022	Springpole Lake	L-15-B1	September	Cryptophyceae	Unidentified		Single Cell	235000	324	76140000
2022	Springpole Lake	L-15-B1	September	Chrysophyceae	Dinobryon	sp.	Single Cell	74000	540	39960000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Asterionella	formosa	Single Cell	25000	810	20250000
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Scenedesmus	sp.	Single Cell	8000	160	1280000
2022	Springpole Lake	L-15-B1	September	Chrysophyceae	Mallomonas	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B1	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	1000	540	540000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	20000	4000	80000000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	50000	1120	56000000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	16000	2400	38400000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Melosira	sp.	Filament	1000	78000	78000000
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Unidentified		Single Cell	103000	160	16480000
2022	Springpole Lake	L-15-B1	September	Bacillariophyceae	Attheya	sp.	Single Cell	5000	6000	30000000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Aphanocapsa	sp.	Colony	25000	27000	675000000
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	20000	180	3600000
2022	Springpole Lake	L-15-B1	September	Chrysophyceae	small chrysophytes		Single Cell	235000	64	15040000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Merismopedia	sp.	Single Cell	157000	8	1256000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	2000	27000	54000000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Cyanodictyon	sp.	Colony	5000	27000	135000000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Chroococcus	sp.	Single Cell	20000	125	2500000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	4480	4480000
2022	Springpole Lake	L-15-B1	September	Chlorophyceae	Botryococcus	sp.	Colony	1000	64000	64000000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Anabaena	sp.	Filament	8000	2880	23040000
2022	Springpole Lake	L-15-B1	September	Cyanophyceae	Aphanizomenon	sp.	Filament	4000	2080	8320000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Synedra	sp.	Single Cell	1000	540	540000
2022	Springpole Lake	L-15-B4	September	Dinophyceae	Ceratium	hirundinella	Single Cell	1000	80000	80000000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	6000	2400	14400000
2022	Springpole Lake	L-15-B4	September	Chrysophyceae	Dinobryon	sp.	Single Cell	39000	540	21060000
2022	Springpole Lake	L-15-B4	September	Euglenophyceae	Trachelomonas	sp.	Single Cell	1000	4500	4500000
2022	Springpole Lake	L-15-B4	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	12000	120000000
2022	Springpole Lake	L-15-B4	September	Chrysophyceae	small chrysophytes		Single Cell	313000	64	20032000
2022	Springpole Lake	L-15-B4	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Monoraphidium	sp.	Single Cell	25000	120	3000000
2022	Springpole Lake	L-15-B4	September	Cyanophyceae	Cyanodictyon	sp.	Colony	10000	27000	270000000
2022	Springpole Lake	L-15-B4	September	Cyanophyceae	Anabaena	sp.	Filament	6000	3600	21600000
2022	Springpole Lake	L-15-B4	September	Cyanophyceae	Aphanocapsa	sp.	Colony	29000	27000	783000000
2022	Springpole Lake	L-15-B4	September	Cyanophyceae	Chroococcus	sp.	Single Cell	88000	125	11000000
2022	Springpole Lake	L-15-B4	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	2000	27000	54000000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Asterionella	formosa	Single Cell	7000	810	5670000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Cosmarium	sp.	Single Cell	1000	32000	32000000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	10000	1500	15000000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Oocystis	sp.	Colony	25000	4500	112500000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Quadrigula	sp.	Single Cell	8000	80	640000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Spondylosium	sp.	Filament	1000	11000	11000000
2022	Springpole Lake	L-15-B4	September	Dinophyceae	Gymnodinium	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	25000	4000	100000000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	20000	1200	24000000
2022	Springpole Lake	L-15-B4	September	Cyanophyceae	Merismopedia	sp.	Single Cell	127000	8	1016000
2022	Springpole Lake	L-15-B4	September	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Botryococcus	sp.	Colony	1000	27000	27000000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Unidentified		Single Cell	44000	160	7040000
2022	Springpole Lake	L-15-B4	September	Bacillariophyceae	Attheya	sp.	Single Cell	5000	6000	30000000
2022	Springpole Lake	L-15-B4	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	5000	180	900000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Crucigenia	quadrata	Single Cell	39000	12	468000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Chroococcus	sp.	Single Cell	59000	125	7375000
2022	Springpole Lake	L-15-B3	September	Chrysophyceae	Dinobryon	sp.	Single Cell	49000	540	26460000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	7000	27000	189000000
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	5000	180	900000
2022	Springpole Lake	L-15-B3	September	Cryptophyceae	Unidentified		Single Cell	235000	324	76140000
2022	Springpole Lake	L-15-B3	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	5000	4000	20000000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Merismopedia	sp.	Single Cell	78000	8	624000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Planktolyngbya	sp.	Filament	2000	640	1280000
2022	Springpole Lake	L-15-B3	September	Chrysophyceae	small chrysophytes		Single Cell	156000	64	9984000
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	960	960000
2022	Springpole Lake	L-15-B3	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B3	September	Bacillariophyceae	Synedra	sp.	Single Cell	2000	540	1080000
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Monoraphidium	sp.	Single Cell	29000	120	3480000
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Oocystis	sp.	Colony	5000	4500	22500000
2022	Springpole Lake	L-15-B3	September	Bacillariophyceae	Melosira	sp.	Filament	1000	4000	4000000
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Tetraedron	sp.	Single Cell	5000	400	2000000
2022	Springpole Lake	L-15-B3	September	Bacillariophyceae	Asterionella	formosa	Single Cell	27000	810	21870000
2022	Springpole Lake	L-15-B3	September	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	50000	1280	64000000
2022	Springpole Lake	L-15-B3	September	Chlorophyceae	Unidentified		Single Cell	34000	160	5440000
2022	Springpole Lake	L-15-B3	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	32000	2400	76800000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Aphanizomenon	sp.	Filament	7000	1120	7840000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Anabaena	sp.	Filament	1000	5400	5400000
2022	Springpole Lake	L-15-B3	September	Cyanophyceae	Aphanocapsa	sp.	Colony	15000	27000	405000000
2022	Springpole Lake	L-15-B3	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	5625	56250000
2022	Springpole Lake	L-15-B5	September	Chrysophyceae	Bitrichia	sp.	Single Cell	1000	432	432000
2022	Springpole Lake	L-15-B5	September	Cyanophyceae	Planktolyngbya	sp.	Filament	1000	960	960000
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	7000	2400	16800000
2022	Springpole Lake	L-15-B5	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	25000	5625	140625000
2022	Springpole Lake	L-15-B5	September	Chrysophyceae	small chrysophytes		Single Cell	156000	64	9984000
2022	Springpole Lake	L-15-B5	September	Cryptophyceae	Unidentified		Single Cell	391000	324	126684000
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Synedra	sp.	Single Cell	2000	540	1080000
2022	Springpole Lake	L-15-B5	September	Cyanophyceae	Aphanizomenon	sp.	Filament	7000	2720	19040000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Attheya	sp.	Single Cell	3000	6000	18000000
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Asterionella	formosa	Single Cell	51000	270	13770000
2022	Springpole Lake	L-15-B5	September	Chlorophyceae	Unidentified		Colony	5000	27000	135000000
2022	Springpole Lake	L-15-B5	September	Chlorophyceae	Scenedesmus	sp.	Single Cell	8000	160	1280000
2022	Springpole Lake	L-15-B5	September	Chlorophyceae	Unidentified		Single Cell	15000	160	2400000
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Nitzschia	sp.	Single Cell	10000	540	5400000
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Melosira	sp.	Filament	4000	57600	230400000
2022	Springpole Lake	L-15-B5	September	Euglenophyceae	Trachelomonas	sp.	Single Cell	10000	4500	45000000
2022	Springpole Lake	L-15-B5	September	Cyanophyceae	Anabaena	sp.	Filament	16000	5040	80640000
2022	Springpole Lake	L-15-B5	September	Chlorophyceae	Schroederia	sp.	Single Cell	25000	80	2000000
2022	Springpole Lake	L-15-B5	September	Chrysophyceae	Mallomonas	sp.	Single Cell	5000	4500	22500000
2022	Springpole Lake	L-15-B5	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B5	September	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B5	September	Chlorophyceae	Crucigenia	tetrapedia	Single Cell	39000	36	1404000
2022	Springpole Lake	L-15-B5	September	Cyanophyceae	Chroococcus	sp.	Single Cell	4000	125	500000
2022	Springpole Lake	L-15-B5	September	Cyanophyceae	Aphanocapsa	sp.	Colony	1000	8000	8000000
2022	Springpole Lake	L-15-B5	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	5000	180	900000
2022	Springpole Lake	L-15-B5	September	Chrysophyceae	Synura	sp.	Single Cell	10000	1200	12000000
2022	Springpole Lake	L-15-B5	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	10000	4000	40000000
2022	Birch Lake	BIRCH-B1	September	Chrysophyceae	small chrysophytes		Single Cell	156000	64	9984000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Melosira	sp.	Filament	9000	7000	63000000
2022	Birch Lake	BIRCH-B1	September	Chrysophyceae	Mallomonas	sp.	Single Cell	20000	4500	90000000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	25000	4000	100000000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Stephanodiscus	sp.	Single Cell	1000	62500	62500000
2022	Birch Lake	BIRCH-B1	September	Chrysophyceae	Bitrichia	sp.	Single Cell	1000	432	432000
2022	Birch Lake	BIRCH-B1	September	Cyanophyceae	Chroococcus	sp.	Single Cell	20000	125	2500000
2022	Birch Lake	BIRCH-B1	September	Chlorophyceae	Planktosphaeria	sp.	Colony	1000	27000	27000000
2022	Birch Lake	BIRCH-B1	September	Chlorophyceae	Tetraedron	sp.	Single Cell	1000	400	400000
2022	Birch Lake	BIRCH-B1	September	Cyanophyceae	Anabaena	sp.	Filament	2000	2160	4320000
2022	Birch Lake	BIRCH-B1	September	Chlorophyceae	Oocystis	sp.	Colony	1000	4500	4500000
2022	Birch Lake	BIRCH-B1	September	Dinophyceae	Ceratium	sp.	Single Cell	1000	36000	36000000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Nitzschia	sp.	Single Cell	1000	540	540000
2022	Birch Lake	BIRCH-B1	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	3000	27000	81000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Birch Lake	BIRCH-B1	September	Chlorophyceae	Unidentified		Single Cell	29000	160	4640000
2022	Birch Lake	BIRCH-B1	September	Chrysophyceae	Synura	sp.	Single Cell	5000	1200	6000000
2022	Birch Lake	BIRCH-B1	September	Cyanophyceae	Aphanizomenon	sp.	Filament	17000	1760	29920000
2022	Birch Lake	BIRCH-B1	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	1000	540	540000
2022	Birch Lake	BIRCH-B1	September	Cyanophyceae	Merismopedia	sp.	Single Cell	128000	8	1024000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	5000	1500	7500000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	46000	2400	110400000
2022	Birch Lake	BIRCH-B1	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	10000	180	1800000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Synedra	sp.	Single Cell	3000	540	1620000
2022	Birch Lake	BIRCH-B1	September	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2022	Birch Lake	BIRCH-B1	September	Chlorophyceae	Schroederia	sp.	Single Cell	59000	180	10620000
2022	Birch Lake	BIRCH-B1	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	5625	56250000
2022	Birch Lake	BIRCH-B1	September	Cyanophyceae	Aphanocapsa	sp.	Colony	25000	27000	675000000
2022	Birch Lake	BIRCH-B1	September	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Asterionella	formosa	Single Cell	16000	810	12960000
2022	Birch Lake	BIRCH-B1	September	Bacillariophyceae	Attheya	sp.	Single Cell	10000	6000	60000000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Asterionella	formosa	Single Cell	12000	810	9720000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Unidentified		Single Cell	39000	160	6240000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Schroederia	sp.	Single Cell	34000	180	6120000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Spondylosium	sp.	Filament	1000	1500	1500000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Scenedesmus	sp.	Single Cell	4000	160	640000
2022	Birch Lake	BIRCH-B2	September	Cyanophyceae	Anabaena	sp.	Filament	6000	2880	17280000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Attheya	sp.	Single Cell	10000	6000	60000000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Crucigenia	sp.	Single Cell	39000	36	1404000
2022	Birch Lake	BIRCH-B2	September	Cyanophyceae	Aphanizomenon	sp.	Filament	11000	1600	17600000
2022	Birch Lake	BIRCH-B2	September	Cyanophyceae	Chroococcus	sp.	Single Cell	59000	125	7375000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	2000	180	360000
2022	Birch Lake	BIRCH-B2	September	Cyanophyceae	Aphanocapsa	sp.	Colony	3000	27000	81000000
2022	Birch Lake	BIRCH-B2	September	Chlorophyceae	Kirchneriella	sp.	Colony	4000	8000	32000000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	5000	1500	7500000
2022	Birch Lake	BIRCH-B2	September	Dinophyceae	Gymnodinium	sp.	Single Cell	5000	10000	50000000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	12000	2400	28800000
2022	Birch Lake	BIRCH-B2	September	Chrysophyceae	Dinobryon	sp.	Single Cell	20000	540	10800000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Birch Lake	BIRCH-B2	September	Cryptophyceae	Unidentified		Single Cell	313000	324	101412000
2022	Birch Lake	BIRCH-B2	September	Chrysophyceae	Mallomonas	sp.	Single Cell	15000	4500	67500000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Synedra	sp.	Single Cell	6000	540	3240000
2022	Birch Lake	BIRCH-B2	September	Chrysophyceae	small chrysophytes		Single Cell	235000	64	15040000
2022	Birch Lake	BIRCH-B2	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	15000	540	8100000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Surirella	sp.	Single Cell	1000	78125	78125000
2022	Birch Lake	BIRCH-B2	September	Chrysophyceae	Synura	sp.	Single Cell	10000	1200	12000000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Nitzschia	sp.	Single Cell	15000	540	8100000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Melosira	sp.	Filament	7000	21500	150500000
2022	Birch Lake	BIRCH-B2	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	15000	4000	60000000
2022	Springpole Lake	L-15-B2	September	Chrysophyceae	Dinobryon	sp.	Single Cell	29000	540	15660000
2022	Springpole Lake	L-15-B2	September	Cyanophyceae	Anabaena	sp.	Filament	8000	5760	46080000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Attheya	sp.	Single Cell	15000	6000	90000000
2022	Springpole Lake	L-15-B2	September	Chrysophyceae	small chrysophytes		Single Cell	547000	64	35008000
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Schroederia	sp.	Single Cell	34000	180	6120000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Synedra	sp.	Single Cell	4000	540	2160000
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	10000	180	1800000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Epithemia	sp.	Single Cell	1000	9000	9000000
2022	Springpole Lake	L-15-B2	September	Cyanophyceae	Chroococcus	sp.	Single Cell	49000	125	6125000
2022	Springpole Lake	L-15-B2	September	Cryptophyceae	Unidentified		Single Cell	313000	324	101412000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Asterionella	formosa	Single Cell	16000	810	12960000
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Unidentified		Colony	2000	27000	54000000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	49000	4000	196000000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	43000	2400	103200000
2022	Springpole Lake	L-15-B2	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	1000	27000	27000000
2022	Springpole Lake	L-15-B2	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Crucigenia	quadrata	Single Cell	13000	12	156000
2022	Springpole Lake	L-15-B2	September	Cyanophyceae	Aphanizomenon	sp.	Filament	14000	1440	20160000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	43000	1600	68800000
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Unidentified		Single Cell	54000	160	8640000
2022	Springpole Lake	L-15-B2	September	Cyanophyceae	Merismopedia	sp.	Single Cell	78000	8	624000
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Oocystis	sp.	Colony	15000	4500	67500000
2022	Springpole Lake	L-15-B2	September	Cyanophyceae	Aphanocapsa	sp.	Colony	5000	27000	135000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B2	September	Chlorophyceae	Quadrigula	sp.	Single Cell	16000	135	2160000
2022	Springpole Lake	L-15-B2	September	Dinophyceae	Ceratium	hirundinella	Single Cell	1000	55125	55125000
2022	Springpole Lake	L-15-B2	September	Bacillariophyceae	Synedra	ulna	Single Cell	1000	13680	13680000
2022	Springpole Lake	L-15-B2	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	44000	12000	528000000
2022	Springpole Lake	L-15-B6	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	5625	56250000
2022	Springpole Lake	L-15-B6	September	Chrysophyceae	Synura	sp.	Single Cell	5000	1200	6000000
2022	Springpole Lake	L-15-B6	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	Springpole Lake	L-15-B6	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	3000	27000	81000000
2022	Springpole Lake	L-15-B6	September	Cyanophyceae	Anabaena	sp.	Filament	2000	1800	3600000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Botryococcus	sp.	Colony	2000	27000	54000000
2022	Springpole Lake	L-15-B6	September	Dinophyceae	Ceratium	sp.	Single Cell	1000	55125	55125000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Schroederia	sp.	Single Cell	5000	180	900000
2022	Springpole Lake	L-15-B6	September	Chrysophyceae	Mallomonas	sp.	Single Cell	5000	2000	10000000
2022	Springpole Lake	L-15-B6	September	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	4160	4160000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	29000	180	5220000
2022	Springpole Lake	L-15-B6	September	Cyanophyceae	Aphanocapsa	sp.	Colony	10000	27000	270000000
2022	Springpole Lake	L-15-B6	September	Chrysophyceae	small chrysophytes		Single Cell	313000	64	20032000
2022	Springpole Lake	L-15-B6	September	Chrysophyceae	Bitrichia	sp.	Single Cell	5000	432	2160000
2022	Springpole Lake	L-15-B6	September	Chrysophyceae	Dinobryon	sp.	Single Cell	25000	540	13500000
2022	Springpole Lake	L-15-B6	September	Bacillariophyceae	Synedra	sp.	Single Cell	1000	540	540000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Quadrigula	sp.	Single Cell	16000	180	2880000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Staurastrum	sp.	Single Cell	2000	6750	13500000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Oocystis	sp.	Colony	10000	4500	45000000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Monoraphidium	sp.	Single Cell	5000	120	600000
2022	Springpole Lake	L-15-B6	September	Cryptophyceae	Unidentified		Single Cell	235000	324	76140000
2022	Springpole Lake	L-15-B6	September	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	30000	1280	38400000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Crucigenia	quadrata	Single Cell	54000	12	648000
2022	Springpole Lake	L-15-B6	September	Bacillariophyceae	Attheya	sp.	Single Cell	1000	6000	6000000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Unidentified		Single Cell	78000	160	12480000
2022	Springpole Lake	L-15-B6	September	Cyanophyceae	Merismopedia	sp.	Single Cell	78000	8	624000
2022	Springpole Lake	L-15-B6	September	Bacillariophyceae	Asterionella	formosa	Single Cell	24000	810	19440000
2022	Springpole Lake	L-15-B6	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	12000	2400	28800000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	960	960000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2022	Springpole Lake	L-15-B6	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	54000	4000	216000000
2022	Springpole Lake	L-15-B6	September	Chlorophyceae	Coelastrum	sp.	Colony	1000	27000	27000000
2021	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Asterionella	formosa	Single Cell	10000	810	8100000
2021	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	3000	4000	12000000
2021	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Melosira	sp.	Filament	3000	72000	216000000
2021	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Synedra	sp.	Single Cell	15000	540	8100000
2021	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Synedra	ulna	Single Cell	10000	6000	60000000
2021	Birch Lake	BIRCH-B2	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	8000	2560	20480000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Botryococcus	sp.	Colony	1000	64000	64000000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	20000	180	3600000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Kirchneriella	sp.	Colony	5000	3375	16875000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Monoraphidium	sp.	Single Cell	10000	120	1200000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Oocystis	sp.	Colony	1000	8000	8000000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Pediastrum	Boryanum	Colony	1000	10000	10000000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Pediastrum	privum	Colony	5000	900	4500000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Pediastrum	tetras	Colony	5000	1600	8000000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Scenedesmus	sp.	Single Cell	20000	24	480000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Unidentified		Single Cell	10000	1000	10000000
2021	Birch Lake	BIRCH-B2	June	Chlorophyceae	Unidentified		Colony	1000	27000	27000000
2021	Birch Lake	BIRCH-B2	June	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2021	Birch Lake	BIRCH-B2	June	Chrysophyceae	small chrysophytes		Single Cell	1330000	64	85120000
2021	Birch Lake	BIRCH-B2	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	29000	2000	58000000
2021	Birch Lake	BIRCH-B2	June	Cryptophyceae	Unidentified		Single Cell	626000	324	203000000
2021	Birch Lake	BIRCH-B2	June	Cyanophyceae	Anabaena	sp.	Filament	1000	6480	6480000
2021	Birch Lake	BIRCH-B2	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	2880	2880000
2021	Birch Lake	BIRCH-B2	June	Cyanophyceae	Aphanocapsa	sp.	Colony	1000	15625	15625000
2021	Springpole Lake	L-15-B5	June	Bacillariophyceae	Asterionella	formosa	Single Cell	50000	810	40500000
2021	Springpole Lake	L-15-B5	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	10000	4000	40000000
2021	Springpole Lake	L-15-B5	June	Bacillariophyceae	Gomphonema	sp.	Single Cell	1000	9000	9000000
2021	Springpole Lake	L-15-B5	June	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	10000	1125	11250000
2021	Springpole Lake	L-15-B5	June	Bacillariophyceae	Synedra	sp.	Single Cell	2000	540	1080000
2021	Springpole Lake	L-15-B5	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	20000	2800	56000000
2021	Springpole Lake	L-15-B5	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	34000	180	6120000

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2021	Springpole Lake	L-15-B5	June	Chlorophyceae	Pediastrum	tetras	Colony	1000	2500	2500000
2021	Springpole Lake	L-15-B5	June	Chlorophyceae	Scenedesmus	sp.	Single Cell	10000	24	240000
2021	Springpole Lake	L-15-B5	June	Chlorophyceae	Unidentified		Colony	2000	27000	54000000
2021	Springpole Lake	L-15-B5	June	Chlorophyceae	Unidentified		Single Cell	49000	216	10584000
2021	Springpole Lake	L-15-B5	June	Chrysophyceae	Bitrichia	sp.	Single Cell	5000	240	1200000
2021	Springpole Lake	L-15-B5	June	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2021	Springpole Lake	L-15-B5	June	Chrysophyceae	small chrysophytes		Single Cell	1330000	64	85120000
2021	Springpole Lake	L-15-B5	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	15000	2000	30000000
2021	Springpole Lake	L-15-B5	June	Cryptophyceae	Unidentified		Single Cell	156000	324	50544000
2021	Springpole Lake	L-15-B5	June	Cyanophyceae	Aphanizomenon	sp.	Filament	3000	1600	4800000
2021	Springpole Lake	L-15-B5	June	Cyanophyceae	Aphanocapsa	sp.	Colony	25000	8000	200000000
2021	Springpole Lake	L-15-B5	June	Cyanophyceae	Pseudanabaena	sp.	Filament	5000	80	400000
2021	Springpole Lake	L-15-B2	June	Bacillariophyceae	Asterionella	formosa	Single Cell	22000	810	17820000
2021	Springpole Lake	L-15-B2	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	15000	4000	60000000
2021	Springpole Lake	L-15-B2	June	Bacillariophyceae	Synedra	sp.	Single Cell	1000	540	540000
2021	Springpole Lake	L-15-B2	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	27000	2560	69120000
2021	Springpole Lake	L-15-B2	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	29000	180	5220000
2021	Springpole Lake	L-15-B2	June	Chlorophyceae	Unidentified		Colony	1000	27000	27000000
2021	Springpole Lake	L-15-B2	June	Chlorophyceae	Unidentified		Single Cell	54000	216	11664000
2021	Springpole Lake	L-15-B2	June	Chrysophyceae	Dinobryon	sp.	Single Cell	10000	540	5400000
2021	Springpole Lake	L-15-B2	June	Chrysophyceae	small chrysophytes		Single Cell	391000	64	25024000
2021	Springpole Lake	L-15-B2	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	2000	20000000
2021	Springpole Lake	L-15-B2	June	Cryptophyceae	Unidentified		Single Cell	44000	324	14256000
2021	Springpole Lake	L-15-B2	June	Cyanophyceae	Anabaena	sp.	Filament	1000	3240	3240000
2021	Springpole Lake	L-15-B2	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	1440	1440000
2021	Springpole Lake	L-15-B2	June	Cyanophyceae	Aphanocapsa	sp.	Colony	10000	8000	80000000
2021	Springpole Lake	L-15-B2	June	Cyanophyceae	Gomphosphaeria	sp.	Colony	2000	27000	54000000
2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Asterionella	formosa	Single Cell	69000	810	55890000
2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	15000	4000	60000000
2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Melosira	sp.	Filament	1000	42000	42000000
2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Rhizosolenia	sp.	Single Cell	5000	1125	5625000
2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Synedra	sp.	Single Cell	10000	810	8100000
2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Synedra	ulna	Single Cell	2000	9000	18000000

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2021	Springpole Lake	L-15-B6	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	7000	2800	19600000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Crucigenia	quadrata	Single Cell	20000	12	240000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	20000	180	3600000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Quadrigula	sp.	Single Cell	4000	180	720000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Scenedesmus	quadricauda	Single Cell	20000	160	3200000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Scenedesmus	sp.	Single Cell	10000	24	240000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Unidentified		Colony	1000	27000	27000000
2021	Springpole Lake	L-15-B6	June	Chlorophyceae	Unidentified		Single Cell	54000	216	11664000
2021	Springpole Lake	L-15-B6	June	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2021	Springpole Lake	L-15-B6	June	Chrysophyceae	small chrysophytes		Single Cell	1960000	64	125000000
2021	Springpole Lake	L-15-B6	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	5000	2000	10000000
2021	Springpole Lake	L-15-B6	June	Cryptophyceae	Unidentified		Single Cell	54000	324	17496000
2021	Springpole Lake	L-15-B6	June	Cyanophyceae	Anabaena	sp.	Filament	2000	3240	6480000
2021	Springpole Lake	L-15-B6	June	Cyanophyceae	Aphanocapsa	sp.	Colony	25000	8000	200000000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Asterionella	formosa	Single Cell	21000	810	17010000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Attheya	sp.	Single Cell	5000	2250	11250000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	10000	4000	40000000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Melosira	sp.	Filament	4000	25500	102000000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Stephanodiscus	sp.	Single Cell	3000	32000	96000000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Synedra	sp.	Single Cell	2000	900	1800000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Synedra	ulna	Single Cell	1000	12500	12500000
2021	Springpole Lake	L-15-B4	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	13000	3200	41600000
2021	Springpole Lake	L-15-B4	June	Chlorophyceae	Crucigenia	quadrata	Single Cell	59000	12	708000
2021	Springpole Lake	L-15-B4	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	39000	180	7020000
2021	Springpole Lake	L-15-B4	June	Chlorophyceae	Pediastrum	Boryanum	Colony	1000	57600	57600000
2021	Springpole Lake	L-15-B4	June	Chlorophyceae	Scenedesmus	sp.	Single Cell	49000	24	1176000
2021	Springpole Lake	L-15-B4	June	Chlorophyceae	Spondylosium	sp.	Filament	1000	4500	4500000
2021	Springpole Lake	L-15-B4	June	Chlorophyceae	Unidentified		Single Cell	44000	216	9504000
2021	Springpole Lake	L-15-B4	June	Chrysophyceae	small chrysophytes		Single Cell	1410000	64	90240000
2021	Springpole Lake	L-15-B4	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	2000	12000	24000000
2021	Springpole Lake	L-15-B4	June	Cryptophyceae	Unidentified		Single Cell	78000	324	25272000
2021	Springpole Lake	L-15-B4	June	Cyanophyceae	Anabaena	sp.	Filament	1000	3600	3600000
2021	Springpole Lake	L-15-B4	June	Cyanophyceae	Aphanocapsa	sp.	Colony	10000	8000	80000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2021	Springpole Lake	L-15-B4	June	Cyanophyceae	Pseudanabaena	sp.	Filament	10000	480	4800000
2021	Springpole Lake	L-15-B4	June	Dinophyceae	Ceratium	hirundinella	Single Cell	2000	80000	160000000
2021	Springpole Lake	L-15-B1	June	Bacillariophyceae	Asterionella	formosa	Single Cell	27000	810	21870000
2021	Springpole Lake	L-15-B1	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	25000	4000	100000000
2021	Springpole Lake	L-15-B1	June	Bacillariophyceae	Melosira	sp.	Filament	1000	6000	6000000
2021	Springpole Lake	L-15-B1	June	Bacillariophyceae	Synedra	sp.	Single Cell	3000	540	1620000
2021	Springpole Lake	L-15-B1	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	13000	2560	33280000
2021	Springpole Lake	L-15-B1	June	Chlorophyceae	Botryococcus	sp.	Colony	1000	15625	15625000
2021	Springpole Lake	L-15-B1	June	Chlorophyceae	Crucigenia	quadrata	Single Cell	78000	12	936000
2021	Springpole Lake	L-15-B1	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	49000	180	8820000
2021	Springpole Lake	L-15-B1	June	Chlorophyceae	Kirchneriella	sp.	Colony	5000	800	4000000
2021	Springpole Lake	L-15-B1	June	Chlorophyceae	Unidentified		Single Cell	49000	216	10584000
2021	Springpole Lake	L-15-B1	June	Chrysophyceae	Bitrichia	sp.	Single Cell	5000	240	1200000
2021	Springpole Lake	L-15-B1	June	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2021	Springpole Lake	L-15-B1	June	Chrysophyceae	small chrysophytes		Single Cell	1490000	64	95360000
2021	Springpole Lake	L-15-B1	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	25000	2000	50000000
2021	Springpole Lake	L-15-B1	June	Cryptophyceae	Unidentified		Single Cell	469000	324	152000000
2021	Springpole Lake	L-15-B1	June	Cyanophyceae	Anabaena	sp.	Filament	2000	3240	6480000
2021	Springpole Lake	L-15-B1	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	960	960000
2021	Springpole Lake	L-15-B1	June	Cyanophyceae	Aphanocapsa	sp.	Colony	29000	8000	232000000
2021	Springpole Lake	L-15-B1	June	Cyanophyceae	Gomphosphaeria	sp.	Colony	1000	8000	8000000
2021	Springpole Lake	L-15-B1	June	Cyanophyceae	Pseudanabaena	sp.	Filament	5000	480	2400000
2021	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Asterionella	formosa	Single Cell	27000	810	21870000
2021	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	2000	4000	8000000
2021	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Synedra	sp.	Single Cell	15000	720	10800000
2021	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Synedra	ulna	Single Cell	5000	6500	32500000
2021	Birch Lake	BIRCH-B1	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	4000	2560	10240000
2021	Birch Lake	BIRCH-B1	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	5000	180	900000
2021	Birch Lake	BIRCH-B1	June	Chlorophyceae	Oocystis	sp.	Colony	1000	27000	27000000
2021	Birch Lake	BIRCH-B1	June	Chlorophyceae	Unidentified		Single Cell	98000	216	21168000
2021	Birch Lake	BIRCH-B1	June	Chrysophyceae	Dinobryon	sp.	Single Cell	1000	540	540000
2021	Birch Lake	BIRCH-B1	June	Chrysophyceae	small chrysophytes		Single Cell	1410000	64	90240000
2021	Birch Lake	BIRCH-B1	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	2000	2000	4000000

Year	Area	Site	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (um3)	Biovolume (Total um3)
2021	Birch Lake	BIRCH-B1	June	Cryptophyceae	Unidentified		Single Cell	49000	324	15876000
2021	Birch Lake	BIRCH-B1	June	Cyanophyceae	Anabaena	sp.	Filament	4000	2160	8640000
2021	Birch Lake	BIRCH-B1	June	Cyanophyceae	Aphanizomenon	sp.	Filament	4000	640	2560000
2021	Birch Lake	BIRCH-B1	June	Cyanophyceae	Pseudanabaena	sp.	Filament	5000	240	1200000
2021	Springpole Lake	L-15-B3	June	Bacillariophyceae	Asterionella	formosa	Single Cell	31000	810	25110000
2021	Springpole Lake	L-15-B3	June	Bacillariophyceae	Cyclotella	sp.	Single Cell	10000	4000	40000000
2021	Springpole Lake	L-15-B3	June	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	16000	1760	28160000
2021	Springpole Lake	L-15-B3	June	Bacillariophyceae	Melosira	sp.	Filament	1000	9000	9000000
2021	Springpole Lake	L-15-B3	June	Bacillariophyceae	Synedra	sp.	Single Cell	2000	810	1620000
2021	Springpole Lake	L-15-B3	June	Bacillariophyceae	Tabellaria	sp.	Single Cell	49000	2560	125000000
2021	Springpole Lake	L-15-B3	June	Chlorophyceae	Botryococcus	sp.	Colony	1000	144000	144000000
2021	Springpole Lake	L-15-B3	June	Chlorophyceae	Crucigenia	quadrata	Single Cell	20000	12	240000
2021	Springpole Lake	L-15-B3	June	Chlorophyceae	Elakatothrix	sp.	Single Cell	25000	180	4500000
2021	Springpole Lake	L-15-B3	June	Chlorophyceae	Oocystis	sp.	Colony	5000	27000	135000000
2021	Springpole Lake	L-15-B3	June	Chlorophyceae	Unidentified		Single Cell	44000	216	9504000
2021	Springpole Lake	L-15-B3	June	Chrysophyceae	Dinobryon	sp.	Single Cell	5000	540	2700000
2021	Springpole Lake	L-15-B3	June	Chrysophyceae	small chrysophytes		Single Cell	1880000	64	120000000
2021	Springpole Lake	L-15-B3	June	Cryptophyceae	Cryptomonas	sp.	Single Cell	10000	12000	120000000
2021	Springpole Lake	L-15-B3	June	Cryptophyceae	Unidentified		Single Cell	469000	324	152000000
2021	Springpole Lake	L-15-B3	June	Cyanophyceae	Anabaena	sp.	Filament	1000	3240	3240000
2021	Springpole Lake	L-15-B3	June	Cyanophyceae	Aphanizomenon	sp.	Filament	1000	1760	1760000

Table E2-2: Springpole and Birch Lake Zooplankton Sample Results

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Limnocalanus macrurus	0.0022	0.0000
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Limnocalanus macrurus	0.0022	0.0000
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0244	0.0004
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0598	0.0008
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0598	0.0001
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0443	0.0001
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0133	0.0001
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0022	0.0000
2023	Springpole Lake	L-15-B1	March	Winter	Calanoida	Calanoida indet.	3.5454	0.0003
2023	Springpole Lake	L-15-B1	March	Winter	Cyclopoida	Acanthocyclops sp.	0.0111	0.0002
2023	Springpole Lake	L-15-B1	March	Winter	Cyclopoida	Diacyclops thomasi	0.0044	0.0000
2023	Springpole Lake	L-15-B1	March	Winter	Cyclopoida	Cyclopoida indet.	0.0222	0.0001
2023	Springpole Lake	L-15-B1	March	Winter	Cyclopoida	Cyclopoida indet.	1.4403	0.0001
2023	Springpole Lake	L-15-B1	March	Winter	Ploima	Kellicottia longispina	0.7756	0.0000
2023	Springpole Lake	L-15-B1	March	Winter	Ploima	Keratella sp. 1	0.8310	0.0000
2023	Springpole Lake	L-15-B1	March	Winter	Ploima	Keratella sp. 2	0.0554	0.0000
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Limnocalanus macrurus	0.0034	0.0001
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Leptodiaptomus sicilis	0.1473	0.0026
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Leptodiaptomus sicilis	0.1438	0.0020
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0342	0.0001
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0377	0.0001
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0103	0.0001
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0137	0.0001
2023	Springpole Lake	L-15-B2	March	Winter	Calanoida	Calanoida indet.	4.2236	0.0004
2023	Springpole Lake	L-15-B2	March	Winter	Cyclopoida	Diacyclops thomasi	0.0034	0.0000
2023	Springpole Lake	L-15-B2	March	Winter	Cyclopoida	Cyclopoida indet.	0.0137	0.0000
2023	Springpole Lake	L-15-B2	March	Winter	Cyclopoida	Cyclopoida indet.	1.4269	0.0001
2023	Springpole Lake	L-15-B2	March	Winter	Ploima	Kellicottia longispina	0.7991	0.0000
2023	Springpole Lake	L-15-B2	March	Winter	Ploima	Keratella sp. 1	0.4566	0.0000
2023	Springpole Lake	L-15-B2	March	Winter	Ploima	Keratella sp. 2	0.0571	0.0000
2023	Springpole Lake	L-15-B2	March	Winter	Ploima	Gastropus stylifer	0.1142	0.0000
2023	Springpole Lake	L-15-B2	March	Winter		Rotifera indet.	0.1142	0.0000
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Limnocalanus macrurus	0.0040	0.0001
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Limnocalanus macrurus	0.0040	0.0001
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Leptodiaptomus sicilis	0.1079	0.0019
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Leptodiaptomus sicilis	0.1159	0.0015
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Leptodiaptomus siciloides	0.1958	0.0005
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Leptodiaptomus siciloides	0.1679	0.0004
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0120	0.0001

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0160	0.0001
2023	Springpole Lake	L-15-B3	March	Winter	Calanoida	Calanoida indet.	3.8319	0.0003
2023	Springpole Lake	L-15-B3	March	Winter	Cyclopoida	Diacyclops thomasi	0.0639	0.0004
2023	Springpole Lake	L-15-B3	March	Winter	Cyclopoida	Diacyclops thomasi	0.0520	0.0002
2023	Springpole Lake	L-15-B3	March	Winter	Cyclopoida	Cyclopoida indet.	0.0719	0.0004
2023	Springpole Lake	L-15-B3	March	Winter	Cyclopoida	Cyclopoida indet.	3.3123	0.0003
2023	Springpole Lake	L-15-B3	March	Winter	Ploima	Kellicottia bostoniensis	0.0649	0.0000
2023	Springpole Lake	L-15-B3	March	Winter	Ploima	Kellicottia longispina	1.3639	0.0000
2023	Springpole Lake	L-15-B3	March	Winter	Ploima	Keratella sp. 1	0.9742	0.0000
2023	Springpole Lake	L-15-B3	March	Winter	Ploima	Polyarthra sp.	0.1299	0.0000
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Limnocalanus macrurus	0.0042	0.0001
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Leptodiaptomus sicilis	0.1549	0.0029
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0753	0.0010
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Leptodiaptomus siciloides	0.3139	0.0008
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Leptodiaptomus siciloides	0.2511	0.0006
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0251	0.0003
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0167	0.0001
2023	Springpole Lake	L-15-B4	March	Winter	Calanoida	Calanoida indet.	3.4531	0.0003
2023	Springpole Lake	L-15-B4	March	Winter	Cyclopoida	Diacyclops thomasi	0.0167	0.0001
2023	Springpole Lake	L-15-B4	March	Winter	Cyclopoida	Diacyclops thomasi	0.0167	0.0001
2023	Springpole Lake	L-15-B4	March	Winter	Cyclopoida	Cyclopoida indet.	0.0753	0.0003
2023	Springpole Lake	L-15-B4	March	Winter	Cyclopoida	Cyclopoida indet.	3.6623	0.0004
2023	Springpole Lake	L-15-B4	March	Winter	Ploima	Brachionus angularis	0.1046	0.0000
2023	Springpole Lake	L-15-B4	March	Winter	Ploima	Kellicottia longispina	3.2438	0.0000
2023	Springpole Lake	L-15-B4	March	Winter	Ploima	Keratella sp. 1	0.9417	0.0000
2023	Springpole Lake	L-15-B4	March	Winter	Ploima	Gastropus stylifer	0.2093	0.0000
2023	Springpole Lake	L-15-B5	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0167	0.0003
2023	Springpole Lake	L-15-B5	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0084	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0293	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0335	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0084	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Calanoida	Calanoida indet.	0.5581	0.0000
2023	Springpole Lake	L-15-B5	March	Winter	Cyclopoida	Diacyclops thomasi	0.0126	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Cyclopoida	Diacyclops thomasi	0.0126	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Cyclopoida	Microcyclops varicans	0.0042	0.0000
2023	Springpole Lake	L-15-B5	March	Winter	Cyclopoida	Cyclopoida indet.	0.0586	0.0002
2023	Springpole Lake	L-15-B5	March	Winter	Cyclopoida	Cyclopoida indet.	1.0464	0.0001
2023	Springpole Lake	L-15-B5	March	Winter	Ploima	Asplanchna sp.	0.0698	0.0000
2023	Springpole Lake	L-15-B5	March	Winter	Ploima	Kellicottia longispina	0.2093	0.0000
2023	Springpole Lake	L-15-B5	March	Winter	Ploima	Keratella sp. 1	1.1859	0.0000

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Limnocalanus macrurus	0.0161	0.0004
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Limnocalanus macrurus	0.0108	0.0002
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0861	0.0016
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Leptodiaptomus sicilis	0.1184	0.0016
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Leptodiaptomus siciloides	0.3821	0.0010
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Leptodiaptomus siciloides	0.3121	0.0007
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0108	0.0001
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0538	0.0005
2023	Springpole Lake	L-15-B6	March	Winter	Calanoida	Calanoida indet.	5.9195	0.0005
2023	Springpole Lake	L-15-B6	March	Winter	Cyclopoida	Diacyclops thomasi	0.0161	0.0001
2023	Springpole Lake	L-15-B6	March	Winter	Cyclopoida	Diacyclops thomasi	0.0108	0.0001
2023	Springpole Lake	L-15-B6	March	Winter	Cyclopoida	Cyclopoida indet.	0.0646	0.0002
2023	Springpole Lake	L-15-B6	March	Winter	Cyclopoida	Cyclopoida indet.	5.1123	0.0005
2023	Springpole Lake	L-15-B6	March	Winter	Ploima	Kellicottia bostoniensis	0.1345	0.0000
2023	Springpole Lake	L-15-B6	March	Winter	Ploima	Kellicottia longispina	3.4979	0.0000
2023	Springpole Lake	L-15-B6	March	Winter	Ploima	Keratella sp. 1	1.2108	0.0000
2023	Springpole Lake	L-15-B6	March	Winter	Ploima	Polyarthra sp.	0.1345	0.0000
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Limnocalanus macrurus	0.0419	0.0008
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Limnocalanus macrurus	0.0167	0.0003
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Leptodiaptomus sicilis	0.2930	0.0054
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Leptodiaptomus sicilis	0.2009	0.0027
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0753	0.0002
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Leptodiaptomus siciloides	0.1088	0.0002
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0251	0.0003
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0084	0.0001
2023	Springpole Lake	SW-01B	March	Winter	Calanoida	Calanoida indet.	4.1855	0.0004
2023	Springpole Lake	SW-01B	March	Winter	Cyclopoida	Diacyclops thomasi	0.0167	0.0001
2023	Springpole Lake	SW-01B	March	Winter	Cyclopoida	Cyclopoida indet.	0.0335	0.0001
2023	Springpole Lake	SW-01B	March	Winter	Cyclopoida	Cyclopoida indet.	2.7904	0.0003
2023	Springpole Lake	SW-01B	March	Winter	Cyclopoida	Cyclopoida indet.	0.0419	0.0005
2023	Springpole Lake	SW-01B	March	Winter	Flosculariaceae	Conochilus sp.	0.2790	0.0000
2023	Springpole Lake	SW-01B	March	Winter	Ploima	Kellicottia longispina	5.0226	0.0000
2023	Springpole Lake	SW-01B	March	Winter	Ploima	Keratella sp. 1	0.8371	0.0000
2023	Springpole Lake	SW-01B	March	Winter	Ploima	Keratella sp. 2	0.1395	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Diaptomidae indet.	0.0020	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0183	0.0003
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0163	0.0002
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Leptodiaptomus siciloides	0.1059	0.0003
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Leptodiaptomus siciloides	0.0794	0.0002
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Skistodiaptomus oregonensis	0.0020	0.0000

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Calanoida indet.	0.0020	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Calanoida	Calanoida indet.	0.3394	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Cyclopoida	Acanthocyclops sp.	0.0020	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Cyclopoida	Acanthocyclops sp.	0.0020	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Cyclopoida	Diacyclops thomasi	0.0102	0.0001
2023	Birch Lake	Birch-B1	March	Winter	Cyclopoida	Diacyclops thomasi	0.0122	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Cyclopoida	Cyclopoida indet.	0.0794	0.0002
2023	Birch Lake	Birch-B1	March	Winter	Cyclopoida	Cyclopoida indet.	2.0362	0.0002
2023	Birch Lake	Birch-B1	March	Winter	Ploima	Kellicottia bostoniensis	0.0339	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Ploima	Kellicottia longispina	0.4072	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Ploima	Keratella sp. 1	0.1018	0.0000
2023	Birch Lake	Birch-B1	March	Winter	Ploima	Keratella sp. 2	0.0339	0.0000
2023	Birch Lake	Birch-B1	March	Winter		Rotifera indet.	0.1697	0.0000
2023	Birch Lake	Birch-B2	March	Winter	Diplostraca	Daphnia sp.	0.0082	0.0000
2023	Birch Lake	Birch-B2	March	Winter	Calanoida	Limnocalanus macrurus	0.0082	0.0002
2023	Birch Lake	Birch-B2	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0491	0.0008
2023	Birch Lake	Birch-B2	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0246	0.0003
2023	Birch Lake	Birch-B2	March	Winter	Calanoida	Leptodiaptomus siciloides	0.2457	0.0006
2023	Birch Lake	Birch-B2	March	Winter	Calanoida	Leptodiaptomus siciloides	0.2375	0.0005
2023	Birch Lake	Birch-B2	March	Winter	Calanoida	Calanoida indet.	4.1491	0.0004
2023	Birch Lake	Birch-B2	March	Winter	Cyclopoida	Diacyclops thomasi	0.2702	0.0020
2023	Birch Lake	Birch-B2	March	Winter	Cyclopoida	Diacyclops thomasi	0.3276	0.0012
2023	Birch Lake	Birch-B2	March	Winter	Cyclopoida	Tropocyclops prasinus mexicanus	0.0082	0.0000
2023	Birch Lake	Birch-B2	March	Winter	Cyclopoida	Cyclopoida indet.	0.6551	0.0029
2023	Birch Lake	Birch-B2	March	Winter	Cyclopoida	Cyclopoida indet.	6.3329	0.0004
2023	Birch Lake	Birch-B2	March	Winter	Ploima	Kellicottia longispina	2.0746	0.0000
2023	Birch Lake	Birch-B2	March	Winter	Ploima	Keratella sp. 1	1.2011	0.0000
2023	Birch Lake	Birch-B2	March	Winter	Ploima	Keratella sp. 2	0.1092	0.0000
2023	Birch Lake	Birch-B2	March	Winter	Ploima	Polyarthra sp.	0.3276	0.0000
2023	Birch Lake	SW-23	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0251	0.0005
2023	Birch Lake	SW-23	March	Winter	Calanoida	Leptodiaptomus sicilis	0.0126	0.0002
2023	Birch Lake	SW-23	March	Winter	Calanoida	Leptodiaptomus siciloides	0.1381	0.0003
2023	Birch Lake	SW-23	March	Winter	Calanoida	Leptodiaptomus siciloides	0.1130	0.0003
2023	Birch Lake	SW-23	March	Winter	Calanoida	Calanoida indet.	4.7087	0.0005
2023	Birch Lake	SW-23	March	Winter	Cyclopoida	Diacyclops thomasi	0.0063	0.0000
2023	Birch Lake	SW-23	March	Winter	Cyclopoida	Tropocyclops prasinus mexicanus	0.0063	0.0000
2023	Birch Lake	SW-23	March	Winter	Cyclopoida	Cyclopoida indet.	0.1193	0.0003
2023	Birch Lake	SW-23	March	Winter	Cyclopoida	Cyclopoida indet.	1.0464	0.0001
2023	Birch Lake	SW-23	March	Winter	Ploima	Kellicottia longispina	0.6278	0.0000
2023	Birch Lake	SW-23	March	Winter	Ploima	Keratella sp. 1	0.7325	0.0000

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2023	Birch Lake	SW-23	March	Winter	Ploima	Keratella sp. 2	0.2093	0.0000
2023	Birch Lake	SW-23	March	Winter	Ploima	Notholca sp.	0.1046	0.0000
2022	Springpole Lake	L-15-B1	April	Spring	Calanoida	Limnocalanus macrurus Sars	0.4019	92.0066
2022	Springpole Lake	L-15-B1	April	Spring	Calanoida	Diaptomus minutus Lilljeborg	0.9043	5.5177
2022	Springpole Lake	L-15-B1	April	Spring	Calanoida	Diaptomus sicilis S.A.Forbes	0.0075	0.7204
2022	Springpole Lake	L-15-B1	April	Spring	Calanoida	Diaptomus oregonensis Marsh	0.2462	16.3288
2022	Springpole Lake	L-15-B1	April	Spring	Calanoida	Calanoid nauplius	3.4162	4.0261
2022	Springpole Lake	L-15-B1	April	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	7.0334	95.2387
2022	Springpole Lake	L-15-B1	April	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.1005	2.3994
2022	Springpole Lake	L-15-B1	April	Spring	Cyclopoida	Cyclopoid nauplius	2.2105	6.0730
2022	Springpole Lake	L-15-B1	April	Spring	Holopedidae	Holopedium gibberum Zaddach	0.0251	0.7037
2022	Springpole Lake	L-15-B1	April	Spring	Daphniidae	Daphnia longiremis Sars	0.1005	8.5989
2022	Springpole Lake	L-15-B1	April	Spring	Daphniidae	Daphnia galeata mendotae Birge	0.0226	0.6309
2022	Springpole Lake	L-15-B1	April	Spring	Daphniidae	Daphnia retrocurva Forbes	0.0226	1.4632
2022	Springpole Lake	L-15-B1	April	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.0452	0.7468
2022	Springpole Lake	L-15-B1	April	Spring	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.0226	0.1277
2022	Springpole Lake	L-15-B1	April	Spring	Ploima	Kellicottia sps	10.7511	2.3038
2022	Springpole Lake	L-15-B1	April	Spring	Ploima	Keratella sps	2.5119	0.3947
2022	Springpole Lake	L-15-B1	April	Spring	Ploima	Polyarthra sps	3.6172	2.7387
2022	Springpole Lake	L-15-B1	April	Spring	Flosculariaceae	Conochilus sps	0.2010	0.1206
2022	Springpole Lake	L-15-B1	April	Spring	Ploima	Asplanchna sps	3.7177	2.1775
2022	Springpole Lake	L-15-B1	April	Spring	Ploima	Brachionus sps	0.6029	0.2153
2022	Springpole Lake	L-15-B2	April	Spring	Calanoida	Limnocalanus macrurus Sars	0.0885	15.2083
2022	Springpole Lake	L-15-B2	April	Spring	Calanoida	Diaptomus minutus Lilljeborg	0.1376	5.0427
2022	Springpole Lake	L-15-B2	April	Spring	Calanoida	Diaptomus sicilis S.A.Forbes	0.0590	5.9367
2022	Springpole Lake	L-15-B2	April	Spring	Calanoida	Diaptomus oregonensis Marsh	0.0164	1.0867
2022	Springpole Lake	L-15-B2	April	Spring	Calanoida	Diaptomus siciloides Lilljeborg	0.0066	0.2643
2022	Springpole Lake	L-15-B2	April	Spring	Calanoida	Calanoid nauplius	2.2280	2.6257
2022	Springpole Lake	L-15-B2	April	Spring	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.1311	0.7560
2022	Springpole Lake	L-15-B2	April	Spring	Cyclopoida	Acanthocyclops vernalis Fischer	0.0033	0.0579
2022	Springpole Lake	L-15-B2	April	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	5.2456	71.7894
2022	Springpole Lake	L-15-B2	April	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.1343	3.5257
2022	Springpole Lake	L-15-B2	April	Spring	Cyclopoida	Cyclopoid nauplius	2.0969	5.7609
2022	Springpole Lake	L-15-B2	April	Spring	Holopedidae	Holopedium gibberum Zaddach	0.0066	0.4383
2022	Springpole Lake	L-15-B2	April	Spring	Daphniidae	Daphnia longiremis Sars	0.0033	0.6486
2022	Springpole Lake	L-15-B2	April	Spring	Daphniidae	Daphnia ambigua Scourfield	0.1311	4.3035
2022	Springpole Lake	L-15-B2	April	Spring	Daphniidae	Daphnia galeata mendotae Birge	0.1311	0.8372
2022	Springpole Lake	L-15-B2	April	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.0164	0.4279
2022	Springpole Lake	L-15-B2	April	Spring	Ploima	Kellicottia sps	17.5617	3.7632
2022	Springpole Lake	L-15-B2	April	Spring	Ploima	Keratella sps	1.7037	0.2677

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B2	April	Spring	Ploima	Polyarthra sps	6.5529	4.9615
2022	Springpole Lake	L-15-B2	April	Spring	Flosculariaceae	Conochilus sps	1.1795	0.7077
2022	Springpole Lake	L-15-B2	April	Spring	Ploima	Asplanchna sps	2.3590	1.3817
2022	Springpole Lake	L-15-B2	April	Spring	Ploima	Brachionus sps	1.0485	0.3744
2022	Springpole Lake	L-15-B3	June	Spring	Calanoida	Epischura lacustris S.A. Forbes	0.0025	0.4470
2022	Springpole Lake	L-15-B3	June	Spring	Calanoida	Limnocalanus macrurus Sars	0.5024	132.1924
2022	Springpole Lake	L-15-B3	June	Spring	Calanoida	Diaptomus sicilis S.A.Forbes	0.0276	3.0343
2022	Springpole Lake	L-15-B3	June	Spring	Calanoida	Diaptomus oregonensis Marsh	0.2085	1.7071
2022	Springpole Lake	L-15-B3	June	Spring	Calanoida	Calanoid nauplius	2.8134	3.3156
2022	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Acanthocyclops vernalis Fischer	0.0226	1.2942
2022	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	3.1198	41.8324
2022	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.1030	2.7030
2022	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Cyclopoid nauplius	1.2057	3.3125
2022	Springpole Lake	L-15-B3	June	Spring	Holopedidae	Holopedium gibberum Zaddach	0.0126	2.3608
2022	Springpole Lake	L-15-B3	June	Spring	Daphniidae	Daphnia ambigua Scourfield	0.0025	0.0825
2022	Springpole Lake	L-15-B3	June	Spring	Daphniidae	Daphnia retrocurva Forbes	0.0025	0.0825
2022	Springpole Lake	L-15-B3	June	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.0025	0.0415
2022	Springpole Lake	L-15-B3	June	Spring	Ploima	Kellicottia sps	8.9425	1.9162
2022	Springpole Lake	L-15-B3	June	Spring	Ploima	Keratella sps	2.3110	0.3632
2022	Springpole Lake	L-15-B3	June	Spring	Ploima	Polyarthra sps	3.8181	2.8909
2022	Springpole Lake	L-15-B3	June	Spring	Flosculariaceae	Conochilus sps	0.9043	0.5426
2022	Springpole Lake	L-15-B3	June	Spring	Ploima	Asplanchna sps	2.2105	1.2947
2022	Springpole Lake	L-15-B3	June	Spring	Ploima	Brachionus sps	0.6029	0.2153
2022	Springpole Lake	L-15-B4	June	Spring	Calanoida	Limnocalanus macrurus Sars	0.0574	11.9164
2022	Springpole Lake	L-15-B4	June	Spring	Calanoida	Diaptomus minutus Lilljeborg	0.2871	1.7516
2022	Springpole Lake	L-15-B4	June	Spring	Calanoida	Diaptomus oregonensis Marsh	0.4306	2.8154
2022	Springpole Lake	L-15-B4	June	Spring	Calanoida	Calanoid nauplius	1.5789	1.8608
2022	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Acanthocyclops vernalis Fischer	0.1435	2.5369
2022	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.8612	10.2782
2022	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.1615	5.5964
2022	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Cyclopoid nauplius	2.4402	6.7039
2022	Springpole Lake	L-15-B4	June	Spring	Holopedidae	Holopedium gibberum Zaddach	0.0395	1.4196
2022	Springpole Lake	L-15-B4	June	Spring	Daphniidae	Daphnia longiremis Sars	0.0108	2.1310
2022	Springpole Lake	L-15-B4	June	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.0359	0.1112
2022	Springpole Lake	L-15-B4	June	Spring	Ploima	Kellicottia sps	3.3014	0.7074
2022	Springpole Lake	L-15-B4	June	Spring	Ploima	Keratella sps	1.8660	0.2932
2022	Springpole Lake	L-15-B4	June	Spring	Ploima	Polyarthra sps	1.2919	0.9781
2022	Springpole Lake	L-15-B4	June	Spring	Flosculariaceae	Conochilus sps	0.1435	0.0861
2022	Springpole Lake	L-15-B4	June	Spring	Ploima	Asplanchna sps	2.2966	1.3452
2022	Springpole Lake	L-15-B4	June	Spring	Ploima	Brachionus sps	3.4449	1.2303

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B5	June	Spring	Calanoida	Limnocalanus macrurus Sars	0.0188	7.5348
2022	Springpole Lake	L-15-B5	June	Spring	Calanoida	Diaptomus minutus Lilljeborg	0.0377	1.3807
2022	Springpole Lake	L-15-B5	June	Spring	Calanoida	Diaptomus sicilis S.A.Forbes	0.2185	7.4932
2022	Springpole Lake	L-15-B5	June	Spring	Calanoida	Diaptomus oregonensis Marsh	0.0075	0.4999
2022	Springpole Lake	L-15-B5	June	Spring	Calanoida	Calanoid nauplius	1.3564	1.5986
2022	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.2562	8.5142
2022	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.1545	11.4881
2022	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Cyclopoid nauplius	5.4258	14.9063
2022	Springpole Lake	L-15-B5	June	Spring	Holopedidae	Holopedium gibberum Zaddach	0.0565	3.2310
2022	Springpole Lake	L-15-B5	June	Spring	Daphniidae	Daphnia longiremis Sars	0.0038	0.7459
2022	Springpole Lake	L-15-B5	June	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.0038	0.0622
2022	Springpole Lake	L-15-B5	June	Spring	Ploima	Kellicottia sps	4.8229	1.0335
2022	Springpole Lake	L-15-B5	June	Spring	Ploima	Keratella sps	1.6579	0.2605
2022	Springpole Lake	L-15-B5	June	Spring	Ploima	Polyarthra sps	2.2607	1.7117
2022	Springpole Lake	L-15-B5	June	Spring	Flosculariaceae	Conochilus sps	0.6029	0.3617
2022	Springpole Lake	L-15-B5	June	Spring	Ploima	Asplanchna sps	8.5908	5.0318
2022	Springpole Lake	L-15-B5	June	Spring	Ploima	Lecane sps	0.1507	0.0818
2022	Springpole Lake	L-15-B5	June	Spring	Ploima	Brachionus sps	1.0550	0.3768
2022	Springpole Lake	L-15-B6	June	Spring	Calanoida	Limnocalanus macrurus Sars	0.1696	53.3144
2022	Springpole Lake	L-15-B6	June	Spring	Calanoida	Diaptomus minutus Lilljeborg	0.1884	1.1495
2022	Springpole Lake	L-15-B6	June	Spring	Calanoida	Diaptomus sicilis S.A.Forbes	0.1884	0.8325
2022	Springpole Lake	L-15-B6	June	Spring	Calanoida	Diaptomus oregonensis Marsh	1.3564	11.1213
2022	Springpole Lake	L-15-B6	June	Spring	Calanoida	Diaptomus siciloides Lilljeborg	0.0188	0.7598
2022	Springpole Lake	L-15-B6	June	Spring	Calanoida	Calanoid nauplius	1.6956	1.9982
2022	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.6500	11.0410
2022	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.9467	20.0152
2022	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Cyclopoid nauplius	2.6375	7.2461
2022	Springpole Lake	L-15-B6	June	Spring	Daphniidae	Daphnia longiremis Sars	0.0047	0.9323
2022	Springpole Lake	L-15-B6	June	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.1884	0.3028
2022	Springpole Lake	L-15-B6	June	Spring	Ploima	Kellicottia sps	7.7242	1.6552
2022	Springpole Lake	L-15-B6	June	Spring	Ploima	Keratella sps	3.0143	0.4737
2022	Springpole Lake	L-15-B6	June	Spring	Ploima	Polyarthra sps	2.4491	1.8543
2022	Springpole Lake	L-15-B6	June	Spring	Flosculariaceae	Conochilus sps	0.9420	0.5652
2022	Springpole Lake	L-15-B6	June	Spring	Ploima	Asplanchna sps	3.5795	2.0966
2022	Springpole Lake	L-15-B6	June	Spring	Ploima	Brachionus sps	4.8983	1.7494
2022	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Limnocalanus macrurus Sars	0.0814	13.9916
2022	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Diaptomus siciloides Lilljeborg	0.0814	3.2822
2022	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Calanoid nauplius	0.7234	0.8526
2022	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.4823	2.4977
2022	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	3.1922	34.8887

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Cyclopoid nauplius	1.6880	4.6375
2022	Birch Lake	BIRCH-B1	June	Spring	Daphniidae	Daphnia galeata mendotae Birge	0.0271	0.7571
2022	Birch Lake	BIRCH-B1	June	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.1085	1.3879
2022	Birch Lake	BIRCH-B1	June	Spring	Ploima	Kellicottia sps	1.9292	0.4134
2022	Birch Lake	BIRCH-B1	June	Spring	Ploima	Keratella sps	0.7234	0.1137
2022	Birch Lake	BIRCH-B1	June	Spring	Ploima	Polyarthra sps	0.4823	0.3652
2022	Birch Lake	BIRCH-B1	June	Spring	Flosculariaceae	Conochilus sps	0.2411	0.1447
2022	Birch Lake	BIRCH-B1	June	Spring	Ploima	Asplanchna sps	1.9292	1.1299
2022	Birch Lake	BIRCH-B1	June	Spring	Ploima	Brachionus sps	0.9646	0.3445
2022	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Limnocalanus macrurus Sars	0.0084	0.4848
2022	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Diaptomus oregonensis Marsh	0.3349	2.1897
2022	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Diaptomus siciloides Lilljeborg	0.0084	0.3377
2022	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Calanoid nauplius	2.0095	2.3683
2022	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.3433	2.5033
2022	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Mesocyclops edax S.A.Forbes	0.0795	2.3056
2022	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Cyclopoid nauplius	1.0048	2.7604
2022	Birch Lake	BIRCH-B2	June	Spring	Daphniidae	Daphnia ambigua Scourfield	0.0042	0.1375
2022	Birch Lake	BIRCH-B2	June	Spring	Bosminidae	Bosmina longirostris O.F.Muller	0.0795	0.1903
2022	Birch Lake	BIRCH-B2	June	Spring	Ploima	Kellicottia sps	2.6794	0.5742
2022	Birch Lake	BIRCH-B2	June	Spring	Ploima	Keratella sps	0.6698	0.1053
2022	Birch Lake	BIRCH-B2	June	Spring	Ploima	Polyarthra sps	0.6698	0.5072
2022	Birch Lake	BIRCH-B2	June	Spring	Ploima	Asplanchna sps	1.3397	0.7847
2022	Birch Lake	BIRCH-B2	June	Spring	Ploima	Brachionus sps	1.0048	0.3588
2022	Springpole Lake	L-15-B1	August	Summer	Calanoida	Epischura lacustris S.A. Forbes	0.0025	0.3295
2022	Springpole Lake	L-15-B1	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.0904	36.1672
2022	Springpole Lake	L-15-B1	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	1.2057	26.2928
2022	Springpole Lake	L-15-B1	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.6481	23.1937
2022	Springpole Lake	L-15-B1	August	Summer	Calanoida	Diaptomus siciloides Lilljeborg	0.0025	0.1013
2022	Springpole Lake	L-15-B1	August	Summer	Calanoida	Calanoid nauplius	1.2057	1.4210
2022	Springpole Lake	L-15-B1	August	Summer	Cyclopoida	Acanthocyclops vernalis Fischer	0.4019	0.7904
2022	Springpole Lake	L-15-B1	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	1.0274	6.9419
2022	Springpole Lake	L-15-B1	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	0.6255	33.3685
2022	Springpole Lake	L-15-B1	August	Summer	Cyclopoida	Cyclopoid nauplius	8.0382	22.0835
2022	Springpole Lake	L-15-B1	August	Summer	Sididae	Diaphanosoma birgei Korinek	0.4019	8.1227
2022	Springpole Lake	L-15-B1	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.0251	23.1657
2022	Springpole Lake	L-15-B1	August	Summer	Daphniidae	Daphnia longiremis Sars	0.0678	13.4255
2022	Springpole Lake	L-15-B1	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	0.4019	37.5091
2022	Springpole Lake	L-15-B1	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.4019	8.3697
2022	Springpole Lake	L-15-B1	August	Summer	Daphniidae	Ceriodaphnia lacustris Birge	0.0226	0.2524
2022	Springpole Lake	L-15-B1	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	0.6029	6.9615

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B1	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.4019	2.2703
2022	Springpole Lake	L-15-B1	August	Summer	Ploima	Kellicottia sps	0.8038	0.1722
2022	Springpole Lake	L-15-B1	August	Summer	Ploima	Keratella sps	7.4353	1.1684
2022	Springpole Lake	L-15-B1	August	Summer	Ploima	Polyarthra sps	0.8038	0.6086
2022	Springpole Lake	L-15-B1	August	Summer	Flosculariaceae	Conochilus sps	6.6315	3.9789
2022	Springpole Lake	L-15-B1	August	Summer	Ploima	Brachionus sps	0.4019	0.1435
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Epischura lacustris S.A. Forbes	0.0339	4.4487
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.0603	24.1115
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	0.6707	24.5772
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	2.4115	57.4029
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.0377	2.4993
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Diaptomus siciloides Lilljeborg	0.0339	1.3676
2022	Springpole Lake	L-15-B2	August	Summer	Calanoida	Calanoid nauplius	0.9043	1.0657
2022	Springpole Lake	L-15-B2	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	3.0482	18.4198
2022	Springpole Lake	L-15-B2	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	0.3693	23.8232
2022	Springpole Lake	L-15-B2	August	Summer	Cyclopoida	Cyclopoid nauplius	12.9616	35.6096
2022	Springpole Lake	L-15-B2	August	Summer	Polyphemidae	Polyphemus pediculus Linne	0.3014	120.5727
2022	Springpole Lake	L-15-B2	August	Summer	Sididae	Diaphanosoma birgei Korinek	0.9043	33.5171
2022	Springpole Lake	L-15-B2	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.0678	7.8317
2022	Springpole Lake	L-15-B2	August	Summer	Daphniidae	Daphnia longiremis Sars	0.3014	25.7967
2022	Springpole Lake	L-15-B2	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	0.1130	4.6336
2022	Springpole Lake	L-15-B2	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.6029	19.7959
2022	Springpole Lake	L-15-B2	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	2.7129	8.8545
2022	Springpole Lake	L-15-B2	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	1.2057	6.8108
2022	Springpole Lake	L-15-B2	August	Summer	Ploima	Kellicottia sps	2.7129	0.5813
2022	Springpole Lake	L-15-B2	August	Summer	Ploima	Keratella sps	8.1387	1.2789
2022	Springpole Lake	L-15-B2	August	Summer	Ploima	Polyarthra sps	4.2200	3.1952
2022	Springpole Lake	L-15-B2	August	Summer	Flosculariaceae	Conochilus sps	5.1243	3.0746
2022	Springpole Lake	L-15-B2	August	Summer	Ploima	Asplanchna sps	0.3014	0.1766
2022	Springpole Lake	L-15-B2	August	Summer	Ploima	Gastropus sps	0.3014	0.0861
2022	Springpole Lake	L-15-B2	August	Summer	Ploima	Brachionus sps	0.3014	0.1077
2022	Springpole Lake	L-15-B3	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.1809	72.3344
2022	Springpole Lake	L-15-B3	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	0.0553	2.0251
2022	Springpole Lake	L-15-B3	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	1.0048	27.2752
2022	Springpole Lake	L-15-B3	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.4346	7.1523
2022	Springpole Lake	L-15-B3	August	Summer	Calanoida	Diaptomus siciloides Lilljeborg	0.0452	1.8235
2022	Springpole Lake	L-15-B3	August	Summer	Calanoida	Calanoid nauplius	1.6076	1.8946
2022	Springpole Lake	L-15-B3	August	Summer	Cyclopoida	Acanthocyclops vernalis Fischer	0.6029	1.1857
2022	Springpole Lake	L-15-B3	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	1.6101	8.7190
2022	Springpole Lake	L-15-B3	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	1.8538	23.7004

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B3	August	Summer	Cyclopoida	Cyclopoid nauplius	10.4496	28.7085
2022	Springpole Lake	L-15-B3	August	Summer	Leptodoridae	Leptodora kindtii Focke	0.0050	1.4713
2022	Springpole Lake	L-15-B3	August	Summer	Polyphemidae	Polyphemus pediculus Linne	0.0226	9.0430
2022	Springpole Lake	L-15-B3	August	Summer	Sididae	Diaphanosoma birgei Korinek	0.6029	22.3448
2022	Springpole Lake	L-15-B3	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.1407	17.3323
2022	Springpole Lake	L-15-B3	August	Summer	Daphniidae	Daphnia longiremis Sars	0.8038	113.9539
2022	Springpole Lake	L-15-B3	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	0.4019	11.2164
2022	Springpole Lake	L-15-B3	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.4019	8.3697
2022	Springpole Lake	L-15-B3	August	Summer	Daphniidae	Ceriodaphnia lacustris Birge	0.2010	2.2432
2022	Springpole Lake	L-15-B3	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	2.4115	6.8719
2022	Springpole Lake	L-15-B3	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.8038	4.5405
2022	Springpole Lake	L-15-B3	August	Summer	Ploima	Kellicottia sps	0.8038	0.1722
2022	Springpole Lake	L-15-B3	August	Summer	Ploima	Keratella sps	5.6267	0.8842
2022	Springpole Lake	L-15-B3	August	Summer	Ploima	Polyarthra sps	2.4115	1.8258
2022	Springpole Lake	L-15-B3	August	Summer	Flosculariaceae	Conochilus sps	5.8277	3.4966
2022	Springpole Lake	L-15-B3	August	Summer	Ploima	Gastropus sps	0.2010	0.0574
2022	Springpole Lake	L-15-B3	August	Summer	Ploima	Brachionus sps	0.6029	0.2153
2022	Springpole Lake	L-15-B4	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.4718	188.6984
2022	Springpole Lake	L-15-B4	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	0.0885	3.2417
2022	Springpole Lake	L-15-B4	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	1.3106	30.3284
2022	Springpole Lake	L-15-B4	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.2621	1.7137
2022	Springpole Lake	L-15-B4	August	Summer	Calanoida	Diaptomus siciloides Lilljeborg	0.2621	10.5708
2022	Springpole Lake	L-15-B4	August	Summer	Calanoida	Calanoid nauplius	1.3106	1.5445
2022	Springpole Lake	L-15-B4	August	Summer	Cyclopoida	Acanthocyclops vernalis Fischer	0.5242	1.0310
2022	Springpole Lake	L-15-B4	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	1.9528	38.1348
2022	Springpole Lake	L-15-B4	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	0.8158	19.4823
2022	Springpole Lake	L-15-B4	August	Summer	Cyclopoida	Cyclopoid nauplius	9.4361	25.9241
2022	Springpole Lake	L-15-B4	August	Summer	Sididae	Diaphanosoma birgei Korinek	0.0295	1.0929
2022	Springpole Lake	L-15-B4	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.0393	20.9779
2022	Springpole Lake	L-15-B4	August	Summer	Daphniidae	Daphnia longiremis Sars	0.5242	74.3177
2022	Springpole Lake	L-15-B4	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	0.5242	48.9249
2022	Springpole Lake	L-15-B4	August	Summer	Daphniidae	Daphnia retrocurva Forbes	1.0485	28.1308
2022	Springpole Lake	L-15-B4	August	Summer	Daphniidae	Ceriodaphnia lacustris Birge	0.2621	2.9260
2022	Springpole Lake	L-15-B4	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	0.5242	0.8425
2022	Springpole Lake	L-15-B4	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	2.6211	14.8061
2022	Springpole Lake	L-15-B4	August	Summer	Ploima	Kellicottia sps	1.3106	0.2808
2022	Springpole Lake	L-15-B4	August	Summer	Ploima	Keratella sps	8.1256	1.2769
2022	Springpole Lake	L-15-B4	August	Summer	Ploima	Polyarthra sps	4.1938	3.1753
2022	Springpole Lake	L-15-B4	August	Summer	Flosculariaceae	Conochilus sps	7.0771	4.2463
2022	Springpole Lake	L-15-B4	August	Summer	Diptera	Trichocera sps	0.2621	0.3520

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B4	August	Summer	Ploima	Asplanchna sps	0.5242	0.3070
2022	Springpole Lake	L-15-B4	August	Summer	Ploima	Gastropus sps	0.5242	0.1498
2022	Springpole Lake	L-15-B4	August	Summer	Ploima	Brachionus sps	0.5242	0.1872
2022	Springpole Lake	L-15-B5	August	Summer	Calanoida	Epischura lacustris S.A. Forbes	0.0034	0.4494
2022	Springpole Lake	L-15-B5	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.0274	10.9598
2022	Springpole Lake	L-15-B5	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	1.3701	16.7298
2022	Springpole Lake	L-15-B5	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	0.2740	9.6333
2022	Springpole Lake	L-15-B5	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.8906	17.6138
2022	Springpole Lake	L-15-B5	August	Summer	Calanoida	Calanoid nauplius	2.1922	2.5836
2022	Springpole Lake	L-15-B5	August	Summer	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.2740	0.9132
2022	Springpole Lake	L-15-B5	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	2.7403	17.5018
2022	Springpole Lake	L-15-B5	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	0.8324	13.4497
2022	Springpole Lake	L-15-B5	August	Summer	Cyclopoida	Cyclopoid nauplius	8.4949	23.3382
2022	Springpole Lake	L-15-B5	August	Summer	Sididae	Diaphanosoma birgei Korinek	1.0961	12.9158
2022	Springpole Lake	L-15-B5	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.2775	173.1721
2022	Springpole Lake	L-15-B5	August	Summer	Daphniidae	Daphnia longiremis Sars	0.2740	23.4515
2022	Springpole Lake	L-15-B5	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	1.6579	79.3828
2022	Springpole Lake	L-15-B5	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.5481	11.4132
2022	Springpole Lake	L-15-B5	August	Summer	Daphniidae	Ceriodaphnia lacustris Birge	0.2740	3.0590
2022	Springpole Lake	L-15-B5	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	1.3701	2.2020
2022	Springpole Lake	L-15-B5	August	Summer	Ploima	Keratella sps	4.6585	0.7320
2022	Springpole Lake	L-15-B5	August	Summer	Ploima	Polyarthra sps	6.3027	4.7720
2022	Springpole Lake	L-15-B5	August	Summer	Flosculariaceae	Conochilus sps	0.5481	0.3288
2022	Springpole Lake	L-15-B5	August	Summer	Ploima	Gastropus sps	0.5481	0.1566
2022	Springpole Lake	L-15-B6	August	Summer	Calanoida	Epischura lacustris S.A. Forbes	0.0042	0.5492
2022	Springpole Lake	L-15-B6	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.0419	16.7441
2022	Springpole Lake	L-15-B6	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	0.7075	25.9272
2022	Springpole Lake	L-15-B6	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	2.3445	55.5953
2022	Springpole Lake	L-15-B6	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.0042	0.2777
2022	Springpole Lake	L-15-B6	August	Summer	Calanoida	Calanoid nauplius	3.3492	3.9472
2022	Springpole Lake	L-15-B6	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	1.7165	19.0625
2022	Springpole Lake	L-15-B6	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	1.0131	28.9501
2022	Springpole Lake	L-15-B6	August	Summer	Cyclopoida	Cyclopoid nauplius	8.3731	23.0036
2022	Springpole Lake	L-15-B6	August	Summer	Leptodoridae	Leptodora kindtii Focke	0.0042	1.2261
2022	Springpole Lake	L-15-B6	August	Summer	Polyphemidae	Polyphemus pediculus Linne	0.0042	1.6746
2022	Springpole Lake	L-15-B6	August	Summer	Sididae	Diaphanosoma birgei Korinek	1.3397	38.3654
2022	Springpole Lake	L-15-B6	August	Summer	Holopedidae	Holopedium gibberum Zaddach	2.3905	729.1634
2022	Springpole Lake	L-15-B6	August	Summer	Daphniidae	Daphnia longiremis Sars	1.0048	161.2601
2022	Springpole Lake	L-15-B6	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	0.3349	9.3470
2022	Springpole Lake	L-15-B6	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.3349	2.9517

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B6	August	Summer	Daphniidae	Ceriodaphnia lacustris Birge	0.3349	3.7387
2022	Springpole Lake	L-15-B6	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	2.3445	8.7617
2022	Springpole Lake	L-15-B6	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	1.6746	9.4595
2022	Springpole Lake	L-15-B6	August	Summer	Ploima	Kellicottia sps	1.6746	0.3588
2022	Springpole Lake	L-15-B6	August	Summer	Ploima	Keratella sps	6.0286	0.9474
2022	Springpole Lake	L-15-B6	August	Summer	Ploima	Polyarthra sps	8.7080	6.5932
2022	Springpole Lake	L-15-B6	August	Summer	Flosculariaceae	Conochilus sps	10.3827	6.2296
2022	Springpole Lake	L-15-B6	August	Summer	Ploima	Gastropus sps	0.6698	0.1914
2022	Birch Lake	BIRCH-B1	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.1583	63.2926
2022	Birch Lake	BIRCH-B1	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	0.0100	0.3682
2022	Birch Lake	BIRCH-B1	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	0.6029	17.1698
2022	Birch Lake	BIRCH-B1	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.2060	1.6471
2022	Birch Lake	BIRCH-B1	August	Summer	Calanoida	Calanoid nauplius	1.6076	1.8946
2022	Birch Lake	BIRCH-B1	August	Summer	Cyclopoida	Acanthocyclops vernalis Fischer	0.4019	0.7904
2022	Birch Lake	BIRCH-B1	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	2.4165	19.3285
2022	Birch Lake	BIRCH-B1	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	0.6104	14.4221
2022	Birch Lake	BIRCH-B1	August	Summer	Cyclopoida	Cyclopoid nauplius	6.2296	17.1147
2022	Birch Lake	BIRCH-B1	August	Summer	Polyphemidae	Polyphemus pediculus Linne	0.0025	1.0048
2022	Birch Lake	BIRCH-B1	August	Summer	Sididae	Diaphanosoma birgei Korinek	0.4019	8.1227
2022	Birch Lake	BIRCH-B1	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.0904	74.5451
2022	Birch Lake	BIRCH-B1	August	Summer	Daphniidae	Daphnia longiremis Sars	0.2010	17.1978
2022	Birch Lake	BIRCH-B1	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	0.8490	20.9615
2022	Birch Lake	BIRCH-B1	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.6029	14.9683
2022	Birch Lake	BIRCH-B1	August	Summer	Daphniidae	Ceriodaphnia lacustris Birge	0.2010	2.2432
2022	Birch Lake	BIRCH-B1	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	0.6029	0.9689
2022	Birch Lake	BIRCH-B1	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.2010	1.1351
2022	Birch Lake	BIRCH-B1	August	Summer	Ploima	Kellicottia sps	0.8038	0.1722
2022	Birch Lake	BIRCH-B1	August	Summer	Ploima	Keratella sps	4.6220	0.7263
2022	Birch Lake	BIRCH-B1	August	Summer	Ploima	Polyarthra sps	2.2105	1.6737
2022	Birch Lake	BIRCH-B1	August	Summer	Flosculariaceae	Conochilus sps	10.0477	6.0286
2022	Birch Lake	BIRCH-B1	August	Summer	Ploima	Asplanchna sps	0.2010	0.1177
2022	Birch Lake	BIRCH-B1	August	Summer	Ploima	Gastropus sps	0.2010	0.0574
2022	Birch Lake	BIRCH-B1	August	Summer	Ploima	Brachionus sps	0.2010	0.0718
2022	Birch Lake	BIRCH-B2	August	Summer	Calanoida	Epischura lacustris S.A. Forbes	0.0848	11.1216
2022	Birch Lake	BIRCH-B2	August	Summer	Calanoida	Limnocalanus macrurus Sars	0.2543	101.7202
2022	Birch Lake	BIRCH-B2	August	Summer	Calanoida	Diaptomus minutus Lilljeborg	0.0283	1.0356
2022	Birch Lake	BIRCH-B2	August	Summer	Calanoida	Diaptomus sicilis S.A.Forbes	0.2512	3.8012
2022	Birch Lake	BIRCH-B2	August	Summer	Calanoida	Diaptomus oregonensis Marsh	0.5306	14.8476
2022	Birch Lake	BIRCH-B2	August	Summer	Calanoida	Calanoid nauplius	2.0095	2.3683
2022	Birch Lake	BIRCH-B2	August	Summer	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.2512	1.1528

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Birch Lake	BIRCH-B2	August	Summer	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	1.7866	31.6835
2022	Birch Lake	BIRCH-B2	August	Summer	Cyclopoida	Mesocyclops edax S.A.Forbes	1.0079	16.2444
2022	Birch Lake	BIRCH-B2	August	Summer	Cyclopoida	Cyclopoid nauplius	8.0382	22.0835
2022	Birch Lake	BIRCH-B2	August	Summer	Polyphemidae	Polyphemus pediculus Linne	0.0283	11.3037
2022	Birch Lake	BIRCH-B2	August	Summer	Sididae	Diaphanosoma birgei Korinek	0.5024	10.1534
2022	Birch Lake	BIRCH-B2	August	Summer	Holopedidae	Holopedium gibberum Zaddach	0.0314	22.1075
2022	Birch Lake	BIRCH-B2	August	Summer	Daphniidae	Daphnia longiremis Sars	0.7536	64.4918
2022	Birch Lake	BIRCH-B2	August	Summer	Daphniidae	Daphnia galeata mendotae Birge	1.0896	36.0935
2022	Birch Lake	BIRCH-B2	August	Summer	Daphniidae	Daphnia retrocurva Forbes	0.2512	2.2138
2022	Birch Lake	BIRCH-B2	August	Summer	Bosminidae	Bosmina longirostris O.F.Muller	0.7536	1.2111
2022	Birch Lake	BIRCH-B2	August	Summer	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.0283	0.1596
2022	Birch Lake	BIRCH-B2	August	Summer	Ploima	Kellicottia sps	2.0095	0.4306
2022	Birch Lake	BIRCH-B2	August	Summer	Ploima	Keratella sps	5.2751	0.8289
2022	Birch Lake	BIRCH-B2	August	Summer	Ploima	Polyarthra sps	1.2560	0.9509
2022	Birch Lake	BIRCH-B2	August	Summer	Flosculariaceae	Conochilus sps	5.0239	3.0143
2022	Birch Lake	BIRCH-B2	August	Summer	Diptera	Trichocera sps	0.2512	0.3373
2022	Birch Lake	BIRCH-B2	August	Summer	Ploima	Asplanchna sps	0.2512	0.1471
2022	Springpole Lake	L-15-B1	September	Fall	Calanoida	Epischura lacustris S.A. Forbes	0.0025	0.0722
2022	Springpole Lake	L-15-B1	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.0703	28.1300
2022	Springpole Lake	L-15-B1	September	Fall	Calanoida	Diaptomus minutus Lilljeborg	0.3466	9.1306
2022	Springpole Lake	L-15-B1	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	0.6029	19.1815
2022	Springpole Lake	L-15-B1	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.7033	10.4948
2022	Springpole Lake	L-15-B1	September	Fall	Calanoida	Calanoid nauplius	0.4019	0.4737
2022	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.3014	1.3833
2022	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Acanthocyclops vernalis Fischer	0.6029	9.7778
2022	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.4019	4.2939
2022	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.7033	34.6611
2022	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Cyclopoid nauplius	2.5119	6.9011
2022	Springpole Lake	L-15-B1	September	Fall	Polyphemidae	Polyphemus pediculus Linne	0.0075	3.0143
2022	Springpole Lake	L-15-B1	September	Fall	Sididae	Diaphanosoma birgei Korinek	0.6029	18.9579
2022	Springpole Lake	L-15-B1	September	Fall	Holopedidae	Holopedium gibberum Zaddach	0.0201	10.5346
2022	Springpole Lake	L-15-B1	September	Fall	Daphniidae	Daphnia longiremis Sars	0.2010	39.7791
2022	Springpole Lake	L-15-B1	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.6029	23.4842
2022	Springpole Lake	L-15-B1	September	Fall	Daphniidae	Ceriodaphnia lacustris Birge	0.1005	1.1216
2022	Springpole Lake	L-15-B1	September	Fall	Bosminidae	Bosmina longirostris O.F.Muller	1.1052	4.7726
2022	Springpole Lake	L-15-B1	September	Fall	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.5024	2.8378
2022	Springpole Lake	L-15-B1	September	Fall	Ploima	Kellicottia sps	1.0048	0.2153
2022	Springpole Lake	L-15-B1	September	Fall	Ploima	Keratella sps	3.2153	0.5053
2022	Springpole Lake	L-15-B1	September	Fall	Ploima	Polyarthra sps	4.1196	3.1191
2022	Springpole Lake	L-15-B1	September	Fall	Flosculariaceae	Conochilus sps	0.7033	0.4220

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B1	September	Fall	Ploima	Asplanchna sps	0.4019	0.2354
2022	Springpole Lake	L-15-B1	September	Fall	Ploima	Gastropus sps	1.1053	0.3158
2022	Springpole Lake	L-15-B2	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.0063	2.5116
2022	Springpole Lake	L-15-B2	September	Fall	Calanoida	Diaptomus minutus Lilljeborg	0.0126	0.4602
2022	Springpole Lake	L-15-B2	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	0.5087	13.5799
2022	Springpole Lake	L-15-B2	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.3077	8.3394
2022	Springpole Lake	L-15-B2	September	Fall	Calanoida	Calanoid nauplius	0.2512	0.2960
2022	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Acanthocyclops vernalis Fischer	0.2575	0.8535
2022	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.7536	23.1884
2022	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.2512	5.9985
2022	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Cyclopoid nauplius	1.5072	4.1407
2022	Springpole Lake	L-15-B2	September	Fall	Sididae	Diaphanosoma birgei Korinek	0.2261	4.5690
2022	Springpole Lake	L-15-B2	September	Fall	Holopedidae	Holopedium gibberum Zaddach	0.2575	50.2669
2022	Springpole Lake	L-15-B2	September	Fall	Daphniidae	Daphnia longiremis Sars	0.0063	1.2431
2022	Springpole Lake	L-15-B2	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.1193	0.8973
2022	Springpole Lake	L-15-B2	September	Fall	Daphniidae	Ceriodaphnia lacustris Birge	0.0565	0.6309
2022	Springpole Lake	L-15-B2	September	Fall	Bosminidae	Bosmina longirostris O.F.Muller	1.5072	9.9130
2022	Springpole Lake	L-15-B2	September	Fall	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.2512	1.4189
2022	Springpole Lake	L-15-B2	September	Fall	Ploima	Kellicottia sps	0.2512	0.0538
2022	Springpole Lake	L-15-B2	September	Fall	Ploima	Keratella sps	2.5119	0.3947
2022	Springpole Lake	L-15-B2	September	Fall	Ploima	Polyarthra sps	2.2607	1.7117
2022	Springpole Lake	L-15-B2	September	Fall	Flosculariaceae	Conochilus sps	0.2512	0.1507
2022	Springpole Lake	L-15-B2	September	Fall	Ploima	Gastropus sps	1.0048	0.2871
2022	Springpole Lake	L-15-B3	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.0980	39.1811
2022	Springpole Lake	L-15-B3	September	Fall	Calanoida	Diaptomus minutus Lilljeborg	0.0050	0.1841
2022	Springpole Lake	L-15-B3	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	0.5024	15.6493
2022	Springpole Lake	L-15-B3	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.6029	13.2368
2022	Springpole Lake	L-15-B3	September	Fall	Calanoida	Calanoid nauplius	0.3014	0.3552
2022	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Acanthocyclops vernalis Fischer	0.3014	2.1710
2022	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.1055	1.3511
2022	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.4019	10.1271
2022	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Cyclopoid nauplius	1.0048	2.7604
2022	Springpole Lake	L-15-B3	September	Fall	Sididae	Diaphanosoma birgei Korinek	0.0678	1.7517
2022	Springpole Lake	L-15-B3	September	Fall	Holopedidae	Holopedium gibberum Zaddach	0.2236	12.8582
2022	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Daphnia longiremis Sars	0.1005	8.5989
2022	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.0226	0.6309
2022	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Daphnia pulex x schoedleri	0.0025	1.3304
2022	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Ceriodaphnia lacustris Birge	0.0226	0.2524
2022	Springpole Lake	L-15-B3	September	Fall	Bosminidae	Bosmina longirostris O.F.Muller	0.4019	0.6459
2022	Springpole Lake	L-15-B3	September	Fall	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.3014	1.7027

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Springpole Lake	L-15-B3	September	Fall	Ploima	Kellicottia sps	0.7033	0.1507
2022	Springpole Lake	L-15-B3	September	Fall	Ploima	Keratella sps	2.2105	0.3474
2022	Springpole Lake	L-15-B3	September	Fall	Ploima	Polyarthra sps	1.0048	0.7608
2022	Springpole Lake	L-15-B3	September	Fall	Flosculariaceae	Conochilus sps	1.9091	1.1454
2022	Springpole Lake	L-15-B3	September	Fall	Ploima	Asplanchna sps	0.5024	0.2943
2022	Springpole Lake	L-15-B3	September	Fall	Ploima	Gastropus sps	0.6029	0.1722
2022	Springpole Lake	L-15-B4	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.0238	9.5177
2022	Springpole Lake	L-15-B4	September	Fall	Calanoida	Diaptomus minutus Lilljeborg	0.2300	8.4298
2022	Springpole Lake	L-15-B4	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	1.4278	37.4890
2022	Springpole Lake	L-15-B4	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.1586	1.0372
2022	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Acanthocyclops vernalis Fischer	0.3173	5.6079
2022	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.3570	5.2272
2022	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.6703	14.3346
2022	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Cyclopoid nauplius	1.7451	4.7944
2022	Springpole Lake	L-15-B4	September	Fall	Polyphemidae	Polyphemus pediculus Linne	0.0040	1.5865
2022	Springpole Lake	L-15-B4	September	Fall	Sididae	Diaphanosoma birgei Korinek	0.6346	18.1731
2022	Springpole Lake	L-15-B4	September	Fall	Holopedidae	Holopedium gibberum Zaddach	0.3371	36.4819
2022	Springpole Lake	L-15-B4	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.5553	6.2920
2022	Springpole Lake	L-15-B4	September	Fall	Daphniidae	Ceriodaphnia lacustris Birge	0.0040	0.0443
2022	Springpole Lake	L-15-B4	September	Fall	Bosminidae	Bosmina longirostris O.F.Muller	0.4759	3.1304
2022	Springpole Lake	L-15-B4	September	Fall	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.4759	2.6885
2022	Springpole Lake	L-15-B4	September	Fall	Ploima	Kellicottia sps	0.4759	0.1020
2022	Springpole Lake	L-15-B4	September	Fall	Ploima	Keratella sps	3.6489	0.5734
2022	Springpole Lake	L-15-B4	September	Fall	Ploima	Polyarthra sps	2.3797	1.8018
2022	Springpole Lake	L-15-B4	September	Fall	Flosculariaceae	Conochilus sps	1.4278	0.8567
2022	Springpole Lake	L-15-B4	September	Fall	Diptera	Trichocera sps	0.1586	0.2130
2022	Springpole Lake	L-15-B4	September	Fall	Ploima	Asplanchna sps	0.4759	0.2788
2022	Springpole Lake	L-15-B4	September	Fall	Ploima	Gastropus sps	0.6346	0.1813
2022	Springpole Lake	L-15-B4	September	Fall	Ploima	Brachionus sps	0.1586	0.0567
2022	Springpole Lake	L-15-B5	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.0171	6.8498
2022	Springpole Lake	L-15-B5	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	0.8221	24.6887
2022	Springpole Lake	L-15-B5	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.5857	21.0115
2022	Springpole Lake	L-15-B5	September	Fall	Calanoida	Calanoid nauplius	0.5481	0.6459
2022	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.2740	1.2576
2022	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Acanthocyclops vernalis Fischer	0.1370	0.2695
2022	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.6851	6.3683
2022	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.8529	14.4896
2022	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Cyclopoid nauplius	4.1104	11.2927
2022	Springpole Lake	L-15-B5	September	Fall	Holopedidae	Holopedium gibberum Zaddach	0.0274	21.0860
2022	Springpole Lake	L-15-B5	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.7159	21.0642

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2022	Springpole Lake	L-15-B5	September	Fall	Daphniidae	Daphnia retrocurva Forbes	0.1370	1.2075
2022	Springpole Lake	L-15-B5	September	Fall	Bosminidae	Bosmina longirostris O.F.Muller	0.1370	0.2202
2022	Springpole Lake	L-15-B5	September	Fall	Ploima	Kellicottia sps	0.4110	0.0881
2022	Springpole Lake	L-15-B5	September	Fall	Ploima	Keratella sps	4.2474	0.6675
2022	Springpole Lake	L-15-B5	September	Fall	Ploima	Polyarthra sps	2.3292	1.7636
2022	Springpole Lake	L-15-B5	September	Fall	Flosculariaceae	Conochilus sps	1.3701	0.8221
2022	Springpole Lake	L-15-B5	September	Fall	Diptera	Trichocera sps	0.2740	0.3680
2022	Springpole Lake	L-15-B5	September	Fall	Ploima	Asplanchna sps	0.1370	0.0803
2022	Springpole Lake	L-15-B5	September	Fall	Ploima	Gastropus sps	0.5481	0.1566
2022	Springpole Lake	L-15-B5	September	Fall	Ploima	Brachionus sps	0.8221	0.2936
2022	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Epischura lacustris S.A. Forbes	0.0025	0.3295
2022	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.1155	46.2137
2022	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	0.7033	18.6903
2022	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.2738	8.2475
2022	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Calanoid nauplius	0.3014	0.3552
2022	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.1005	0.5796
2022	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.3014	14.7906
2022	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.1231	3.5062
2022	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Cyclopoid nauplius	0.8038	2.2083
2022	Birch Lake	BIRCH-B1	September	Fall	Sididae	Diaphanosoma birgei Korinek	0.4019	8.1227
2022	Birch Lake	BIRCH-B1	September	Fall	Daphniidae	Daphnia longiremis Sars	0.1005	19.8896
2022	Birch Lake	BIRCH-B1	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.6029	36.6306
2022	Birch Lake	BIRCH-B1	September	Fall	Daphniidae	Ceriodaphnia lacustris Birge	0.0025	0.0280
2022	Birch Lake	BIRCH-B1	September	Fall	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.2010	1.1351
2022	Birch Lake	BIRCH-B1	September	Fall	Ploima	Kellicottia sps	0.4019	0.0861
2022	Birch Lake	BIRCH-B1	September	Fall	Ploima	Keratella sps	2.9138	0.4579
2022	Birch Lake	BIRCH-B1	September	Fall	Ploima	Polyarthra sps	2.4115	1.8258
2022	Birch Lake	BIRCH-B1	September	Fall	Flosculariaceae	Conochilus sps	3.0143	1.8086
2022	Birch Lake	BIRCH-B1	September	Fall	Diptera	Trichocera sps	0.7033	0.9445
2022	Birch Lake	BIRCH-B1	September	Fall	Ploima	Asplanchna sps	0.2010	0.1177
2022	Birch Lake	BIRCH-B1	September	Fall	Ploima	Gastropus sps	0.5024	0.1435
2022	Birch Lake	BIRCH-B1	September	Fall	Ploima	Brachionus sps	0.5024	0.1794
2022	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Limnocalanus macrurus Sars	0.3360	48.4506
2022	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Diaptomus minutus Lilljeborg	0.1256	0.7663
2022	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Diaptomus sicilis S.A.Forbes	1.8839	42.2515
2022	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Diaptomus oregonensis Marsh	0.1256	2.2952
2022	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Calanoid nauplius	0.1256	0.1480
2022	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Tropocyclops prasinus mexicanus Kiefer	0.1256	0.5764
2022	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Acanthocyclops vernalis Fischer	1.5072	15.8255
2022	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Cyclops bicuspidatus thomasi S.A.Forbes	0.3893	19.3794

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2022	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Mesocyclops edax S.A.Forbes	0.7536	14.5928
2022	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Cyclopoid nauplius	1.7584	4.8308
2022	Birch Lake	BIRCH-B2	September	Fall	Sididae	Diaphanosoma birgei Korinek	0.1256	4.6552
2022	Birch Lake	BIRCH-B2	September	Fall	Holopedidae	Holopedium gibberum Zaddach	0.1821	27.3059
2022	Birch Lake	BIRCH-B2	September	Fall	Daphniidae	Daphnia galeata mendotae Birge	0.5306	10.3981
2022	Birch Lake	BIRCH-B2	September	Fall	Daphniidae	Ceriodaphnia lacustris Birge	0.1256	1.4020
2022	Birch Lake	BIRCH-B2	September	Fall	Bosminidae	Bosmina longirostris O.F.Muller	0.2512	0.4037
2022	Birch Lake	BIRCH-B2	September	Fall	Chydoridae	Chydorus sphaericus (O.F.Muller)	0.2512	1.4189
2022	Birch Lake	BIRCH-B2	September	Fall	Ploima	Kellicottia sps	1.8839	0.4037
2022	Birch Lake	BIRCH-B2	September	Fall	Ploima	Keratella sps	6.9078	1.0855
2022	Birch Lake	BIRCH-B2	September	Fall	Ploima	Polyarthra sps	8.6662	6.5615
2022	Birch Lake	BIRCH-B2	September	Fall	Flosculariaceae	Conochilus sps	0.5024	0.3014
2022	Birch Lake	BIRCH-B2	September	Fall	Diptera	Trichocera sps	1.3816	1.8552
2022	Birch Lake	BIRCH-B2	September	Fall	Ploima	Asplanchna sps	0.2512	0.1471
2022	Birch Lake	BIRCH-B2	September	Fall	Ploima	Gastropus sps	0.6280	0.1794
2022	Birch Lake	BIRCH-B2	September	Fall	Ploima	Brachionus sps	0.8792	0.3140
2021	Springpole Lake	L-15-B1	June	Spring	Chydoridae	Chydorus sphaericus	1883.2390	1.7354
2021	Springpole Lake	L-15-B1	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	3766.4780	9.9820
2021	Springpole Lake	L-15-B1	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	403.5513	0.6454
2021	Springpole Lake	L-15-B1	June	Spring	Holopedidae	Holopedium gibberum	13182.6700	27.4780
2021	Springpole Lake	L-15-B1	June	Spring	Sididae	Diaphanosoma birgei	134.5171	0.3823
2021	Springpole Lake	L-15-B1	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	672.5854	0.4476
2021	Springpole Lake	L-15-B1	June	Spring	Calanoida	Calanoid copepodid	8003.7660	26.3961
2021	Springpole Lake	L-15-B1	June	Spring	Calanoida	Leptodiaptomus minutus	2959.3760	11.5311
2021	Springpole Lake	L-15-B1	June	Spring	Calanoida	Skistodiaptomus oregonensis	807.1025	4.9325
2021	Springpole Lake	L-15-B1	June	Spring	Calanoida	Epischura lacustris copepodid	4573.5810	3.5106
2021	Springpole Lake	L-15-B1	June	Spring	Calanoida	Calanoid nauplius	2959.3760	0.8511
2021	Springpole Lake	L-15-B1	June	Spring	Cyclopoida	Cyclopoid copepodid	35781.5400	33.2148
2021	Springpole Lake	L-15-B1	June	Spring	Cyclopoida	Diacyclops thomasi	1748.7220	7.2411
2021	Springpole Lake	L-15-B1	June	Spring	Cyclopoida	Mesocyclops edax	1479.6880	12.6798
2021	Springpole Lake	L-15-B1	June	Spring	Cyclopoida	Cyclopoid nauplius	538.0683	0.1068
2021	Springpole Lake	L-15-B1	June	Spring	Cyclopoida	Acanthocyclops sp.	134.5171	0.3727
2021	Springpole Lake	L-15-B2	June	Spring	Chydoridae	Chydorus sphaericus	1318.2670	1.0576
2021	Springpole Lake	L-15-B2	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	2448.2110	3.6685
2021	Springpole Lake	L-15-B2	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	753.2957	0.7620
2021	Springpole Lake	L-15-B2	June	Spring	Holopedidae	Holopedium gibberum	10253.1900	24.0981
2021	Springpole Lake	L-15-B2	June	Spring	Sididae	Diaphanosoma birgei	753.2957	2.5338
2021	Springpole Lake	L-15-B2	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	8851.2240	11.2283
2021	Springpole Lake	L-15-B2	June	Spring	Calanoida	Calanoid copepodid	6403.0130	9.3490
2021	Springpole Lake	L-15-B2	June	Spring	Calanoida	Leptodiaptomus minutus	2259.8870	7.4947

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B2	June	Spring	Calanoida	Skistodiaptomus oregonensis	376.6478	2.7226
2021	Springpole Lake	L-15-B2	June	Spring	Calanoida	Leptodiaptomus siciloides	188.3239	0.9415
2021	Springpole Lake	L-15-B2	June	Spring	Calanoida	Epischura lacustris copepodid	7156.3090	4.1733
2021	Springpole Lake	L-15-B2	June	Spring	Calanoida	Calanoid nauplius	1694.9150	0.3078
2021	Springpole Lake	L-15-B2	June	Spring	Cyclopoida	Cyclopoid copepodid	47080.9800	43.3628
2021	Springpole Lake	L-15-B2	June	Spring	Cyclopoida	Diacyclops thomasi	5838.0410	19.5078
2021	Springpole Lake	L-15-B2	June	Spring	Cyclopoida	Mesocyclops edax	564.9718	3.8535
2021	Springpole Lake	L-15-B2	June	Spring	Cyclopoida	Cyclopoid nauplius	941.6196	0.1627
2021	Springpole Lake	L-15-B3	June	Spring	Chydoridae	Chydorus sphaericus	342.4071	0.3601
2021	Springpole Lake	L-15-B3	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	4622.4960	8.0380
2021	Springpole Lake	L-15-B3	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	1027.2210	0.9290
2021	Springpole Lake	L-15-B3	June	Spring	Holopedidae	Holopedium gibberum	20715.6300	26.7000
2021	Springpole Lake	L-15-B3	June	Spring	Sididae	Diaphanosoma birgei	513.6107	1.5098
2021	Springpole Lake	L-15-B3	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	856.0178	0.9364
2021	Springpole Lake	L-15-B3	June	Spring	Calanoida	Calanoid copepodid	9416.1960	21.5613
2021	Springpole Lake	L-15-B3	June	Spring	Calanoida	Leptodiaptomus minutus	3424.0710	12.4311
2021	Springpole Lake	L-15-B3	June	Spring	Calanoida	Leptodiaptomus siciloides	684.8142	2.4022
2021	Springpole Lake	L-15-B3	June	Spring	Calanoida	Epischura lacustris copepodid	4793.7000	3.4850
2021	Springpole Lake	L-15-B3	June	Spring	Calanoida	Calanoid nauplius	2225.6460	0.4784
2021	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Cyclopoid copepodid	37664.7800	28.1323
2021	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Diacyclops thomasi	3424.0710	11.9338
2021	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Mesocyclops edax	1712.0360	8.8544
2021	Springpole Lake	L-15-B3	June	Spring	Cyclopoida	Cyclopoid nauplius	1198.4250	0.2101
2021	Springpole Lake	L-15-B4	June	Spring	Chydoridae	Chydorus sphaericus	753.2957	0.4891
2021	Springpole Lake	L-15-B4	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	1255.4930	4.1109
2021	Springpole Lake	L-15-B4	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	878.8449	1.1101
2021	Springpole Lake	L-15-B4	June	Spring	Holopedidae	Holopedium gibberum	6528.5620	12.7045
2021	Springpole Lake	L-15-B4	June	Spring	Sididae	Diaphanosoma birgei	251.0986	0.7752
2021	Springpole Lake	L-15-B4	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	9416.1960	9.6349
2021	Springpole Lake	L-15-B4	June	Spring	Calanoida	Calanoid copepodid	5649.7180	11.5514
2021	Springpole Lake	L-15-B4	June	Spring	Calanoida	Leptodiaptomus minutus	1883.2390	7.1804
2021	Springpole Lake	L-15-B4	June	Spring	Calanoida	Skistodiaptomus oregonensis	1004.3940	5.4627
2021	Springpole Lake	L-15-B4	June	Spring	Calanoida	Leptodiaptomus siciloides	376.6478	1.6572
2021	Springpole Lake	L-15-B4	June	Spring	Calanoida	Epischura lacustris copepodid	4304.5470	3.0190
2021	Springpole Lake	L-15-B4	June	Spring	Calanoida	Calanoid nauplius	2134.3380	0.5536
2021	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Cyclopoid copepodid	35781.5400	29.1120
2021	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Diacyclops thomasi	1506.5910	5.0144
2021	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Mesocyclops edax	878.8449	5.5747
2021	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Cyclopoid nauplius	1255.4930	0.2208
2021	Springpole Lake	L-15-B4	June	Spring	Cyclopoida	Acanthocyclops sp.	376.6478	1.7949

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B5	June	Spring	Chydoridae	Chydorus sphaericus	94.1620	0.1050
2021	Springpole Lake	L-15-B5	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	659.1337	1.4972
2021	Springpole Lake	L-15-B5	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	47.0810	0.0418
2021	Springpole Lake	L-15-B5	June	Spring	Holopedidae	Holopedium gibberum	2306.9680	4.3696
2021	Springpole Lake	L-15-B5	June	Spring	Sididae	Diaphanosoma birgei	94.1620	0.2213
2021	Springpole Lake	L-15-B5	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	4536.8940	4.9639
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Calanoid copepodid	894.5386	2.2607
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Leptodiaptomus minutus	376.6478	1.3508
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Skistodiaptomus oregonensis	94.1620	0.6933
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Leptodiaptomus siciloides	47.0810	0.1731
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Epischura lacustris	47.0810	0.7286
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Epischura lacustris copepodid	470.8098	0.4679
2021	Springpole Lake	L-15-B5	June	Spring	Calanoida	Calanoid nauplius	235.4049	0.0644
2021	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Cyclopoid copepodid	11770.2400	10.6606
2021	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Diacyclops thomasi	2024.4820	6.4736
2021	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Mesocyclops edax	329.5669	1.9329
2021	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Cyclopoid nauplius	659.1337	0.1047
2021	Springpole Lake	L-15-B5	June	Spring	Cyclopoida	Acanthocyclops sp.	564.9718	1.5771
2021	Springpole Lake	L-15-B6	June	Spring	Chydoridae	Chydorus sphaericus	403.5513	0.3367
2021	Springpole Lake	L-15-B6	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	1412.4290	2.9214
2021	Springpole Lake	L-15-B6	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	336.2927	0.3047
2021	Springpole Lake	L-15-B6	June	Spring	Holopedidae	Holopedium gibberum	5767.4200	11.7147
2021	Springpole Lake	L-15-B6	June	Spring	Sididae	Diaphanosoma birgei	67.2585	0.1412
2021	Springpole Lake	L-15-B6	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	6238.2300	7.6729
2021	Springpole Lake	L-15-B6	June	Spring	Calanoida	Calanoid copepodid	2824.8590	6.1606
2021	Springpole Lake	L-15-B6	June	Spring	Calanoida	Leptodiaptomus minutus	1345.1710	4.5438
2021	Springpole Lake	L-15-B6	June	Spring	Calanoida	Skistodiaptomus oregonensis	201.7756	1.3040
2021	Springpole Lake	L-15-B6	June	Spring	Calanoida	Epischura lacustris copepodid	1479.6880	0.9904
2021	Springpole Lake	L-15-B6	June	Spring	Calanoida	Calanoid nauplius	672.5854	0.1189
2021	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Cyclopoid copepodid	9887.0060	8.8983
2021	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Diacyclops thomasi	941.6196	2.8850
2021	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Mesocyclops edax	672.5854	3.6189
2021	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Cyclopoid nauplius	67.2585	0.0073
2021	Springpole Lake	L-15-B6	June	Spring	Cyclopoida	Acanthocyclops sp.	538.0683	1.1553
2021	Birch Lake	BIRCH-B1	June	Spring	Daphniidae	Ceriodaphnia sp.	94.1620	0.0077
2021	Birch Lake	BIRCH-B1	June	Spring	Chydoridae	Chydorus sphaericus	564.9718	0.3700
2021	Birch Lake	BIRCH-B1	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	470.8098	1.9758
2021	Birch Lake	BIRCH-B1	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	376.6478	0.4669
2021	Birch Lake	BIRCH-B1	June	Spring	Holopedidae	Holopedium gibberum	10593.2200	13.6537
2021	Birch Lake	BIRCH-B1	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	1412.4290	2.2900

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Calanoid copepodid	9887.0060	25.5719
2021	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Skistodiaptomus oregonensis	282.4859	1.2360
2021	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Leptodiaptomus siciloides	94.1620	0.4129
2021	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Epischura lacustris	188.3239	2.5989
2021	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Epischura lacustris copepodid	1883.2390	1.4733
2021	Birch Lake	BIRCH-B1	June	Spring	Calanoida	Calanoid nauplius	470.8098	0.1117
2021	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Cyclopoid copepodid	32015.0700	24.5662
2021	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Diacyclops thomasi	5178.9080	15.2960
2021	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Mesocyclops edax	376.6478	2.0982
2021	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Cyclopoid nauplius	1694.9150	0.2461
2021	Birch Lake	BIRCH-B1	June	Spring	Cyclopoida	Acanthocyclops sp.	282.4859	0.6491
2021	Birch Lake	BIRCH-B2	June	Spring	Daphniidae	Ceriodaphnia sp.	67.2585	0.0076
2021	Birch Lake	BIRCH-B2	June	Spring	Chydoridae	Chydorus sphaericus	134.5171	0.1053
2021	Birch Lake	BIRCH-B2	June	Spring	Daphniidae	Daphnia (Hyalodaphnia) mendotae	403.5513	0.3828
2021	Birch Lake	BIRCH-B2	June	Spring	Daphniidae	Daphnia (Daphnia) retrocurva	201.7756	0.3965
2021	Birch Lake	BIRCH-B2	June	Spring	Holopedidae	Holopedium gibberum	5178.9080	8.4134
2021	Birch Lake	BIRCH-B2	June	Spring	Bosminidae	Bosmina (Bosmina) longirostris	3161.1510	3.3940
2021	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Calanoid copepodid	1977.4010	5.2644
2021	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Leptodiaptomus minutus	201.7756	0.6500
2021	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Skistodiaptomus oregonensis	67.2585	0.3031
2021	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Leptodiaptomus siciloides	134.5171	0.4403
2021	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Epischura lacustris copepodid	874.3610	0.4986
2021	Birch Lake	BIRCH-B2	June	Spring	Calanoida	Calanoid nauplius	67.2585	0.0157
2021	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Cyclopoid copepodid	26365.3500	19.8974
2021	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Diacyclops thomasi	2623.0830	7.1617
2021	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Mesocyclops edax	336.2927	1.6684
2021	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Cyclopoid nauplius	672.5854	0.1059
2021	Birch Lake	BIRCH-B2	June	Spring	Cyclopoida	Acanthocyclops sp.	269.0342	0.8601
2021	Springpole Lake	L-15-B1	July	Summer	Daphniidae	Ceriodaphnia sp.	62.7825	0.0086
2021	Springpole Lake	L-15-B1	July	Summer	Chydoridae	Chydorus sphaericus	355.7676	0.2612
2021	Springpole Lake	L-15-B1	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	167.4201	0.3552
2021	Springpole Lake	L-15-B1	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	125.5650	0.1175
2021	Springpole Lake	L-15-B1	July	Summer	Holopedidae	Holopedium gibberum	62.7825	0.0425
2021	Springpole Lake	L-15-B1	July	Summer	Sididae	Diaphanosoma birgei	648.7527	1.4052
2021	Springpole Lake	L-15-B1	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	1234.7230	1.1836
2021	Springpole Lake	L-15-B1	July	Summer	Calanoida	Calanoid copepodid	1360.2880	3.7246
2021	Springpole Lake	L-15-B1	July	Summer	Calanoida	Leptodiaptomus minutus	83.7100	0.2667
2021	Springpole Lake	L-15-B1	July	Summer	Calanoida	Epischura lacustris copepodid	209.2751	0.0914
2021	Springpole Lake	L-15-B1	July	Summer	Calanoida	Limnocalanus macrurus	146.4925	4.7860
2021	Springpole Lake	L-15-B1	July	Summer	Calanoida	Calanoid nauplius	125.5650	0.0263

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B1	July	Summer	Calanoida	Limnocalanus macrurus copepodid	20.9275	0.7494
2021	Springpole Lake	L-15-B1	July	Summer	Cyclopoida	Cyclopoid copepodid	3243.7640	2.2515
2021	Springpole Lake	L-15-B1	July	Summer	Cyclopoida	Diacyclops thomasi	83.7100	0.2005
2021	Springpole Lake	L-15-B1	July	Summer	Cyclopoida	Mesocyclops edax	272.0576	0.7113
2021	Springpole Lake	L-15-B1	July	Summer	Cyclopoida	Cyclopoid nauplius	209.2751	0.0322
2021	Springpole Lake	L-15-B1	July	Summer	Cyclopoida	Acanthocyclops sp.	62.7825	0.0769
2021	Springpole Lake	L-15-B2	July	Summer	Daphniidae	Ceriodaphnia sp.	195.0382	0.0472
2021	Springpole Lake	L-15-B2	July	Summer	Chydoridae	Chydorus sphaericus	752.2903	0.4185
2021	Springpole Lake	L-15-B2	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	529.3895	0.9232
2021	Springpole Lake	L-15-B2	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) longiremis	27.8626	0.0331
2021	Springpole Lake	L-15-B2	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	250.7634	0.1945
2021	Springpole Lake	L-15-B2	July	Summer	Holopedidae	Holopedium gibberum	83.5878	0.0696
2021	Springpole Lake	L-15-B2	July	Summer	Sididae	Diaphanosoma birgei	668.7025	1.4050
2021	Springpole Lake	L-15-B2	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	4967.5040	3.9895
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Calanoid copepodid	3477.2530	7.0689
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Leptodiaptomus minutus	195.0382	0.5223
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Skistodiaptomus oregonensis	139.3130	0.5262
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Leptodiaptomus siciloides	167.1756	0.4121
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Epischura lacustris copepodid	445.8017	0.4555
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Limnocalanus macrurus	27.8626	0.7873
2021	Springpole Lake	L-15-B2	July	Summer	Calanoida	Calanoid nauplius	195.0382	0.0337
2021	Springpole Lake	L-15-B2	July	Summer	Cyclopoida	Cyclopoid copepodid	4346.5660	3.2255
2021	Springpole Lake	L-15-B2	July	Summer	Cyclopoida	Diacyclops thomasi	83.5878	0.1662
2021	Springpole Lake	L-15-B2	July	Summer	Cyclopoida	Mesocyclops edax	167.1756	0.3313
2021	Springpole Lake	L-15-B2	July	Summer	Cyclopoida	Cyclopoid nauplius	195.0382	0.0288
2021	Springpole Lake	L-15-B2	July	Summer	Cyclopoida	Acanthocyclops sp.	83.5878	0.2207
2021	Springpole Lake	L-15-B3	July	Summer	Daphniidae	Ceriodaphnia sp.	97.6617	0.0239
2021	Springpole Lake	L-15-B3	July	Summer	Chydoridae	Chydorus sphaericus	279.0334	0.1810
2021	Springpole Lake	L-15-B3	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	251.1301	0.8220
2021	Springpole Lake	L-15-B3	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	111.6134	0.1335
2021	Springpole Lake	L-15-B3	July	Summer	Holopedidae	Holopedium gibberum	27.9033	0.0280
2021	Springpole Lake	L-15-B3	July	Summer	Sididae	Diaphanosoma birgei	251.1301	0.5105
2021	Springpole Lake	L-15-B3	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	784.7815	0.5951
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Calanoid copepodid	2197.3880	6.2820
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Leptodiaptomus minutus	181.3717	0.3515
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Skistodiaptomus oregonensis	125.5650	0.3835
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Leptodiaptomus siciloides	13.9517	0.0340
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Epischura lacustris	13.9517	0.1328
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Epischura lacustris copepodid	83.7100	0.1154
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Limnocalanus macrurus	209.2751	6.1923

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B3	July	Summer	Calanoida	Calanoid nauplius	41.8550	0.0073
2021	Springpole Lake	L-15-B3	July	Summer	Cyclopoida	Cyclopoid copepodid	3264.6910	2.4307
2021	Springpole Lake	L-15-B3	July	Summer	Cyclopoida	Diacyclops thomasi	55.8067	0.1146
2021	Springpole Lake	L-15-B3	July	Summer	Cyclopoida	Mesocyclops edax	69.7584	0.2508
2021	Springpole Lake	L-15-B3	July	Summer	Cyclopoida	Cyclopoid nauplius	69.7584	0.0078
2021	Springpole Lake	L-15-B3	July	Summer	Cyclopoida	Acanthocyclops sp.	69.7584	0.0734
2021	Springpole Lake	L-15-B4	July	Summer	Daphniidae	Ceriodaphnia sp.	269.0747	0.0971
2021	Springpole Lake	L-15-B4	July	Summer	Chydoridae	Chydorus sphaericus	2018.0600	1.4455
2021	Springpole Lake	L-15-B4	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	1883.5230	5.1301
2021	Springpole Lake	L-15-B4	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) longiremis	67.2687	0.0789
2021	Springpole Lake	L-15-B4	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	672.6868	1.1183
2021	Springpole Lake	L-15-B4	July	Summer	Holopedidae	Holopedium gibberum	672.6868	1.4216
2021	Springpole Lake	L-15-B4	July	Summer	Sididae	Diaphanosoma birgei	1950.7920	4.4882
2021	Springpole Lake	L-15-B4	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	2758.0160	2.4684
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Calanoid copepodid	5336.6480	12.7475
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Leptodiaptomus minutus	672.6868	1.3560
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Skistodiaptomus oregonensis	538.1494	2.0776
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Leptodiaptomus siciloides	739.9554	1.8457
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Epischura lacustris	67.2687	0.8470
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Epischura lacustris copepodid	336.3434	0.3823
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Limnocalanus macrurus	134.5374	4.5528
2021	Springpole Lake	L-15-B4	July	Summer	Calanoida	Calanoid nauplius	269.0747	0.0516
2021	Springpole Lake	L-15-B4	July	Summer	Cyclopoida	Cyclopoid copepodid	9888.4950	6.8868
2021	Springpole Lake	L-15-B4	July	Summer	Cyclopoida	Diacyclops thomasi	1278.1050	4.9530
2021	Springpole Lake	L-15-B4	July	Summer	Cyclopoida	Mesocyclops edax	605.4181	2.1732
2021	Springpole Lake	L-15-B4	July	Summer	Cyclopoida	Cyclopoid nauplius	538.1494	0.0798
2021	Springpole Lake	L-15-B4	July	Summer	Cyclopoida	Acanthocyclops sp.	67.2687	0.1107
2021	Springpole Lake	L-15-B5	July	Summer	Daphniidae	Ceriodaphnia sp.	82.6097	0.0169
2021	Springpole Lake	L-15-B5	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	1486.9740	6.7615
2021	Springpole Lake	L-15-B5	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	82.6097	0.0976
2021	Springpole Lake	L-15-B5	July	Summer	Holopedidae	Holopedium gibberum	206.5242	0.1941
2021	Springpole Lake	L-15-B5	July	Summer	Sididae	Diaphanosoma birgei	991.3161	2.0944
2021	Springpole Lake	L-15-B5	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	1652.1930	1.0910
2021	Springpole Lake	L-15-B5	July	Summer	Calanoida	Calanoid copepodid	1635.6720	4.7161
2021	Springpole Lake	L-15-B5	July	Summer	Calanoida	Leptodiaptomus minutus	82.6097	0.1880
2021	Springpole Lake	L-15-B5	July	Summer	Calanoida	Skistodiaptomus oregonensis	165.2193	0.7009
2021	Springpole Lake	L-15-B5	July	Summer	Calanoida	Epischura lacustris copepodid	842.6187	0.6562
2021	Springpole Lake	L-15-B5	July	Summer	Calanoida	Limnocalanus macrurus	206.5242	6.0203
2021	Springpole Lake	L-15-B5	July	Summer	Calanoida	Calanoid nauplius	1338.2770	0.2698
2021	Springpole Lake	L-15-B5	July	Summer	Cyclopoida	Cyclopoid copepodid	3370.4750	2.4120

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B5	July	Summer	Cyclopoida	Diacyclops thomasi	413.0484	1.0237
2021	Springpole Lake	L-15-B5	July	Summer	Cyclopoida	Mesocyclops edax	123.9145	0.3030
2021	Springpole Lake	L-15-B5	July	Summer	Cyclopoida	Cyclopoid nauplius	793.0529	0.1101
2021	Springpole Lake	L-15-B5	July	Summer	Cyclopoida	Acanthocyclops sp.	82.6097	0.2226
2021	Springpole Lake	L-15-B5	July	Summer	Cyclopoida	Tropocyclops extensus	41.3048	0.0212
2021	Springpole Lake	L-15-B6	July	Summer	Daphniidae	Ceriodaphnia sp.	840.8223	0.2268
2021	Springpole Lake	L-15-B6	July	Summer	Chydoridae	Chydorus sphaericus	1597.5620	0.9538
2021	Springpole Lake	L-15-B6	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	1261.2330	2.7255
2021	Springpole Lake	L-15-B6	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	420.4111	0.6657
2021	Springpole Lake	L-15-B6	July	Summer	Holopedidae	Holopedium gibberum	924.9045	0.8548
2021	Springpole Lake	L-15-B6	July	Summer	Sididae	Diaphanosoma birgei	2942.8780	6.3552
2021	Springpole Lake	L-15-B6	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	6278.1400	5.7471
2021	Springpole Lake	L-15-B6	July	Summer	Calanoida	Calanoid copepodid	4035.9470	9.6240
2021	Springpole Lake	L-15-B6	July	Summer	Calanoida	Leptodiaptomus minutus	84.0822	0.1505
2021	Springpole Lake	L-15-B6	July	Summer	Calanoida	Skistodiaptomus oregonensis	252.2467	1.1491
2021	Springpole Lake	L-15-B6	July	Summer	Calanoida	Epischura lacustris copepodid	420.4111	0.2096
2021	Springpole Lake	L-15-B6	July	Summer	Calanoida	Limnocalanus macrurus	84.0822	3.1725
2021	Springpole Lake	L-15-B6	July	Summer	Calanoida	Calanoid nauplius	336.3289	0.0768
2021	Springpole Lake	L-15-B6	July	Summer	Cyclopoida	Cyclopoid copepodid	20179.7300	16.0941
2021	Springpole Lake	L-15-B6	July	Summer	Cyclopoida	Diacyclops thomasi	756.7400	1.7828
2021	Springpole Lake	L-15-B6	July	Summer	Cyclopoida	Mesocyclops edax	672.6578	2.3872
2021	Springpole Lake	L-15-B6	July	Summer	Cyclopoida	Cyclopoid nauplius	672.6578	0.0762
2021	Springpole Lake	L-15-B6	July	Summer	Cyclopoida	Acanthocyclops sp.	84.0822	0.1547
2021	Birch Lake	BIRCH-B1	July	Summer	Daphniidae	Ceriodaphnia sp.	392.3908	0.1228
2021	Birch Lake	BIRCH-B1	July	Summer	Chydoridae	Chydorus sphaericus	294.2931	0.1814
2021	Birch Lake	BIRCH-B1	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	245.2442	0.4883
2021	Birch Lake	BIRCH-B1	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	294.2931	0.3590
2021	Birch Lake	BIRCH-B1	July	Summer	Holopedidae	Holopedium gibberum	49.0488	0.0200
2021	Birch Lake	BIRCH-B1	July	Summer	Sididae	Diaphanosoma birgei	441.4396	0.8653
2021	Birch Lake	BIRCH-B1	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	2158.1490	1.7425
2021	Birch Lake	BIRCH-B1	July	Summer	Calanoida	Calanoid copepodid	686.6838	1.7334
2021	Birch Lake	BIRCH-B1	July	Summer	Calanoida	Skistodiaptomus oregonensis	196.1954	4.7087
2021	Birch Lake	BIRCH-B1	July	Summer	Calanoida	Epischura lacustris copepodid	196.1954	0.1026
2021	Birch Lake	BIRCH-B1	July	Summer	Calanoida	Limnocalanus macrurus	2893.8820	87.4289
2021	Birch Lake	BIRCH-B1	July	Summer	Calanoida	Calanoid nauplius	637.6350	0.1037
2021	Birch Lake	BIRCH-B1	July	Summer	Calanoida	Limnocalanus macrurus copepodid	2283.0010	8.2108
2021	Birch Lake	BIRCH-B1	July	Summer	Cyclopoida	Cyclopoid copepodid	2354.3450	2.4597
2021	Birch Lake	BIRCH-B1	July	Summer	Cyclopoida	Diacyclops thomasi	245.2442	0.9258
2021	Birch Lake	BIRCH-B1	July	Summer	Cyclopoida	Mesocyclops edax	49.0488	0.1112
2021	Birch Lake	BIRCH-B1	July	Summer	Cyclopoida	Cyclopoid nauplius	784.7815	0.1224

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Birch Lake	BIRCH-B2	July	Summer	Daphniidae	Ceriodaphnia sp.	156.9563	0.0435
2021	Birch Lake	BIRCH-B2	July	Summer	Chydoridae	Chydorus sphaericus	261.5938	0.2338
2021	Birch Lake	BIRCH-B2	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) mendotae	967.8972	2.2317
2021	Birch Lake	BIRCH-B2	July	Summer	Daphniidae	Daphnia (Hyalodaphnia) longiremis	130.7969	0.3054
2021	Birch Lake	BIRCH-B2	July	Summer	Daphniidae	Daphnia (Daphnia) retrocurva	653.9846	1.1625
2021	Birch Lake	BIRCH-B2	July	Summer	Holopedidae	Holopedium gibberum	130.7969	0.2095
2021	Birch Lake	BIRCH-B2	July	Summer	Sididae	Diaphanosoma birgei	261.5938	0.6092
2021	Birch Lake	BIRCH-B2	July	Summer	Bosminidae	Bosmina (Bosmina) longirostris	3191.4450	2.2083
2021	Birch Lake	BIRCH-B2	July	Summer	Calanoida	Calanoid copepodid	2615.9380	6.9011
2021	Birch Lake	BIRCH-B2	July	Summer	Calanoida	Leptodiaptomus minutus	78.4782	0.2078
2021	Birch Lake	BIRCH-B2	July	Summer	Calanoida	Skistodiaptomus oregonensis	26.1594	0.1135
2021	Birch Lake	BIRCH-B2	July	Summer	Calanoida	Epischura lacustris copepodid	261.5938	0.1046
2021	Birch Lake	BIRCH-B2	July	Summer	Calanoida	Limnocalanus macrurus	183.1157	5.6694
2021	Birch Lake	BIRCH-B2	July	Summer	Calanoida	Calanoid nauplius	235.4345	0.0377
2021	Birch Lake	BIRCH-B2	July	Summer	Cyclopoida	Cyclopoid copepodid	2615.9380	1.4979
2021	Birch Lake	BIRCH-B2	July	Summer	Cyclopoida	Diacyclops thomasi	340.0720	0.9343
2021	Birch Lake	BIRCH-B2	July	Summer	Cyclopoida	Mesocyclops edax	235.4345	0.8327
2021	Birch Lake	BIRCH-B2	July	Summer	Cyclopoida	Cyclopoid nauplius	287.7532	0.0389
2021	Birch Lake	BIRCH-B2	July	Summer	Cyclopoida	Acanthocyclops sp.	26.1594	0.0183
2021	Springpole Lake	L-15-B1	September	Fall	Daphniidae	Ceriodaphnia sp.	104.6375	0.0502
2021	Springpole Lake	L-15-B1	September	Fall	Chydoridae	Chydorus sphaericus	994.0566	0.5905
2021	Springpole Lake	L-15-B1	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	174.3959	0.4286
2021	Springpole Lake	L-15-B1	September	Fall	Daphniidae	Daphnia (Daphnia) retrocurva	17.4396	0.0403
2021	Springpole Lake	L-15-B1	September	Fall	Holopedidae	Holopedium gibberum	17.4396	0.0204
2021	Springpole Lake	L-15-B1	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	209.2751	0.1757
2021	Springpole Lake	L-15-B1	September	Fall	Sididae	Diaphanosoma birgei	122.0771	0.2736
2021	Springpole Lake	L-15-B1	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	592.9460	0.5826
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Calanoid copepodid	1151.0130	3.5201
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Leptodiaptomus minutus	34.8792	0.1023
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Skistodiaptomus oregonensis	34.8792	0.1710
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Leptodiaptomus siciloides	17.4396	0.0530
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Epischura lacustris copepodid	34.8792	0.0293
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Limnocalanus macrurus	418.5501	12.9063
2021	Springpole Lake	L-15-B1	September	Fall	Calanoida	Calanoid nauplius	104.6375	0.0158
2021	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Cyclopoid copepodid	1883.4760	0.9726
2021	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Diacyclops thomasi	296.4730	0.8108
2021	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Mesocyclops edax	34.8792	0.1358
2021	Springpole Lake	L-15-B1	September	Fall	Cyclopoida	Cyclopoid nauplius	1307.9690	0.1005
2021	Springpole Lake	L-15-B2	September	Fall	Daphniidae	Ceriodaphnia sp.	36.7149	0.0082
2021	Springpole Lake	L-15-B2	September	Fall	Chydoridae	Chydorus sphaericus	1046.3750	0.6578

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B2	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	110.1448	0.2808
2021	Springpole Lake	L-15-B2	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	110.1448	0.1101
2021	Springpole Lake	L-15-B2	September	Fall	Sididae	Diaphanosoma birgei	201.9321	0.4922
2021	Springpole Lake	L-15-B2	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	715.9410	0.7368
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Calanoid copepodid	1395.1670	4.2476
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Leptodiaptomus minutus	18.3575	0.0446
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Skistodiaptomus oregonensis	36.7149	0.1906
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Leptodiaptomus siciloides	36.7149	0.1166
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Epischura lacustris copepodid	55.0724	0.0390
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Limnocalanus macrurus	367.1492	12.9192
2021	Springpole Lake	L-15-B2	September	Fall	Calanoida	Calanoid nauplius	165.2172	0.0174
2021	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Cyclopoid copepodid	2092.7510	1.9357
2021	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Diacyclops thomasi	477.2940	1.1304
2021	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Mesocyclops edax	55.0724	0.1586
2021	Springpole Lake	L-15-B2	September	Fall	Cyclopoida	Cyclopoid nauplius	4045.9850	0.3325
2021	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Ceriodaphnia sp.	2.5113	0.0008
2021	Springpole Lake	L-15-B3	September	Fall	Chydoridae	Chydorus sphaericus	75.3390	0.0422
2021	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	25.1130	0.0396
2021	Springpole Lake	L-15-B3	September	Fall	Daphniidae	Daphnia (Daphnia) retrocurva	25.1130	0.0268
2021	Springpole Lake	L-15-B3	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	35.1582	0.0316
2021	Springpole Lake	L-15-B3	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	251.1301	0.2525
2021	Springpole Lake	L-15-B3	September	Fall	Calanoida	Calanoid copepodid	47.7147	0.1144
2021	Springpole Lake	L-15-B3	September	Fall	Calanoida	Leptodiaptomus minutus	2.5113	0.0031
2021	Springpole Lake	L-15-B3	September	Fall	Calanoida	Skistodiaptomus oregonensis	2.5113	0.0083
2021	Springpole Lake	L-15-B3	September	Fall	Calanoida	Epischura lacustris copepodid	2.5113	0.0013
2021	Springpole Lake	L-15-B3	September	Fall	Calanoida	Limnocalanus macrurus	2.5113	0.0753
2021	Springpole Lake	L-15-B3	September	Fall	Calanoida	Calanoid nauplius	2.5113	0.0003
2021	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Cyclopoid copepodid	47.7147	0.0332
2021	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Diacyclops thomasi	7.5339	0.0172
2021	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Mesocyclops edax	2.5113	0.0150
2021	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Cyclopoid nauplius	30.1356	0.0034
2021	Springpole Lake	L-15-B3	September	Fall	Cyclopoida	Tropocyclops extensus	5.0226	0.0025
2021	Springpole Lake	L-15-B4	September	Fall	Chydoridae	Chydorus sphaericus	523.1959	0.3220
2021	Springpole Lake	L-15-B4	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	941.7526	3.1200
2021	Springpole Lake	L-15-B4	September	Fall	Daphniidae	Daphnia (Daphnia) retrocurva	78.4794	0.2943
2021	Springpole Lake	L-15-B4	September	Fall	Holopedidae	Holopedium gibberum	104.6392	0.0539
2021	Springpole Lake	L-15-B4	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	156.9588	0.1330
2021	Springpole Lake	L-15-B4	September	Fall	Sididae	Diaphanosoma birgei	418.5567	1.0968
2021	Springpole Lake	L-15-B4	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	863.2732	0.8756
2021	Springpole Lake	L-15-B4	September	Fall	Calanoida	Calanoid copepodid	2707.5390	10.8936

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2021	Springpole Lake	L-15-B4	September	Fall	Calanoida	Leptodiaptomus minutus	52.3196	0.1492
2021	Springpole Lake	L-15-B4	September	Fall	Calanoida	Skistodiaptomus oregonensis	209.2784	1.0726
2021	Springpole Lake	L-15-B4	September	Fall	Calanoida	Leptodiaptomus siciloides	26.1598	0.0830
2021	Springpole Lake	L-15-B4	September	Fall	Calanoida	Epischura lacustris copepodid	104.6392	0.0632
2021	Springpole Lake	L-15-B4	September	Fall	Calanoida	Calanoid nauplius	340.0773	0.0451
2021	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Cyclopoid copepodid	4237.8870	4.0080
2021	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Diacyclops thomasi	627.8351	1.7075
2021	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Mesocyclops edax	235.4382	1.0113
2021	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Cyclopoid nauplius	6827.7060	0.6554
2021	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Acanthocyclops sp.	26.1598	0.0978
2021	Springpole Lake	L-15-B4	September	Fall	Cyclopoida	Tropocyclops extensus	26.1598	0.0185
2021	Springpole Lake	L-15-B5	September	Fall	Chydoridae	Chydorus sphaericus	76.2551	0.0341
2021	Springpole Lake	L-15-B5	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	1501.1360	11.3551
2021	Springpole Lake	L-15-B5	September	Fall	Sididae	Diaphanosoma birgei	15.2510	0.0334
2021	Springpole Lake	L-15-B5	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	335.5224	0.3099
2021	Springpole Lake	L-15-B5	September	Fall	Calanoida	Calanoid copepodid	1586.1060	4.8926
2021	Springpole Lake	L-15-B5	September	Fall	Calanoida	Skistodiaptomus oregonensis	381.2754	1.8712
2021	Springpole Lake	L-15-B5	September	Fall	Calanoida	Leptodiaptomus siciloides	106.7571	0.2665
2021	Springpole Lake	L-15-B5	September	Fall	Calanoida	Epischura lacustris copepodid	76.2551	0.0380
2021	Springpole Lake	L-15-B5	September	Fall	Calanoida	Limnocalanus macrurus	228.7652	7.1870
2021	Springpole Lake	L-15-B5	September	Fall	Calanoida	Calanoid nauplius	167.7612	0.0245
2021	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Cyclopoid copepodid	2973.9480	1.6694
2021	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Diacyclops thomasi	183.0122	0.5514
2021	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Mesocyclops edax	30.5020	0.1174
2021	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Cyclopoid nauplius	5551.3700	0.3719
2021	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Acanthocyclops sp.	76.2551	0.1552
2021	Springpole Lake	L-15-B5	September	Fall	Cyclopoida	Tropocyclops extensus	198.2632	0.1244
2021	Springpole Lake	L-15-B6	September	Fall	Daphniidae	Ceriodaphnia sp.	100.8987	0.0228
2021	Springpole Lake	L-15-B6	September	Fall	Chydoridae	Chydorus sphaericus	1446.2140	0.8411
2021	Springpole Lake	L-15-B6	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	437.2276	1.2461
2021	Springpole Lake	L-15-B6	September	Fall	Daphniidae	Daphnia (Daphnia) retrocurva	201.7973	0.2739
2021	Springpole Lake	L-15-B6	September	Fall	Holopedidae	Holopedium gibberum	100.8987	0.0891
2021	Springpole Lake	L-15-B6	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	302.6960	0.2635
2021	Springpole Lake	L-15-B6	September	Fall	Sididae	Diaphanosoma birgei	571.7591	1.5997
2021	Springpole Lake	L-15-B6	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	2331.8800	2.3476
2021	Springpole Lake	L-15-B6	September	Fall	Calanoida	Calanoid copepodid	2017.9730	6.7097
2021	Springpole Lake	L-15-B6	September	Fall	Calanoida	Leptodiaptomus minutus	100.8987	0.2066
2021	Springpole Lake	L-15-B6	September	Fall	Calanoida	Skistodiaptomus oregonensis	100.8987	0.6470
2021	Springpole Lake	L-15-B6	September	Fall	Calanoida	Leptodiaptomus siciloides	67.2658	0.2167
2021	Springpole Lake	L-15-B6	September	Fall	Calanoida	Epischura lacustris copepodid	100.8987	0.0509

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Springpole Lake	L-15-B6	September	Fall	Calanoida	Calanoid nauplius	269.0631	0.0408
2021	Springpole Lake	L-15-B6	September	Fall	Cyclopoida	Cyclopoid copepodid	3228.7570	4.2425
2021	Springpole Lake	L-15-B6	September	Fall	Cyclopoida	Diacyclops thomasi	403.5947	0.9913
2021	Springpole Lake	L-15-B6	September	Fall	Cyclopoida	Mesocyclops edax	134.5316	0.6805
2021	Springpole Lake	L-15-B6	September	Fall	Cyclopoida	Cyclopoid nauplius	6995.6410	0.6335
2021	Springpole Lake	L-15-B6	September	Fall	Cyclopoida	Acanthocyclops sp.	33.6329	0.0627
2021	Springpole Lake	L-15-B6	September	Fall	Cyclopoida	Tropocyclops extensus	100.8987	0.0530
2021	Birch Lake	BIRCH-B1	September	Fall	Chydoridae	Chydorus sphaericus	474.8293	0.2814
2021	Birch Lake	BIRCH-B1	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	284.8976	1.0134
2021	Birch Lake	BIRCH-B1	September	Fall	Daphniidae	Daphnia (Daphnia) retrocurva	126.6211	0.1688
2021	Birch Lake	BIRCH-B1	September	Fall	Holopedidae	Holopedium gibberum	79.1382	0.0630
2021	Birch Lake	BIRCH-B1	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	142.4488	0.0912
2021	Birch Lake	BIRCH-B1	September	Fall	Sididae	Diaphanosoma birgei	63.3106	0.1381
2021	Birch Lake	BIRCH-B1	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	395.6911	0.3119
2021	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Calanoid copepodid	3545.3920	10.0118
2021	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Skistodiaptomus oregonensis	31.6553	0.1666
2021	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Leptodiaptomus siciloides	221.5870	0.6489
2021	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Limnocalanus macrurus	490.6569	14.3710
2021	Birch Lake	BIRCH-B1	September	Fall	Calanoida	Calanoid nauplius	126.6211	0.0146
2021	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Cyclopoid copepodid	1994.2830	1.9739
2021	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Diacyclops thomasi	316.5529	0.9994
2021	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Mesocyclops edax	79.1382	0.3470
2021	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Cyclopoid nauplius	4431.7400	0.3792
2021	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Acanthocyclops sp.	31.6553	0.0743
2021	Birch Lake	BIRCH-B1	September	Fall	Cyclopoida	Tropocyclops extensus	300.7252	0.1918
2021	Birch Lake	BIRCH-B2	September	Fall	Daphniidae	Ceriodaphnia sp.	523.1877	0.1925
2021	Birch Lake	BIRCH-B2	September	Fall	Chydoridae	Chydorus sphaericus	2511.3010	1.5995
2021	Birch Lake	BIRCH-B2	September	Fall	Daphniidae	Daphnia (Hyalodaphnia) mendotae	261.5938	0.9344
2021	Birch Lake	BIRCH-B2	September	Fall	Daphniidae	Daphnia (Daphnia) retrocurva	366.2314	0.5981
2021	Birch Lake	BIRCH-B2	September	Fall	Holopedidae	Holopedium gibberum	889.4191	0.7161
2021	Birch Lake	BIRCH-B2	September	Fall	Bosminidae	Eubosmina (Eubosmina) longispina	52.3188	0.0405
2021	Birch Lake	BIRCH-B2	September	Fall	Sididae	Diaphanosoma birgei	627.8252	1.7643
2021	Birch Lake	BIRCH-B2	September	Fall	Bosminidae	Bosmina (Bosmina) longirostris	1883.4760	1.7569
2021	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Calanoid copepodid	3811.7960	9.9568
2021	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Leptodiaptomus siciloides	209.2751	0.6312
2021	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Epischura lacustris copepodid	104.6375	0.0584
2021	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Limnocalanus macrurus	261.5938	7.3027
2021	Birch Lake	BIRCH-B2	September	Fall	Calanoida	Calanoid nauplius	313.9126	0.0490
2021	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Cyclopoid copepodid	5885.8610	5.8969
2021	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Diacyclops thomasi	941.7378	1.9162

Year	Area	Site	Month	Season	Order	Taxa	Density	Biomass
2021	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Mesocyclops edax	104.6375	0.7462
2021	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Cyclopoid nauplius	2690.6790	0.2370
2021	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Acanthocyclops sp.	156.9563	0.3025
2021	Birch Lake	BIRCH-B2	September	Fall	Cyclopoida	Tropocyclops extensus	104.6375	0.0474

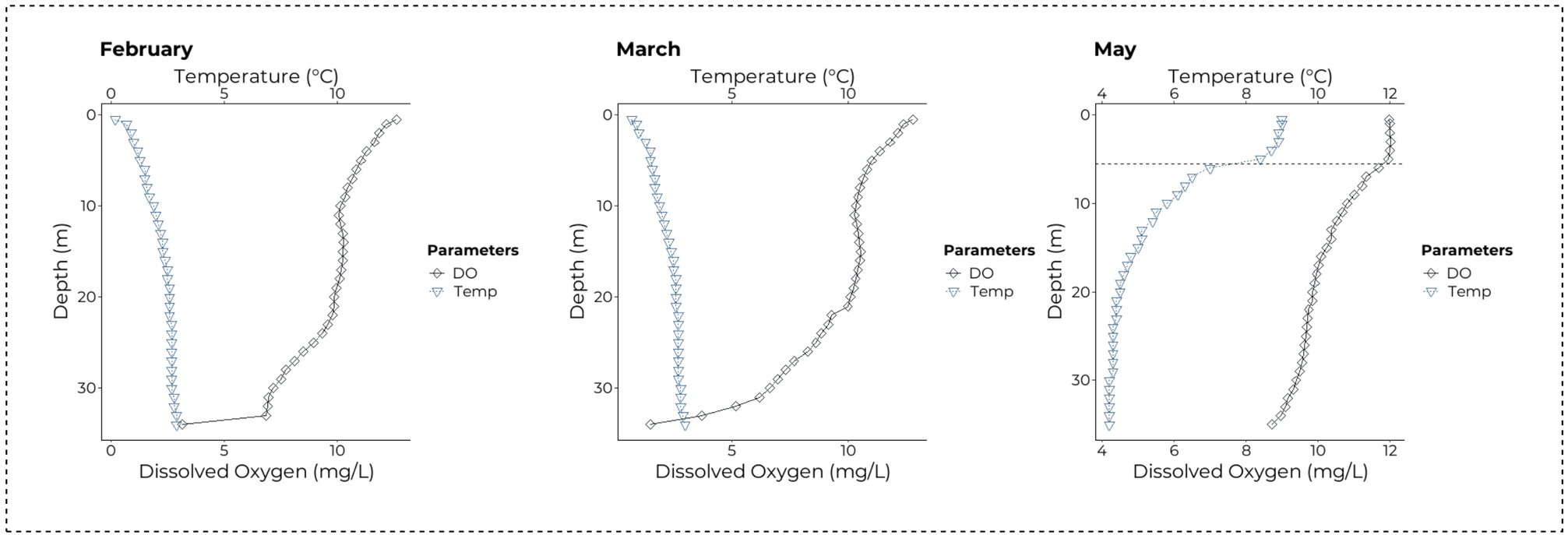

Figure E1-1: 2023 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B1)

Note: Dashed line represents thermocline.

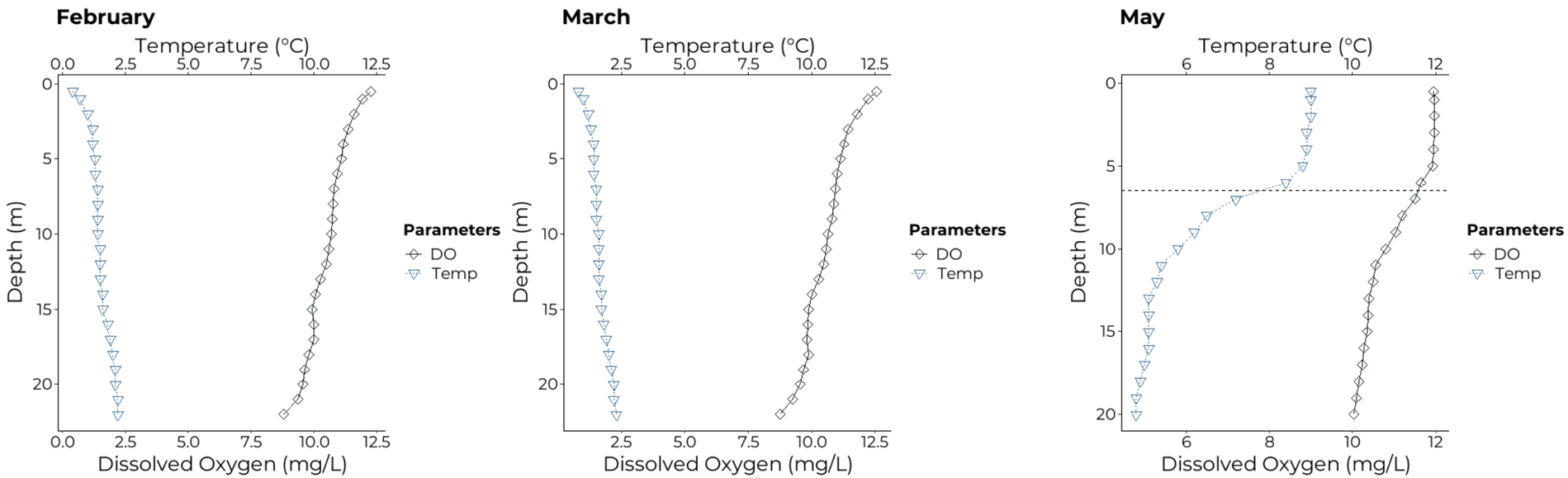

Figure E1-2: 2023 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B2)

Note: Dashed line represents thermocline.

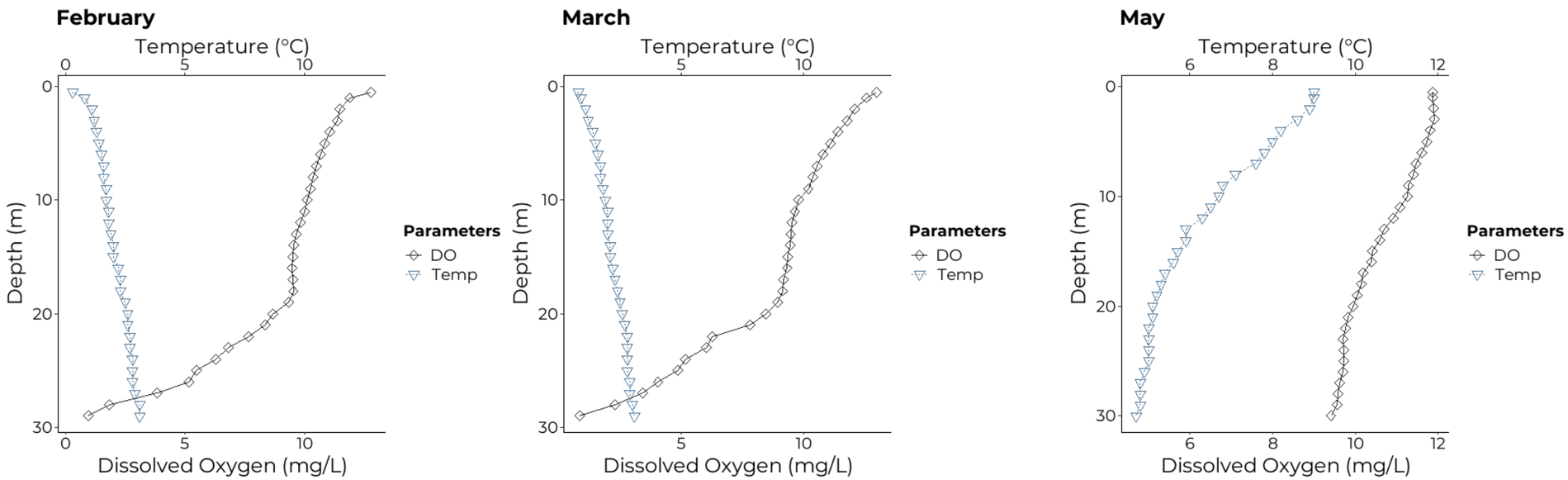

Figure E1-3: 2023 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B3)

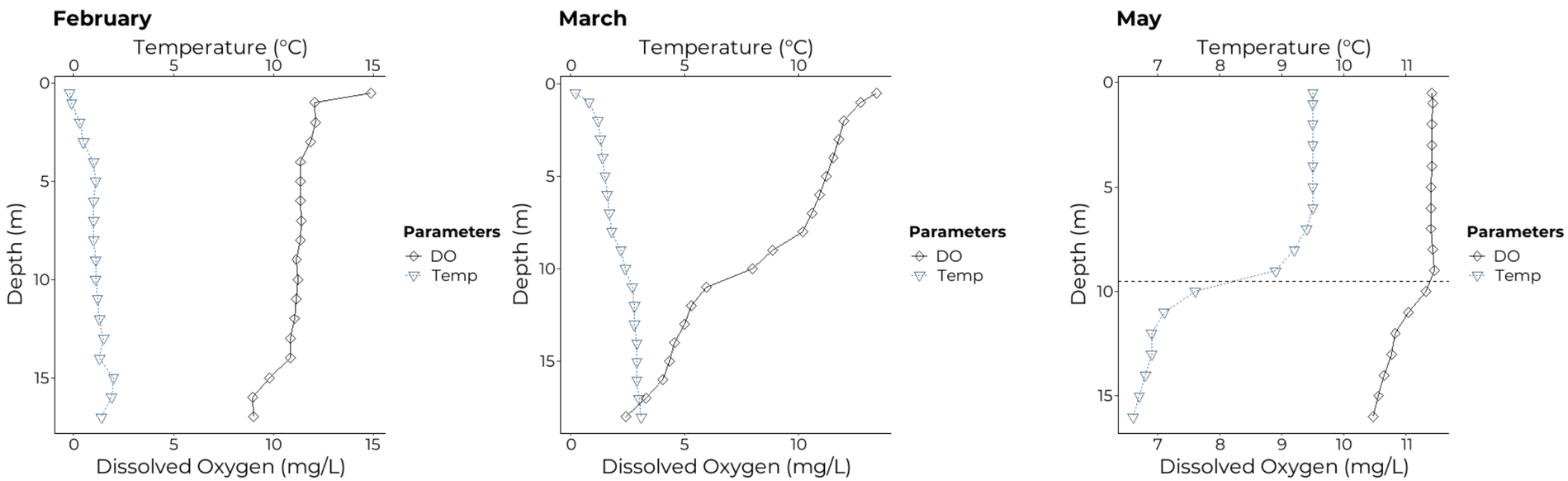

Figure E1-4: 2023 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B4)

Note: Dashed line represents thermocline.

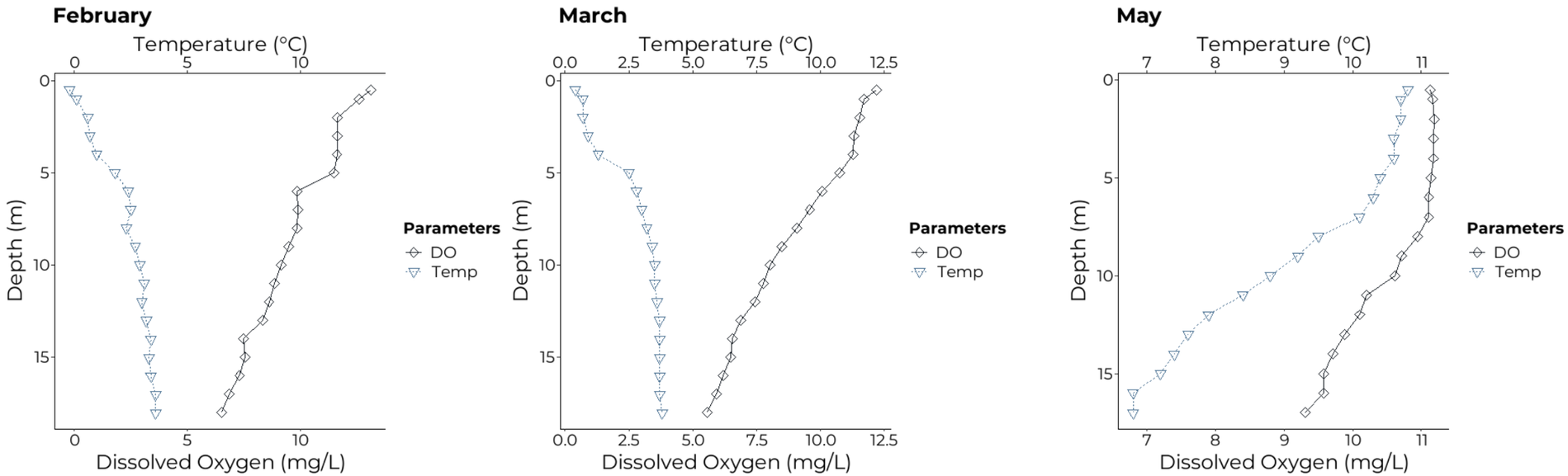

Figure E1-5: 2023 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B5)

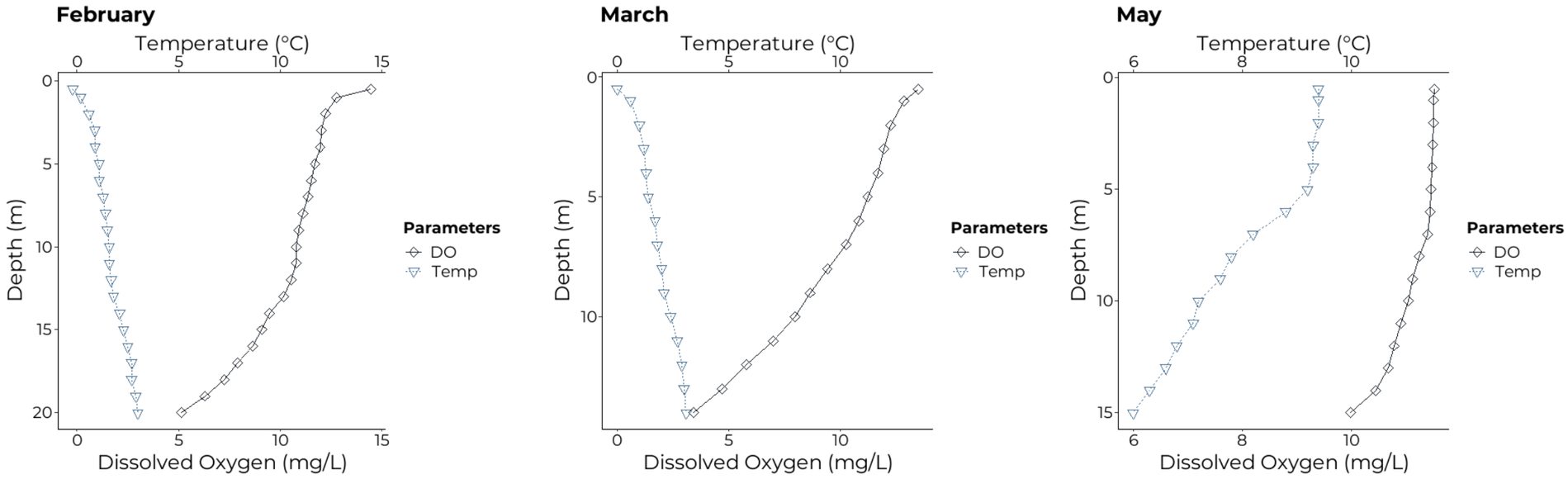

Figure E1-6: 2023 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B6)

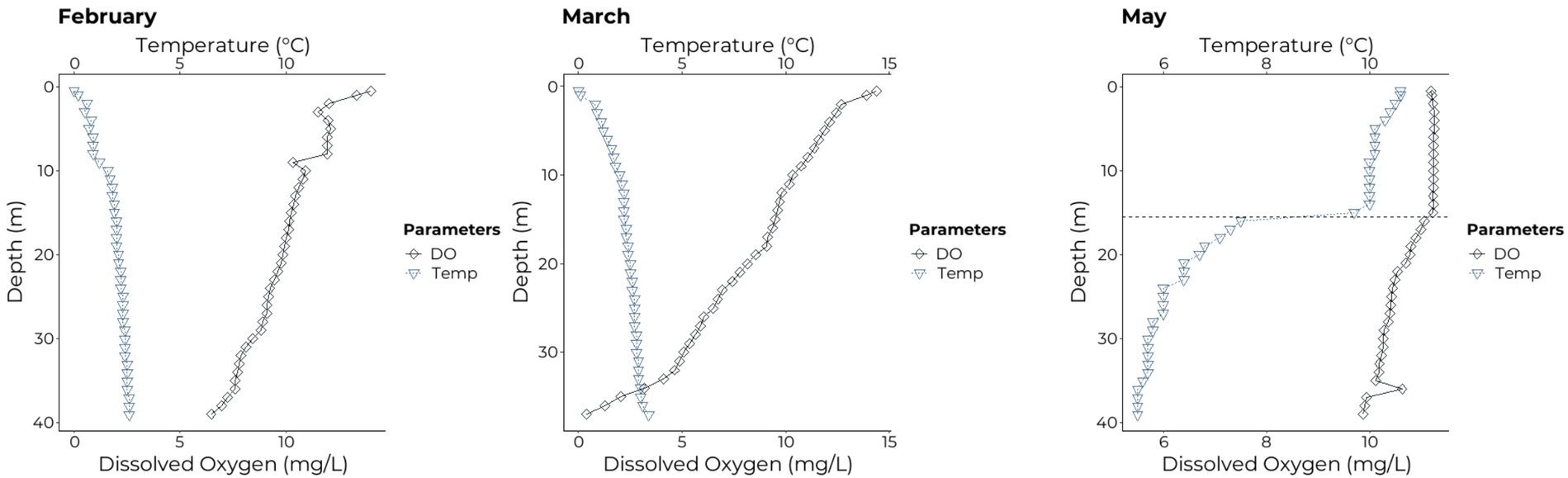

Figure E1-7: 2023 Temperature and Dissolved Oxygen Profiles – Birch Lake (Basin B1)

Note: Dashed line represents thermocline.

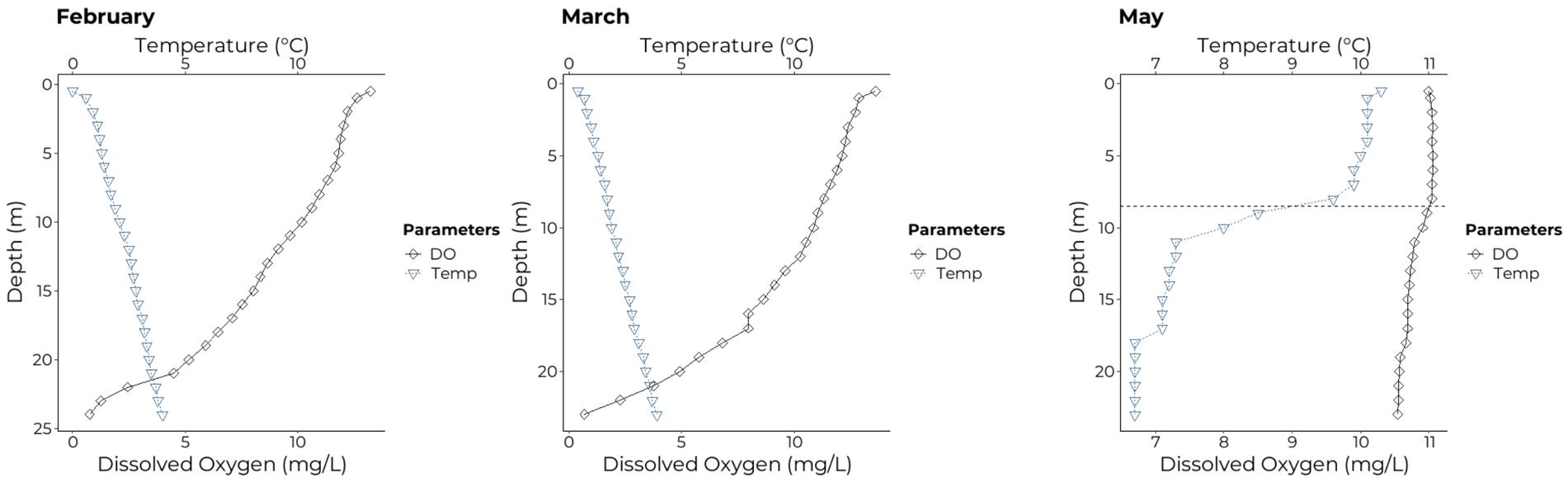

Figure E1-8: 2023 Temperature and Dissolved Oxygen Profiles – Birch Lake (Basin B2)

Note: Dashed line represents thermocline.

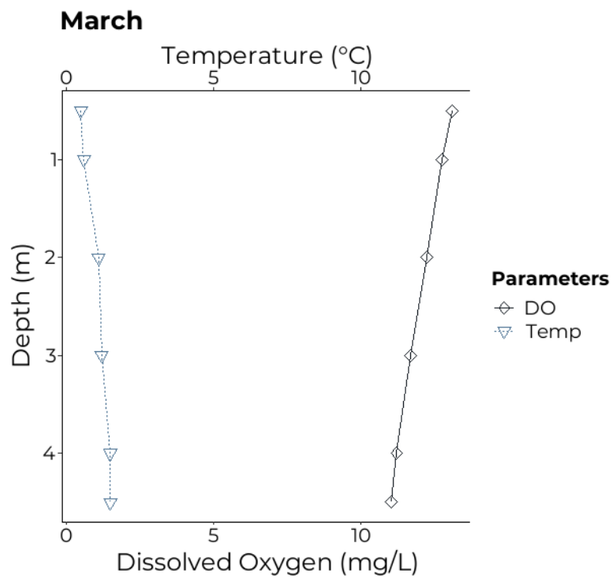

Figure E1-9: 2023 Temperature and Dissolved Oxygen Profiles – Surface Water 01b (SW-01b)

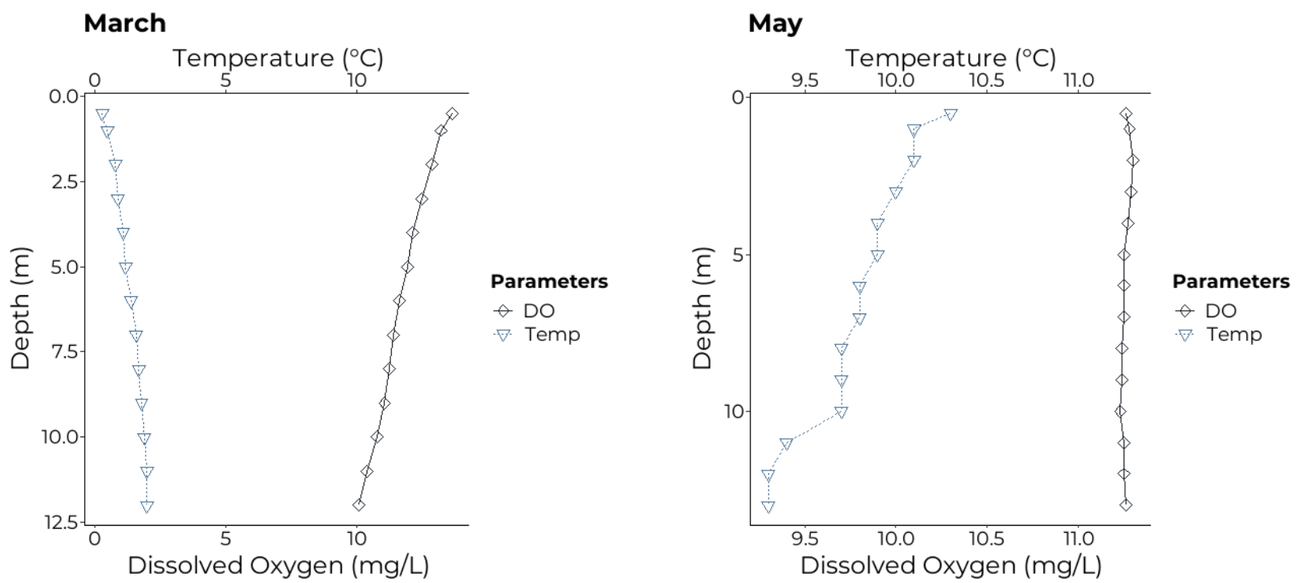

Figure E1-10: 2023 Temperature and Dissolved Oxygen Profiles – Surface Water 23 (SW-23)

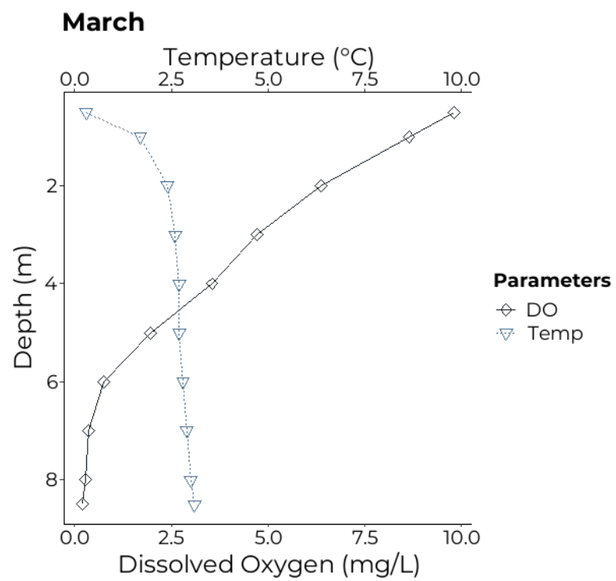

Figure E1-11: 2023 Temperature and Dissolved Oxygen Profiles – Lake 16 (L-16)

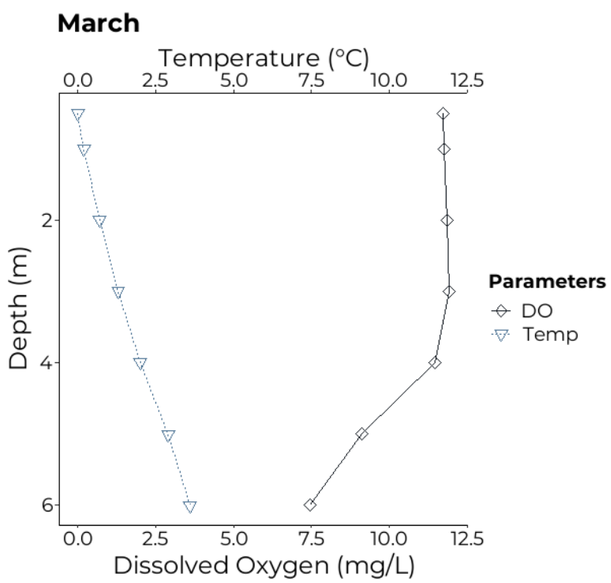

Figure E1-12: 2023 Temperature and Dissolved Oxygen Profiles – Regional 1 (RSW-1)

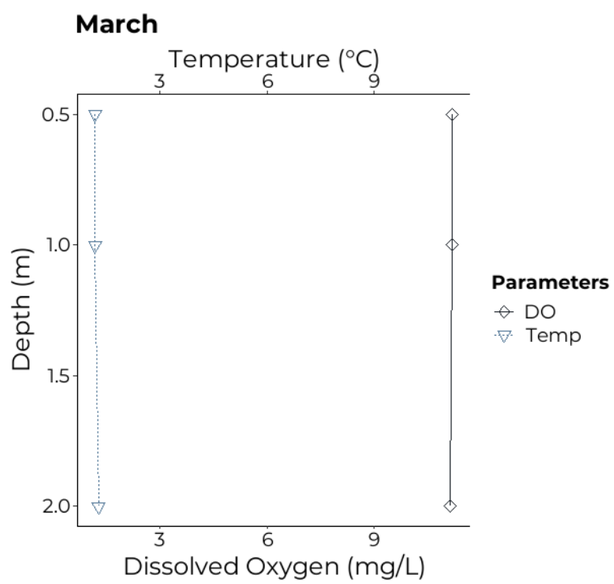

Figure E1-13: 2023 Temperature and Dissolved Oxygen Profiles – Regional 2 (RSW-2)

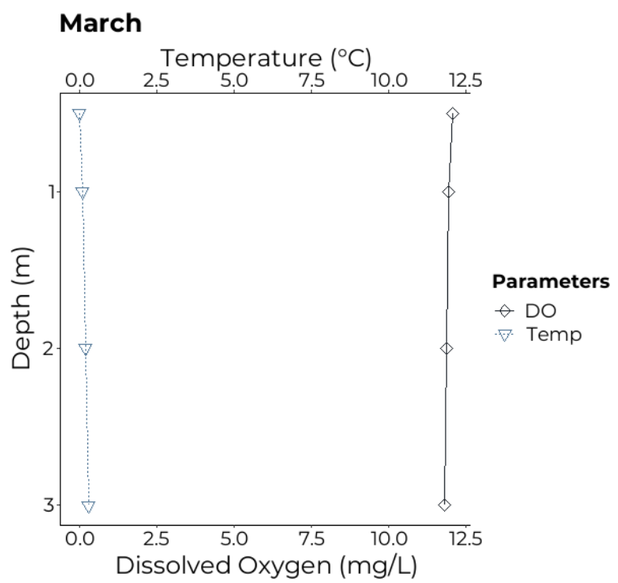

Figure E1-14: 2023 Temperature and Dissolved Oxygen Profiles – Regional 3 (RSW-3)

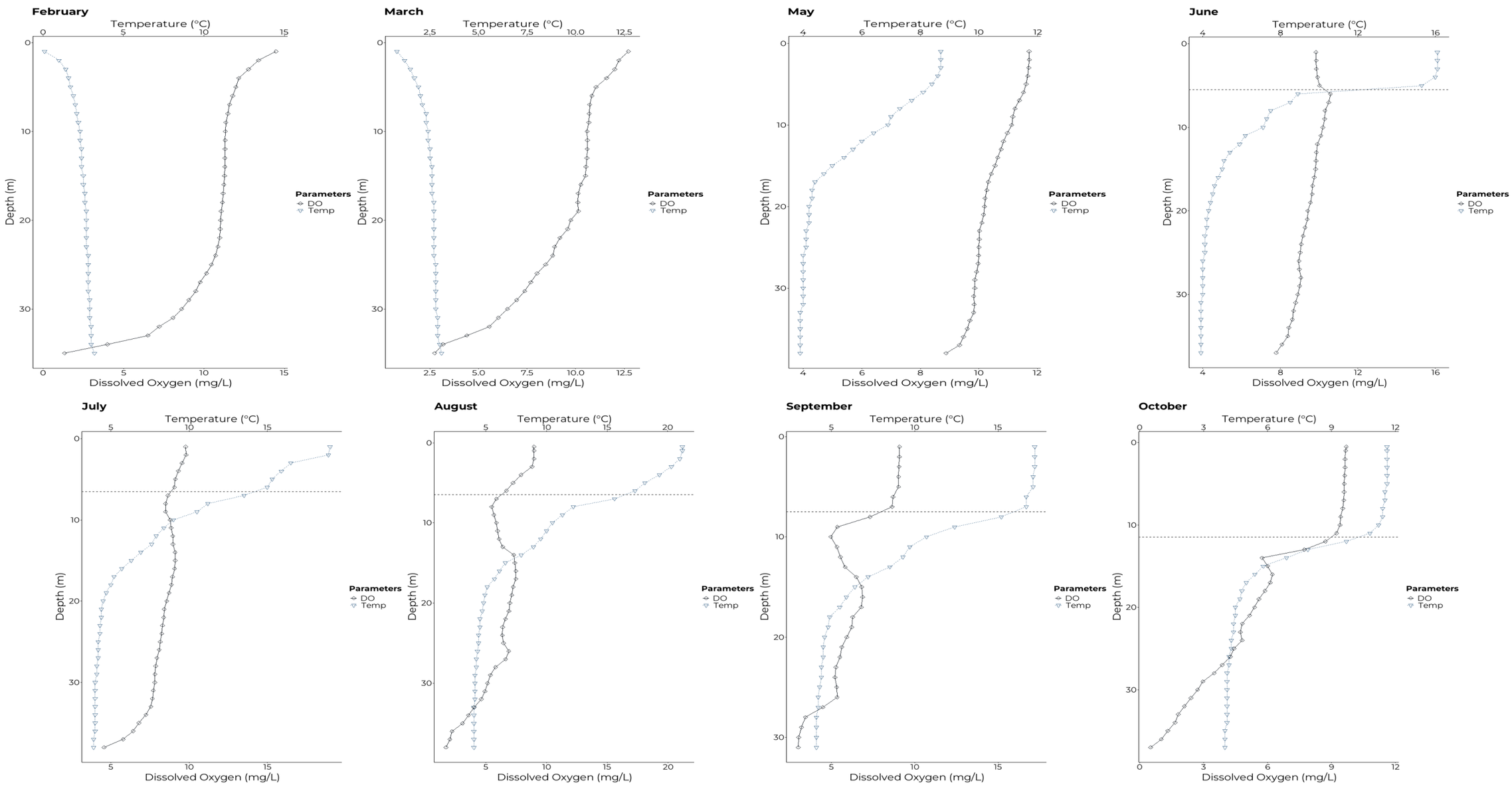

Figure E1-15: 2022 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B1)

Note: Dashed line represents thermocline.

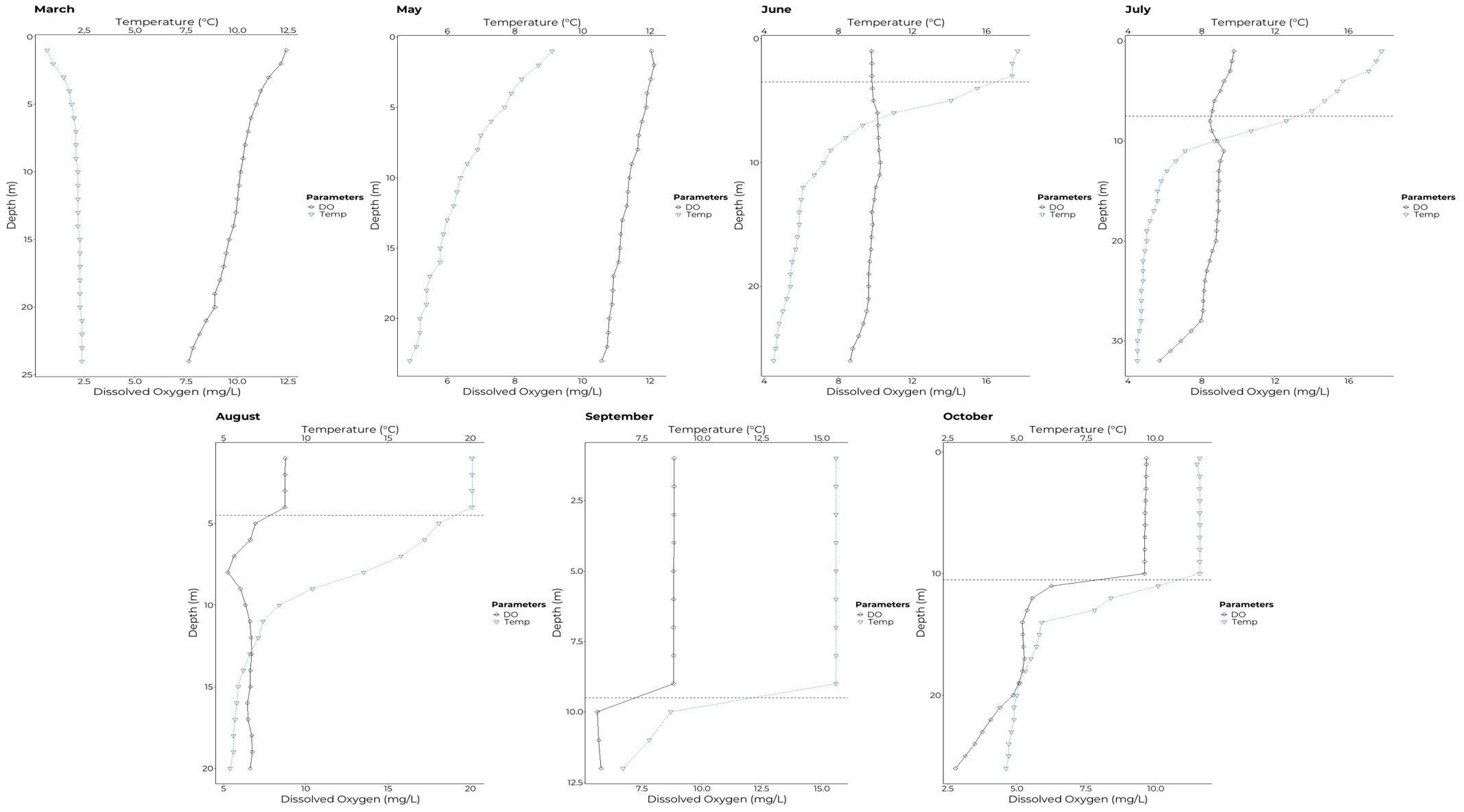

Figure E1-16: 2022 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B2)

Note: Dashed line represents thermocline.

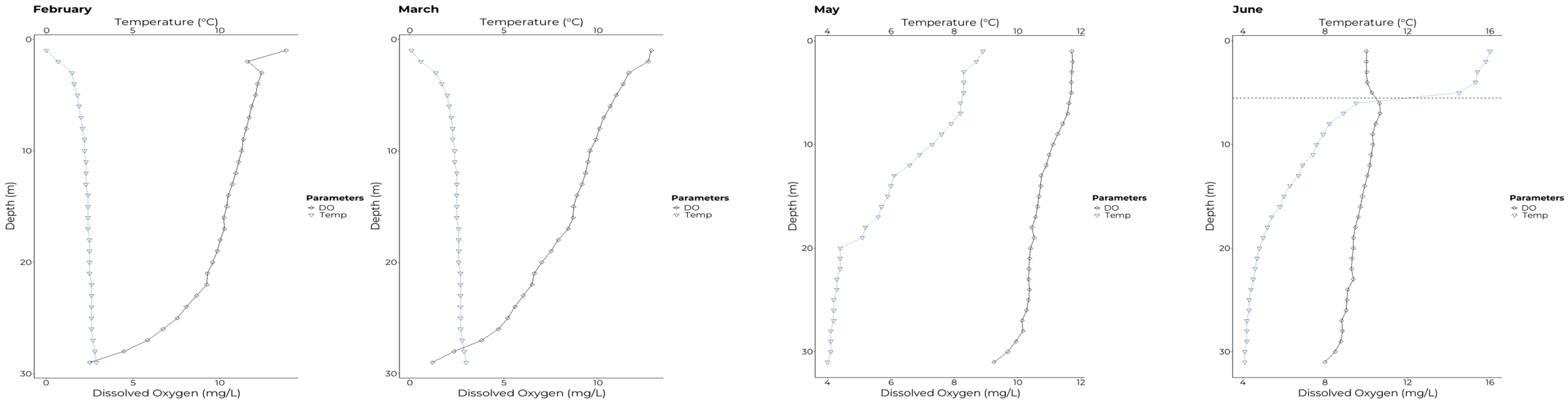

Figure E1-17: 2022 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B3)

Note: Dashed line represents thermocline.

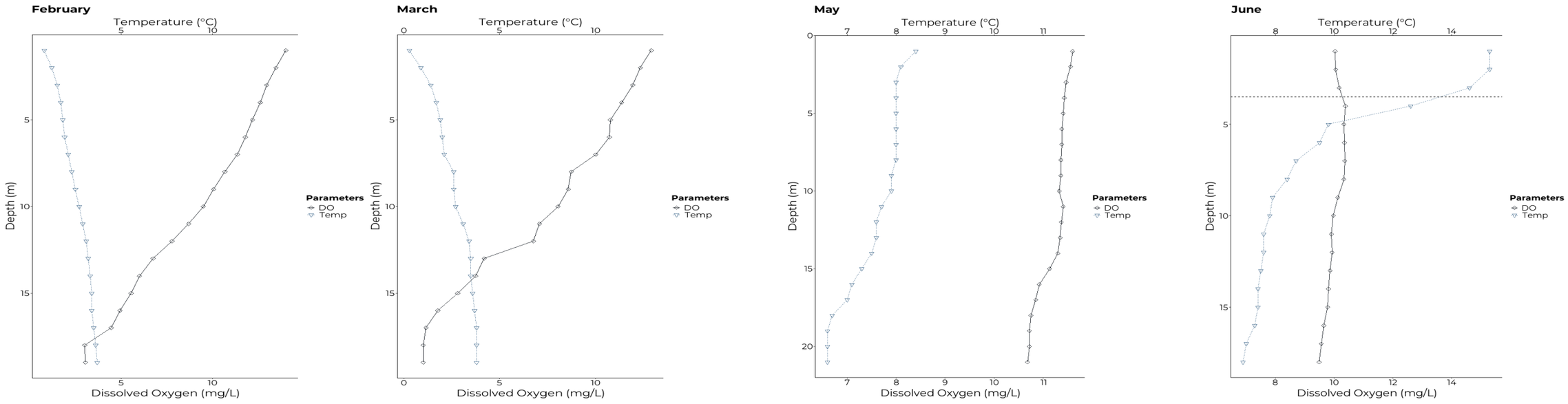

Figure E1-18: 2022 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B4)

Note: Dashed line represents thermocline.

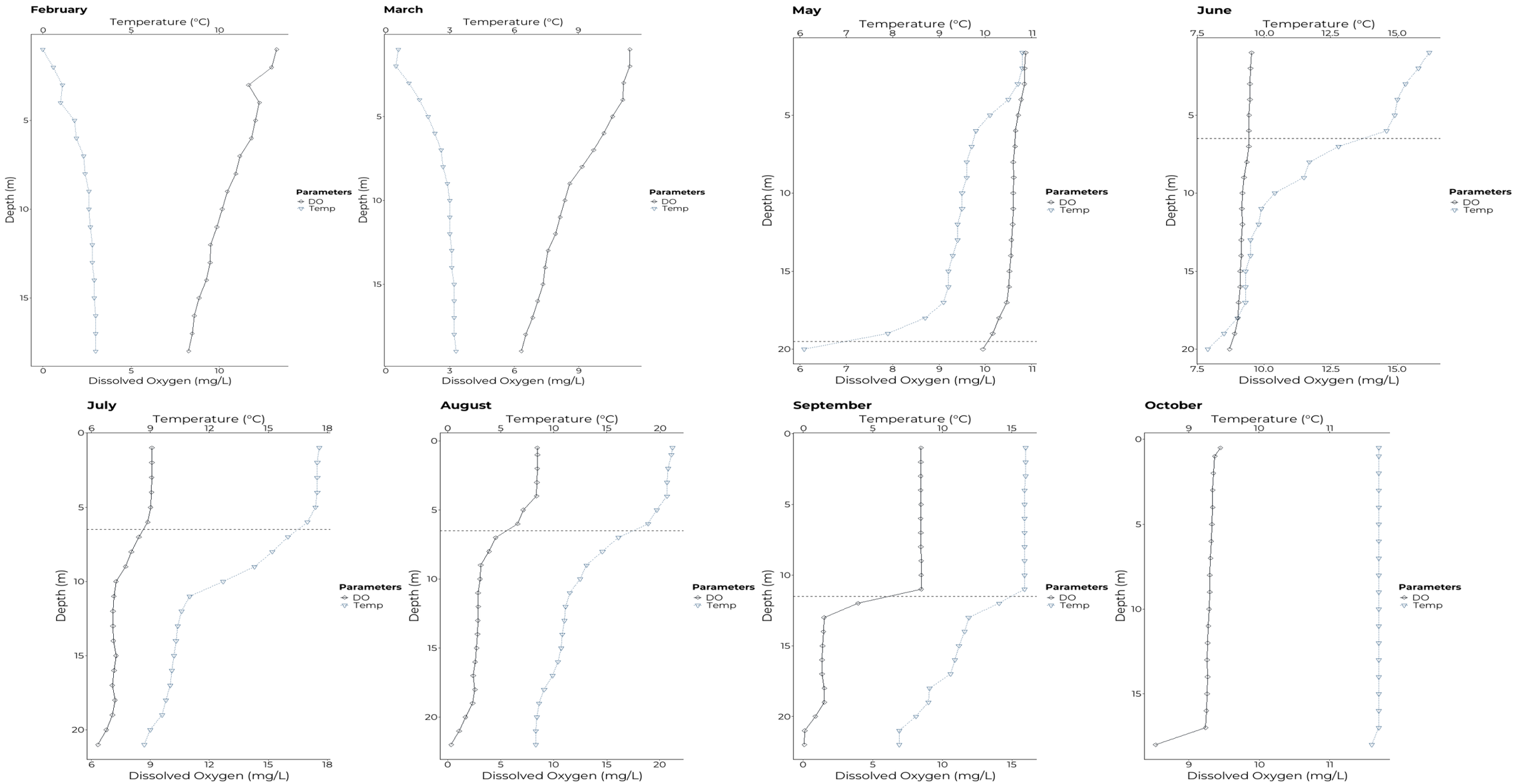

Figure E1-19: 2022 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B5)

Note: Dashed line represents thermocline.

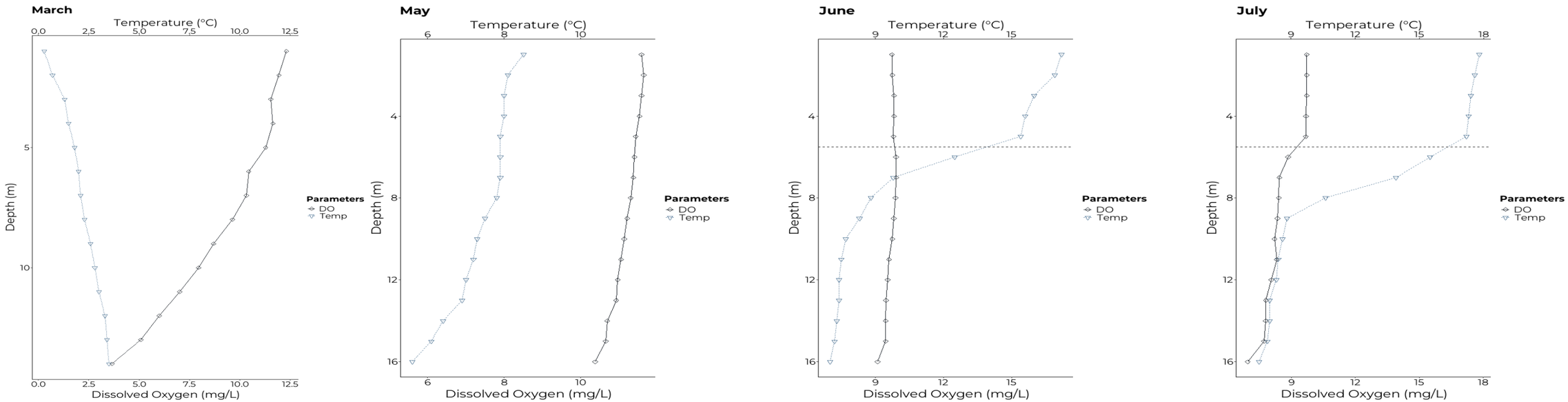

Figure E1-20: 2022 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B6)

Note: Dashed line represents thermocline.

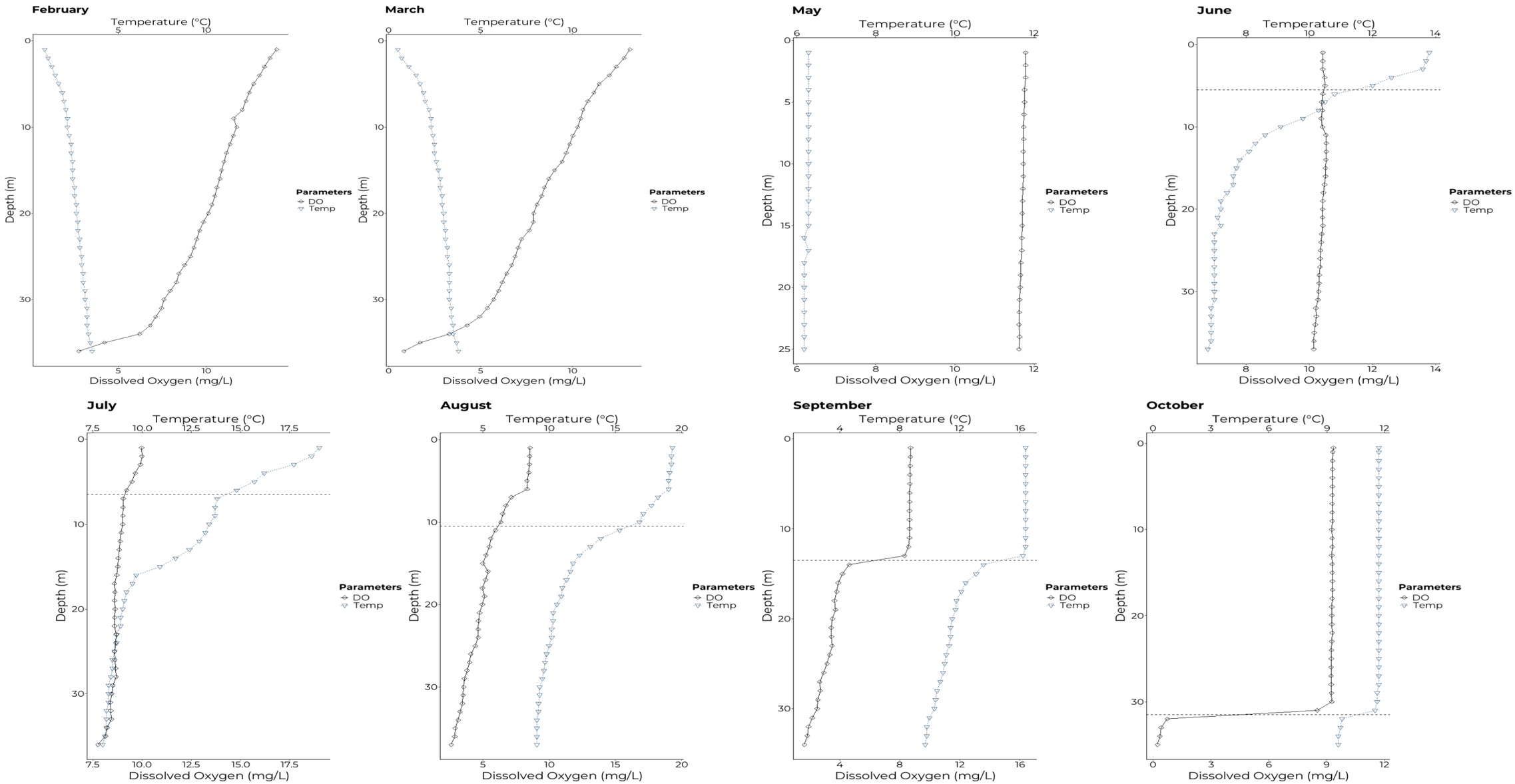

Figure E1-21: 2022 Temperature and Dissolved Oxygen Profiles – Birch Lake (Basin B1)

Note: Dashed line represents thermocline.

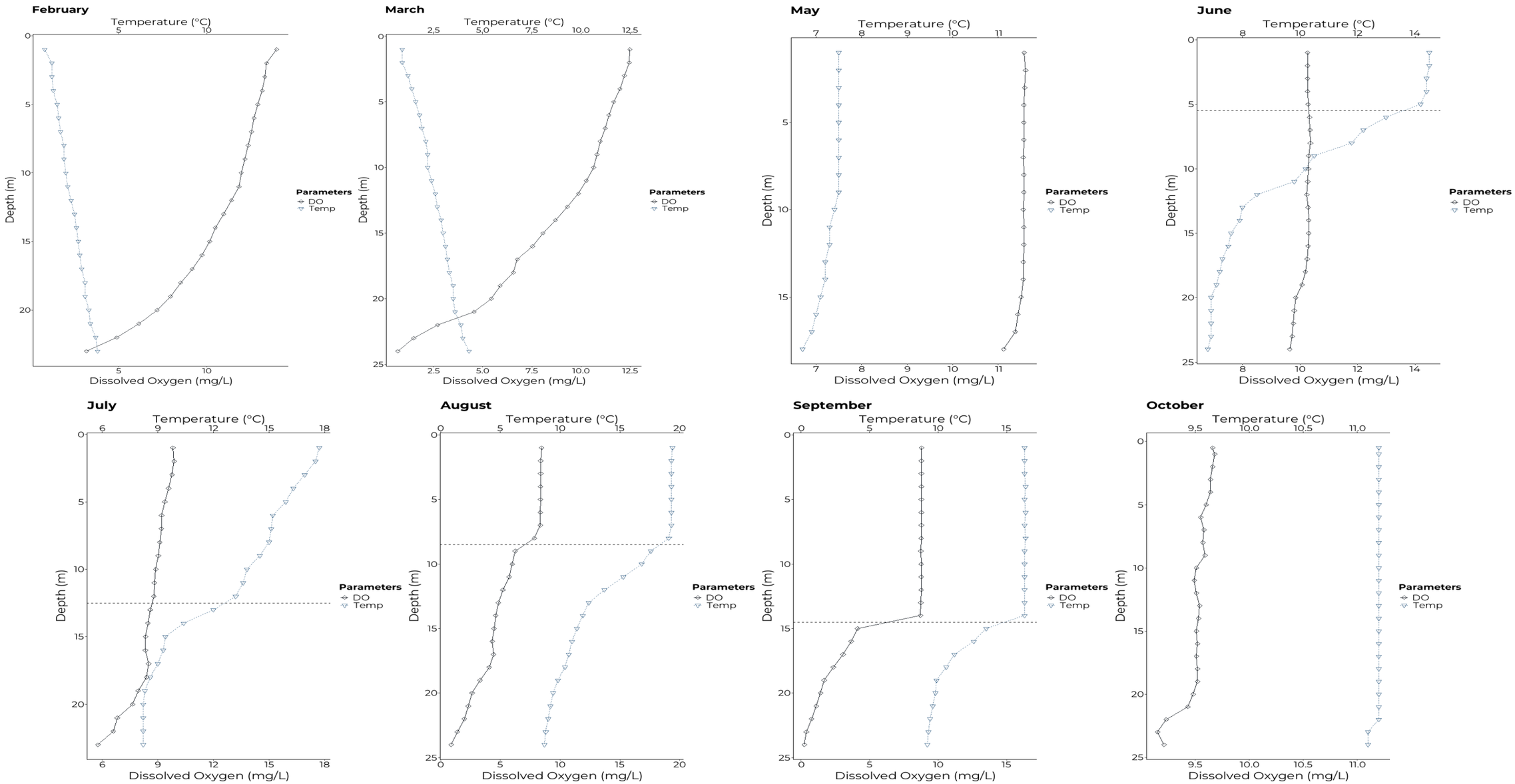

Figure E1-22: 2022 Temperature and Dissolved Oxygen Profiles – Birch Lake (Basin B2)

Note: Dashed line represents thermocline.

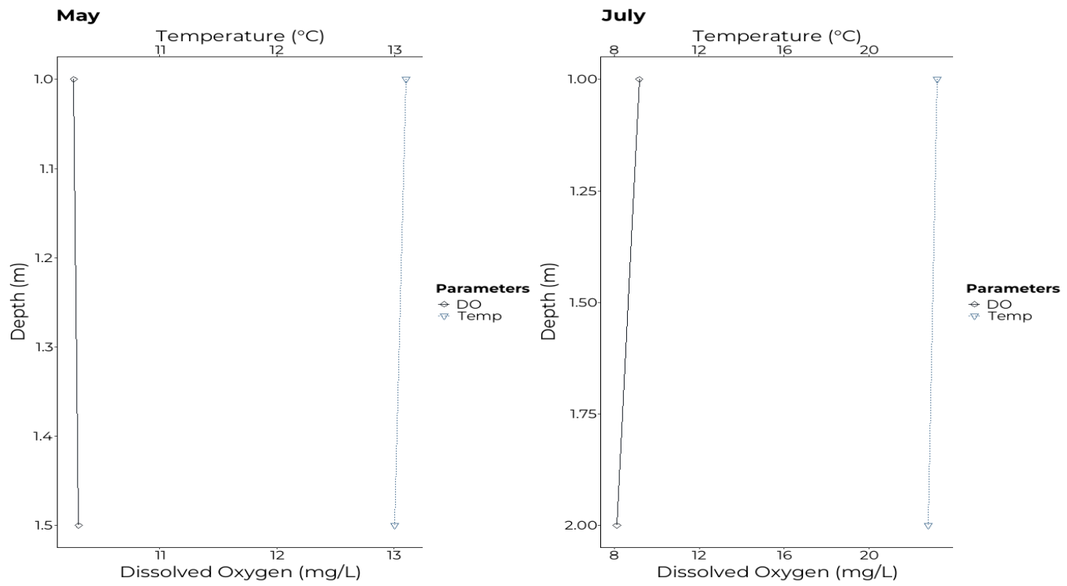

Figure E1-23: 2022 Temperature and Dissolved Oxygen Profiles – Lake 1 (L-1)

Note: Dashed line represents thermocline.

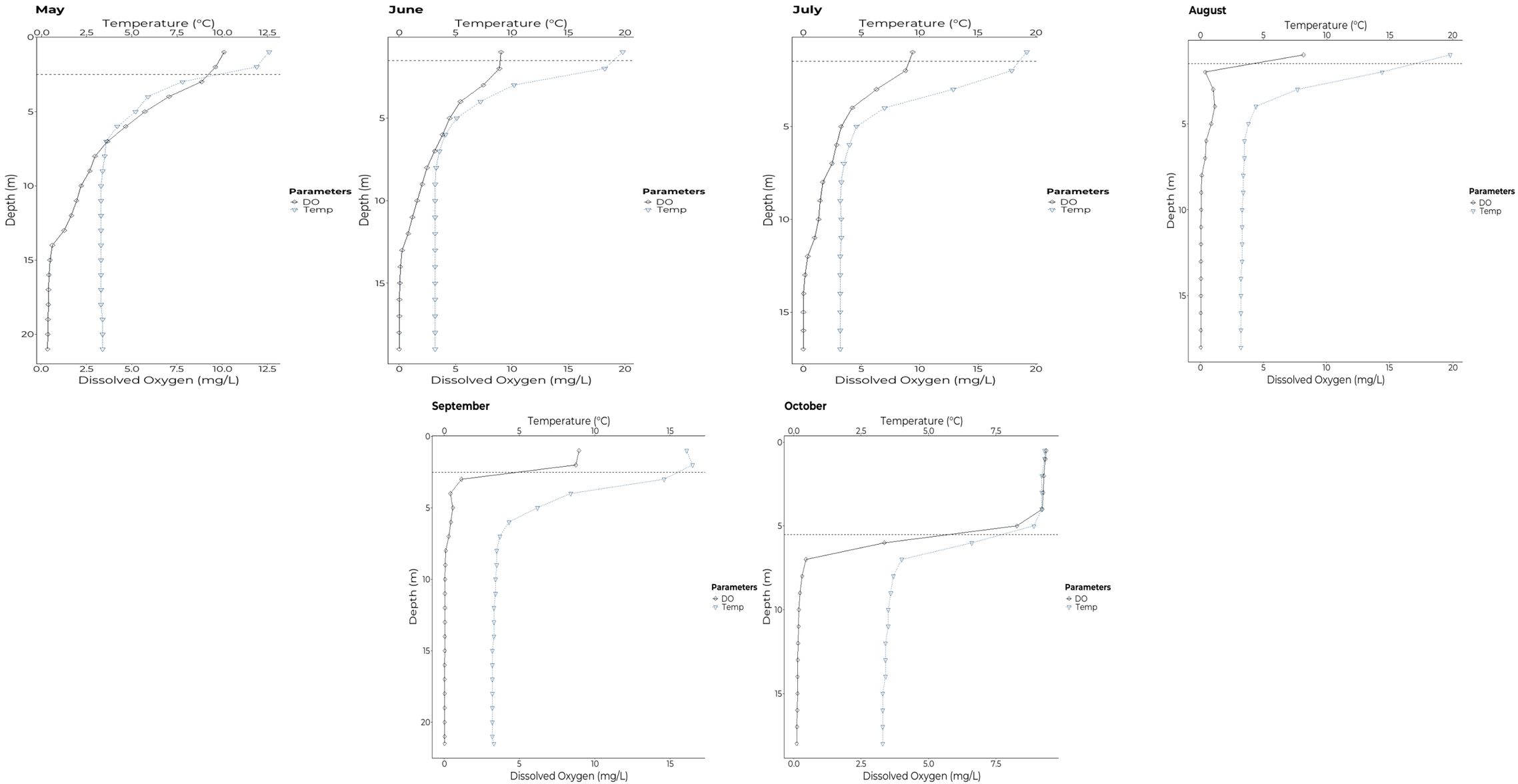

Figure E1-24: 2022 Temperature and Dissolved Oxygen Profiles – Lake 2 (L-2)

Note: Dashed line represents thermocline.

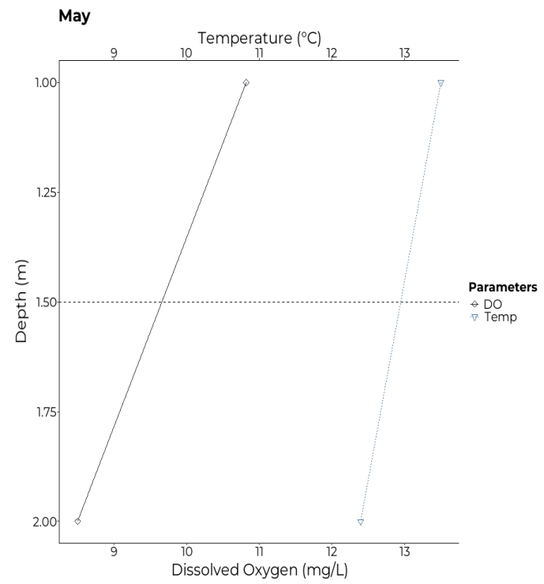

Figure E1-25: 2022 Temperature and Dissolved Oxygen Profiles – Surface Water 9 (SW-9)

Note: Dashed line represents thermocline.

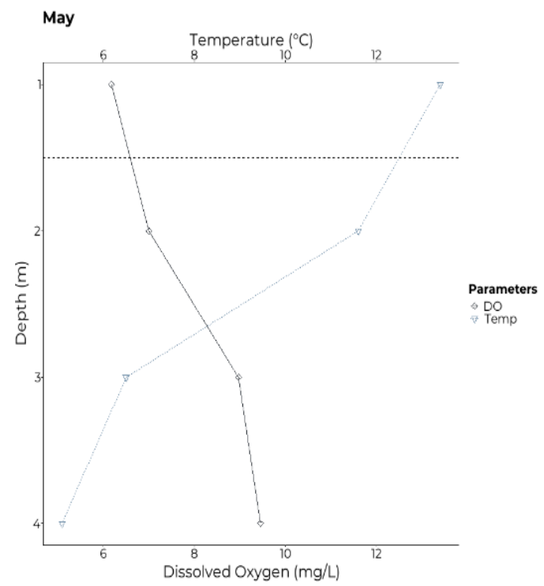

Figure E1-26: 2022 Temperature and Dissolved Oxygen Profiles – Surface Water 26 (SW-26)

Note: Dashed line represents thermocline.

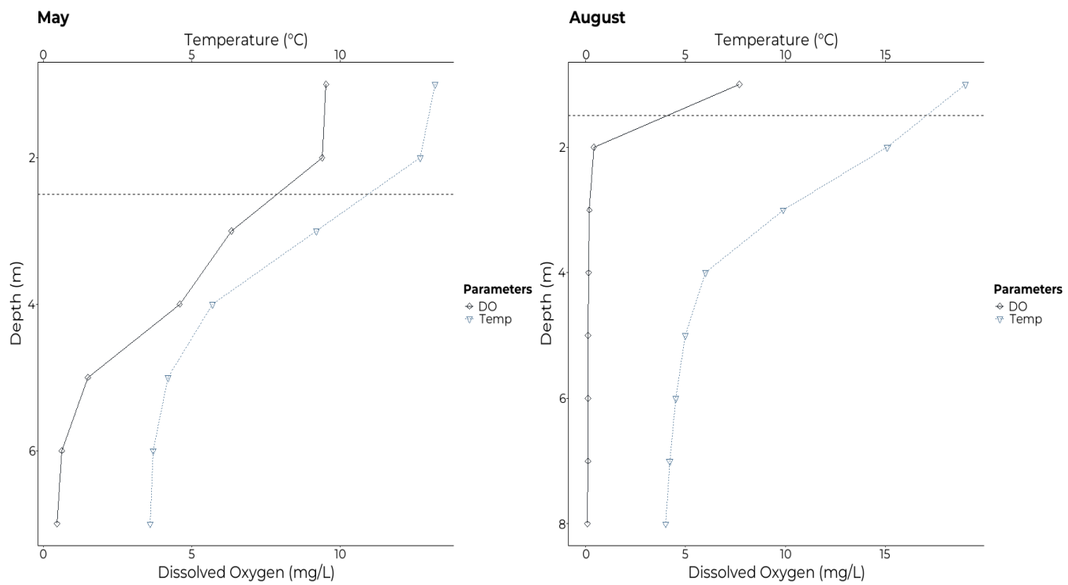

Figure E1-27: 2022 Temperature and Dissolved Oxygen Profiles – Lake 16 (L-16)

Note: Dashed line represents thermocline.

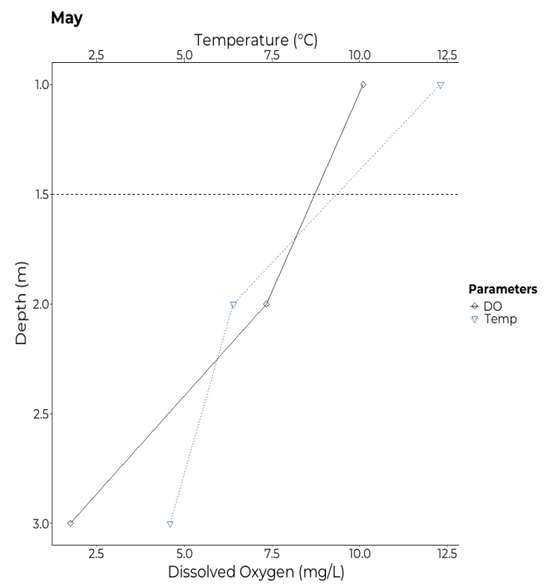

Figure E1-28: 2022 Temperature and Dissolved Oxygen Profiles – Lake 17 (L-17)

Note: Dashed line represents thermocline.

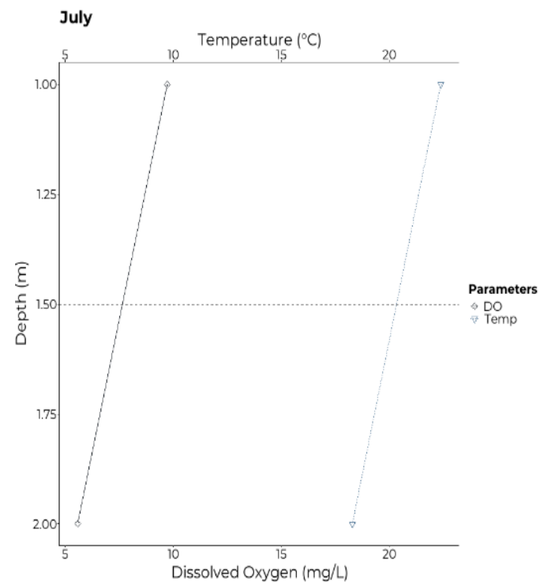

Figure E1-29: 2022 Temperature and Dissolved Oxygen Profiles – Lake 19 (L-19)

Note: Dashed line represents thermocline.

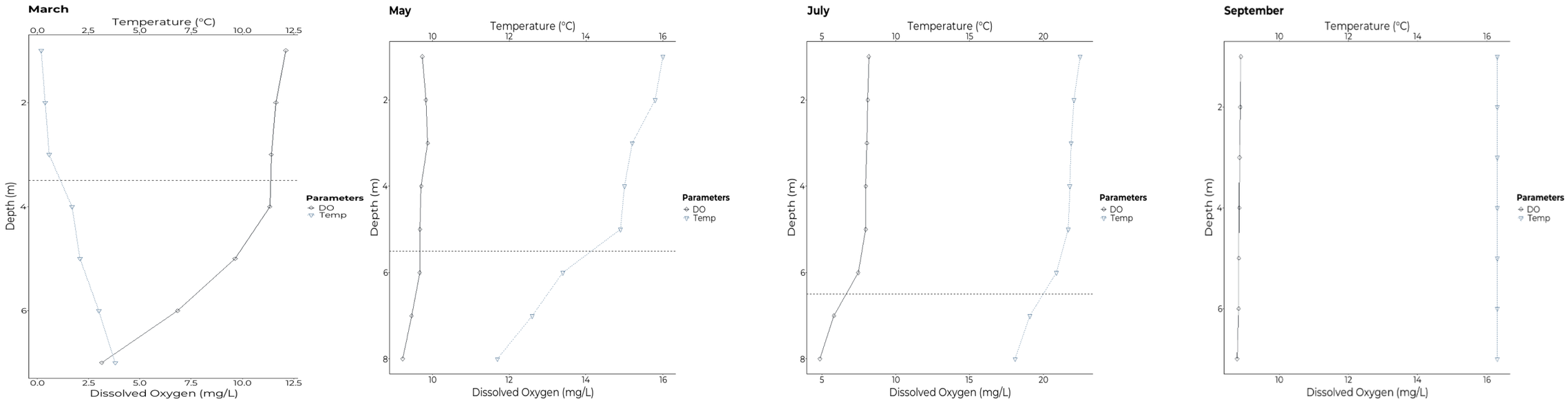

Figure E1-30: 2022 Temperature and Dissolved Oxygen Profiles – Regional 1 (RSW-1)

Note: Dashed line represents thermocline.

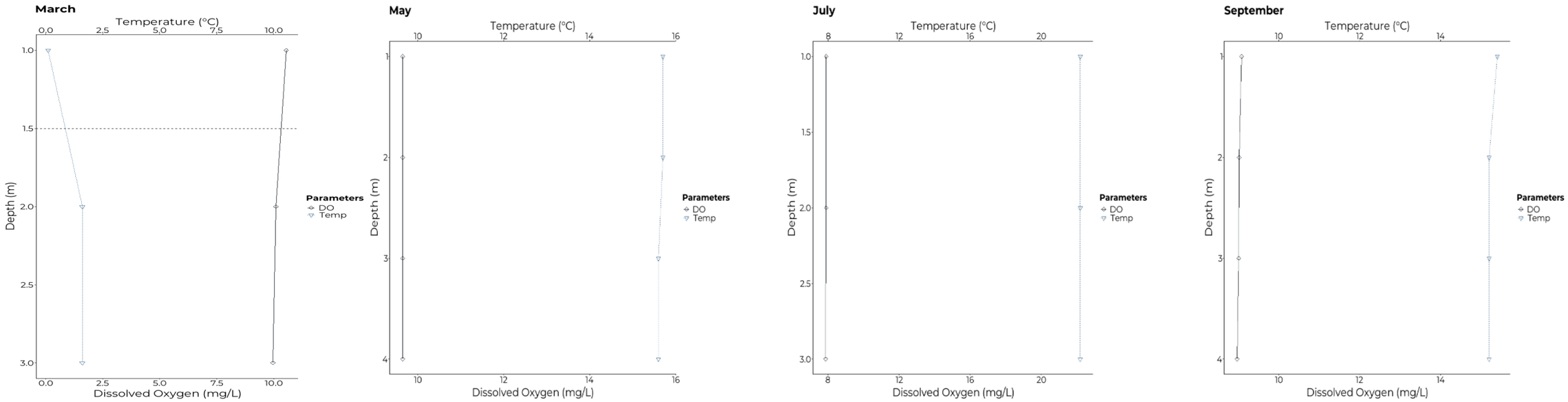

Figure E1-31: 2022 Temperature and Dissolved Oxygen Profiles – Regional 2 (RSW-2)

Note: Dashed line represents thermocline.

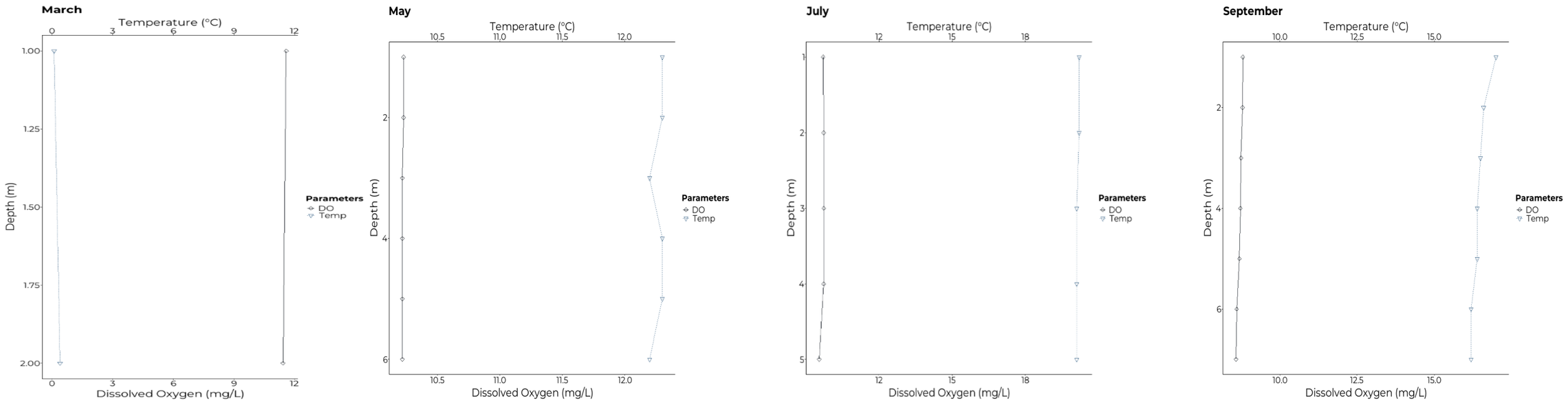

Figure E1-32: 2022 Temperature and Dissolved Oxygen Profiles – Regional 3 (RSW-3)

Note: Dashed line represents thermocline.

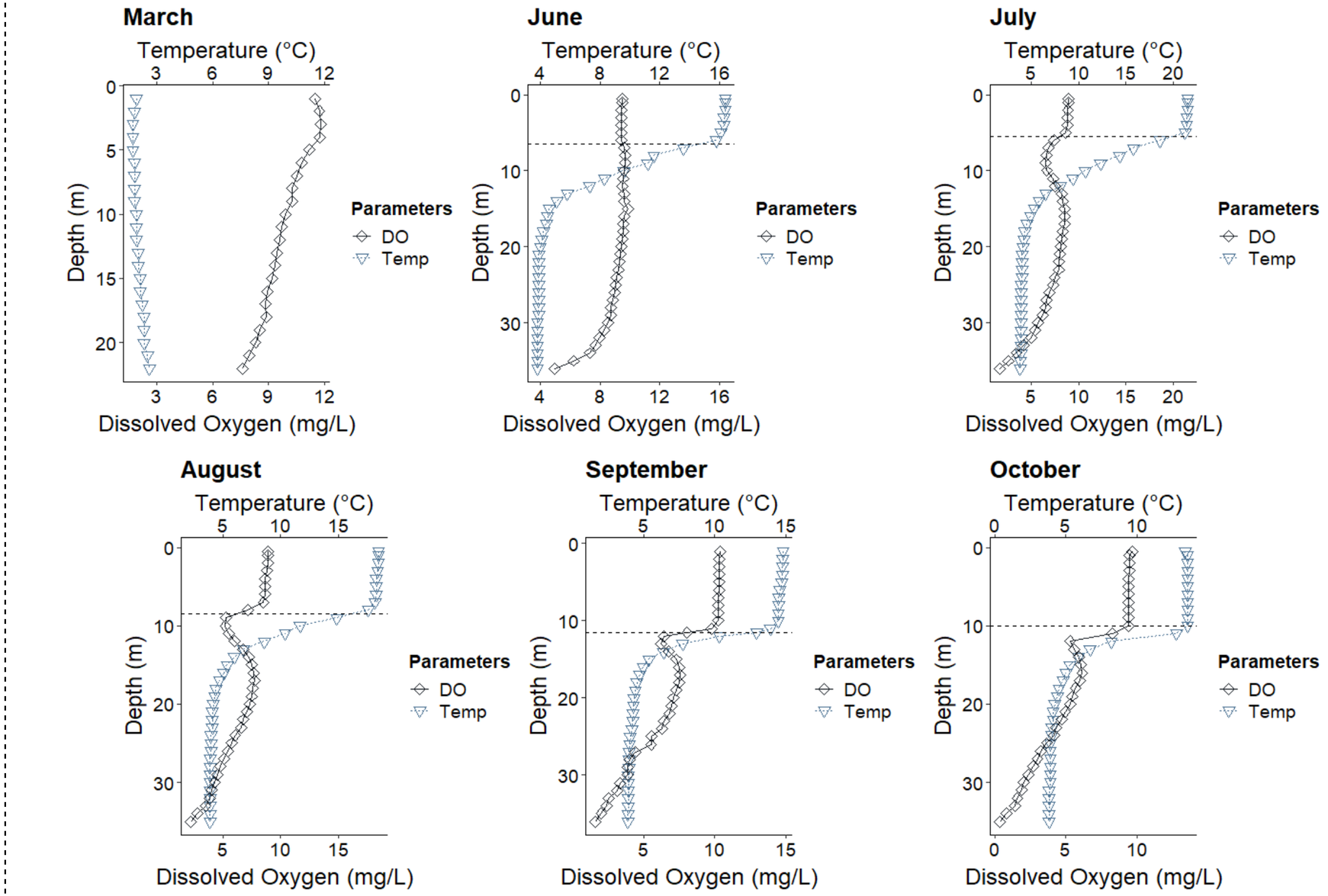

Figure E1-33: 2021 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B1)

Note: Dashed line represents thermocline.

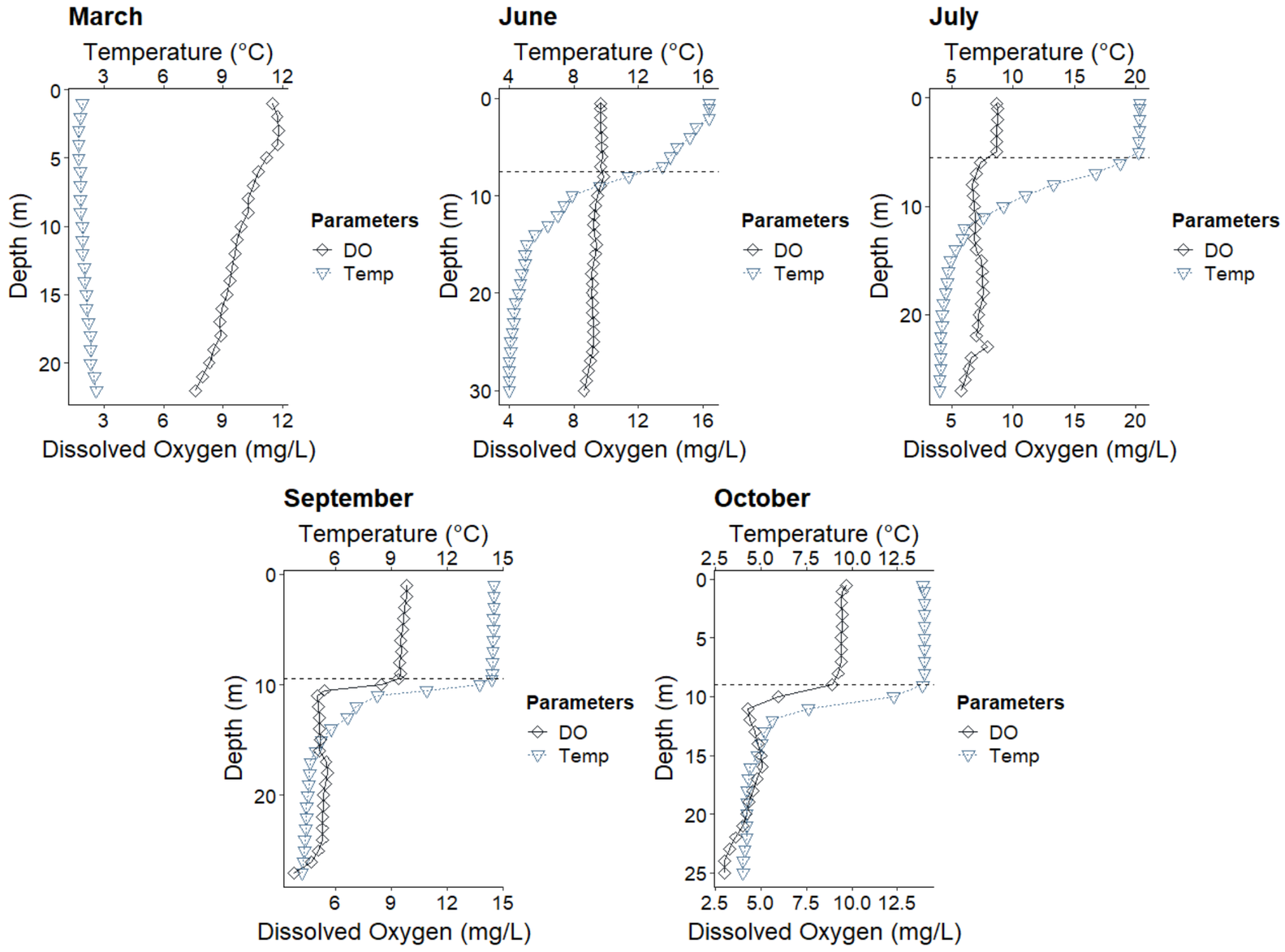

Figure E1-34: 2021 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B2)

Note: Dashed line represents thermocline.

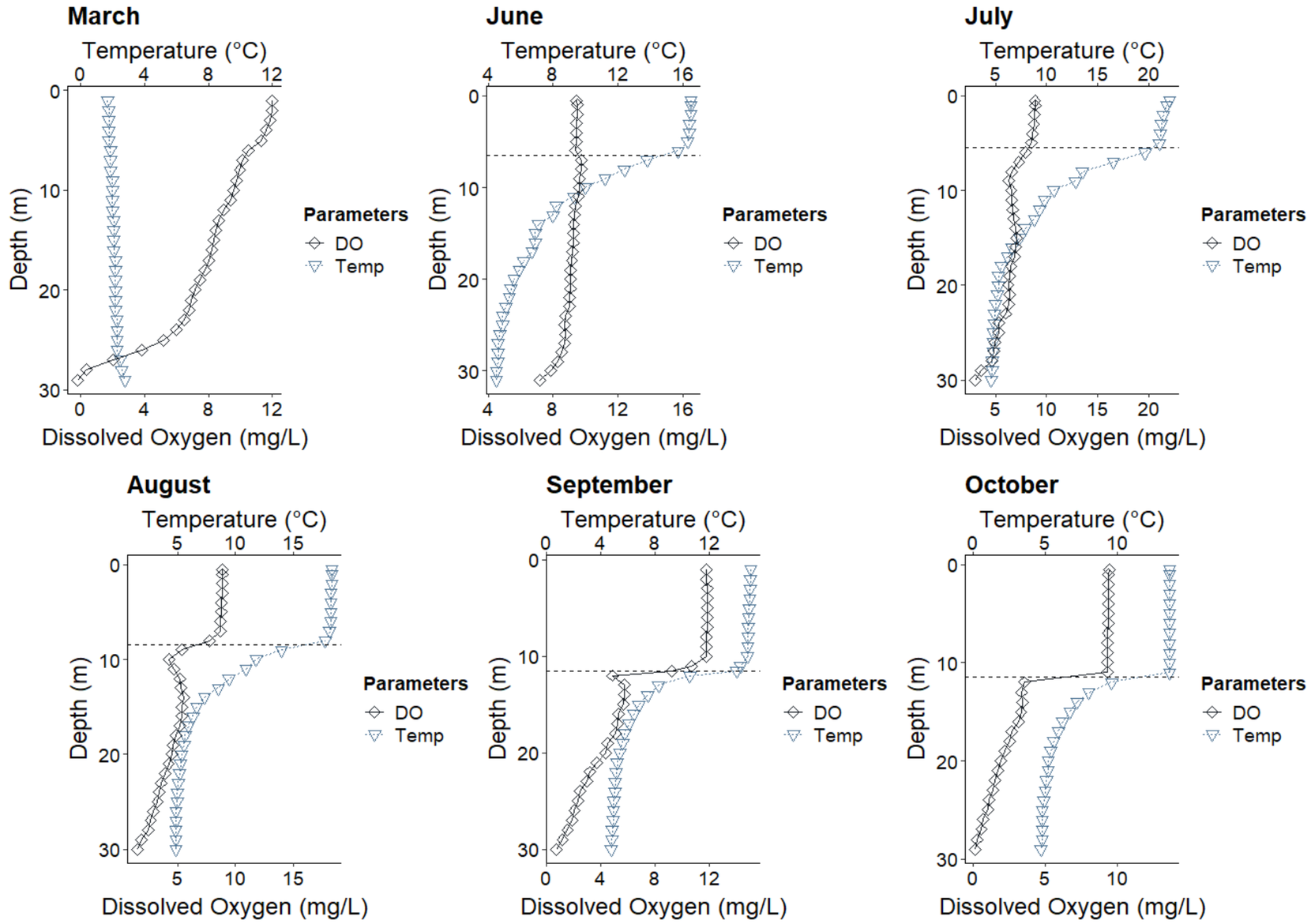

Figure E1-35: 2021 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B3)

Note: Dashed line represents thermocline.

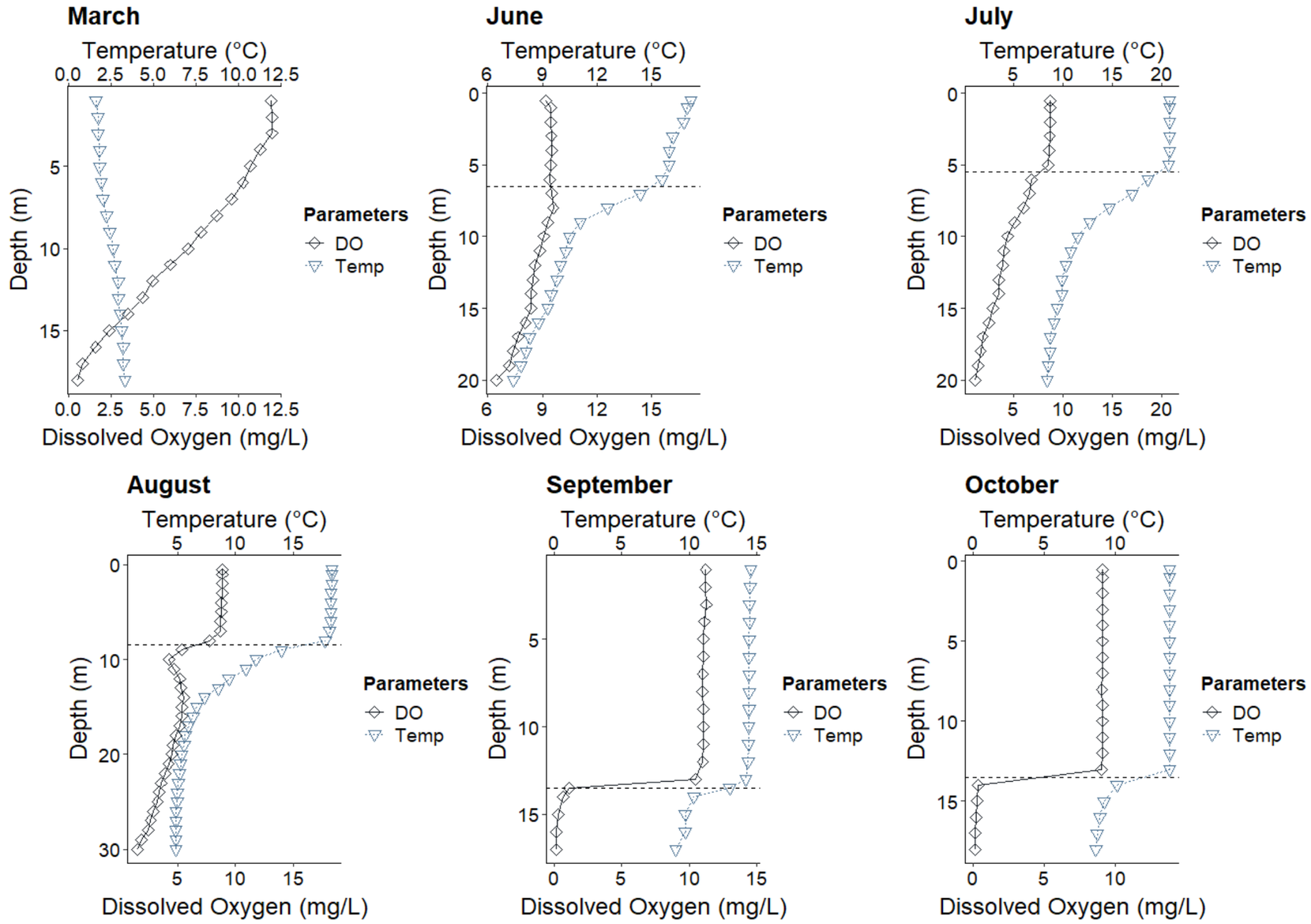

Figure E1-36: 2021 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B4)

Note: Dashed line represents thermocline.

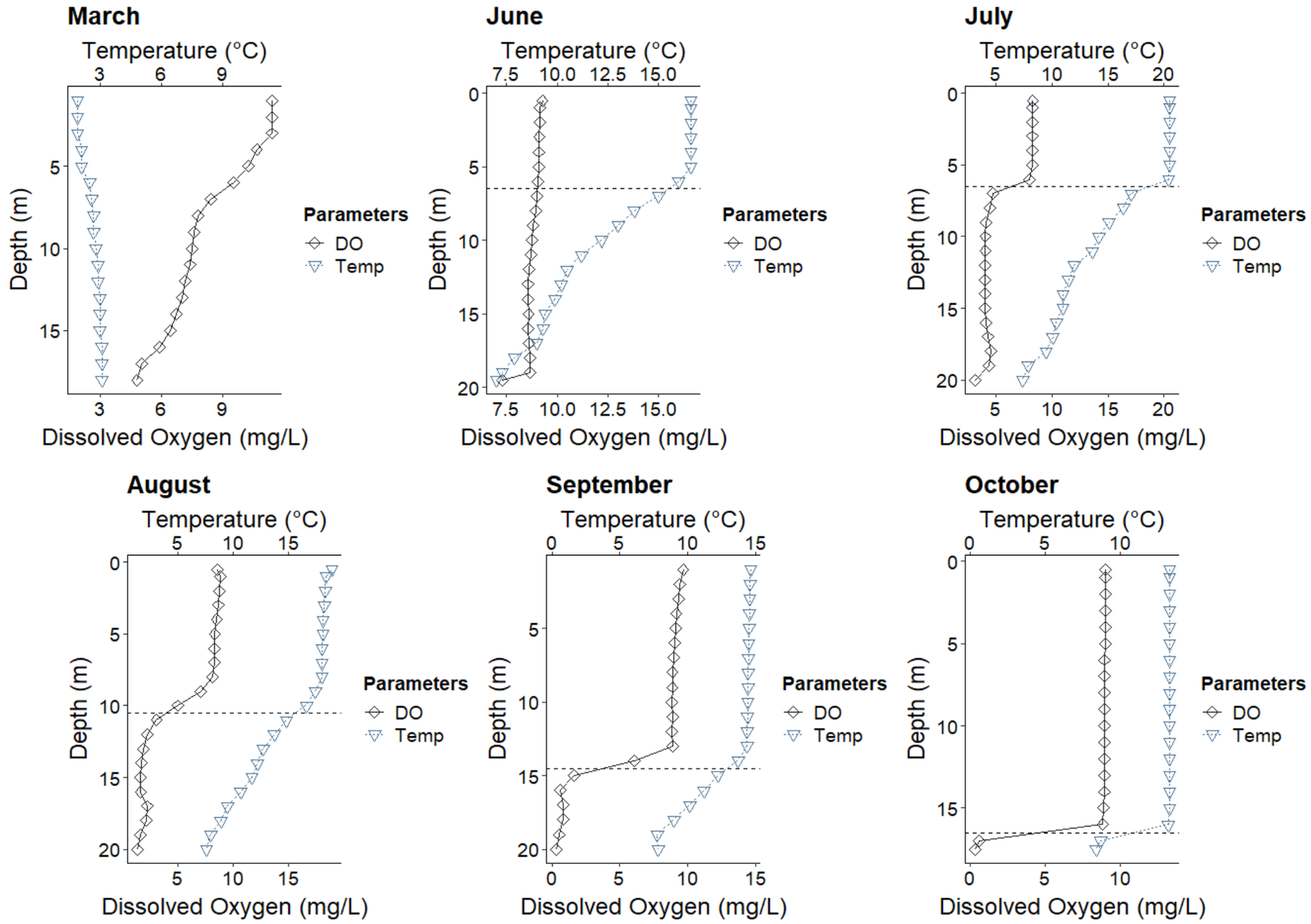

Figure E1-37: 2021 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B5)

Note: Dashed line represents thermocline.

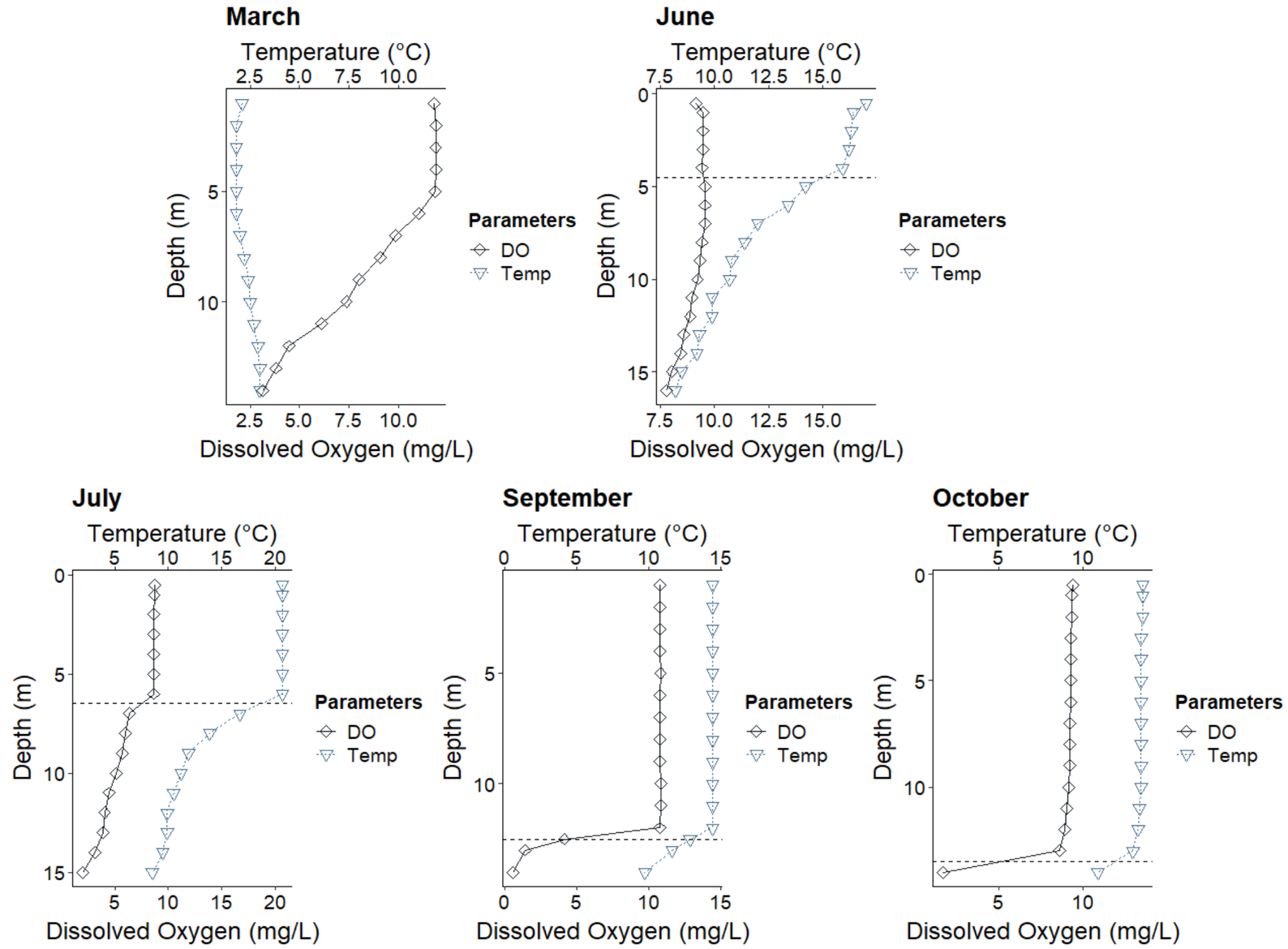

Figure E1-38: 2021 Temperature and Dissolved Oxygen Profiles – Springpole Lake (L-15-B6)

Note: Dashed line represents thermocline.

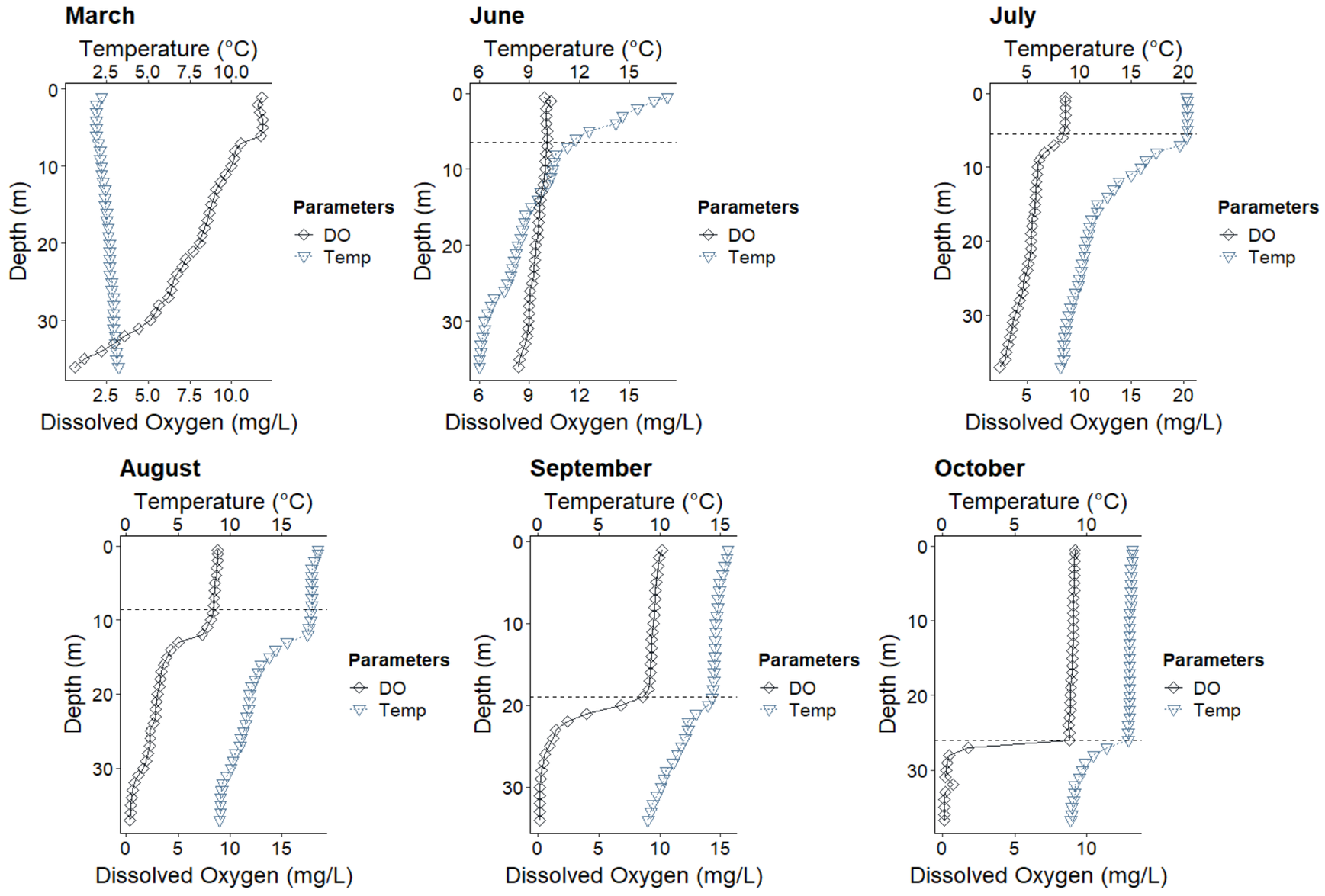

Figure E1-39: 2021 Temperature and Dissolved Oxygen Profiles – Birch Lake (Basin B1)

Note: Dashed line represents thermocline.

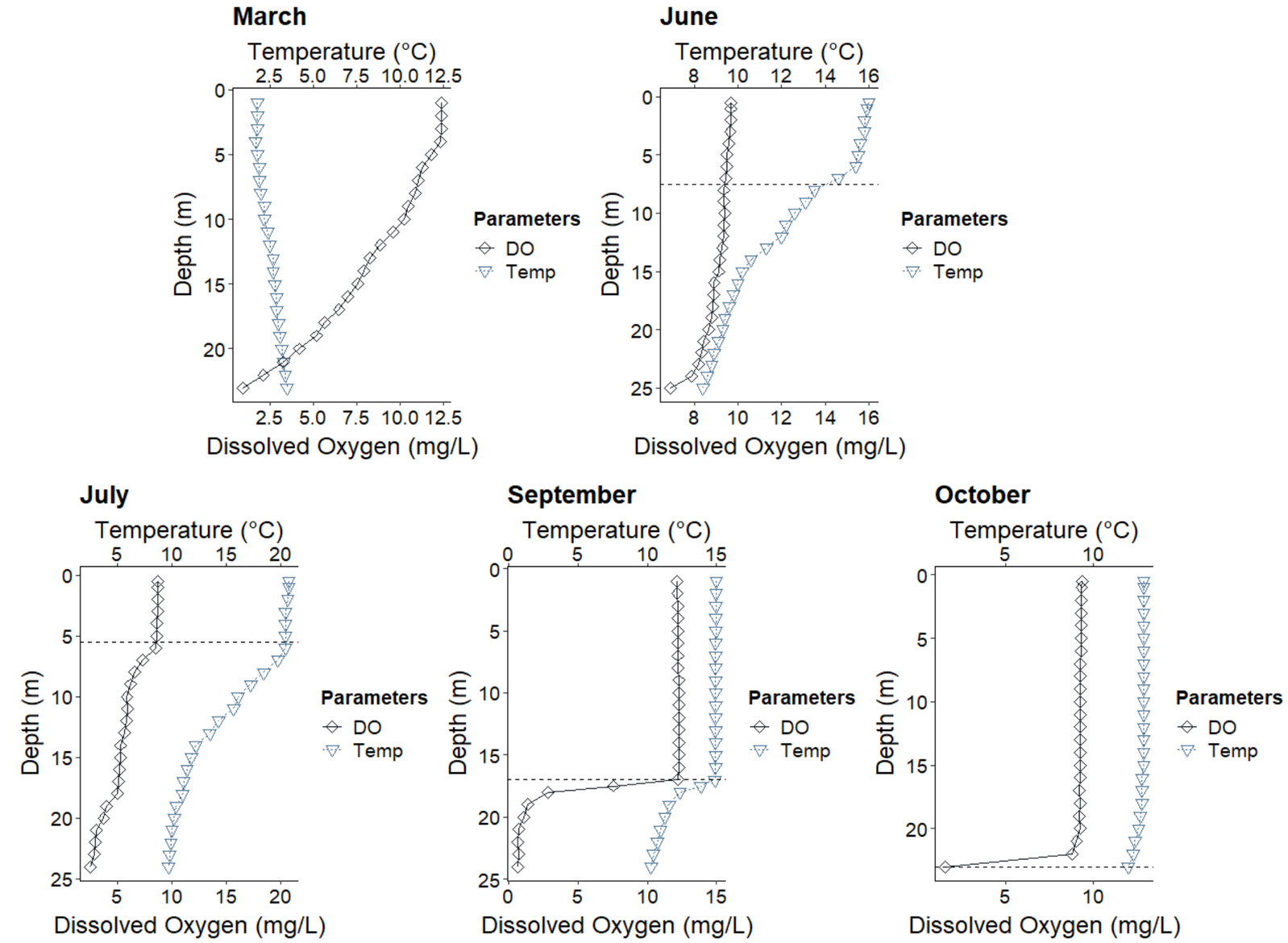

Figure E1-40: 2021 Temperature and Dissolved Oxygen Profiles – Birch Lake (Basin B2)

Note: Dashed line represents thermocline.

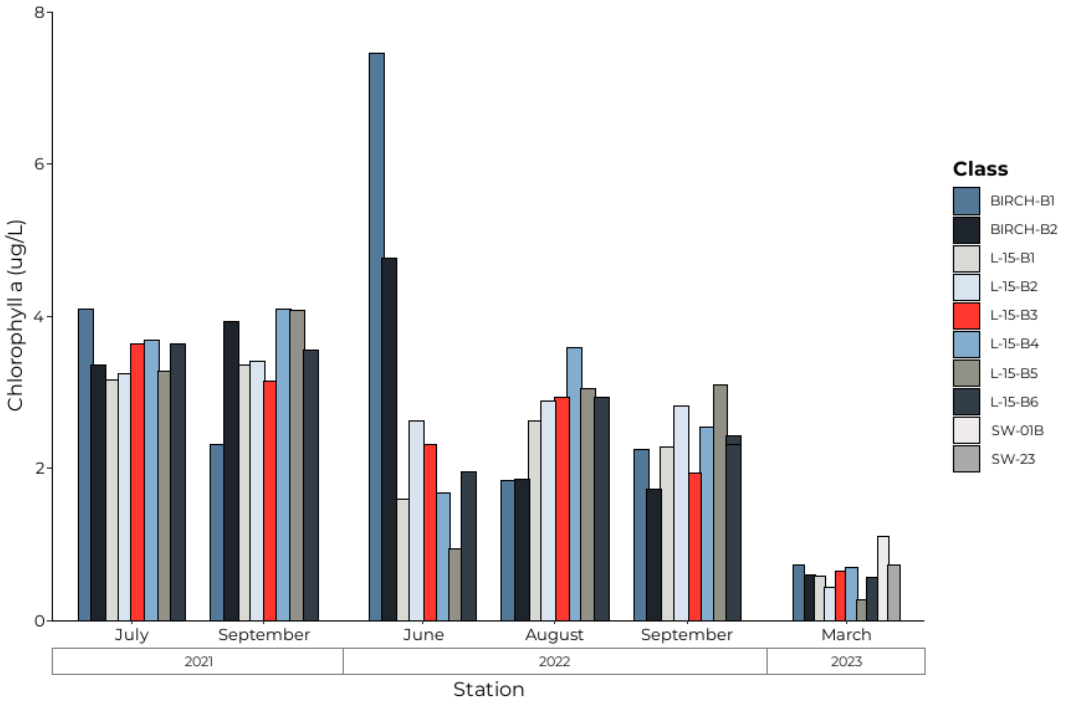

Figure E2-1: Chlorophyll a (µg/L) by Station and Month

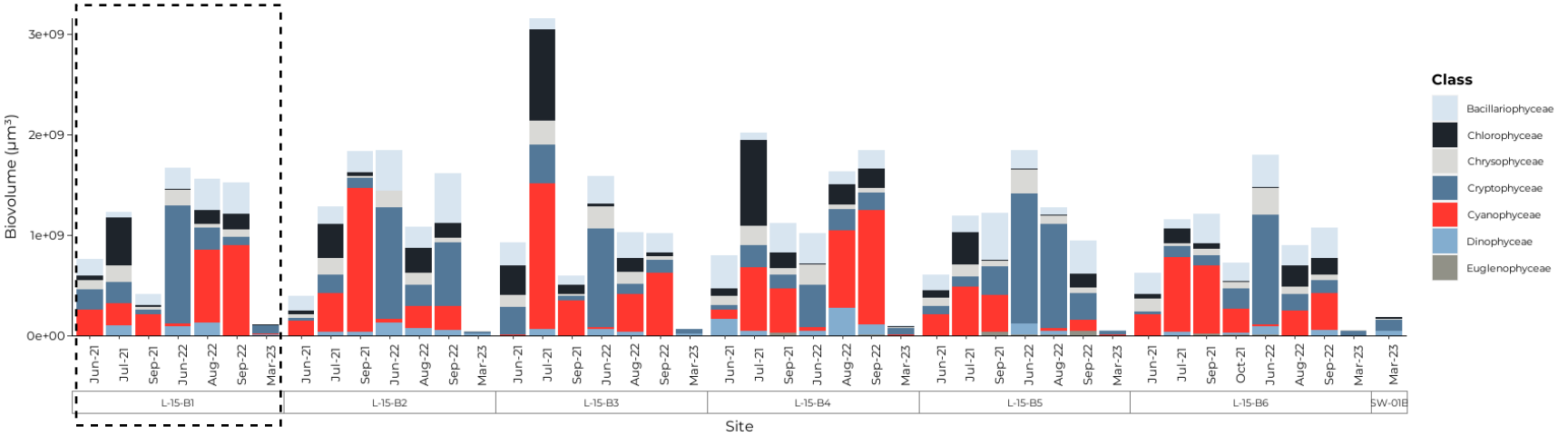

Figure E2-2: Phytoplankton Biovolume (µm³) by Station and Season for Springpole Lake

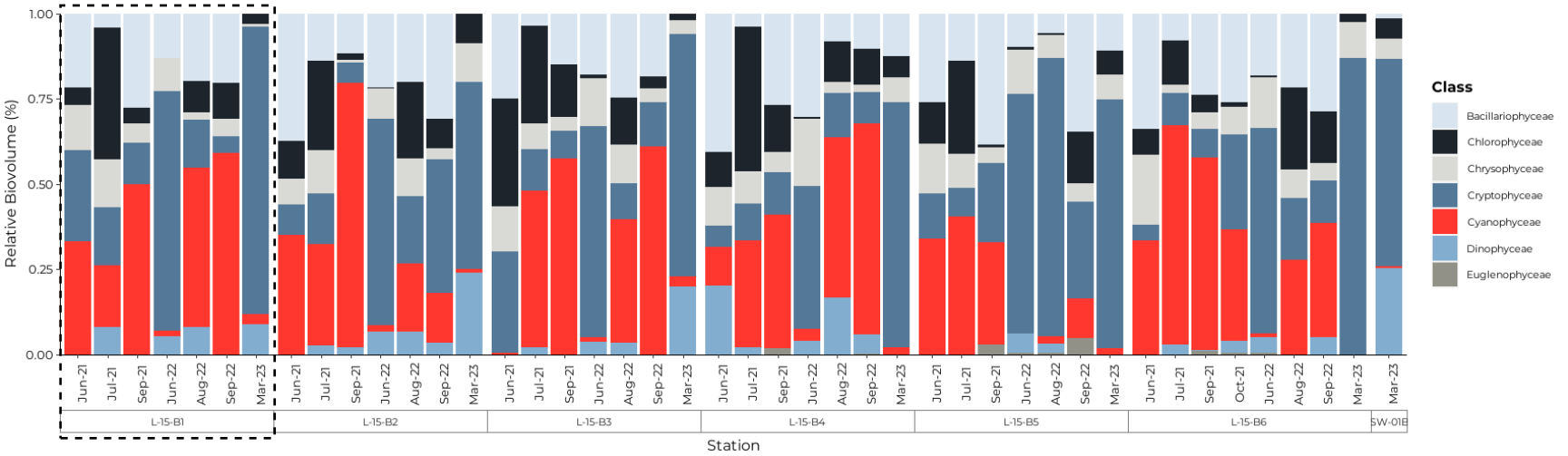

Figure E2-3: Relative Phytoplankton Biovolume (%) by Station and Season for Springpole Lake

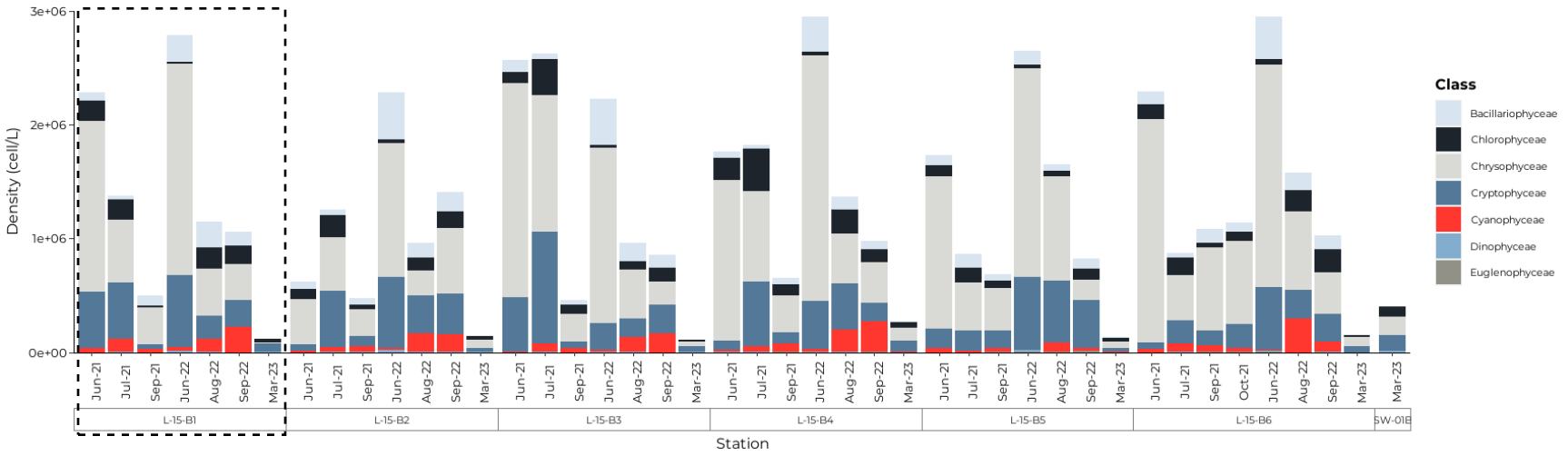

Figure E2-4: Phytoplankton Density (cell/L) by Station and Season for Springpole Lake

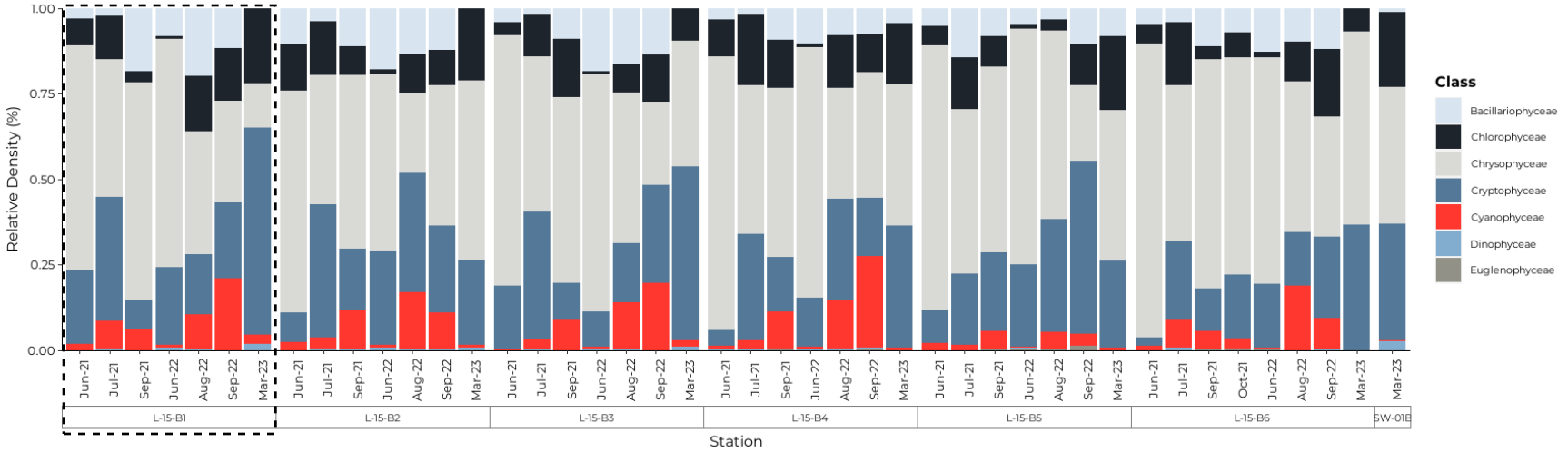

Figure E2-5: Relative Phytoplankton Density (%) by Station and Season for Springpole Lake

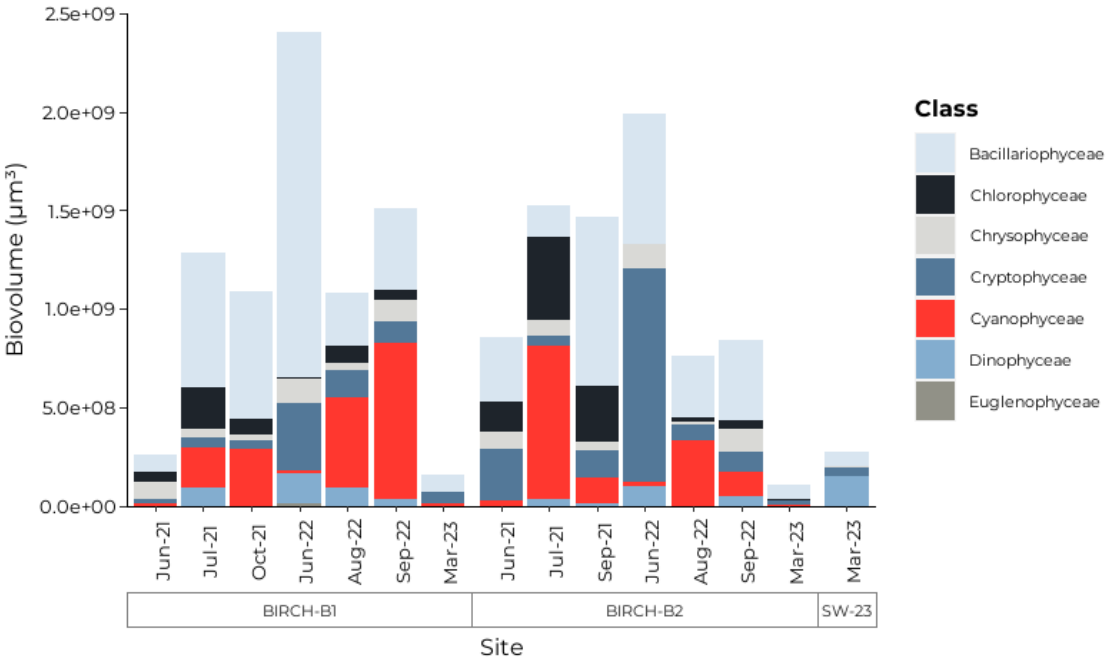

Figure E2-6: Phytoplankton Biovolume (µm³) by Station and Season for Birch Lake

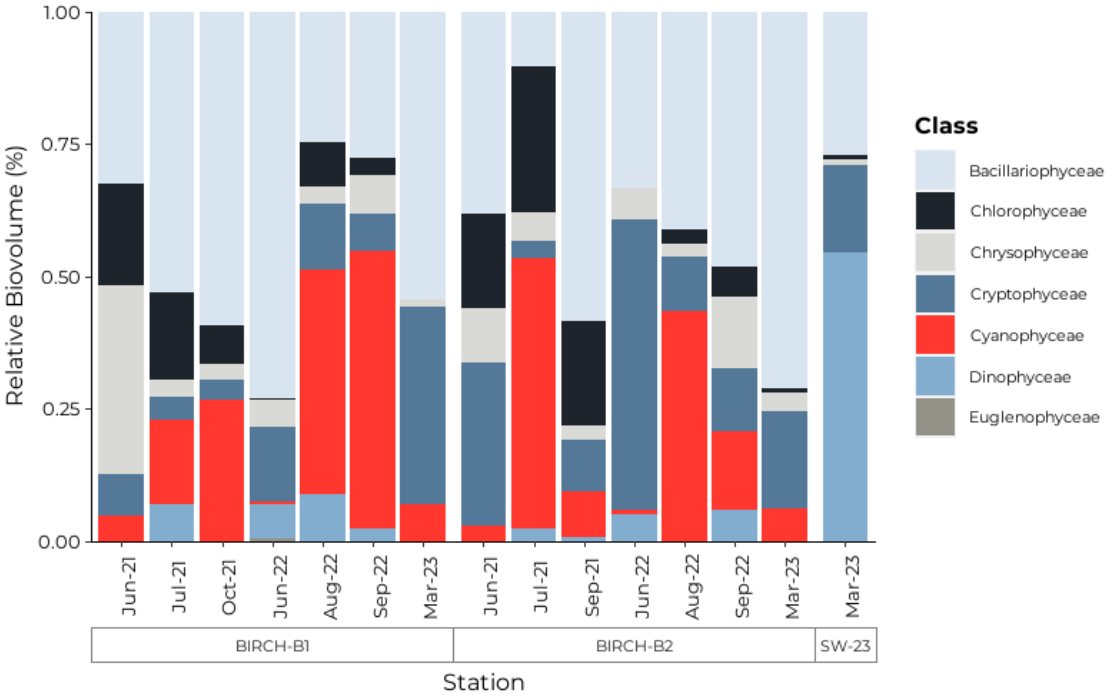

Figure E2-7: Relative Phytoplankton Biovolume (%) by Station and Season for Birch Lake

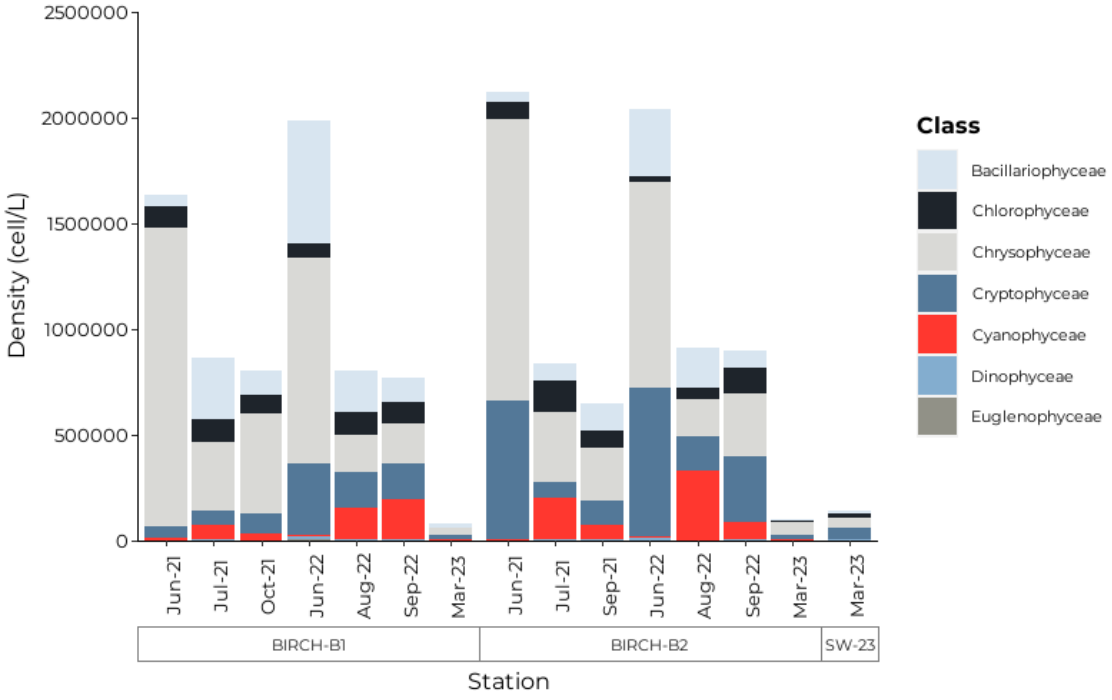

Figure E2-8: Phytoplankton Density (cell/L) by Station and Season for Birch Lake

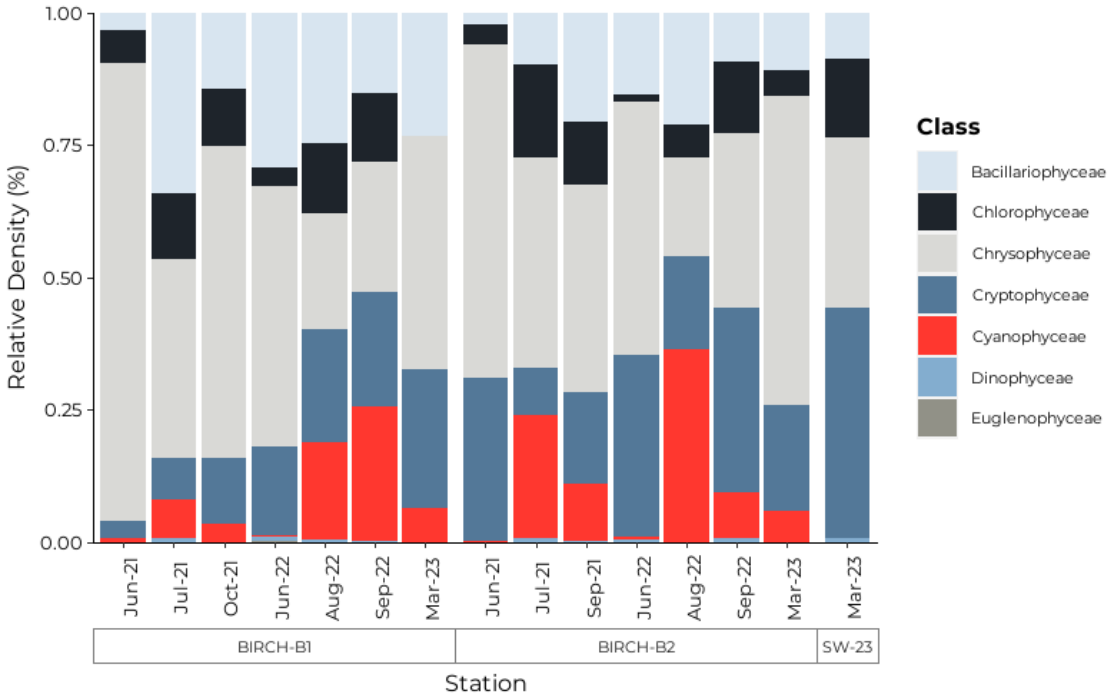

Figure E2-9: Relative Phytoplankton Density (cell/L) by Station and Season for Birch Lake

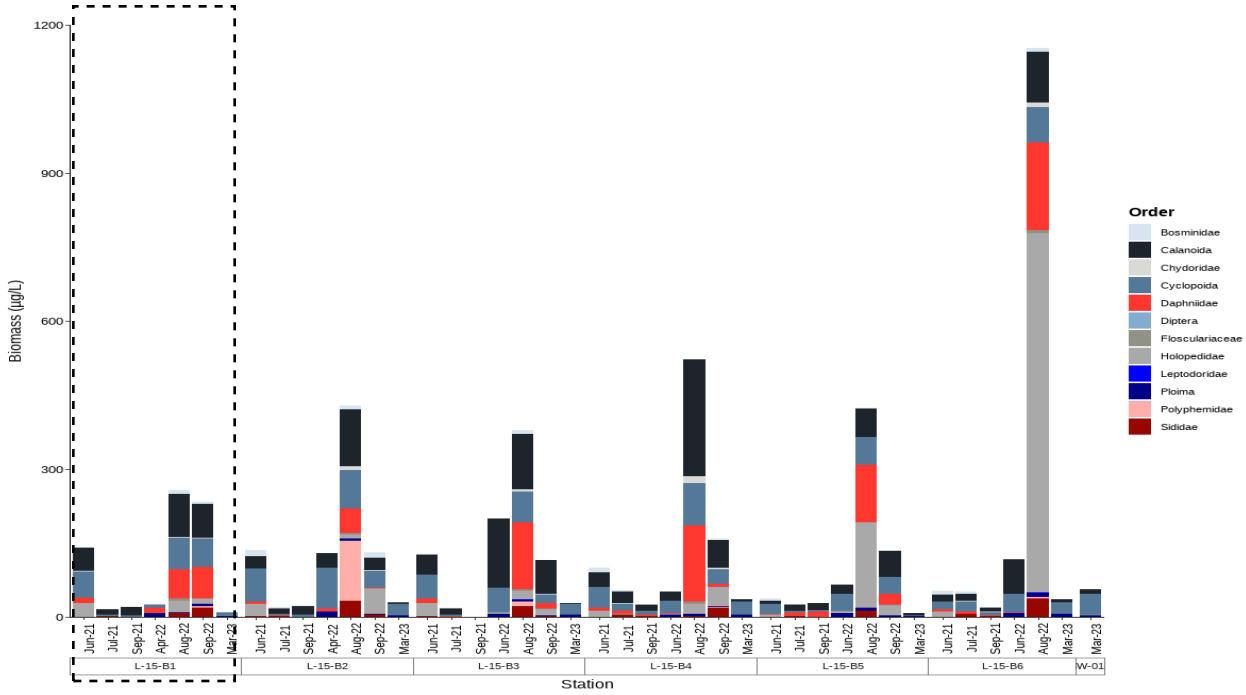

Figure E2-10: Zooplankton Biomass (µg/L wwt) by Station and Year for Springpole Lake

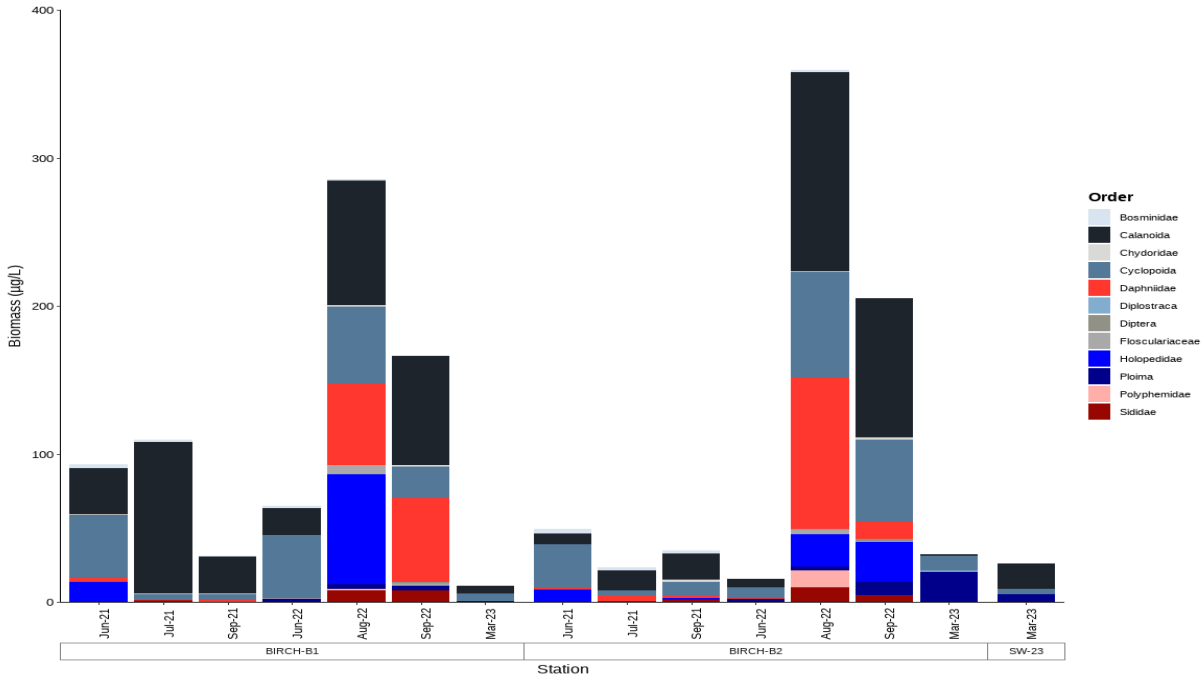

Figure E2-11: Zooplankton Biomass (µg/L wwt) by Station and Year for Birch Lake

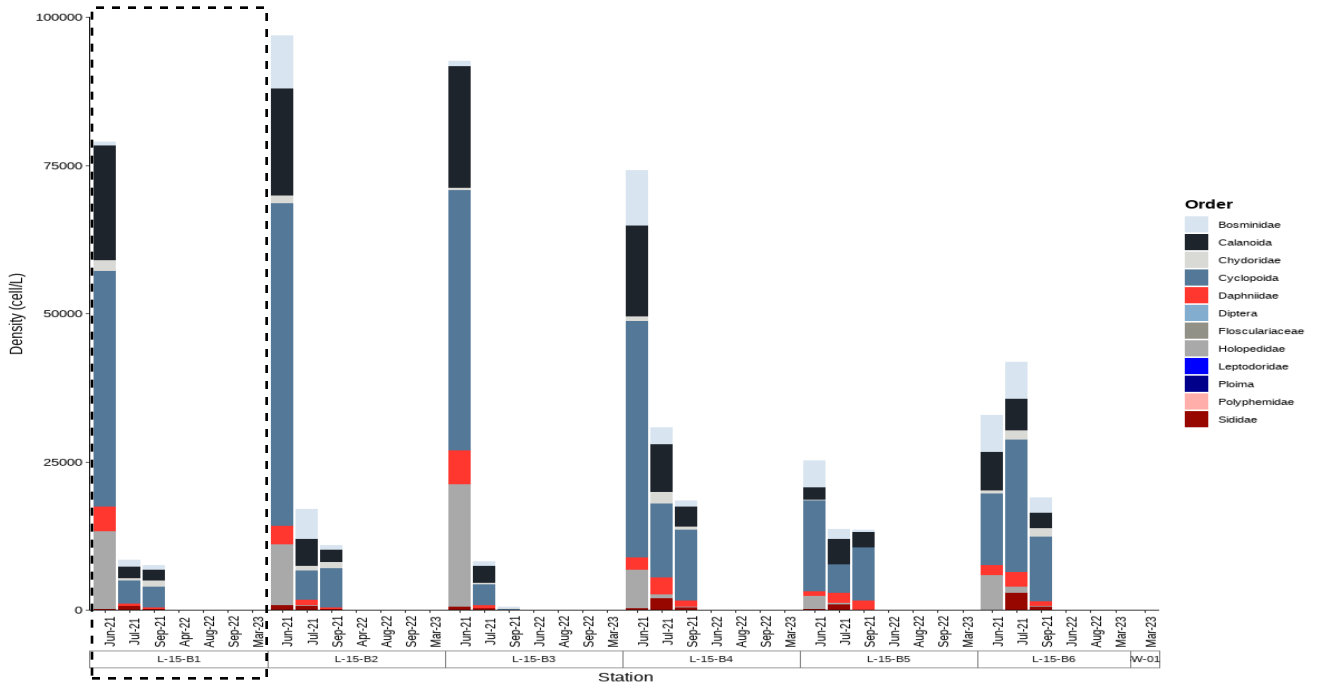

Figure E2-12: Zooplankton Density (#/L) by Station in Springpole Lake

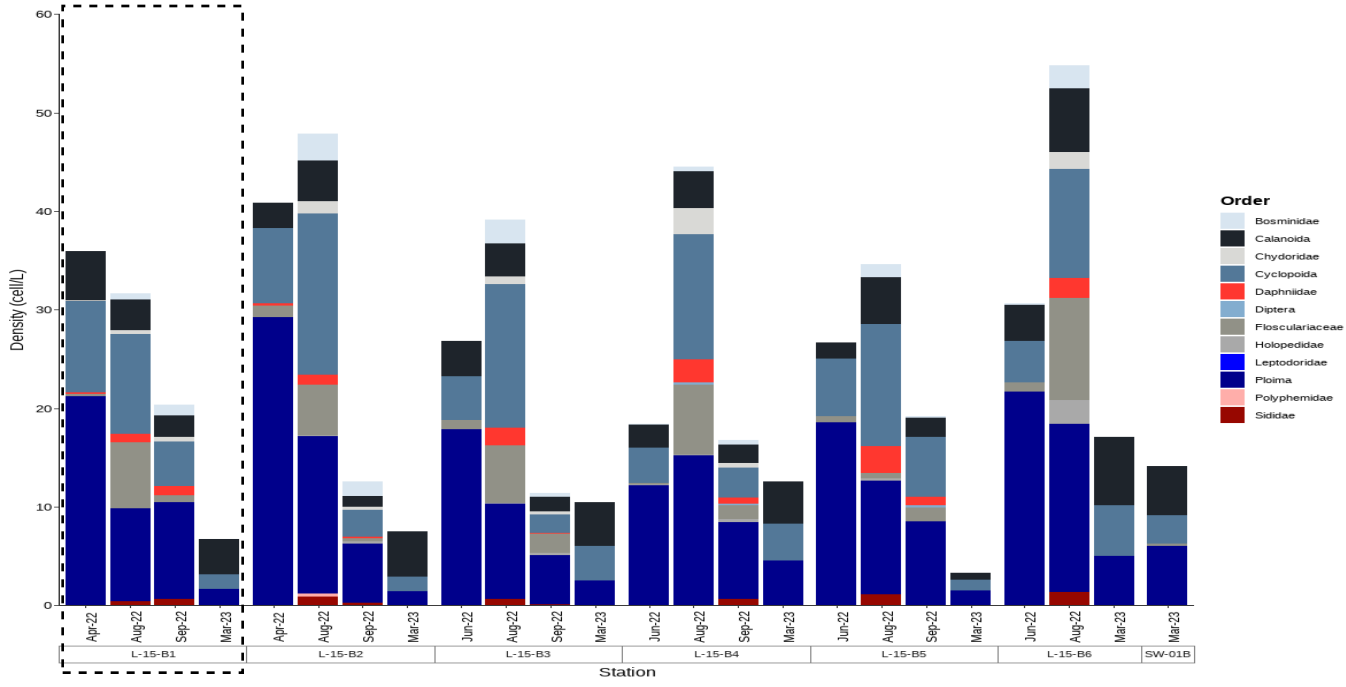

Figure E2-13: Zooplankton Density (#/L) by Station during 2022 and 2023 in Springpole Lake

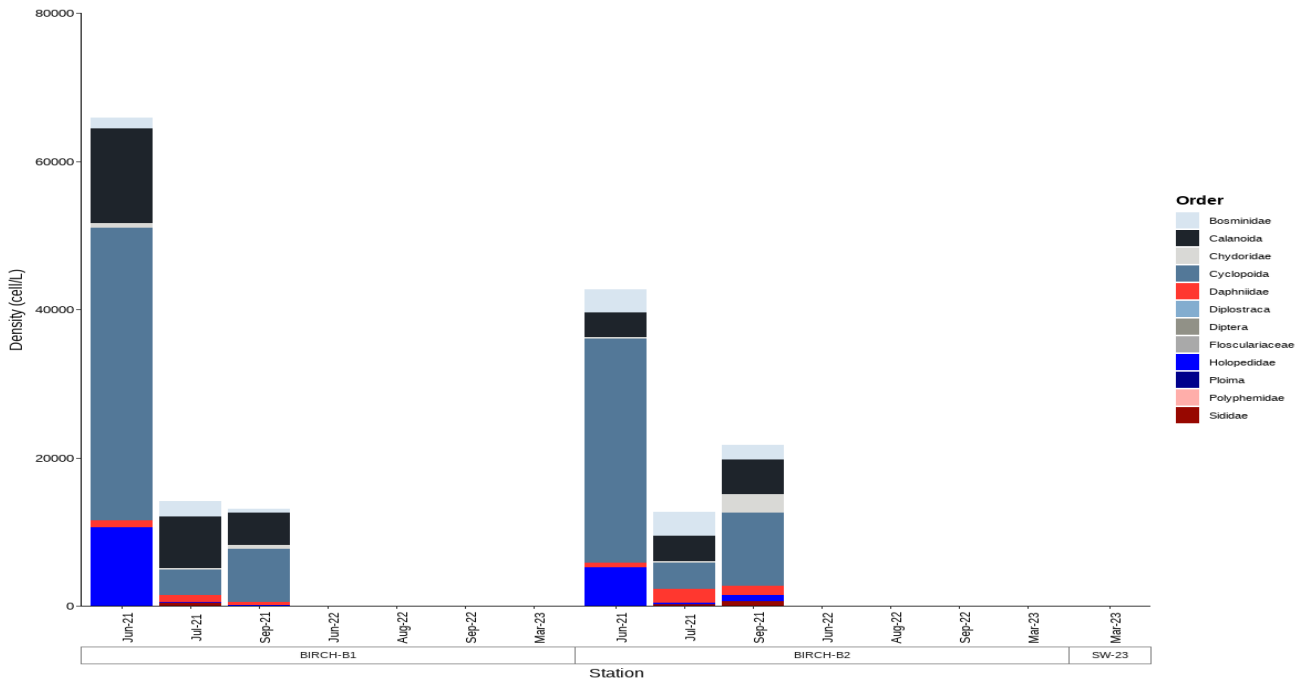

Figure E2-14: Zooplankton Density (#/L) by Station in Birch Lake

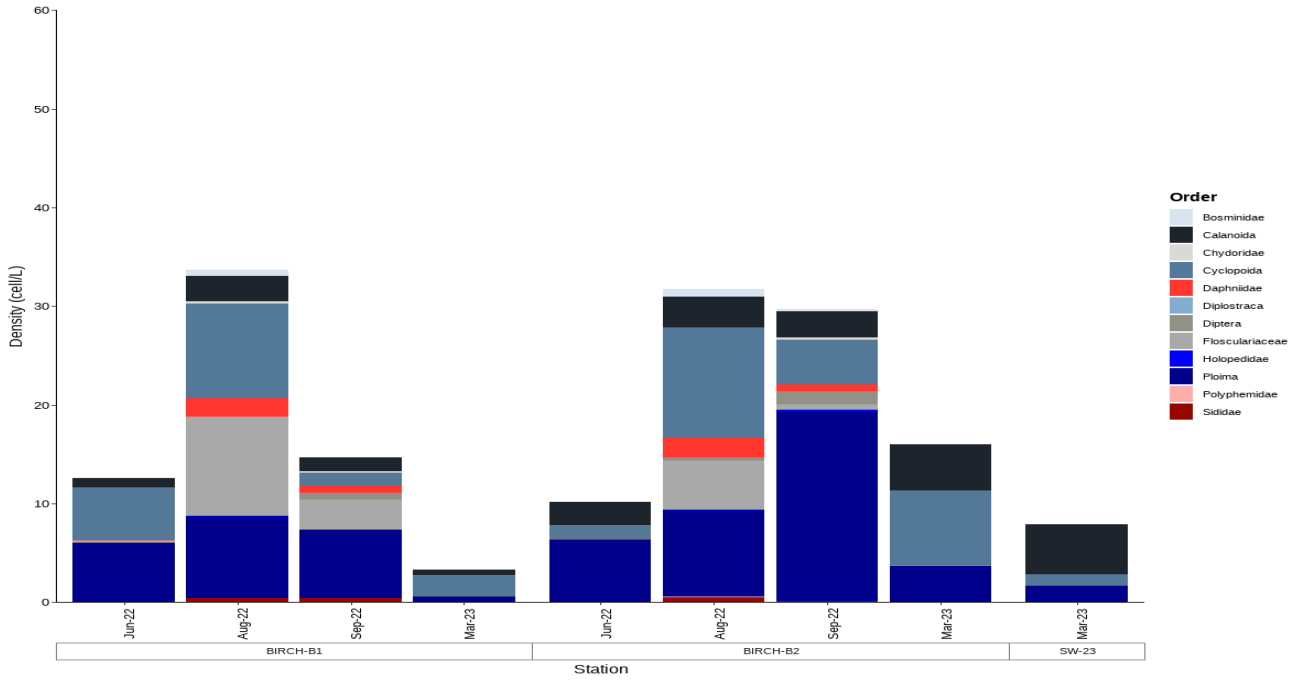

Figure E2-15: Zooplankton Density (#/L) by Station during 2022 and 2023 in Birch Lake

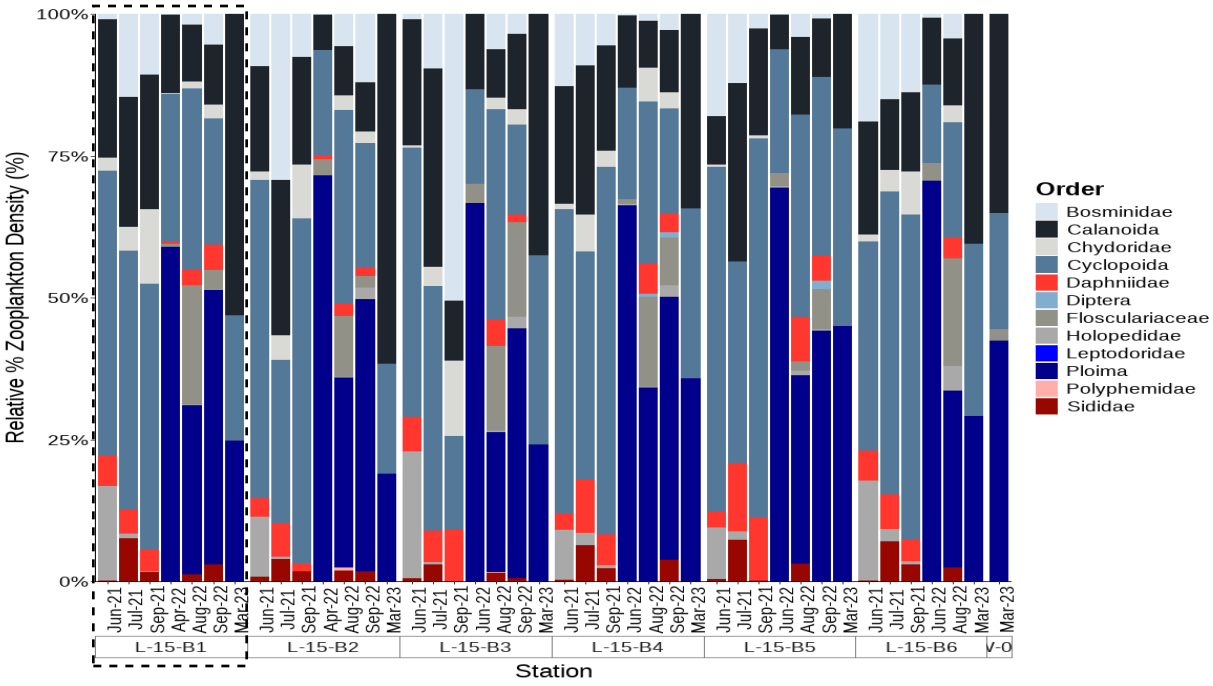

Figure E2-16: Relative Percent Zooplankton Density by Station and Year in Springpole Lake

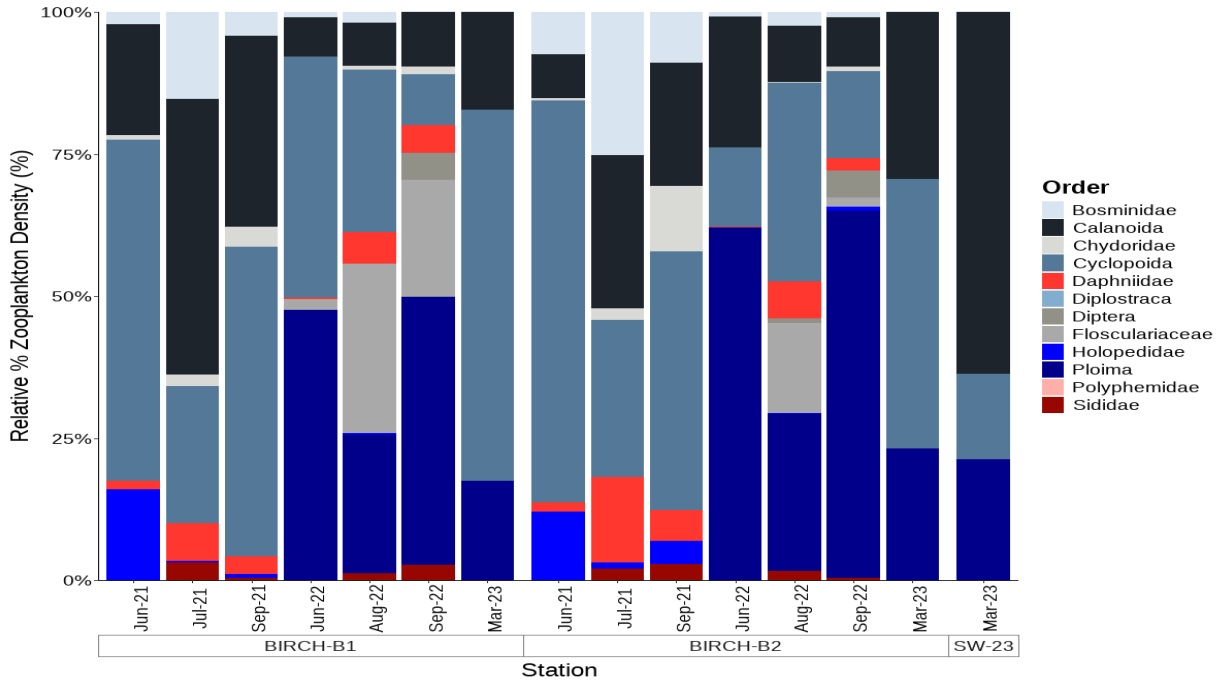

Figure E2-17: Relative Percent Zooplankton Density by Station and Year in Birch Lake

Attachment F Sediment Quality and Benthic Invertebrate Community Results

Table F1-1: Springpole Sediment Quality Laboratory Results 2022

							Sample Area	BIRCH-1-S1	BIRCH-1-S2	BIRCH-1-S3	BIRCH-1-S4	BIRCH-1-S5	BIRCH-2-S1	BIRCH-2-S2	BIRCH-2-S3	BIRCH-2-S4	BIRCH-2-S5
							Date Sampled	08-Oct-2022	08-Oct-2022	08-Oct-2022	08-Oct-2022	08-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022
Parameter	Lowest Detection Limit	Units	CSQG ISQG	CSQG PEL	PSQG LEL	PSQG SEL											
Physical Tests																	
Loss on Ignition @ 375 C	1	%						22.3	22.9	23.9	23.7	23.6	1.6	1.3	3.5	1.7	1.9
Moisture	0.25	%						87.9	88.5	90.2	89.4	91.2	21.9	32.2	52	24.2	38.8
pH (1:2 soil:water)	0.10	pH units						5.74	5.59	5.53	5.48	5.4	5.81	5.65	6.29	6	6.88
Nutrients & Organics																	
Total Kjeldahl Nitrogen	0.020	%			0.055	0.48		0.975	0.993	1.08	1.02	1.04	0.046	0.059	0.086	0.048	0.072
Total Organic Carbon	0.10	%			1	10		10.1	10.5	10.7	10.9	10.8	0.61	1.01	2.2	0.54	1.78
Organic Matter	0.200	%						17.4	18.1	18.4	18.8	18.6	1.05	1.74	3.79	0.93	3.07
Plant Available Nutrients																	
Phosphate, available (as P)	2.0	mg/kg						11.6	12.6	14.4	17.3	10.2	4.3	5.6	2.8	5	<2.0
Metals																	
Aluminum (Al)	50	mg/kg						14000	13700	14000	14800	12900	2610	2730	2470	3300	3060
Antimony (Sb)	0.10	mg/kg						0.37	0.35	0.44	0.3	0.4	<0.10	<0.10	<0.10	<0.10	<0.10
Arsenic (As)	0.10	mg/kg	5.9	17	6	33		8.4	7.51	9.26	7.01	7.55	1.13	0.78	1.57	1.44	2.93
Barium (Ba)	0.50	mg/kg						74.2	73.8	75.2	75.2	75.6	5.77	5.5	8.22	7.42	9.72
Beryllium (Be)	0.10	mg/kg						0.39	0.41	0.39	0.39	0.4	<0.10	<0.10	<0.10	<0.10	<0.10
Bismuth (Bi)	0.20	mg/kg						0.24	0.24	0.29	<0.20	0.26	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)	5.0	mg/kg						6.8	7	7	6.6	6.4	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	0.020	mg/kg	0.6	3.5	0.6	10		0.592	0.555	0.778	0.5	0.68	0.022	0.041	0.037	0.026	0.032
Calcium (Ca)	50	mg/kg						7900	8060	7930	7960	7870	1450	1360	1720	1710	1560
Chromium (Cr)	0.50	mg/kg	37.3	90	26	110		58.6	55.4	48.2	50.3	54.7	7.04	6.56	6.12	8.24	7.66
Cobalt (Co)	0.10	mg/kg						7.44	7.33	7.6	7.46	7.22	1.89	2.26	1.98	2.4	2.27
Copper (Cu)	0.50	mg/kg	35.7	197	16	110		38.8	38.4	39.8	40.8	37.6	1.42	1.27	1.85	1.48	1.71
Iron (Fe)	50	mg/kg			20000	40000		16600	16500	16100	16700	15700	4910	5080	4850	6350	6600
Lead (Pb)	0.50	mg/kg	35	91.3	31	250		18.4	18	26	14.1	24.2	1.35	0.8	1.25	1.18	1.89
Lithium (Li)	2.0	mg/kg						14	14.3	13.3	13.8	13.5	2.7	2.6	2.3	3.6	3.3
Magnesium (Mg)	20	mg/kg						5580	5410	5400	5700	5360	1650	1710	1510	2010	1760
Manganese (Mn)	1.0	mg/kg			460	1100		198	194	190	190	194	62.1	64.4	123	87.2	205
Mercury (Hg)	0.0050	mg/kg	0.17	0.486	0.2	2		0.0922	0.09	0.106	0.0816	0.106	<0.0050	<0.0050	0.0069	0.0056	0.0073
Molybdenum (Mo)	0.10	mg/kg						3.32	3.03	2.46	2.35	3.06	<0.10	0.11	0.12	0.15	0.19
Nickel (Ni)	0.50	mg/kg			16	75		38.3	36.4	33	33.7	36	4.38	4.44	4.04	5.12	4.7
Phosphorus (P)	50	mg/kg						1150	1110	1140	1190	1100	349	272	285	363	257
Potassium (K)	100	mg/kg						1710	1690	1770	1710	1650	110	<100	100	140	170
Selenium (Se)	0.20	mg/kg						1.48	1.45	1.5	1.47	1.41	<0.20	<0.20	<0.20	<0.20	<0.20
Silver (Ag)	0.10	mg/kg						0.13	0.13	0.14	0.13	0.13	<0.10	<0.10	<0.10	<0.10	<0.10
Sodium (Na)	50	mg/kg						201	204	221	199	185	<50	<50	<50	<50	<50
Strontium (Sr)	0.50	mg/kg						25.8	26.6	26.5	27.4	25.9	4.51	4.15	5.4	5.75	5.45
Sulfur (S)	1000	mg/kg						2900	3100	3400	3000	2700	<1000	<1000	<1000	<1000	<1000
Thallium (Tl)	0.050	mg/kg						0.171	0.17	0.172	0.166	0.16	<0.050	<0.050	<0.050	<0.050	<0.050
Tin (Sn)	2.0	mg/kg						<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium (Ti)	1.0	mg/kg						415	416	399	412	341	182	195	179	254	173
Tungsten (W)	0.50	mg/kg						<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	0.050	mg/kg						2.06	2.09	1.89	2.09	1.87	0.229	0.176	0.186	0.22	0.195
Vanadium (V)	0.20	mg/kg						30.2	29.7	29.7	30.2	28.6	8.6	8.97	8.18	10.6	9.08
Zinc (Zn)	2.0	mg/kg	123	315	120	820		82.1	81.4	85	81	82.8	12.5	12.2	13	16.1	16
Zirconium (Zr)	1.0	mg/kg						3.7	3.7	3.8	3.7	3.5	1	1.2	<1.0	1.5	<1.0
Sample Collection																	
Sample Depth	-	m						9	9	9.2	9.5	8.8	1	0.6	0.8	1	1.6

1. PSQG; Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in Ontario
2. CSQG; Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. All values expressed as mg/kg unless otherwise indicated
4. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
5. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL
6. Blue shaded values indicate concentrations that exceed the CCME ISQG
7. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-1: Springpole Sediment Quality Laboratory Results 2022

						Sample Area	BIRCH-3-S1	BIRCH-3-S2	BIRCH-3-S3	BIRCH-3-S4	BIRCH-3-S5	BIRCH-4-S1	BIRCH-4-S2	BIRCH-4-S3	BIRCH-4-S4	BIRCH-4-S5
						Date Sampled	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022
Parameter	Lowest Detection Limit	Units	CSQG ISQG	CSQG PEL	PSQG LEL	PSQG SEL										
Physical Tests																
Loss on Ignition @ 375 C	1	%					1.1	1	1.6	3.7	1.7	2.6	2.8	1	1.4	1.6
Moisture	0.25	%					21	31.6	39.9	60.7	40.5	48.8	40.5	29.5	37	33.6
pH (1:2 soil:water)	0.10	pH units					5.5	5.35	5.9	7.41	5.54	6.08	5.29	5.62	5.48	6.13
Nutrients & Organics																
Total Kjeldahl Nitrogen	0.020	%			0.055	0.48	0.072	0.072	0.077	0.187	0.108	0.122	0.126	0.075	0.08	0.064
Total Organic Carbon	0.10	%			1	10	0.86	0.67	0.72	1.82	1.23	1.1	1.25	1.11	0.69	0.54
Organic Matter	0.200	%					1.48	1.16	1.24	3.14	2.12	1.9	2.16	1.91	1.19	0.93
Plant Available Nutrients																
Phosphate, available (as P)	2.0	mg/kg					6.2	6.8	5.9	4.1	7.7	10.7	15.1	10.4	9.8	12.2
Metals																
Aluminum (Al)	50	mg/kg					6170	6230	3990	10900	5850	6820	6900	5330	2730	4320
Antimony (Sb)	0.10	mg/kg					<0.10	<0.10	<0.10	0.16	<0.10	0.12	0.1	<0.10	<0.10	<0.10
Arsenic (As)	0.10	mg/kg	5.9	17	6	33	5.16	6.8	1.47	15.7	4.51	64.6	36.9	5.26	3.46	15.9
Barium (Ba)	0.50	mg/kg					15.5	14	13	75	18.5	366	111	15	13.8	74
Beryllium (Be)	0.10	mg/kg					<0.10	<0.10	<0.10	0.37	0.11	0.46	0.26	<0.10	<0.10	0.15
Bismuth (Bi)	0.20	mg/kg					<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron (B)	5.0	mg/kg					<5.0	<5.0	<5.0	5.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium (Cd)	0.020	mg/kg	0.6	3.5	0.6	10	0.054	0.055	0.065	0.218	0.093	0.294	0.17	0.06	0.074	0.108
Calcium (Ca)	50	mg/kg					1750	1890	1880	12700	2170	4830	2320	1860	1890	2700
Chromium (Cr)	0.50	mg/kg	37.3	90	26	110	25.2	23.9	12.5	31.8	21.9	24.1	62.4	14.2	9.91	27.3
Cobalt (Co)	0.10	mg/kg					4.21	4.14	2.6	8.12	4.06	15.1	8.24	4.02	1.92	4.93
Copper (Cu)	0.50	mg/kg	35.7	197	16	110	3.84	3.18	3.82	16.8	4.87	11.3	8.06	3.54	3.41	8.73
Iron (Fe)	50	mg/kg			20000	40000	13300	13900	7160	24600	12200	85600	49700	12600	5610	21100
Lead (Pb)	0.50	mg/kg	35	91.3	31	250	3.28	2.84	2.82	8.51	3.88	5.42	4.33	3.37	3.46	3.32
Lithium (Li)	2.0	mg/kg					6.4	6.2	4	15.9	6.4	9.1	7.4	5.8	2.8	5.6
Magnesium (Mg)	20	mg/kg					3560	3390	2120	10000	3160	3140	3920	3220	1320	2220
Manganese (Mn)	1.0	mg/kg			460	1100	196	175	102	494	180	5380	1800	208	122	1050
Mercury (Hg)	0.0050	mg/kg	0.17	0.486	0.2	2	0.011	0.0092	0.0107	0.0271	0.0145	0.0136	0.0118	0.0112	0.0108	0.01
Molybdenum (Mo)	0.10	mg/kg					1.38	1.36	0.27	0.66	0.82	2.3	6.28	0.14	0.31	1.68
Nickel (Ni)	0.50	mg/kg			16	75	14.6	14.1	6.77	20.8	12.9	16.1	36.9	8.28	5.5	15.5
Phosphorus (P)	50	mg/kg					500	578	550	1010	610	4300	2050	557	495	1160
Potassium (K)	100	mg/kg					340	340	280	1940	360	1090	280	210	240	650
Selenium (Se)	0.20	mg/kg					<0.20	<0.20	<0.20	0.34	<0.20	0.45	0.22	<0.20	<0.20	<0.20
Silver (Ag)	0.10	mg/kg					<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sodium (Na)	50	mg/kg					50	65	<50	194	60	98	<50	<50	<50	90
Strontium (Sr)	0.50	mg/kg					7.39	6.44	6.09	21.7	6.97	22.3	10.4	6.98	6.24	10.4
Sulfur (S)	1000	mg/kg					<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Thallium (Tl)	0.050	mg/kg					<0.050	<0.050	<0.050	0.177	<0.050	0.17	0.054	<0.050	<0.050	0.09
Tin (Sn)	2.0	mg/kg					<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium (Ti)	1.0	mg/kg					216	240	226	614	245	347	165	266	224	303
Tungsten (W)	0.50	mg/kg					<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	0.050	mg/kg					0.327	0.406	0.38	1.04	0.482	0.873	0.901	0.426	0.399	0.495
Vanadium (V)	0.20	mg/kg					19	17.8	11.2	33.5	19.3	39.8	36.9	20.4	8.96	18.3
Zinc (Zn)	2.0	mg/kg	123	315	120	820	23.5	24.1	18.4	50	26.9	47.4	36.3	22.3	14.6	20.9
Zirconium (Zr)	1.0	mg/kg					<1.0	<1.0	<1.0	3.1	<1.0	1.5	<1.0	<1.0	<1.0	<1.0
Sample Collection																
Sample Depth	-	m					6.3	7.7	8	9.6	9.2	12.5	10.7	8.1	8.6	9.8

1. PSQG; Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in Ontario
2. CSQG; Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. All values expressed as mg/kg unless otherwise indicated
4. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
5. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL

6. Blue shaded values indicate concentrations that exceed the CCME ISQG
7. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-1: Springpole Sediment Quality Laboratory Results 2022

						Sample Area	BIRCH-5-S1	BIRCH-5-S2	BIRCH-5-S3	BIRCH-5-S4	BIRCH-5-S5	L-16-S1	L-16-S2	L-16-S3	L-16-S4	L-16-S5
						Date Sampled	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	09-Oct-2022	10-Oct-2022	10-Oct-2022	10-Oct-2022	10-Oct-2022	10-Oct-2022
Parameter	Lowest Detection Limit	Units	CSQG ISQG	CSQG PEL	PSQG LEL	PSQG SEL										
Physical Tests																
Loss on Ignition @ 375 C	1	%					20.8	22.3	19	18.1	14.2	53.1	60.6	57.8	52.5	53.2
Moisture	0.25	%					85.1	88.6	86	84.6	81.1	94	93.7	92	93	93.3
pH (1:2 soil:water)	0.10	pH units					5.71	5.69	5.61	5.55	5.47	5.7	5.8	5.89	5.69	5.83
Nutrients & Organics																
Total Kjeldahl Nitrogen	0.020	%			0.055	0.48	0.893	0.953	0.788	0.795	0.624	1.95	1.91	1.87	1.86	1.9
Total Organic Carbon	0.10	%			1	10	9.29	9.9	8.59	8.46	6.04	25.1	28	26.3	24.8	24
Organic Matter	0.200	%					16	17.1	14.8	14.6	10.4	43.3	48.3	45.3	42.8	41.4
Plant Available Nutrients																
Phosphate, available (as P)	2.0	mg/kg					7.8	9.4	6.1	4.4	4.1	9.9	7.6	7.8	2.3	6.8
Metals																
Aluminum (Al)	50	mg/kg					16900	17200	15900	15800	12600	11000	9500	10200	9890	10600
Antimony (Sb)	0.10	mg/kg					0.33	0.41	0.27	0.22	0.24	0.36	0.29	0.27	0.36	0.38
Arsenic (As)	0.10	mg/kg	5.9	17	6	33	7.08	7.93	6.97	6.82	6.61	4.72	4.69	3.89	9.11	6.25
Barium (Ba)	0.50	mg/kg					74.9	84.5	70.5	72	53.2	91.1	78.7	74.3	86.4	77
Beryllium (Be)	0.10	mg/kg					0.42	0.45	0.43	0.42	0.28	0.24	0.22	0.22	0.22	0.24
Bismuth (Bi)	0.20	mg/kg					0.25	0.27	<0.20	<0.20	<0.20	<0.31	<0.29	<0.30	<0.31	<0.30
Boron (B)	5.0	mg/kg					7.5	8.5	7.4	7.1	5.6	9.1	9.2	9.5	9.6	8.7
Cadmium (Cd)	0.020	mg/kg	0.6	3.5	0.6	10	0.53	0.618	0.431	0.358	0.396	0.78	0.598	0.595	0.7	0.775
Calcium (Ca)	50	mg/kg					7370	7840	7040	7020	5740	18400	20700	18700	16600	17700
Chromium (Cr)	0.50	mg/kg	37.3	90	26	110	38	39.5	36.8	37	30.7	26.2	23.2	23.2	19.4	23.9
Cobalt (Co)	0.10	mg/kg					7.07	7.19	7.14	7.3	6.4	10.3	8.58	8.78	8.29	9.32
Copper (Cu)	0.50	mg/kg	35.7	197	16	110	34.4	36.1	31.8	30.6	21.1	40.4	44	44.2	42	39.7
Iron (Fe)	50	mg/kg			20000	40000	17400	17600	17700	18200	15800	15300	12900	13600	16000	14600
Lead (Pb)	0.50	mg/kg	35	91.3	31	250	18.9	22.8	13.8	11.2	13.5	17.3	11.8	10.7	20.9	21.8
Lithium (Li)	2.0	mg/kg					14.4	15	13.9	13.6	11.1	8.3	7	7.6	5.9	7.4
Magnesium (Mg)	20	mg/kg					6170	6260	5930	5840	5180	4300	3410	3540	2900	3730
Manganese (Mn)	1.0	mg/kg			460	1100	218	211	251	417	270	498	447	452	572	494
Mercury (Hg)	0.0050	mg/kg	0.17	0.486	0.2	2	0.0789	0.104	0.0712	0.0562	0.059	0.238	0.205	0.141	0.191	0.188
Molybdenum (Mo)	0.10	mg/kg					0.63	0.78	0.68	0.71	0.56	1.08	1.07	1.36	1.73	1.17
Nickel (Ni)	0.50	mg/kg			16	75	24.5	25.4	23.6	23.8	19.3	24.3	22.5	22.3	20.1	22.1
Phosphorus (P)	50	mg/kg					1110	1100	1140	1160	958	1320	1180	957	1060	1040
Potassium (K)	100	mg/kg					1740	1890	1630	1620	1230	990	790	850	830	970
Selenium (Se)	0.20	mg/kg					1.38	1.56	1.21	1.27	0.91	2	1.94	1.8	1.58	1.84
Silver (Ag)	0.10	mg/kg					0.11	0.12	<0.10	<0.10	<0.10	0.23	0.24	0.25	0.27	0.24
Sodium (Na)	50	mg/kg					186	189	189	180	147	92	<73	82	90	96
Strontium (Sr)	0.50	mg/kg					25.8	28.5	26.3	26.4	22.2	27.5	29.3	28.3	27.2	28.5
Sulfur (S)	1000	mg/kg					2200	2400	2000	2000	1400	5500	5800	6100	6700	5700
Thallium (Tl)	0.050	mg/kg					0.176	0.175	0.172	0.172	0.13	0.157	0.152	0.17	0.2	0.188
Tin (Sn)	2.0	mg/kg					<2.0	<2.0	<2.0	<2.0	<2.0	<3.1	<2.9	9.4	<3.1	<3.0
Titanium (Ti)	1.0	mg/kg					525	574	567	586	586	402	326	383	307	384
Tungsten (W)	0.50	mg/kg					<0.50	<0.50	<0.50	<0.50	<0.50	<0.77	<0.73	<0.75	<0.77	<0.75
Uranium (U)	0.050	mg/kg					1.94	1.92	1.82	1.76	1.28	0.888	0.979	0.88	0.714	0.861
Vanadium (V)	0.20	mg/kg					32.8	34.7	32.8	32.7	28.1	29.5	24.3	30.4	31.8	30.4
Zinc (Zn)	2.0	mg/kg	123	315	120	820	82.4	86.2	78.5	75.1	64.9	83.1	72.3	78	101	84.2
Zirconium (Zr)	1.0	mg/kg					2.6	2.8	2.3	2.1	1.4	3.9	4.1	4.1	3	4
Sample Collection																
Sample Depth	-	m					9.2	9.5	8.6	7.5	7.4	2	2	3.4	5	3

1. PSQG; Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in Ontario
2. CSQG; Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. All values expressed as mg/kg unless otherwise indicated
4. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
5. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL

6. Blue shaded values indicate concentrations that exceed the CCME ISQG
7. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-1: Springpole Sediment Quality Laboratory Results 2022

							Sample Area	L-15-B3a-S1	L-15-B3a-S2	L-15-B3a-S3	L-15-B3a-S4	L-15-B3a-S5
							Date Sampled	10-Oct-2022	10-Oct-2022	10-Oct-2022	10-Oct-2022	10-Oct-2022
Parameter	Lowest Detection Limit	Units	CSQG ISQG	CSQG PEL	PSQG LEL	PSQG SEL						
Physical Tests												
Loss on Ignition @ 375 C	1	%						11.1	17.3	23.8	24.3	23
Moisture	0.25	%						74	84.5	88.7	89.8	89.9
pH (1:2 soil:water)	0.10	pH units						5.51	5.55	5.49	5.32	5.41
Nutrients & Organics												
Total Kjeldahl Nitrogen	0.020	%			0.055	0.48		0.432	0.73	1	1.06	1.01
Total Organic Carbon	0.10	%			1	10		3.75	7.21	10.2	10.8	10.4
Organic Matter	0.200	%						6.46	12.4	17.6	18.6	17.9
Plant Available Nutrients												
Phosphate, available (as P)	2.0	mg/kg						7.3	6.2	3.4	2.9	3.9
Metals												
Aluminum (Al)	50	mg/kg						13500	15600	19400	18200	18800
Antimony (Sb)	0.10	mg/kg						0.19	0.25	0.5	0.53	0.46
Arsenic (As)	0.10	mg/kg	5.9	17	6	33		4.88	4.85	8.51	10.3	7.2
Barium (Ba)	0.50	mg/kg						48.8	65.1	97.9	93.4	87.2
Beryllium (Be)	0.10	mg/kg						0.26	0.31	0.41	0.4	0.4
Bismuth (Bi)	0.20	mg/kg						<0.20	<0.20	0.36	0.37	0.34
Boron (B)	5.0	mg/kg						<5.0	6	7.7	7.9	7.2
Cadmium (Cd)	0.020	mg/kg	0.6	3.5	0.6	10		0.226	0.309	0.822	0.918	0.708
Calcium (Ca)	50	mg/kg						4540	6440	7690	7530	7540
Chromium (Cr)	0.50	mg/kg	37.3	90	26	110		33.5	37.2	45	42.8	42.2
Cobalt (Co)	0.10	mg/kg						10.1	9.78	11.8	11.4	11.2
Copper (Cu)	0.50	mg/kg	35.7	197	16	110		20.1	34.2	50.7	48.2	45
Iron (Fe)	50	mg/kg			20000	40000		20700	20100	25100	24800	22900
Lead (Pb)	0.50	mg/kg	35	91.3	31	250		6.68	10.2	22.3	31	27.3
Lithium (Li)	2.0	mg/kg						13	14.2	16.7	16.2	16.1
Magnesium (Mg)	20	mg/kg						8180	7610	9070	8490	8710
Manganese (Mn)	1.0	mg/kg			460	1100		246	231	268	264	258
Mercury (Hg)	0.0050	mg/kg	0.17	0.486	0.2	2		0.0354	0.0557	0.111	0.123	0.116
Molybdenum (Mo)	0.10	mg/kg						1.86	1.18	1.27	1.27	1.23
Nickel (Ni)	0.50	mg/kg			16	75		25.6	28	35.6	33.9	33.5
Phosphorus (P)	50	mg/kg						822	896	1120	1120	1080
Potassium (K)	100	mg/kg						1280	1470	1860	1810	1780
Selenium (Se)	0.20	mg/kg						0.68	1.16	1.58	1.81	1.66
Silver (Ag)	0.10	mg/kg						<0.10	0.15	0.23	0.24	0.22
Sodium (Na)	50	mg/kg						98	130	149	145	141
Strontium (Sr)	0.50	mg/kg						18.7	24	26.5	25.9	25.7
Sulfur (S)	1000	mg/kg						1300	1900	3400	3100	3200
Thallium (Tl)	0.050	mg/kg						0.232	0.227	0.263	0.255	0.247
Tin (Sn)	2.0	mg/kg						<2.0	<2.0	<2.0	<2.0	<2.0
Titanium (Ti)	1.0	mg/kg						694	644	557	517	535
Tungsten (W)	0.50	mg/kg						<0.50	<0.50	<0.50	<0.50	<0.50
Uranium (U)	0.050	mg/kg						0.965	1.35	1.64	1.6	1.56
Vanadium (V)	0.20	mg/kg						42	42.6	48.7	46.6	45.7
Zinc (Zn)	2.0	mg/kg	123	315	120	820		74.5	81	106	104	102
Zirconium (Zr)	1.0	mg/kg						1.5	2.2	4.3	4.3	4.1
Sample Collection												
Sample Depth	-	m						11.2	11.8	12.4	12.5	12.1

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2. CSQG; Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. All values expressed as mg/kg unless otherwise indicated
4. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
5. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL
6. Blue shaded values indicate concentrations that exceed the CCME ISQG
7. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-2: Springpole Lake Sediment Quality Laboratory Results 2021

Parameter	Lowest Detection Limit	Units	PSQG LEL	PSQG SEL	CSQG ISQG	CSQG PEL	Sample Area	psp	L15-B1-SED2	L15-B1-SED3	L15-B1-SED4	L15-B1-SED5	SED-DUP-02	L-15-B2-SED1	L-15-B2-SED2	L-15-B2-SED3	L-15-B2-SED4	L-15-B2-SED5	L-15-B3-SED1	L-15-B3-SED2	L-15-B3-SED3	L-15-B3-SED4	L-15-B3-SED5
							Date Sampled	26-Sep-21	26-Sep-21	27-Sep-21	27-Sep-21	27-Sep-21	27-Sep-21	26-Sep-21	26-Sep-21	26-Sep-21	26-Sep-21	26-Sep-21	23-Sep-21	23-Sep-21	23-Sep-21	23-Sep-21	23-Sep-21
Physical Tests																							
Moisture	1.0	%																					
Physical Tests	N/A	pH						4.79	4.78	4.81	4.76	5.02	4.54	5.73	5.74	5.75	5.76	5.77	5.77	5.16	5.26	5.7	5.27
Organic Content																							
Leachable Anions & Nutrients																							
Nitrate (N)	2	mg/kg																					
Nitrite (N)	0.5	mg/kg																					
Nitrate + Nitrite (N)	3	mg/kg																					
Total Kjeldahl Nitrogen	100	mg/kg	0.055	0.48				0.98	0.91	0.84	0.8	0.91	0.99	0.89	0.91	0.9	0.89	0.92	1.36	1.05	1	1.04	1.01
Organic / Inorganic Carbon																							
Fraction Organic Carbon	0.001	g/g						0.0858	0.0864	0.0846	0.0852	0.0878	0.092	0.0788	0.0827	0.0745	0.0758	0.0759	0.108	0.104	0.0994	0.101	0.1
Total Organic Carbon	0.05	%	1	10				8.58	8.64	8.46	8.52	8.78	9.2	7.88	8.27	7.45	7.58	7.59	10.8	10.4	9.94	10.1	10
Metals																							
Aluminum	50	mg/kg						18700	16500	17200	18000	16200	20700	16100	15800	14800	15300	16300	15400	15500	15800	16700	16200
Antimony	0.20 or 0.10	mg/kg						0.61	0.56	0.55	0.56	0.55	0.46	0.38	0.5	0.33	0.48	0.34	0.44	0.46	0.48	0.45	0.46
Arsenic	1.0 or 0.1	mg/kg	6	33	5.9	17		16.2	16.7	15.1	16.3	19.4	30.5	12.8	14.3	15.1	11.8	11.5	9.16	10.4	11.8	10.2	12.9
Barium	0.50	mg/kg						172	152	149	162	172	210	260	237	243	243	242	109	112	127	118	134
Beryllium	0.20 or 0.10	mg/kg						0.55	0.49	0.51	0.52	0.5	0.71	0.56	0.57	0.58	0.59	0.61	0.46	0.48	0.47	0.46	0.45
Bismuth	1.0 or 0.2	mg/kg						0.52	0.46	0.47	0.48	0.44	0.52	0.34	0.42	0.3	0.41	0.32	0.44	0.45	0.45	0.45	0.45
Boron	5.0	mg/kg						9.8	8.7	8.6	9.1	8.4	8	10.1	10.3	9.1	9.7	9	7.9	7.7	7.5	7.8	7.3
Cadmium	0.10 or 0.02	mg/kg	0.6	10	0.6	3.5		1.08	1.03	0.975	1	1.01	1.12	0.862	0.969	0.755	0.982	0.843	1	1.01	0.97	1.06	0.952
Calcium	50	mg/kg						6630	5830	6090	6390	5920	7430	5680	5770	5790	5590	5740	6530	6500	6050	6330	5930
Chromium	1.0 or 0.5	mg/kg	26	110	37.3	90		43.7	36.5	37.2	39	34.8	44.1	38.1	39.4	38.1	36.4	40	37.2	38.1	36.8	38.4	37.5
Cobalt	0.10	mg/kg						12.2	10.4	10.8	11	10.2	19.6	17	17.5	17	16.9	19.7	9.97	10.8	11	10.7	10.8
Copper	0.50	mg/kg	16	110	35.7	197		50.1	44.9	44.8	46.8	44.4	45.2	43.2	44.9	42.7	41.8	46.9	49.5	49.5	49.4	51.1	49.1
Iron	50	mg/kg	20000	40000				34300	30600	30600	32900	31900	55600	44800	43300	37400	41400	43600	26000	26000	28200	26600	29300
Lead	1.0 or 0.5	mg/kg	31	250	35	91.3		37.1	37.1	33.3	33.9	41.2	33.3	18.2	24.6	16.5	24.2	16.2	32.6	32.7	31.9	33.6	30.9
Lithium	2	mg/kg						17.1	14.6	15.6	16.1	14.5	15.8	15.1	15.7	15	14.9	14.8	13.1	13.5	12.6	13.5	12.6
Magnesium	50 or 20	mg/kg						7470	6550	6770	7060	6220	5190	6940	6940	6850	6600	7050	6680	6870	6930	6730	6860
Manganese	1.0	mg/kg	460	1100				821	720	688	796	819	1770	3400	3010	2770	3110	2850	472	429	471	467	463
Mercury	0.05	mg/kg	0.2	2	0.17	0.486		0.114	0.124	0.0926	0.115	0.127	0.129	0.0888	0.0991	0.0784	0.1	0.0753	0.169	0.12	0.14	0.17	0.13
Molybdenum	0.50 or 0.1	mg/kg						1.54	1.44	1.44	1.47	1.55	1.15	2.14	2.23	1.97	2.08	2.09	1.07	1.12	1.06	1.09	1.09
Nickel	0.50	mg/kg	16	75				34.4	29.1	29.9	31	28.4	32.5	36.4	36.2	36.1	34.6	39.4	28.5	30.4	29.9	30	29.6
Phosphorus	50	mg/kg	600	2000				2640	2470	2380	3070	3060	3070	2350	2380	2060	2160	2350	1160	1080	1670	1350	1690
Potassium	200 or 100	mg/kg						2010	1790	1790	1850	1720	1560	2030	2120	2030	1910	1980	1840	1820	1880	1930	1890
Selenium	0.50 or 0.2	mg/kg						1.84	1.69	1.54	1.72	1.68	1.99	1.39	1.53	1.36	1.49	1.4	1.84	1.8	1.63	1.82	1.82
Silver	0.20 or 0.10	mg/kg						0.27	0.26	0.27	0.26	0.27	0.16	0.16	0.18	0.16	0.17	0.18	0.26	0.25	0.26	0.27	0.25
Sodium	50	mg/kg						194	176	170	182	172	192	164	166	160	154	162	151	146	149	159	147
Strontium	1.0 or 0.5	mg/kg						25.8	23.5	24.4	25.2	23.3	27.9	23.6	25.1	24.7	24.1	23.9	22.6	22.4	22.3	23.6	22.6
Sulfur	1000	mg/kg						2800	2500	2500	2700	2700	2800	1200	1400	1200	1200	1200	2000	2300	2200	2000	2400
Thallium	0.050	mg/kg						0.303	0.273	0.274	0.274	0.26	0.303	0.411	0.405	0.459	0.425	0.467	0.272	0.269	0.264	0.272	0.261
Tin	1.0 or 2.0	mg/kg						<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	5.0 or 1.0	mg/kg						501	420	414	451	385	393	547	552	504	471	484	406	417	429	442	431
Tungsten	0.5	mg/kg						<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	0.05	mg/kg						1.89	1.68	1.76	1.75	1.63	2.38	1.94	1.98	1.88	1.96	2.06	1.67	1.69	1.63	1.65	1.64
Vanadium	5.0 or 0.2	mg/kg						54.5	47.4	46.9	49.3	45.6	59.6	61.8	62.4	61.3	57.8	64.5	47.6	47.9	47.2	48.7	47.4
Zinc	5.0 or 2.0	mg/kg	120	820	123	315		99.8	93.1	91	97	90.5	120	95.8	97.3	93.6	94.2	98.9	92.8	95	96.7	97.4	93.7
Zirconium	1	mg/kg						3.4	3	3.4	3.5	3	2.8	1.7	1.9	1.8	2.1	2.2	3.2	3.4	3.2	3.3	3.3

Notes:

1. PSQG; Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in Ontario
2. CSQG; Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. MDL; Method Detection Limit provided by Bureau Veritas, Mississauga, ON
4. '<' indicates that the reported concentration was less than the MDL
5. '-' indicates that the parameter was not analyzed
6. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
7. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL
8. Blue shaded values indicate concentrations that exceed the CCME ISQG
9. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-2: Springpole Lake Sediment Quality Laboratory Results 2021

Parameter	Lowest Detection Limit	Units	PSQG LEL	PSQG SEL	CSQG ISQG	CSQG PEL	Sample Area	L-15-B4-SED1	L-15-B4-SED2	L-15-B4-SED3	L-15-B4-SED4	L-15-B4-SED5	L-15-B5-SED1	L-15-B5-SED2	L-15-B5-SED3	L-15-B5-SED4	L-15-B5-SED5	L-15-B6-SED1	L-15-B6-SED2	L-15-B6-SED3	L-15-B6-SED4	L-15-B6-SED5	L-18-SED1
							Date Sampled	25-Sep-21	25-Sep-21	25-Sep-21	25-Sep-21	25-Sep-21	28-Sep-21	28-Sep-21	28-Sep-21	28-Sep-21	28-Sep-21	25-Sep-21	25-Sep-21	25-Sep-21	25-Sep-21	25-Sep-21	30-Sep-21
Physical Tests																							
Moisture	1.0	%																					
Physical Tests	N/A	pH						5.44	5.49	5.5	5.49	5.74	4.72	4.34	4.53	4.29	4.75	5.79	5.72	5.66	5.68	5.66	5.69
Organic Content																							
Leachable Anions & Nutrients																							
Nitrate (N)	2	mg/kg																					
Nitrite (N)	0.5	mg/kg																					
Nitrate + Nitrite (N)	3	mg/kg																					
Total Kjeldahl Nitrogen	100	mg/kg	0.055	0.48				1.32	1.37	1.42	1.36	1.34	0.95	1.07	1.04	1.02	1.15	1.25	1.25	1.32	1.33	1.25	1.26
Organic / Inorganic Carbon																							
Fraction Organic Carbon	0.001	g/g						0.0989	0.105	0.104	0.104	0.105	0.0975	0.0994	0.098	0.0928	0.0988	0.105	0.1	0.103	0.101	0.0987	0.146
Total Organic Carbon	0.05	%	1	10				9.89	10.5	10.4	10.4	10.5	9.75	9.94	9.8	9.28	9.88	10.5	10	10.3	10.1	9.87	14.6
Metals																							
Aluminum	50	mg/kg						14600	15800	15900	15300	16200	23700	18400	23300	24700	24800	16200	16700	16300	18000	18400	4520
Antimony	0.20 or 0.10	mg/kg						0.39	0.48	0.43	0.46	0.49	0.57	0.44	0.51	0.49	0.57	0.18	0.2	0.44	0.33	0.18	0.13
Arsenic	1.0 or 0.1	mg/kg	6	33	5.9	17		6.08	8.03	7.23	7.67	8.54	18.3	17	32.3	23.7	21.4	4.63	5.06	6.03	6.37	4.67	1.91
Barium	0.50	mg/kg						86.6	91	89.3	86	97.3	206	155	221	245	201	94.6	95.1	91.7	102	101	24.2
Beryllium	0.20 or 0.10	mg/kg						0.41	0.41	0.38	0.39	0.42	0.83	0.59	0.78	0.95	0.71	0.41	0.42	0.47	0.45	0.42	<0.10
Bismuth	1.0 or 0.2	mg/kg						0.33	0.37	0.35	0.37	0.4	0.58	0.51	0.57	0.57	0.63	<0.20	<0.20	0.37	0.28	<0.20	<0.20
Boron	5.0	mg/kg						7.2	7.4	6.8	6.8	7.4	9.3	7.3	8.9	8.8	9.3	6.9	6.4	8.1	8.3	7.8	<5.0
Cadmium	0.10 or 0.02	mg/kg	0.6	10	0.6	3.5		0.642	0.854	0.786	0.766	0.873	1.29	0.921	1.21	1.26	1.28	0.314	0.346	0.621	0.52	0.305	0.202
Calcium	50	mg/kg						6900	7050	6800	6990	7070	8500	6690	8280	8390	8730	7300	7470	8780	8250	7830	10300
Chromium	1.0 or 0.5	mg/kg	26	110	37.3	90		37.8	38.2	39.7	37.2	41.2	51.5	38.3	48.7	52.2	52.2	42.8	41.4	39.7	45.9	48.4	12.2
Cobalt	0.10	mg/kg						9.12	9.34	9.53	9.19	10	21.9	16.5	21.7	27.9	19	10.4	10.4	9.98	10.8	11.1	3.52
Copper	0.50	mg/kg	16	110	35.7	197		42.4	44.1	45.3	43.1	46.9	53.6	39.9	49.7	53.5	53.8	49.5	50.3	46.8	52.6	52.3	16.1
Iron	50	mg/kg	20000	40000				18700	19200	19500	19000	20900	46500	39000	59900	64500	46200	22000	22700	21300	22800	23900	5350
Lead	1.0 or 0.5	mg/kg	31	250	35	91.3		21.4	31.5	24.7	26.3	27.9	32.6	30.5	35.6	32.4	36.2	8.24	9.03	23.8	15	7.51	4.12
Lithium	2	mg/kg						13.4	13.1	12.7	13	13.5	18.8	13.9	17.8	18.1	19.3	15.3	15.1	17.1	16.5	16.5	2.5
Magnesium	50 or 20	mg/kg						6120	6560	6670	6330	6750	5820	4650	5640	5740	6350	7470	7560	7310	7790	8130	2110
Manganese	1.0	mg/kg	460	1100				224	230	234	224	249	1140	1040	1840	1770	1020	259	266	242	268	279	127
Mercury	0.05	mg/kg	0.2	2	0.17	0.486		0.105	0.131	0.111	0.101	0.118	0.134	0.14	0.142	0.122	0.137	0.0707	0.0691	0.109	0.0996	0.0584	0.0541
Molybdenum	0.50 or 0.1	mg/kg						0.96	0.92	0.92	0.97	0.99	1.77	1.14	1.25	1.78	1.4	1.04	1.03	1.06	1.13	1.14	0.31
Nickel	0.50	mg/kg	16	75				27	28.1	28.5	27.1	29.3	37.8	28.8	35.6	39.4	37.7	31.6	31.8	31.1	33.4	33.6	11.4
Phosphorus	50	mg/kg	600	2000				945	991	1010	930	1010	2600	1960	3210	3310	2600	1000	1060	1030	1130	1120	290
Potassium	200 or 100	mg/kg						1560	1690	1700	1590	1740	1760	1470	1690	1720	1880	1750	1760	1720	1900	1940	250
Selenium	0.50 or 0.2	mg/kg						1.36	1.53	1.49	1.47	1.52	2.09	1.85	2.19	2.25	2.35	1.42	1.31	1.44	1.57	1.56	0.53
Silver	0.20 or 0.10	mg/kg						0.19	0.2	0.19	0.19	0.2	0.19	0.14	0.18	0.18	0.2	0.17	0.17	0.22	0.2	0.18	<0.10
Sodium	50	mg/kg						145	153	144	139	159	215	172	208	221	228	135	141	140	164	159	52
Strontium	1.0 or 0.5	mg/kg						24.2	23.8	23.8	23.5	23.9	31.9	22.4	29.6	31.3	32.2	25.1	24.4	29.2	27.4	27.8	19.2
Sulfur	1000	mg/kg						2300	2500	2200	2500	2500	3700	2800	3100	3600	4100	2000	1900	2300	2500	2100	2000
Thallium	0.050	mg/kg						0.2	0.2	0.196	0.201	0.215	0.368	0.293	0.333	0.414	0.334	0.216	0.227	0.253	0.232	0.236	<0.050
Tin	1.0 or 2.0	mg/kg						<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	5.0 or 1.0	mg/kg						502	511	494	460	535	503	344	433	483	470	507	486	465	607	660	144
Tungsten	0.5	mg/kg						<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	0.05	mg/kg						1.47	1.45	1.47	1.45	1.56	2.82	2.08	2.6	2.93	2.74	1.63	1.61	1.88	1.7	1.75	0.231
Vanadium	5.0 or 0.2	mg/kg						41.4	43.7	42.9	41.5	45.8	69.9	50.1	65.4	77.3	61.7	44.6	44.5	42.5	48.1	50	8.24
Zinc	5.0 or 2.0	mg/kg	120	820	123	315		75.7	83	82.5	79.3	86.7	136	103	131	146	133	81.6	84.4	85.9	90.8	87.5	28.4
Zirconium	1	mg/kg						3	3.2	3.2	3.3	3.1	3	2.3	3.1	3.2	3.4	3.3	3.4	4.1	3.3	3.1	1.2

Notes:

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Table F1-2: Springpole Lake Sediment Quality Laboratory Results 2021

Parameter	Lowest Detection Limit	Units	PSQG LEL	PSQG SEL	CSQG ISQG	CSQG PEL	Sample Area	L-18-SED2	L-18-SED3	L-19-SED1	L-19-SED2	L-19-SED3	BIRCH-B1-SED1	BIRCH-B1-SED2	BIRCH-B1-SED3	BIRCH-B1-SED4	BIRCH-B1-SED5	BIRCH-B2-SED1	BIRCH-B2-SED2	BIRCH-B2-SED3	BIRCH-B2-SED4	BIRCH-B2-SED5	L2-POTA-02-SED
							Date Sampled	30-Sep-21	30-Sep-21	30-Sep-21	30-Sep-21	30-Sep-21	1-Oct-21	1-Oct-21	1-Oct-21	1-Oct-21	1-Oct-21	24-Sep-21	24-Sep-21	24-Sep-21	24-Sep-21	24-Sep-21	30-Aug-21
Physical Tests																							
Moisture	1.0	%																					70.1
Physical Tests	N/A	pH						5.65	5.71	5.53	6.03	5.78	4.94	4.76	4.69	4.74	4.64	5.5	5.55	5.38	5.43	5.4	
Organic Content																							
Leachable Anions & Nutrients																							
Nitrate (N)	2	mg/kg																					
Nitrite (N)	0.5	mg/kg																					
Nitrate + Nitrite (N)	3	mg/kg																					
Total Kjeldahl Nitrogen	100	mg/kg	0.055	0.48				1.74	1.8	0.67	0.32	0.63	0.76	0.71	0.62	0.72	0.56	1.12	1.1	1.05	0.51	0.82	
Organic / Inorganic Carbon																							
Fraction Organic Carbon	0.001	g/g						0.315	0.277	0.0318	0.0186	0.0374	0.0807	0.0754	0.0752	0.0752	0.0762	0.0858	0.0872	0.0884	0.0906	0.09	
Total Organic Carbon	0.05	%	1	10				31.5	27.7	3.18	1.86	3.74	8.07	7.54	7.52	7.52	7.62	8.58	8.72	8.84	9.06	9	
Metals																							
Aluminum	50	mg/kg						4340	4860	2280	2970	3450	17900	15400	17600	19500	17200	15200	14100	14400	15100	15600	7640
Antimony	0.20 or 0.10	mg/kg						0.25	0.22	<0.10	<0.10	0.12	0.54	0.43	0.5	0.57	0.5	0.51	0.46	0.49	0.42	0.48	0.13
Arsenic	1.0 or 0.1	mg/kg	6	33	5.9	17		4.4	2.73	1.55	0.95	2.03	24.3	19.3	22.9	29.7	24.6	14.3	12.3	13.3	13.2	15.5	2.56
Barium	0.50	mg/kg						35.3	44	20.5	17.3	24.6	140	117	136	160	147	89.1	84.3	86.4	93.2	93	43.5
Beryllium	0.20 or 0.10	mg/kg						0.11	0.11	<0.10	<0.10	<0.10	0.56	0.55	0.62	0.63	0.6	0.49	0.47	0.45	0.43	0.45	0.23
Bismuth	1.0 or 0.2	mg/kg						<0.20	<0.20	<0.20	<0.20	<0.20	0.42	0.39	0.41	0.44	0.41	0.36	0.34	0.36	0.33	0.35	<0.20
Boron	5.0	mg/kg						<5.0	<5.0	<5.0	<5.0	<5.0	9.3	7.8	9.1	10.3	9.2	8.4	8.3	7.9	7.5	7.6	<5.0
Cadmium	0.10 or 0.02	mg/kg	0.6	10	0.6	3.5		0.355	0.285	0.112	0.049	0.16	0.885	0.629	0.964	0.918	0.815	0.668	0.569	0.61	0.646	0.687	0.099
Calcium	50	mg/kg						15300	16000	4890	2370	4700	6240	5290	6090	6540	5820	6370	6370	6200	6270	6280	9440
Chromium	1.0 or 0.5	mg/kg	26	110	37.3	90		8.02	8.94	5.53	7.23	8.54	42	35.2	43.3	45.5	40.9	38.2	36.2	36.4	37.8	39.7	18.7
Cobalt	0.10	mg/kg						3.71	4.03	1.29	1.62	2.38	9.96	8.37	9.81	10.7	9.53	6.91	6.42	6.36	6.84	7.1	5.45
Copper	0.50	mg/kg	16	110	35.7	197		40.6	29.9	3.18	3	4.55	39.5	33.6	40.5	42.9	38.5	35.7	33.6	33.7	36	38.3	13.1
Iron	50	mg/kg	20000	40000				6550	6690	3890	3970	5770	30100	26700	31200	33500	31100	20400	18400	18600	20500	20800	11700
Lead	1.0 or 0.5	mg/kg	31	250	35	91.3		7.79	4.18	3.13	1.88	4.56	35	28.8	34	36.4	32.2	30.6	26.3	30	27.8	31	4.55
Lithium	2	mg/kg						<2.0	<2.0	<2.0	3.9	3.9	15.2	13	15.1	16.5	14.8	13.3	13.1	12.6	11.9	12.6	7.9
Magnesium	50 or 20	mg/kg						1340	1300	1080	1200	1570	6190	5370	6330	6490	6180	5310	5050	5030	5460	5590	4410
Manganese	1.0	mg/kg	460	1100				336	173	76.3	49	82.1	740	673	762	771	739	292	261	261	296	295	184
Mercury	0.05	mg/kg	0.2	2	0.17	0.486		0.139	0.116	0.0237	0.0084	0.0223	0.106	0.106	0.108	0.108	0.109	0.114	0.113	0.112	0.121	0.119	0.0366
Molybdenum	0.50 or 0.1	mg/kg						0.41	0.44	0.14	0.12	0.28	0.9	0.76	0.76	1.03	0.86	0.89	0.81	0.83	0.79	0.82	0.36
Nickel	0.50	mg/kg	16	75				9.61	10.7	3.31	4.64	5.79	26.3	22.2	27	29.7	25.9	23.3	21.5	21.5	23	24.3	13.5
Phosphorus	50	mg/kg	600	2000				438	335	243	267	181	1810	1800	2070	2400	2260	1080	1010	1000	1220	1190	614
Potassium	200 or 100	mg/kg						220	160	<100	150	140	2010	1870	2070	2190	1940	1850	1790	1820	1900	1950	830
Selenium	0.50 or 0.2	mg/kg						1.16	1.27	0.29	<0.20	0.28	1.76	1.49	1.77	1.83	1.71	1.7	1.58	1.54	1.57	1.62	<0.20
Silver	0.20 or 0.10	mg/kg						0.14	<0.10	<0.10	<0.10	<0.10	0.14	0.13	0.15	0.16	0.14	0.15	0.14	0.16	0.14	0.15	0.44
Sodium	50	mg/kg						<50	64	<50	61	61	256	220	258	285	246	188	181	178	201	190	149
Strontium	1.0 or 0.5	mg/kg						22.2	33.1	13	6.96	11	25.5	20.2	24.4	26.8	23.6	24.3	24.5	24	24	22.3	23.6
Sulfur	1000	mg/kg						4500	4700	<1000	<1000	<1000	2100	1800	2000	2300	2000	1800	1800	1800	1600	1800	<1000
Thallium	0.050	mg/kg						<0.050	<0.050	<0.050	<0.050	<0.050	0.25	0.225	0.252	0.258	0.235	0.203	0.196	0.206	0.187	0.198	0.086
Tin	1.0 or 2.0	mg/kg						<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	5.0 or 1.0	mg/kg						62	90.5	254	331	301	529	400	521	570	480	474	462	430	434	453	514
Tungsten	0.5	mg/kg						<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Uranium	0.05	mg/kg						0.256	0.301	0.31	0.297	0.259	2.5	2.13	2.58	2.72	2.47	2.12	2.09	2.1	2.04	2.05	0.454
Vanadium	5.0 or 0.2	mg/kg						7.81	9.47	6.63	7.45	9.67	48.4	40.4	48.5	52.4	46.4	38.4	36.3	35.8	37.7	39	22.2
Zinc	5.0 or 2.0	mg/kg	120	820	123	315		34.8	30.8	15.8	9.8	23.5	96.1	81.1	99	105	93.3	79.4	73.4	76.6	81.2	85.7	26
Zirconium	1	mg/kg						1.9	2.5	1.8	1.9	2	2.7	2.4	2.9	2.9	2.7	2.5	2.6	2.7	2.7	2.7	4

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Table F1-2: Springpole Lake Sediment Quality Laboratory Results 2021

Parameter	Lowest Detection Limit	Units	PSQG LEL	PSQG SEL	CSQG ISQG	CSQG PEL	Sample Area	L2-TYPH-03-SED	L1-TYPH-04-SED	L15-TYPH-05-SED	L15-POTA-06-SED	L15-POTA-07-SED	L15-POTA-08-SED	L15-ACOR-09-SED	L15-ACOR-10-SED
							Date Sampled	30-Aug-21	30-Aug-21	31-Aug-21	31-Aug-21	31-Aug-21	31-Aug-21	31-Aug-21	31-Aug-21
Physical Tests															
Moisture	1.0	%						73.4	84.8	70.9	62.9	74.3	74.8	73.9	70.8
Physical Tests	N/A	pH													
Organic Content															
Leachable Anions & Nutrients															
Nitrate (N)	2	mg/kg													
Nitrite (N)	0.5	mg/kg													
Nitrate + Nitrite (N)	3	mg/kg													
Total Kjeldahl Nitrogen	100	mg/kg	0.055	0.48											
Organic / Inorganic Carbon															
Fraction Organic Carbon	0.001	g/g													
Total Organic Carbon	0.05	%	1	10											
Metals															
Aluminum	50	mg/kg						9580	7050	5140	4610	5210	6280	6020	10300
Antimony	0.20 or 0.10	mg/kg						0.12	0.26	<0.10	<0.10	<0.10	0.15	0.15	<0.10
Arsenic	1.0 or 0.1	mg/kg	6	33	5.9	17		2.81	3.6	1.84	1.57	2.67	3.42	3.3	2.38
Barium	0.50	mg/kg						53.3	173	36.4	30.1	31	51.8	45.8	94.7
Beryllium	0.20 or 0.10	mg/kg						0.31	0.3	0.13	0.11	<0.10	0.18	0.16	0.2
Bismuth	1.0 or 0.2	mg/kg						<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Boron	5.0	mg/kg						5.2	5.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Cadmium	0.10 or 0.02	mg/kg	0.6	10	0.6	3.5		0.107	0.413	0.241	0.203	0.211	0.307	0.292	0.203
Calcium	50	mg/kg						24200	26000	12000	7980	5570	8900	8380	8780
Chromium	1.0 or 0.5	mg/kg	26	110	37.3	90		24	16.9	12.5	11.6	19.9	15.1	14.3	31.2
Cobalt	0.10	mg/kg						6.42	9.86	3.51	3.1	4.49	4.92	4.8	10.5
Copper	0.50	mg/kg	16	110	35.7	197		15.8	20.3	10.8	7.97	10.8	19.4	17.7	14.7
Iron	50	mg/kg	20000	40000				14400	11200	7190	6310	7260	10000	9470	15800
Lead	1.0 or 0.5	mg/kg	31	250	35	91.3		5.3	11.1	5.82	5.21	4.17	6.39	6.31	4.89
Lithium	2	mg/kg						10.5	6.2	7.3	6.8	4.6	6.2	5.7	8.2
Magnesium	50 or 20	mg/kg						7100	3370	2490	2120	2830	2700	2570	4600
Manganese	1.0	mg/kg	460	1100				240	581	158	124	229	254	223	752
Mercury	0.05	mg/kg	0.2	2	0.17	0.486		0.0323	0.0973	0.0522	0.049	0.0538	0.0643	0.0595	0.0525
Molybdenum	0.50 or 0.1	mg/kg						0.33	1.71	0.67	0.56	0.3	0.43	0.41	0.32
Nickel	0.50	mg/kg	16	75				16	15.9	8.78	7.83	14.1	12.6	11.8	18
Phosphorus	50	mg/kg	600	2000				623	713	855	906	660	588	549	769
Potassium	200 or 100	mg/kg						1090	1000	350	260	290	690	650	900
Selenium	0.50 or 0.2	mg/kg						0.21	0.84	0.51	0.41	0.55	0.85	0.84	0.49
Silver	0.20 or 0.10	mg/kg						<0.10	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Sodium	50	mg/kg						196	101	97	82	115	143	145	167
Strontium	1.0 or 0.5	mg/kg						32.7	105	24.7	18.7	15.3	22.7	22	23
Sulfur	1000	mg/kg						<1000	3200	1700	1200	1200	2400	2400	1200
Thallium	0.050	mg/kg						0.106	0.171	0.05	<0.050	<0.050	0.064	0.066	0.117
Tin	1.0 or 2.0	mg/kg						<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	5.0 or 1.0	mg/kg						681	305	418	477	343	356	342	609
Tungsten	0.5	mg/kg						<0.50	1.17	<0.50	<0.50	<0.50	<0.50	0.65	<0.50
Uranium	0.05	mg/kg						0.502	1.73	1.42	1.31	0.485	0.729	0.724	0.693
Vanadium	5.0 or 0.2	mg/kg						28.7	16.6	13.1	12.2	13.7	19.3	18.9	28.5
Zinc	5.0 or 2.0	mg/kg	120	820	123	315		29.4	41.6	32.1	24.8	24	34.6	32.2	43.3
Zirconium	1	mg/kg						6.2	5.9	2.3	1.9	1.7	2.7	2.9	2.8

Notes:

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2. CSQG; Canadian Council of Ministers of the Environmen
3. MDL; Method Detection Limit provided by Bureau Verita
4. '<' indicates that the reported concentration was less th
5. '-' indicates that the parameter was not analyzed
6. Dark blue shaded values indicate concentrations that ex
7. Gray shaded values indicate concentrations that exceed
8. Blue shaded values indicate concentrations that exceed
9. Light blue shaded values indicate concentrations that ex

Table F1-3: Springpole Lake Sediment Quality Laboratory Results 2020

							Sample Area	L-15-S-01	L-15-S-02	L-15-S-03	L-15-S -04	L-15-S 05	L-15-D-01	L-15-D-02	L-15-D-03	L-15-D-04	L-15-D-05
							Date Sampled	20-09-10	20-09-10	20-09-10	20-09-11	20-09-11	20-09-11	20-09-11	20-09-11	20-09-11	20-09-12
Parameter	Units	RDL	PSQG		CSQG												
			LEL	SEL	ISQG	PEL											
Physical Properties																	
pH	pH Units	N/A						5.4	5.04	5.21	5.24	5.22	5.08	4.94	5.02	5.01	4.86
Moisture	%	1						89	89	89	89	89	90	90	90	90	89
Leachable Anions & Nutrients																	
Total Kjeldahl Nitrogen	mg/kg	100	550	4800				12,500	12,700	12,300	12,200	12,700	13,400	13,700	13,300	13,500	12,000
Nitrite (N)	mg/kg	0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrate (N)	mg/kg	2						<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Nitrate + Nitrite (N)	mg/kg	3						<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Total Organic Carbon	mg/kg	500	10,000	100,000				110,000	120,000	120,000	120,000	120,000	130,000	130,000	130,000	130,000	110,000
Metals																	
Aluminum (Al)	mg/kg	50						17,000	17,000	18,000	18,000	17,000	18,000	18,000	18,000	17,000	17,000
Antimony (Sb)	mg/kg	0.2						0.53	0.51	0.55	0.41	0.52	0.41	0.49	0.48	0.4	0.61
Arsenic (As)	mg/kg	1	6	33	5.9	17		27	12	20	23	21	8	8.2	8.3	8.4	11
Barium (Ba)	mg/kg	0.5						210	130	170	200	180	110	120	110	120	140
Beryllium (Be)	mg/kg	0.2						0.61	0.52	0.57	0.6	0.55	0.49	0.51	0.5	0.5	0.56
Bismuth (Bi)	mg/kg	1						<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Boron (B)	mg/kg	5						9.7	9.2	11	10	9.3	9.3	9.4	9.1	9.3	9
Cadmium (Cd)	mg/kg	0.1	0.6	10	0.6	3.5		0.91	0.72	0.94	0.91	0.79	1.1	1	1	1	0.82
Calcium (Ca)	mg/kg	50						7,500	7,200	7,500	7,400	7,200	7,400	7,400	7,200	7,300	6,900
Chromium (Cr)	mg/kg	1	26	110	37.3	90		42	43	43	44	41	42	40	41	41	42
Cobalt (Co)	mg/kg	0.1						16	13	15	17	15	11	11	11	11	16
Copper (Cu)	mg/kg	0.5	16	110	35.7	197		47	47	46	49	46	53	51	51	51	47
Iron (Fe)	mg/kg	50	20,000	40,000				52,000	37,000	46,000	51,000	48,000	29,000	29,000	28,000	30,000	36,000
Lead (Pb)	mg/kg	1	31	250	35	91.3		33	29	32	33	31	35	35	34	35	36
Magnesium (Mg)	mg/kg	50						7,700	7,600	7,900	7,900	7,500	7,500	7,200	7,200	7,200	7,400
Manganese (Mn)	mg/kg	1	460	1100				3,000	1,000	1,900	2,700	2,300	470	490	470	520	960
Mercury (Hg)	mg/kg	0.05	0.2	2	0.17	0.486		0.14	0.13	0.15	0.14	0.15	0.18	0.16	0.18	0.19	0.14
Molybdenum (Mo)	mg/kg	0.5						1.8	1.4	1.4	1.8	1.5	1.2	1.2	1.2	1.2	1.6
Nickel (Ni)	mg/kg	0.5	16	75				36	33	35	37	33	32	31	31	31	34
Phosphorus (P)	mg/kg	50	600	2,000				2,600	1,700	2,300	2,600	2,500	1,400	1,500	1,400	1,800	1,500
Potassium (K)	mg/kg	200						1,900	1,900	1,900	1,900	1,900	2,000	1,900	1,900	2,000	1,900
Selenium (Se)	mg/kg	0.5						2.2	1.8	2	2.1	2.1	2	2	2	2	2
Silver (Ag)	mg/kg	0.2						0.22	0.22	0.2	0.21	0.22	0.29	0.29	0.25	0.25	<0.20
Sodium (Na)	mg/kg	50						190	160	170	170	160	200	180	180	180	170
Strontium (Sr)	mg/kg	1						26	24	25	26	25	25	25	23	24	24
Thallium (Tl)	mg/kg	0.05						0.41	0.36	0.4	0.42	0.35	0.32	0.35	0.33	0.31	0.38
Tin (Sn)	mg/kg	1						1	1	<1.0	<1.0	<1.0	1	1	1.1	<1.0	<1.0
Titanium (Ti)	mg/kg	5						450	450	520	510	430	510	500	500	490	530
Uranium (U)	mg/kg	0.05						2.4	2.1	2.2	2.2	2.2	2	2	1.9	1.9	2.1
Vanadium (V)	mg/kg	5						63	57	63	65	59	53	51	51	51	64
Zinc (Zn)	mg/kg	5	120	820	123	315		120	110	120	120	110	110	100	100	110	120

Notes:

1. PSQG; Provincial Sediment Quality Guidelines for the protection and management of aquatic sediment quality in Ontario
2. CSQG; Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the protection of aquatic life
3. MDL; Method Detection Limit provided by Bureau Veritas, Mississauga, ON
4. <' indicates that the reported concentration was less than the MDL
5. -' indicates that the parameter was not analyzed
6. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
7. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL
8. Blue shaded values indicate concentrations that exceed the CCME ISQG
9. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-4: Springpole Lake Sediment Quality Laboratory Results September 2019

							Sample Area	L-2-OUT-S	L-5-OUT-S	L-6-OUT-S	S-9-S	S-9-US01-S	S-9-US02-S	L-16-IN-S
							Date Sampled	2019-09-17	2019-09-13	2019-09-14	2019-09-10	2019-09-11	2019-09-10	2019-09-14
Parameter	Units	RDL	PSQG		CSQG									
			LEL	SEL	ISQG	PEL								
Physical Properties														
pH	pH units	N/A						5.25	5.48	6.23	5.45	5.23	5.6	5.99
Moisture	%	N/A						75	83	72	81	79	88	80
Leachable Anions & Nutrients														
Nitrite (N)	mg/kg							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Kjeldahl Nitrogen	mg/kg	0	550	4800				6,210	8,950	3,640	12,200	13,700	12,700	12,000
Organic / Inorganic Carbon														
Total Organic Carbon	%	500	10000	100000				75,000	160,000	75,000	200,000	230,000	460,000	130,000
Metals														
Aluminum (Al)	mg/kg	5						8,300	9,700	7,400	9,600	8,200	4,400	9,500
Antimony (Sb)	mg/kg	0.2						0.25	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Arsenic (As)	mg/kg	1	6	33	5.9	17		4.5	3	5	1.5	1.1	1.3	7.5
Barium (Ba)	mg/kg	0.5						59	81	37	120	120	120	87
Bismuth (Bi)	mg/kg	1						<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Beryllium (Be)	mg/kg	0.2						0.25	0.26	<0.20	<0.20	<0.20	<0.20	0.23
Boron (B)	mg/kg	5						<5.0	<5.0	<5.0	<5.0	<5.0	10	<5.0
Calcium (Ca)	mg/kg	50			0.6			6,300	17,000	9,300	17,000	19,000	31,000	15,000
Cadmium (Cd)	mg/kg	0.1	0.6	10		3.5		0.19	0.22	<0.10	0.25	0.22	0.27	0.19
Chromium (Cr)	mg/kg	1	26	110	37.3	90		20	28	23	26	22	8.1	27
Cobalt (Co)	mg/kg	0.1						6.7	7.8	7.9	12	6.5	3.9	12
Copper (Cu)	mg/kg	0.5	16	110	35.7	197		17	35	11	22	17	16	16
Iron (Fe)	mg/kg	50	20000	40000				15,000	16,000	21,000	17,000	10,000	7,000	26,000
Lead (Pb)	mg/kg	0.5	31	250	35	91.3		7.3	7.7	4.5	5.2	5.3	5.9	6.6
Magnesium (Mg)	mg/kg	50						3,100	3,600	4,200	4,100	2,700	1500	4,500
Manganese (Mn)	mg/kg	1	460	1100				430	660	680	950	450	210	1,500
Molybdenum (Mo)	mg/kg	0.5						<0.50	<0.50	<0.50	<0.50	<0.50	0.76	0.65
Mercury (Hg)	mg/kg	0.05	0.2	2	0.17	0.486		0.064	0.15	<0.050	0.11	0.092	0.11	0.083
Nickel (Ni)	mg/kg	0.5	16	75				16	15	14	17	12	6.8	18
Phosphorus (P)	mg/kg	50	600	2,000				690	820	750	870	770	600	930
Potassium (K)	mg/kg	200						740	560	670	510	430	200	1000
Selenium (Se)	mg/kg	0.5						<0.50	0.89	<0.50	0.91	0.72	0.9	0.55
Silver (Ag)	mg/kg	0.2						<0.20	0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Sodium (Na)	mg/kg	50						110	70	94	91	66	60	91
Strontium (Sr)	mg/kg	1						29	29	15	34	35	120	24
Thallium (Tl)	mg/kg	0.05						0.16	0.14	0.096	0.11	0.086	0.066	0.14
Tin (Sn)	mg/kg	1						<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Uranium (U)	mg/kg	0.05						0.63	1.1	0.52	1.9	0.79	1.9	0.79
Vanadium (V)	mg/kg	5						22	26	26	28	20	12	32
Zinc (Zn)	mg/kg	5	120	820	123	315		80	46	35	42	30	19	45

Notes:

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5. -' indicates that the parameter was not analyzed
6. Dark blue shaded values indicate concentrations that exceed the PSQG LEL
7. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL
8. Blue shaded values indicate concentrations that exceed the CCME ISQG
9. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL

Table F1-5: Springpole Lake Sediment Quality Laboratory Results August 2019

						Sample Area	SPR-EXP-1	SPR-EXP-2	SPR-EXP-3	SPR-EXP-4	SPR-EXP-5
						Date Sampled	29-Aug-19	29-Aug-19	29-Aug-19	29-Aug-19	30-Aug-19
Parameter	Unit	MDL	PSQG		CSQG						
			LEL	SEL	ISQG	PEL					
Leachable Anions & Nutrients											
Total Kjeldahl Nitrogen	mg/kg	100	0.055	0.48			-	-	-	-	-
Organic / Inorganic Carbon											
Fraction Organic Carbon	g/g	0.001					0.007	0.007	0.005	0.007	0.009
Total Organic Carbon	%	0.05	1	10			0.7	0.74	0.49	0.7	0.92
Metals											
Aluminum	mg/kg	50					2090	1870	1940	1830	3050
Antimony	mg/kg	0.20 or 0.10					<	<	<	<	<
Arsenic	mg/kg	1.0 or 0.1	6	33	5.9	17	1.09	1.07	1.21	1.14	1.28
Barium	mg/kg	0.5					10.6	10.4	9.8	9.4	15.6
Beryllium	mg/kg	0.20 or 0.10					<	<	<	<	<
Bismuth	mg/kg	1.0 or 0.2					<	<	<	<	<
Boron	mg/kg	5					<	<	<	<	<
Cadmium	mg/kg	0.10 or 0.02	0.6	10	0.6	3.5	0.04	0.04	0.04	0.04	0.07
Calcium	mg/kg	50					2480	2020	1890	2120	3090
Chromium	mg/kg	1.0 or 0.5	26	110	37.3	90	5.81	5.3	5.33	5.18	8.26
Cobalt	mg/kg	0.1					1.62	1.38	1.32	1.42	2.17
Copper	mg/kg	0.5	16	110	35.7	197	2.15	2.09	1.68	1.83	3.38
Iron	mg/kg	50	20000	40000			3260	3060	3510	3230	4450
Lead	mg/kg	1.0 or 0.5	31	250	35	91.3	3.24	2.91	2.8	2.51	3.77
Lithium	mg/kg	2					2.6	2.5	2.5	2.3	3.8
Magnesium	mg/kg	50 or 20					927	807	823	787	1330
Manganese	mg/kg	1	460	1100			71	81.6	84.1	81	99.2
Mercury	mg/kg	0.05	0.2	2	0.17	0.486	-	-	-	-	-
Molybdenum	mg/kg	0.50 or 0.1					0.12	<	<	<	0.15
Nickel	mg/kg	0.5	16	75			4	3.6	3.5	3.3	5.5
Phosphorus	mg/kg	50	600	2000			586	462	411	467	560
Potassium	mg/kg	200 or 100					150	150	130	150	260
Selenium	mg/kg	0.50 or 0.2					<	<	<	<	<
Silver	mg/kg	0.20 or 0.10					<	<	<	<	<
Sodium	mg/kg	50					72	68	57	57	89
Strontium	mg/kg	1.0 or 0.5					8.6	6.9	7.7	7.7	10.6
Sulfur	mg/kg	1000					<	<	<	<	<
Thallium	mg/kg	0.05					<	<	<	<	<
Tin	mg/kg	1.0 or 2.0					<	<	<	<	<
Titanium	mg/kg	5.0 or 1.0					389	291	327	306	463
Tungsten	mg/kg	0.5					<	<	<	<	<
Uranium	mg/kg	0.05					0.29	0.28	0.28	0.23	0.34
Vanadium	mg/kg	5.0 or 0.2					7.52	6.47	6.83	6.46	9.98
Zinc	mg/kg	5.0 or 2.0	120	820	123	315	9.1	8.6	8.2	7.9	12.4
Zirconium	mg/kg	1					<	<	<	<	<

Notes:

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7. Gray shaded values indicate concentrations that exceed the PSQG SEL and LEL
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9. Light blue shaded values indicate concentrations that exceed the CCME ISQG and PEL
10. Samples collected by and results provided by Story Environmental Inc.

Table F1-6: 2022 Particle Size Distribution (%)

		Particle Size				
Waterbody	**Replicate Station**	**Clay (< 0.002 mm)**	**Silt (0.002 - 0.075 mm)**	**Fine Sand (0.075 - 0.425 mm)**	**Medium Sand (0.425 - 1.0 mm)**	**Sand and Gravel (>1.0 mm)**
Birch Lake	BIRCH-1-S1	8.3	90.2	1.4	<1.0	<1.0
	BIRCH-1-S2	6.1	92.9	0.9	<1.0	<1.0
	BIRCH-1-S3	6.6	93	0.3	<1.0	<1.0
	BIRCH-1-S4	7.1	92.7	0.2	<1.0	<1.0
	BIRCH-1-S5	7.6	91.6	0.8	<1.0	<1.0
	BIRCH-2-S1	<1.0	4.3	70.8	15.2	9.7
	BIRCH-2-S2	1.4	1.3	83.1	9.6	4.6
	BIRCH-2-S3	<1.0	5.3	86.2	6.8	1.7
	BIRCH-2-S4	<1.0	6.5	81.3	8.4	3.8
	BIRCH-2-S5	<1.0	4.2	43.5	26.3	26
	BIRCH-3-S1	2	8.2	47.6	18	24.2
	BIRCH-3-S2	<1.0	13	59.5	16.1	11.4
	BIRCH-3-S3	<1.0	14.2	79.8	3.8	2.2
	BIRCH-3-S4	14.2	40.8	41.9	1.9	1.2
	BIRCH-3-S5	2.4	13.2	62.7	14.4	7.3
	BIRCH-4-S1	5.3	41.2	48	3.1	2.4
	BIRCH-4-S2	1.8	18.7	51.2	15.7	12.6
	BIRCH-4-S3	1.6	3.1	26.6	22.8	45.9
	BIRCH-4-S4	4	9.7	82.5	1.8	2
	BIRCH-4-S5	2.1	13.8	58.2	5.7	20.2
	BIRCH-5-S1	9.6	86.6	3.7	<1.0	<1.0
	BIRCH-5-S2	9.7	89.5	0.6	<1.0	<1.0
	BIRCH-5-S3	8.9	84.8	5.9	<1.0	<1.0
	BIRCH-5-S4	11.8	84.6	3.4	<1.0	<1.0
	BIRCH-5-S5	6.8	60.4	24.1	4.9	3.8
	Mean	*6.17*	*42.55*	*38.57*	*10.91*	*11.19*
	Median	*6.60*	*18.70*	*43.50*	*9.00*	*5.95*
	Minimum	*1.40*	*1.30*	*0.20*	*1.80*	*1.20*
	Maximum	*14.20*	*93.00*	*86.20*	*26.30*	*45.90*
	Standard Deviation	*3.74*	*38.39*	*32.27*	*7.63*	*12.33*
	Standard Error	*0.86*	*7.68*	*6.45*	*1.91*	*3.08*
L-16	L-16-S1	6.8	92.7	0.4	<1.0	<1.0
	L-16-S2	3	96.8	0.1	<1.0	<1.0
	L-16-S3	4	95.6	0.3	<1.0	<1.0
	L-16-S4	10.4	89.5	0.1	<1.0	<1.0
	L-16-S5	6.2	93.6	0.1	<1.0	<1.0

		Particle Size				
Waterbody	**Replicate Station**	**Clay (< 0.002 mm)**	**Silt (0.002 - 0.075 mm)**	**Fine Sand (0.075 - 0.425 mm)**	**Medium Sand (0.425 - 1.0 mm)**	**Sand and Gravel (>1.0 mm)**
	Mean	*6.08*	*93.64*	*0.20*	-	-
	Median	*6.20*	*93.60*	*0.10*	-	-
	Minimum	*3.00*	*89.50*	*0.10*	*<1.0*	*<1.0*
	Maximum	*10.40*	*96.80*	*0.40*	*<1.0*	*<1.0*
	Standard Deviation	*2.87*	*2.82*	*0.14*	-	-
	Standard Error	*1.28*	*1.26*	*0.06*	-	-
Springpole Lake	L-15-S1	4.3	61.1	33.2	1	<1.0
	L-15-S2	8.2	85.2	6.3	<1.0	<1.0
	L-15-S3	8.5	91.1	0.4	<1.0	<1.0
	L-15-S4	10	89.7	0.3	<1.0	<1.0
	L-15-S5	10	89.4	0.6	<1.0	<1.0
	Mean	*8.20*	*83.30*	*8.16*	-	-
	Median	*8.50*	*89.40*	*0.60*	-	-
	Minimum	*4.30*	*61.10*	*0.30*	*<1.0*	*<1.0*
	Maximum	*10.00*	*91.10*	*33.20*	*1.00*	*<1.0*
	Standard Deviation	*2.33*	*12.60*	*14.23*	-	-
	Standard Error	*1.04*	*5.64*	*6.36*	-	-

Table F1-7: 2021 Particle Size Distribution (%)

		Particle Size					
Waterbody	**Replicate Station**	**Clay (< 0.002 mm)**	**Silt (0.002 - 0.075 mm)**	**Fine Sand (0.075 - 0.425 mm)**	**Medium Sand (0.425 - 2.0 mm)**	**Coarse Sand (2.0 - 4.75 mm)**	**Gravel (4.75 - 76.2 mm)**
Springpole Lake	L15-B1-SED1	17.4	82.4	<1.0	<1.0	<1.0	<1.0
	L15-B1-SED2	17.1	82.9	<1.0	<1.0	<1.0	<1.0
	L15-B1-SED3	18.5	81.4	<1.0	<1.0	<1.0	<1.0
	L15-B1-SED4	16.6	83.3	<1.0	<1.0	<1.0	<1.0
	L15-B1-SED5	20.6	79.3	<1.0	<1.0	<1.0	<1.0
	L-15-B2-SED1	13.9	85.7	<1.0	<1.0	<1.0	<1.0
	L-15-B2-SED2	17.2	82.5	<1.0	<1.0	<1.0	<1.0
	L-15-B2-SED3	13.8	84.9	1.2	<1.0	<1.0	<1.0
	L-15-B2-SED4	11.7	88	<1.0	<1.0	<1.0	<1.0
	L-15-B2-SED5	11.9	87.4	<1.0	<1.0	<1.0	<1.0
	L-15-B3-SED1	10.2	89.7	<1.0	<1.0	<1.0	<1.0
	L-15-B3-SED2	12	87.8	<1.0	<1.0	<1.0	<1.0
	L-15-B3-SED3	14.4	85.6	<1.0	<1.0	<1.0	<1.0
	L-15-B3-SED4	11.9	88.1	<1.0	<1.0	<1.0	<1.0
	L-15-B3-SED5	11.8	88.1	<1.0	<1.0	<1.0	<1.0
	L-15-B4-SED1	17.6	82.3	<1.0	<1.0	<1.0	<1.0
	L-15-B4-SED2	14.1	85.8	<1.0	<1.0	<1.0	<1.0
	L-15-B4-SED3	12.6	87.3	<1.0	<1.0	<1.0	<1.0
	L-15-B4-SED4	15.5	84.5	<1.0	<1.0	<1.0	<1.0
	L-15-B4-SED5	14.4	85.5	<1.0	<1.0	<1.0	<1.0
	L-15-B5-SED1	10.9	89	<1.0	<1.0	<1.0	<1.0
	L-15-B5-SED2	10.6	89.2	<1.0	<1.0	<1.0	<1.0
	L-15-B5-SED3	12.7	87	<1.0	<1.0	<1.0	<1.0
	L-15-B5-SED4	11.6	88.1	<1.0	<1.0	<1.0	<1.0
	L-15-B5-SED5	11.1	88.7	<1.0	<1.0	<1.0	<1.0
	L-15-B6-SED1	14.6	85	<1.0	<1.0	<1.0	<1.0
	L-15-B6-SED2	10.2	89.3	<1.0	<1.0	<1.0	<1.0
	L-15-B6-SED3	14.1	85.6	<1.0	<1.0	<1.0	<1.0
	L-15-B6-SED4	13.9	85.9	<1.0	<1.0	<1.0	<1.0
	L-15-B6-SED5	15.4	84.3	<1.0	<1.0	<1.0	<1.0
	Mean	*13.94*	*85.82*	-	-	-	-
	Median	*13.90*	*85.75*	-	-	-	-
	Minimum	*10.20*	*79.30*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
	Maximum	*20.60*	*89.70*	*1.20*	*<1.0*	*<1.0*	*<1.0*
	Standard Deviation	*2.70*	*2.66*	-	-	-	-
	Standard Error	*0.49*	*0.49*	-	-	-	-

		Particle Size					
Waterbody	**Replicate Station**	**Clay (< 0.002 mm)**	**Silt (0.002 - 0.075 mm)**	**Fine Sand (0.075 - 0.425 mm)**	**Medium Sand (0.425 - 2.0 mm)**	**Coarse Sand (2.0 - 4.75 mm)**	**Gravel (4.75 - 76.2 mm)**
Springpole Lake	L15-TYPH-05-SED	8.5	33.9	30.4	27.1	<1.0	<1.0
	L15-POTA-06-SED	5.6	29.1	29.7	28.5	5.8	1.4
	L15-POTA-07-SED	7.5	72.9	17.8	1.8	<1.0	<1.0
	L15-POTA-08-SED	6.5	87.5	5.6	<1.0	<1.0	<1.0
	L15-ACOR-09-SED	6.7	86.2	6.6	<1.0	<1.0	<1.0
	L15-ACOR-10-SED	14.9	71.9	10.6	2.7	<1.0	<1.0
	Mean	*8.28*	*63.58*	*16.78*	*15.03*	-	-
	Median	*7.10*	*72.40*	*14.20*	*14.90*	-	-
	Minimum	*5.60*	*29.10*	*5.60*	*1.80*	*< 1.0*	*< 1.0*
	Maximum	*14.90*	*87.50*	*30.40*	*28.50*	*5.80*	*1.40*
	Standard Deviation	*3.39*	*25.73*	*11.14*	*14.77*	-	-
	Standard Error	*1.38*	*10.50*	*4.55*	*7.38*	-	-
L-18	L-18-SED1	6.3	62.2	21.7	9	<1.0	<1.0
	L-18-SED2	6.6	92.7	<1.0	<1.0	<1.0	<1.0
	L-18-SED3	4	92.9	2.3	<1.0	<1.0	<1.0
	Mean	*5.63*	*82.60*	*12.00*	-	-	-
	Median	*6.30*	*92.70*	*12.00*	-	-	-
	Minimum	*4.00*	*62.20*	*2.30*	*< 1.0*	*< 1.0*	*< 1.0*
	Maximum	*6.60*	*92.90*	*21.70*	*9.00*	*< 1.0*	*< 1.0*
	Standard Deviation	*1.42*	*17.67*	*13.72*	-	-	-
	Standard Error	*0.82*	*10.20*	*9.70*	-	-	-
L-19	L-19-SED1	3	25.4	62.6	7.4	<1.0	<1.0
	L-19-SED2	2	25.1	66.9	6	<1.0	<1.0
	L-19-SED3	4	29.1	56	9.8	<1.0	<1.0
	Mean	*3.00*	*26.53*	*61.83*	*7.73*	-	-
	Median	*3.00*	*25.40*	*62.60*	*7.40*	-	-
	Minimum	*2.00*	*25.10*	*56.00*	*6.00*	*< 1.0*	*< 1.0*
	Maximum	*4.00*	*29.10*	*66.90*	*9.80*	*< 1.0*	*< 1.0*
	Standard Deviation	*1.00*	*2.23*	*5.49*	*1.92*	-	-
	Standard Error	*0.58*	*1.29*	*3.17*	*1.11*	-	-
Birch Lake	BIRCH-B1-SED1	14.6	85.2	<1.0	<1.0	<1.0	<1.0
	BIRCH-B1-SED2	14.2	85.6	<1.0	<1.0	<1.0	<1.0
	BIRCH-B1-SED3	16.9	82.9	<1.0	<1.0	<1.0	<1.0
	BIRCH-B1-SED4	12.5	87.5	<1.0	<1.0	<1.0	<1.0
	BIRCH-B1-SED5	19.7	80.2	<1.0	<1.0	<1.0	<1.0
	BIRCH-B2-SED1	15.8	84.1	<1.0	<1.0	<1.0	<1.0
	BIRCH-B2-SED2	16	83.9	<1.0	<1.0	<1.0	<1.0
	BIRCH-B2-SED3	15.4	84.5	<1.0	<1.0	<1.0	<1.0

		Particle Size					
Waterbody	**Replicate Station**	**Clay (< 0.002 mm)**	**Silt (0.002 - 0.075 mm)**	**Fine Sand (0.075 - 0.425 mm)**	**Medium Sand (0.425 - 2.0 mm)**	**Coarse Sand (2.0 - 4.75 mm)**	**Gravel (4.75 - 76.2 mm)**
	BIRCH-B2-SED4	16.3	83.6	<1.0	<1.0	<1.0	<1.0
	BIRCH-B2-SED5	16.1	83.8	<1.0	<1.0	<1.0	<1.0
	Mean	*15.75*	*84.13*	-	-	-	-
	Median	*15.90*	*84.00*	-	-	-	-
	Minimum	*12.50*	*80.20*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
	Maximum	*19.70*	*87.50*	*<1.0*	*<1.0*	*<1.0*	*<1.0*
	Standard Deviation	*1.88*	*1.89*	-	-	-	-
	Standard Error	*0.59*	*0.60*	-	-	-	-
L-2	L2-POTA-02-SED	20	43.4	34.2	2.4	<1.0	<1.0
	L2-TYPH-03-SED	19.6	45.6	19.1	3.8	1	10.9
	Mean	*19.80*	*44.50*	*26.65*	*3.10*	-	-
	Median	*19.80*	*44.50*	*26.65*	*3.10*	-	-
	Minimum	*19.60*	*43.40*	*19.10*	*2.40*	*<1.0*	*<1.0*
	Maximum	*20.00*	*45.60*	*34.20*	*3.80*	*1.00*	*10.90*
	Standard Deviation	*0.28*	*1.56*	*10.68*	*0.99*	-	-
	Standard Error	*0.20*	*1.10*	*7.55*	*0.70*	-	-
L-1	L1-TYPH-04-SED	13.3	85.8	<1.0	<1.0	<1.0	<1.0
Duplicates	SED-DUP-02	13.1	85.7	<1.0	<1.0	<1.0	<1.0
	SED-DUP-01	8.8	90.9	<1.0	<1.0	<1.0	<1.0

Table F1-8: 2019-2020 Particle Size Distribution (%)

			Particle Size					
Year	**Waterbody**	**Replicate Station**	**Clay (< 0.0039 mm)**	**Silt (0.0039 - 0.062 mm)**	**Fine Sand (0.062 - 0.2 mm)**	**Coarse Sand (0.2 - 2.0 mm)**	**Gravel (2.0 - 16.0 mm)**	**Pebble / Cobble (>16.0 mm)**
2019	Lake 2	L-2-OUT	10.40	45.50	31.30	12.90	0.00	0.00
	Lake 5	L-5-OUT-S	8.80	37.70	31.00	22.60	0.00	0.00
	Lake 6	L-6-OUT-S	6.80	22.90	39.50	30.80	0.00	0.00
	Lake 16	L16-IN-S	9.50	41.70	31.00	17.90	0.00	0.00
	Stream 9	S-9-S	3.80	37.50	35.30	23.50	0.00	0.00
		S-9-US02-S	2.50	28.80	38.00	30.70	0.00	0.00
		S-9-US01-S	7.30	51.60	28.10	13.00	0.00	0.00
		Mean	*4.53*	*39.30*	*33.80*	*22.40*	*0.00*	*0.00*
		Median	*3.80*	*37.50*	*35.30*	*23.50*	*0.00*	*0.00*
		Minimum	*2.50*	*28.80*	*28.10*	*13.00*	*0.00*	*0.00*
		Maximum	*7.30*	*51.60*	*38.00*	*30.70*	*0.00*	*0.00*
		Standard Deviation	*2.48*	*11.51*	*5.12*	*8.90*	*0.00*	*0.00*
		Standard Error	*1.43*	*6.64*	*2.95*	*5.14*	*0.00*	*0.00*
2020	Springpole Lake Area S (nearshore)	L-15-S-01	8.62	24.12	37.90	29.36	0.00	0.00
		L-15-S-02	8.30	24.33	18.40	48.97	0.00	0.00
		L-15-S-03	10.56	19.80	22.38	47.26	0.00	0.00
		L-15-S-04	3.00	35.65	37.48	23.87	0.00	0.00
		L-15-S-05	5.71	32.72	24.86	36.71	0.00	0.00
		Mean	*7.24*	*27.32*	*28.20*	*37.23*	*0.00*	*0.00*
		Median	*8.30*	*24.33*	*24.86*	*36.71*	*0.00*	*0.00*
		Minimum	*3.00*	*19.80*	*18.40*	*23.87*	*0.00*	*0.00*
		Maximum	*10.56*	*35.65*	*37.90*	*48.97*	*0.00*	*0.00*
		Standard Deviation	*2.93*	*6.60*	*8.96*	*10.94*	*0.00*	*0.00*
		Standard Error	*1.31*	*2.95*	*4.01*	*4.89*	*0.00*	*0.00*
2020	Springpole Lake Area D (offshore)	L-15-D-01	15.31	28.92	11.33	44.44	0.00	0.00
		L-15-D-02	10.58	19.01	19.36	51.05	0.00	0.00
		L-15-D-03	12.24	26.72	16.17	44.87	0.00	0.00
		L-15-D-04	11.74	29.17	13.63	45.46	0.00	0.00
		L-15-D-05	11.49	24.17	16.84	47.50	0.00	0.00
		Mean	*12.27*	*25.60*	*15.47*	*46.66*	*0.00*	*0.00*
		Median	*11.74*	*26.72*	*16.17*	*45.46*	*0.00*	*0.00*
		Minimum	*10.58*	*19.01*	*11.33*	*44.44*	*0.00*	*0.00*
		Maximum	*15.31*	*29.17*	*19.36*	*51.05*	*0.00*	*0.00*
		Standard Deviation	*1.80*	*4.20*	*3.08*	*2.72*	*0.00*	*0.00*
		Standard Error	*0.81*	*1.88*	*1.38*	*1.22*	*0.00*	*0.00*

Table F1-9: Particle Size Distribution (%) of Sediment Samples collected by Story Environmental Inc.

Year	Waterbody	Replicate Station	Fines (< 0.075 mm)	Fine Sand (0.075 - 0.425 mm)	Medium Sand (0.425 - 2.0 mm)	Coarse Sand (2.0 - 4.75 mm)	Gravel (4.75 mm - 3 in.)	Cobbles (> 3 in.)
2019*	Springpole Lake	SPL-EXP-1	20.5	74.6	4.9	<1.0	<1.0	<1.0
		SPL-EXP-2	17.7	79.9	2.5	<1.0	<1.0	<1.0
		SPL-EXP-3	5.8	79.4	14.4	<1.0	<1.0	<1.0
		SPL-EXP-4	11.3	79.6	9.0	<1.0	<1.0	<1.0
		SPL-EXP-5	22.5	73.7	3.8	<1.0	<1.0	<1.0
		Mean	*15.6*	*77.4*	*6.9*	*<1*	*<1*	*<1*
		Median	*17.7*	*79.4*	*4.9*	*<1*	*<1*	*<1*
		Minimum	*5.8*	*73.7*	*2.5*	*<1*	*<1*	*<1*
		Maximum	*22.5*	*79.9*	*14.4*	*<1*	*<1*	*<1*
		Standard Deviation	*6.9*	*3.0*	*4.8*	*N/A*	*N/A*	*N/A*
		Standard Error	*3.1*	*1.4*	*2.2*	*N/A*	*N/A*	*N/A*

Note:
*Samples collected by Story Environmental Inc.

Table F2-1: Summary of Benthic Invertebrate Community Descriptors

Year	Waterbody	Station	Total Abundance	TID	Total Taxa Richness	Simpsons Diversity	Simpsons Evenness	% EPT	% Chironomids
2022	Birch Lake	Birch-1-B1	122.00	1768.12	7.00	0.71	0.49	0.82	18.85
		Birch-1-B2	131.00	1898.55	6.00	0.71	0.58	0.00	14.50
		Birch-1-B3	84.00	1217.39	6.00	0.71	0.58	0.00	15.48
		Birch-1-B4	37.00	536.23	6.00	0.66	0.49	0.00	24.32
		Birch-1-B5	91.00	1318.84	7.00	0.77	0.63	0.00	25.27
		Average	*93.00*	*1347.83*	*6.40*	*0.71*	*0.56*	*0.16*	*19.68*
		Standard Deviation	*33.18*	*480.93*	*0.49*	*0.04*	*0.06*	*0.33*	*4.43*
		Birch-2-B1	259.00	3753.62	20.00	0.84	0.31	27.03	11.20
		Birch-2-B2	411.00	5956.52	20.00	0.74	0.19	45.01	4.37
		Birch-2-B3	311.00	4507.25	18.00	0.83	0.33	34.08	10.30
		Birch-2-B4	167.00	2420.29	21.00	0.84	0.31	28.14	9.59
		Birch-2-B5	427.00	6188.41	17.00	0.76	0.25	43.56	7.96
		Average	*315.00*	*4565.22*	*19.20*	*0.80*	*0.28*	*35.56*	*8.68*
		Standard Deviation	*96.76*	*1402.37*	*1.47*	*0.04*	*0.05*	*7.53*	*2.40*
		Birch-3-B1	16.00	231.88	6.00	0.70	0.55	43.75	12.50
		Birch-3-B2	54.00	782.61	8.00	0.61	0.32	24.07	5.56
		Birch-3-B3	45.00	652.17	10.00	0.81	0.53	35.56	15.56
		Birch-3-B4	64.00	927.54	7.00	0.73	0.52	20.31	1.56
		Birch-3-B5	31.00	449.28	7.00	0.73	0.53	45.16	6.45
		Average	*42.00*	*608.70*	*7.60*	*0.71*	*0.49*	*33.77*	*8.33*
		Standard Deviation	*16.94*	*245.44*	*1.36*	*0.07*	*0.09*	*10.08*	*5.03*
		Birch-4-B1	73.00	1057.97	7.00	0.75	0.57	32.88	0.00
		Birch-4-B2	45.00	652.17	7.00	0.65	0.41	17.78	15.56
		Birch-4-B3	30.00	434.78	9.00	0.67	0.34	53.33	16.66
		Birch-4-B4	37.00	536.23	6.00	0.71	0.58	45.95	21.62
		Birch-4-B5	73.00	1057.97	9.00	0.64	0.31	17.81	6.85
		Average	*51.60*	*747.83*	*7.60*	*0.69*	*0.44*	*33.55*	*12.14*
		Standard Deviation	*18.11*	*262.41*	*1.20*	*0.04*	*0.11*	*14.44*	*7.71*
		Birch-5-B1	80.00	1159.42	8.00	0.73	0.46	31.25	5.00
		Birch-5-B2	67.00	971.01	7.00	0.75	0.56	31.34	1.49
		Birch-5-B3	58.00	840.58	6.00	0.72	0.60	43.10	5.17
		Birch-5-B4	35.00	507.25	7.00	0.72	0.51	45.71	20.00
		Birch-5-B5	45.00	652.17	10.00	0.81	0.53	24.44	11.11
		Average	*57.00*	*826.09*	*7.60*	*0.75*	*0.53*	*35.17*	*8.55*
		Standard Deviation	*15.86*	*229.88*	*1.36*	*0.03*	*0.05*	*7.99*	*6.50*
	Springpole Lake	L-15-B3a-B1	63.00	913.04	7.00	0.73	0.53	26.98	0.00
		L-15-B3a-B2	38.00	550.72	6.00	0.70	0.55	31.58	5.26

Year	Waterbody	Station	Total Abundance	TID	Total Taxa Richness	Simpsons Diversity	Simpsons Evenness	% EPT	% Chironomids
		L-15-B3a-B3	61.00	884.06	6.00	0.37	0.26	9.84	0.00
		L-15-B3a-B4	43.00	623.19	5.00	0.62	0.53	18.60	0.00
		L-15-B3a-B5	96.00	1391.30	5.00	0.41	0.34	13.54	0.00
		Average	*60.20*	*872.46*	*5.80*	*0.57*	*0.44*	*20.11*	*1.05*
		Standard Deviation	*20.39*	*295.51*	*0.75*	*0.15*	*0.12*	*8.12*	*2.10*
	L-16	L-16-B1	42.00	608.70	3.00	0.21	0.42	88.10	0.00
		L-16-B2	93.00	1347.83	4.00	0.52	0.52	48.39	0.00
		L-16-B3	97.00	1405.80	2.00	0.30	0.72	18.56	0.00
		L-16-B4	81.00	1173.91	2.00	0.07	0.54	3.70	0.00
		L-16-B5	146.00	2115.94	2.00	0.36	0.78	23.29	0.00
		Average	*91.80*	*1330.43*	*2.60*	*0.29*	*0.60*	*36.41*	*0.00*
		Standard Deviation	*33.36*	*483.41*	*0.80*	*0.15*	*0.13*	*29.58*	*0.00*
2021	Birch Lake	Birch-B1-B1	44.00	637.68	5.00	0.52	0.42	0.00	6.82
		Birch-B1-B2	27.00	391.30	6.00	0.52	0.35	0.00	11.11
		Birch-B1-B3	34.00	492.75	6.00	0.63	0.45	0.00	14.71
		Birch-B1-B4	40.00	579.71	6.00	0.60	0.42	0.00	20.00
		Birch-B1-B5	47.00	681.16	5.00	0.61	0.51	0.00	0.00
		Average	*38.40*	*556.52*	*5.60*	*0.58*	*0.43*	*0.00*	*10.53*
		Standard Deviation	*3.59*	*51.97*	*0.24*	*0.02*	*0.03*	*0.00*	*3.41*
		Birch-B2-B1	81.00	1173.91	5.00	0.63	0.54	0.00	43.21
		Birch-B2-B2	30.00	434.78	4.00	0.65	0.71	0.00	33.33
		Birch-B2-B3	50.00	724.64	5.00	0.67	0.60	0.00	44.00
		Birch-B2-B4	78.00	1130.43	5.00	0.66	0.60	0.00	32.05
		Birch-B2-B5	135.00	1956.52	5.00	0.60	0.50	0.00	37.78
		Average	*74.80*	*1084.06*	*4.80*	*0.64*	*0.59*	*0.00*	*38.07*
		Standard Deviation	*17.74*	*257.11*	*0.20*	*0.01*	*0.04*	*0.00*	*2.45*
	Springpole Lake	L-15-B1-B1	1.00	14.49	1.00	0.00	1.00	0.00	0.00
		L-15-B1-B2	0.00	0.00	0.00	1.00	0.00	0.00	0.00
		L-15-B1-B3	1.00	14.49	1.00	0.00	1.00	0.00	100.00
		L-15-B1-B4	0.00	0.00	0.00	1.00	0.00	0.00	0.00
		L-15-B1-B5	0.00	0.00	0.00	1.00	0.00	0.00	0.00
		Average	*0.40*	*5.80*	*0.40*	*0.60*	*0.40*	*0.00*	*20.00*
		Standard Deviation	*0.24*	*3.55*	*0.24*	*0.24*	*0.24*	*0.00*	*20.00*
		L-15-B2-B1	77.00	1115.94	6.00	0.63	0.45	0.00	6.49
		L-15-B2-B2	56.00	811.59	4.00	0.52	0.53	0.00	10.71
		L-15-B2-B3	145.00	2101.45	8.00	0.49	0.25	0.00	2.76
		L-15-B2-B4	61.00	884.06	4.00	0.24	0.33	0.00	1.64
		L-15-B2-B5	75.00	1086.96	4.00	0.39	0.41	0.00	4.00
		Average	*82.80*	*1200.00*	*5.20*	*0.45*	*0.39*	*0.00*	*5.12*

Year	Waterbody	Station	Total Abundance	TID	Total Taxa Richness	Simpsons Diversity	Simpsons Evenness	% EPT	% Chironomids
		Standard Deviation	*16.06*	*232.72*	*0.80*	*0.07*	*0.05*	*0.00*	*1.61*
		L-15-B3-B1	9.00	130.43	3.00	0.64	0.93	0.00	33.33
		L-15-B3-B2	10.00	144.93	3.00	0.58	0.79	0.00	50.00
		L-15-B3-B3	3.00	43.48	3.00	0.67	1.00	0.00	33.33
		L-15-B3-B4	8.00	115.94	3.00	0.59	0.82	0.00	50.00
		L-15-B3-B5	4.00	57.97	2.00	0.38	0.80	0.00	25.00
		Average	*6.80*	*98.55*	*2.80*	*0.57*	*0.87*	*0.00*	*38.33*
		Standard Deviation	*1.39*	*20.19*	*0.20*	*0.05*	*0.04*	*0.00*	*5.00*
		L-15-B4-B1	37.00	536.23	3.00	0.24	0.44	0.00	0.00
		L-15-B4-B2	69.00	1000.00	5.00	0.37	0.32	0.00	1.45
		L-15-B4-B3	10.00	144.93	3.00	0.34	0.51	0.00	0.00
		L-15-B4-B4	60.00	869.57	5.00	0.40	0.33	0.00	3.33
		L-15-B4-B5	43.00	623.19	3.00	0.25	0.44	0.00	6.98
		Average	*43.80*	*634.78*	*3.80*	*0.32*	*0.41*	*0.00*	*2.35*
		Standard Deviation	*10.21*	*148.04*	*0.49*	*0.03*	*0.04*	*0.00*	*1.31*
		L-15-B5-B1	84.00	1217.39	5.00	0.62	0.53	0.00	20.24
		L-15-B5-B2	77.00	1115.94	5.00	0.62	0.53	0.00	15.58
		L-15-B5-B3	105.00	1521.74	5.00	0.54	0.43	0.00	16.19
		L-15-B5-B4	81.00	1173.91	5.00	0.61	0.52	0.00	18.52
		L-15-B5-B5	86.00	1246.38	5.00	0.41	0.34	0.00	5.81
		Average	*86.60*	*1255.07*	*5.00*	*0.56*	*0.47*	*0.00*	*15.27*
		Standard Deviation	*4.84*	*70.20*	*0.00*	*0.04*	*0.04*	*0.00*	*2.51*
		L-15-B6-B1	68.00	985.51	4.00	0.47	0.47	0.00	5.88
		L-15-B6-B2	46.00	666.67	3.00	0.45	0.61	0.00	0.00
		L-15-B6-B3	23.00	333.33	5.00	0.65	0.57	0.00	4.35
		L-15-B6-B4	58.00	840.58	5.00	0.62	0.52	0.00	12.07
		L-15-B6-B5	29.00	420.29	4.00	0.55	0.56	0.00	0.00
		Average	*44.80*	*649.28*	*4.20*	*0.55*	*0.55*	*0.00*	*4.46*
		Standard Deviation	*8.48*	*122.92*	*0.37*	*0.04*	*0.02*	*0.00*	*2.23*
	L-17	L-17-B1	640.00	9275.36	19.00	0.85	0.35	11.88	31.88
		L-17-B2	140.00	2028.99	9.00	0.74	0.43	11.43	45.71
		L-17-B3	556.00	8057.97	17.00	0.74	0.23	9.35	47.48
		Average	*445.33*	*6454.11*	*15.00*	*0.78*	*0.33*	*10.89*	*41.69*
		Standard Deviation	*154.58*	*2240.30*	*3.06*	*0.04*	*0.06*	*0.78*	*4.93*
	L-18	L-18-B1	244.00	3536.23	20.00	0.52	0.10	8.61	68.44
		L-18-B2	124.00	1797.10	9.00	0.82	0.62	25.81	29.03
		L-18-B3	169.00	2449.28	9.00	0.69	0.36	21.30	49.70
		Average	*179.00*	*2594.20*	*12.67*	*0.67*	*0.36*	*18.57*	*49.06*
		Standard Deviation	*35.00*	*507.25*	*3.67*	*0.09*	*0.15*	*5.15*	*11.38*

Year	Waterbody	Station	Total Abundance	TID	Total Taxa Richness	Simpsons Diversity	Simpsons Evenness	% EPT	% Chironomids
	L-19	L-19-B1	388.00	5623.19	10.00	0.62	0.26	10.31	58.76
		L-19-B2	674.00	9768.12	11.00	0.68	0.29	11.28	52.23
		L-19-B3	105.00	1521.74	11.00	0.81	0.48	3.81	38.10
		Average	*389.00*	*5637.68*	*10.67*	*0.70*	*0.34*	*8.46*	*49.69*
		Standard Deviation	*164.26*	*2380.53*	*0.33*	*0.06*	*0.07*	*2.34*	*6.10*
2020	Springpole Lake Area 'S' (Nearshore)	L-15-S-01	110.00	159.42	5.00	0.46	0.37	0.00	1.82
		L-15-S-02	86.00	124.64	6.00	0.57	0.39	0.00	0.00
		L-15-S-03	64.00	92.75	6.00	0.61	0.43	0.00	1.56
		L-15-S-04	87.00	126.09	6.00	0.59	0.40	0.00	1.15
		L-15-S-05	111.00	160.87	7.00	0.61	0.37	0.00	2.70
		Average	*91.60*	*132.75*	*6.00*	*0.57*	*0.39*	*0.00*	*1.45*
		Standard Deviation	*19.55*	*28.34*	*0.71*	*0.06*	*0.02*	*0.00*	*0.99*
	Springpole Lake Area 'D' (Offshore)	L-15-D-01	46.00	66.67	7.00	0.81	0.76	0.00	23.91
		L-15-D-02	9.00	13.04	5.00	0.72	0.70	0.00	22.22
		L-15-D-03	4.00	5.80	1.00	0.00	1.00	0.00	100.00
		L-15-D-04	12.00	17.39	2.00	0.44	0.90	0.00	66.67
		L-15-D-05	23.00	33.33	5.00	0.72	0.72	0.00	30.43
		Average	*18.80*	*27.25*	*4.00*	*0.54*	*0.82*	*0.00*	*48.65*
		Standard Deviation	*7.48*	*10.84*	*1.10*	*0.15*	*0.06*	*0.00*	*15.17*
2019	Stream 9	S-9	240	3,478	9	0.49	0.22	2.5	11.25
		S-9-US-01	12	174	1	0	1	0	0
		S-9-US-02	93	1,348	4	0.38	0.4	0	77.42
		Average	*389.00*	*5637.68*	*10.67*	*0.70*	*0.34*	*8.46*	*49.69*
		Standard Deviation	*164.26*	*2380.53*	*0.33*	*0.06*	*0.07*	*2.34*	*6.10*
	Lake 2	L-2-OUT	264	3,826	17	0.87	0.46	4.55	22.73
	Lake 5	L-5-OUT	24	348	4	0.42	0.43	0	75
	Lake 6	L-6-OUT	42	609	6	0.65	0.48	0	4.76
	Lake 16	L-16-IN	60	870	3	0.29	0.47	3.33	13.33

Table F2-2: Summary of Benthic Invertebrate Community Descriptors Collected by Story Environmental Inc. in 2019

Waterbody	Station	Count	TID (#/m^2)	Richness	Simpson's Diversity	Evenness	% EPT	% Chironomids
Springpole Lake	SPR-EXP-1	568	8,232	19	0.81	0.27	21.13	39.79
	SPR-EXP-2	571	8,275	26	0.75	0.15	13.31	47.64
	SPR-EXP-3	389	5,638	18	0.81	0.29	29.82	30.59
	SPR-EXP-4	425	6,159	21	0.84	0.3	30.82	27.53
	SPR-EXP-5	663	9,609	20	0.75	0.2	14.33	45.85
Mean		*523.2*	*7583*	*21*	*0.79*	*0.24*	*21.88*	*38.28*
Median		*568*	*8232*	*20*	*0.81*	*0.27*	*21.13*	*39.79*
Minimum		*389*	*5638*	*18*	*0.75*	*0.15*	*13.31*	*27.53*
Maximum		*663*	*9609*	*26*	*0.84*	*0.3*	*30.82*	*47.64*
Standard Error		*50.74*	*735.35*	*1.39*	*0.02*	*0.03*	*3.7*	*4.01*
Standard Deviation		*113.46*	*1644.29*	*3.11*	*0.04*	*0.06*	*8.28*	*8.97*

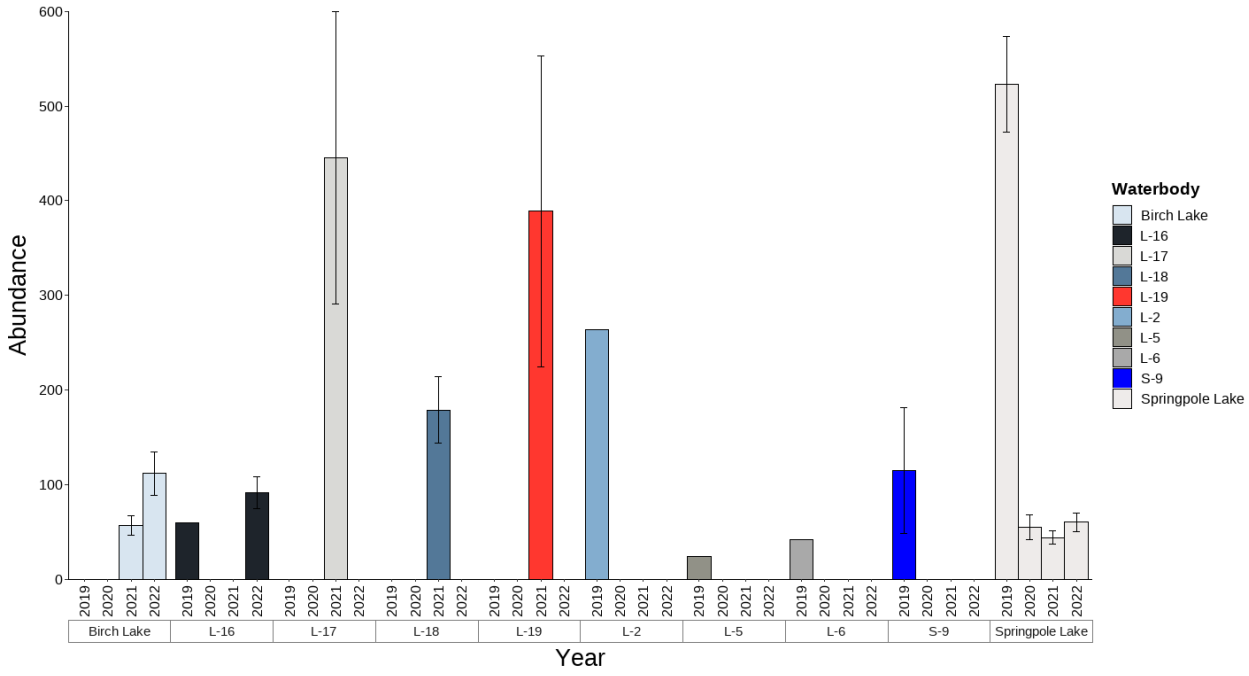


Figure F2-1: Mean Benthic Invertebrate Community Abundance (± Standard Error) by Station and Year

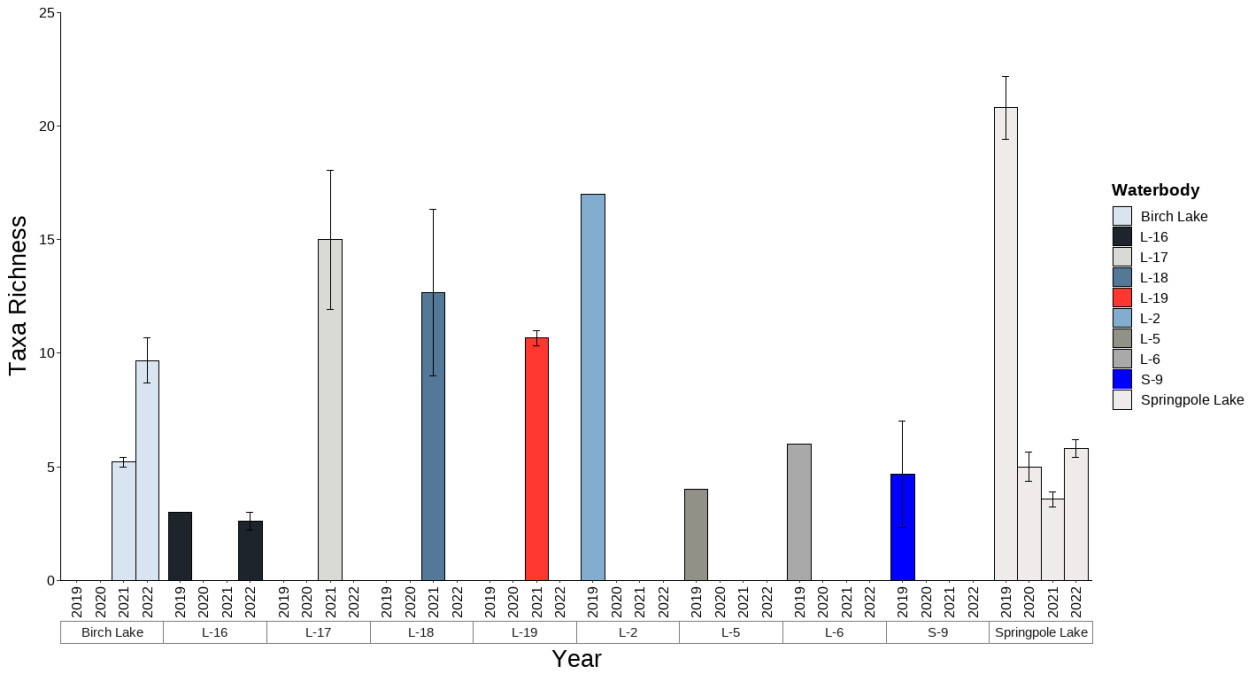


Figure F2-2: Mean Benthic Invertebrate Community Richness (± Standard Error) by Station and Year

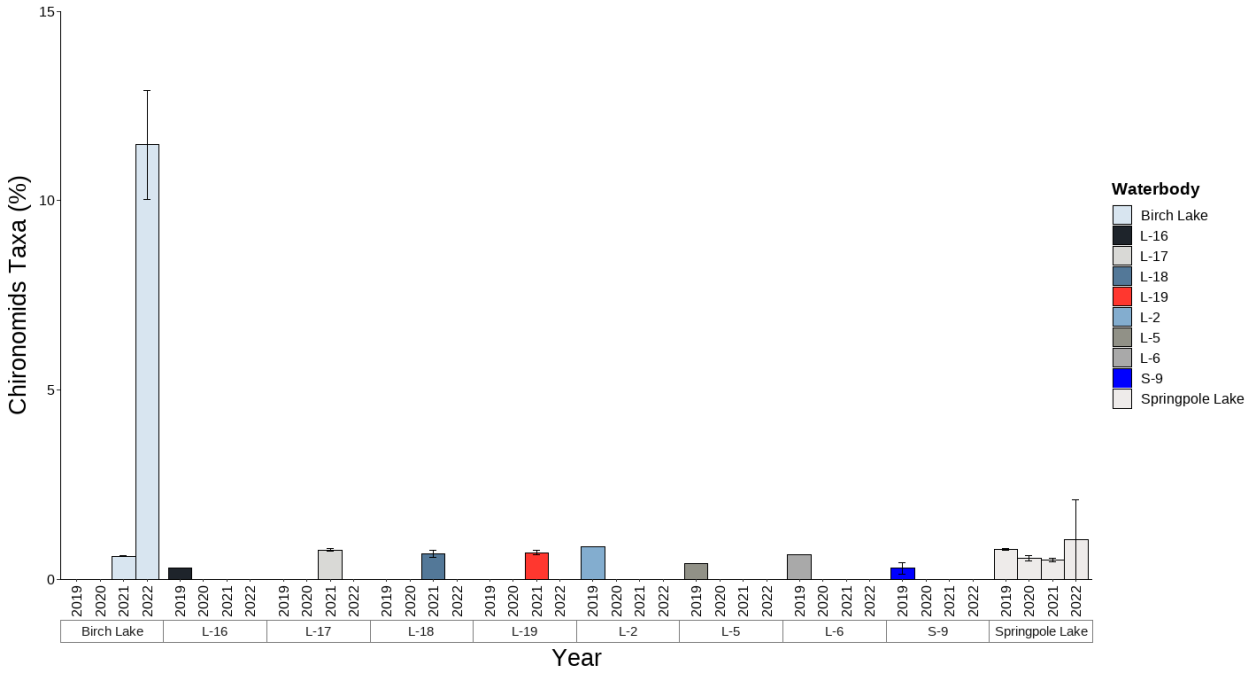


Figure F2-3: Mean Benthic Invertebrate Community Chironomids Taxa (%) (± Standard Error) by Station and Year

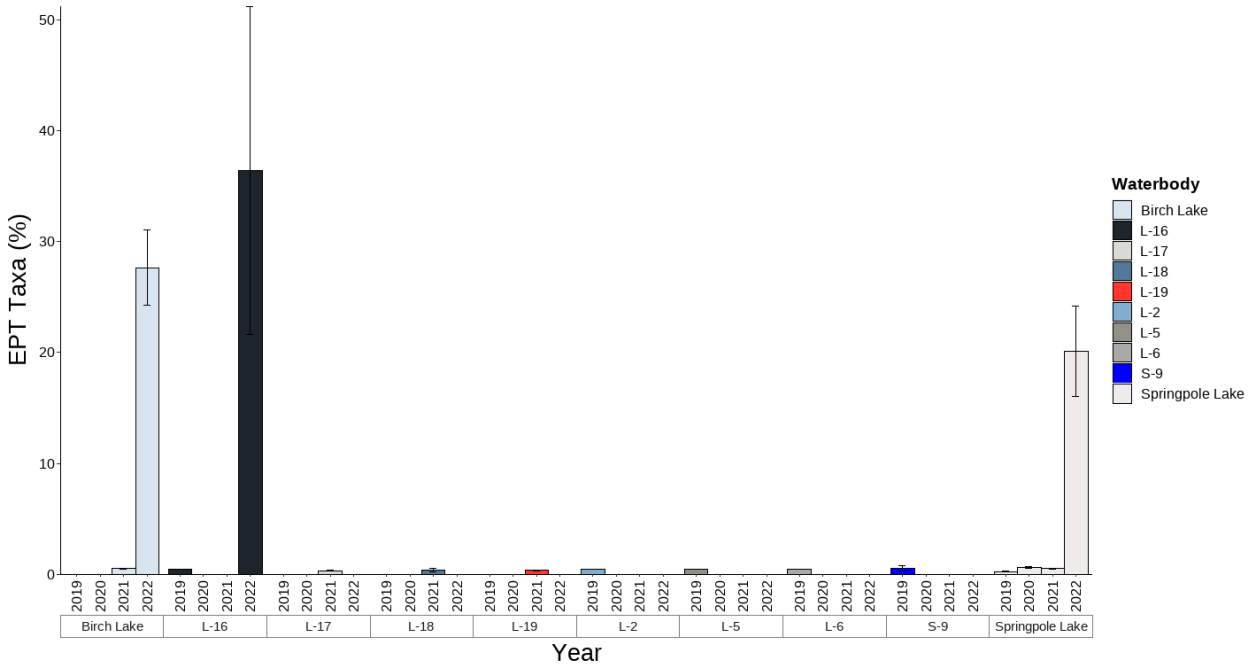


Figure F2-4: Mean Benthic Invertebrate Community EPT Taxa (%) (± Standard Error) by Station and Year

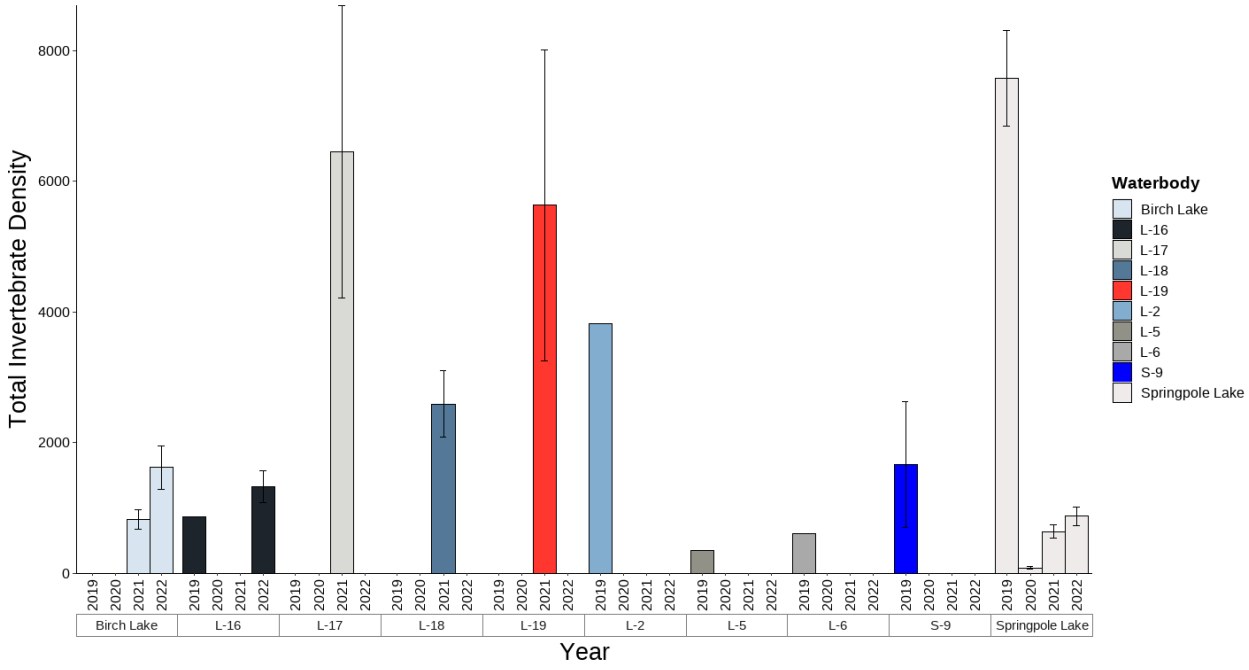


Figure F2-5: Total Invertebrate Density (± Standard Error) by Station and Year

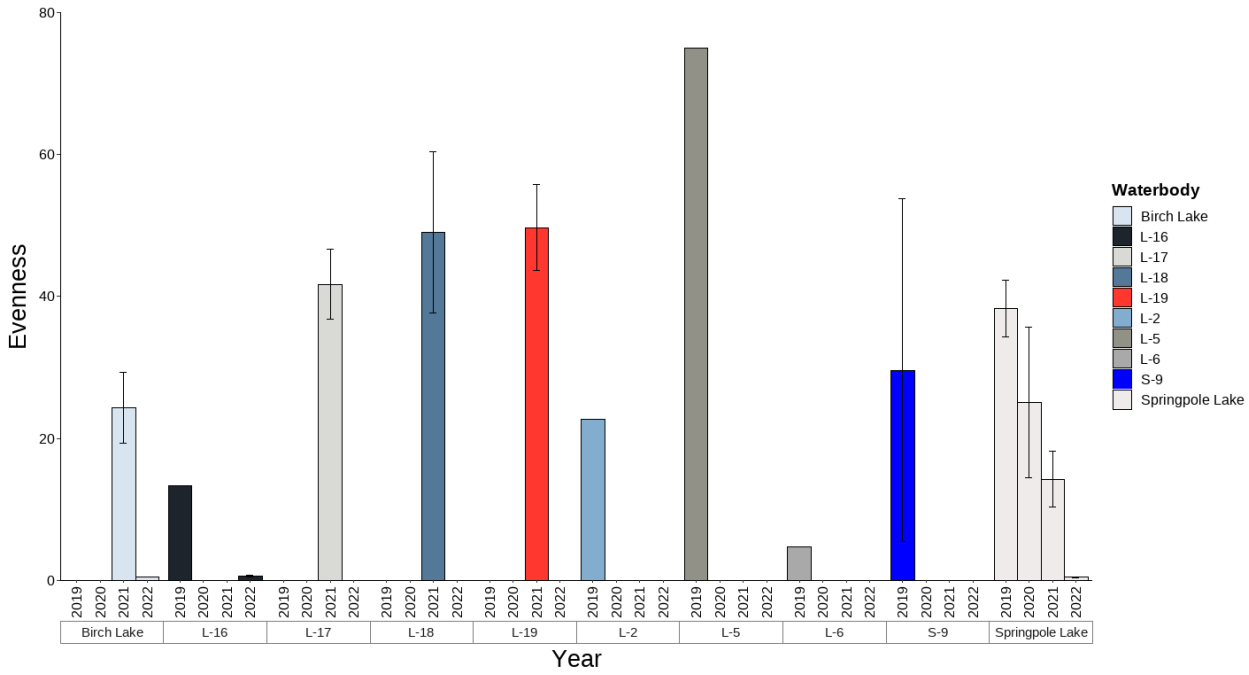


Figure F2-6: Mean Benthic Invertebrate Community Evenness (E) (± Standard Error) by Station and Year

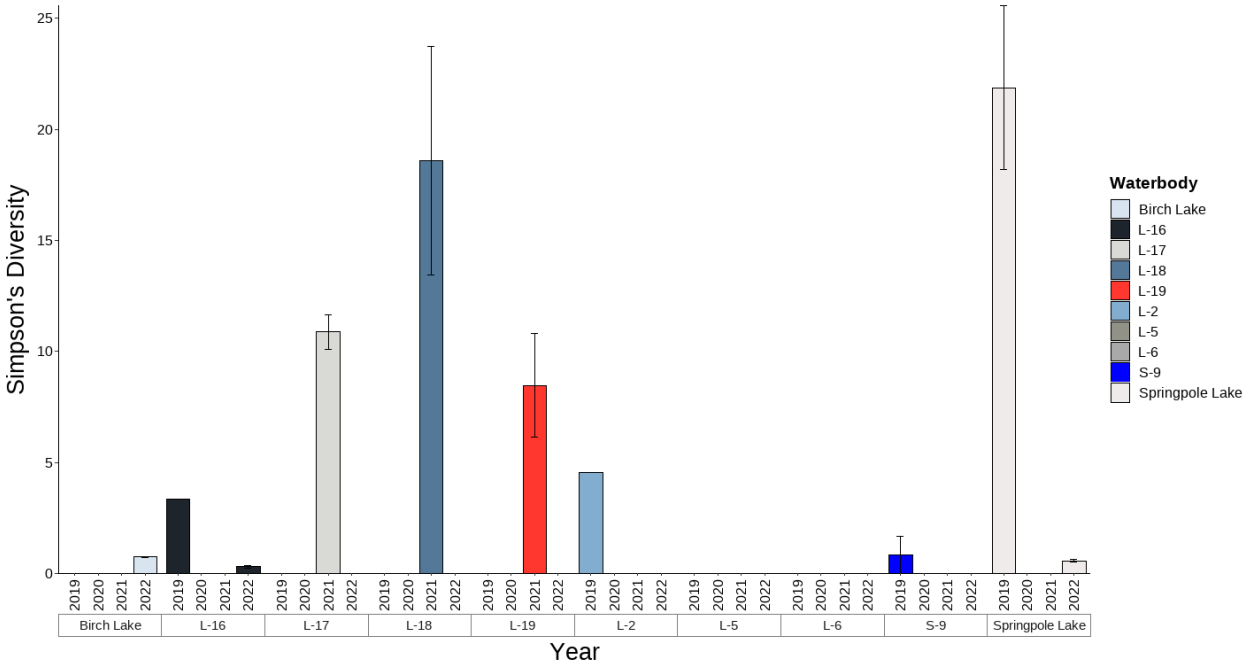


Figure F2-7: Mean Benthic Invertebrate Community Simpson's Diversity (D) (± Standard Error) by Station and Year

Attachment G QA / QC

Table G1-1: Sediment Quality Assurance and Control Results 2022

			Sample Area	BIRCH SED DUP	BIRCH-3-B2	**Meets RPD Detection Limit Trigger?**	**RPD (%)**
			Date Sampled	10-Oct-2022	09-Oct-2022		
Parameter	Lowest Detection Limit	Units					
Physical Tests							
Loss on Ignition @ 375 C	1	%		1	1	NO	
Moisture	0	%		36	32	YES	12.74
pH (1:2 soil:water)	0.10	pH units		5.45	5.35	YES	1.85
Particle Size							
Sand and Gravel (>1.0mm)	1.0	%		13.4	11.4	YES	16.13
Medium Sand (0.425mm - 1.0mm)	1.0	%		19.9	16.1	YES	21.11
Fine Sand (0.075mm - 0.425mm)	1.0	%		55.4	59.5	YES	7.14
Silt (0.002mm - 0.075mm)	1.0	%		8.2	13.0	YES	**45.28**
Clay (<0.002mm)	1.0	%		3.1	<1.0	NO	
Nutrients & Organics							
Total Kjeldahl Nitrogen	0.020	%		0.058	0.072	NO	
Total Organic Carbon	0.10	%		0.78	0.67	YES	15.17
Organic Matter	0.200	%		1.34	1.16	YES	14.40
Plant Available Nutrients							
Phosphate, available (as P)	2.0	mg/kg		6.2	6.8	NO	
Metals							
Aluminum (Al)	50	mg/kg		5520	6230	YES	12.09
Antimony (Sb)	0.10	mg/kg		<0.10	<0.10	NO	
Arsenic (As)	0.10	mg/kg		3.99	6.80	YES	**52.09**
Barium (Ba)	0.50	mg/kg		13.7	14.0	YES	2.17
Beryllium (Be)	0.10	mg/kg		<0.10	<0.10	NO	
Bismuth (Bi)	0.20	mg/kg		<0.20	<0.20	NO	
Boron (B)	5.0	mg/kg		<5.0	<5.0	NO	
Cadmium (Cd)	0.020	mg/kg		0.065	0.055	NO	
Calcium (Ca)	50	mg/kg		2250	1890	YES	17.39
Chromium (Cr)	0.50	mg/kg		13.4	23.9	YES	**56.30**
Cobalt (Co)	0.10	mg/kg		3.4	4.1	YES	20.21

Copper (Cu)	0.50	mg/kg	3	3	YES	4.61
Iron (Fe)	50	mg/kg	11400	13900	YES	19.76
Lead (Pb)	0.50	mg/kg	3.5	2.84	YES	20.25
Lithium (Li)	2.0	mg/kg	5.3	6.2	NO	
Magnesium (Mg)	20	mg/kg	3010	3390	YES	11.88
Manganese (Mn)	1.0	mg/kg	153	175	YES	13.41
Mercury (Hg)	0.0050	mg/kg	0.009	0.01	NO	
Molybdenum (Mo)	0.10	mg/kg	0.1	1.4	YES	**162.67**
Nickel (Ni)	0.50	mg/kg	7.8	14.1	YES	**58.01**
Phosphorus (P)	50	mg/kg	520	578	YES	10.56
Potassium (K)	100	mg/kg	340	340	YES	0.00
Selenium (Se)	0.20	mg/kg	<0.20	<0.20	NO	
Silver (Ag)	0.10	mg/kg	<0.10	<0.10	NO	
Sodium (Na)	50	mg/kg	57	65	NO	
Strontium (Sr)	0.50	mg/kg	8.4	6.4	YES	26.30
Sulfur (S)	1000	mg/kg	<1000	<1000	NO	
Thallium (Tl)	0.050	mg/kg	<0.050	<0.050	NO	
Tin (Sn)	2.0	mg/kg	<2.0	<2.0	NO	
Titanium (Ti)	1.0	mg/kg	406	240	YES	**51.39**
Tungsten (W)	0.50	mg/kg	<0.50	<0.50	NO	
Uranium (U)	0.050	mg/kg	0.413	0.406	YES	1.71
Vanadium (V)	0.20	mg/kg	17.2	17.8	YES	3.43
Zinc (Zn)	2.0	mg/kg	22.7	24.1	YES	5.98
Zirconium (Zr)	1.0	mg/kg	<1.0	<1.0	NO	

Notes:
1. YES denotes that the average of the two sample concentrations was greater than 5x the requested detection limit (RDL).
2. < denotes values that were less than the RDL.
3. Bold values indicate RPD values that were greater than 30%

Table G1-2: Sediment Quality Assurance and Control Results 2021

Parameter	Lowest Detection Limit	Units	Sample Area	SED-DUP-01	L-15-B6-SED1	Meets RPD Detection Limit Trigger?	RPD (%)	SED-DUP-02	L-15-B5-SED3	Meets RPD Detection Limit Trigger?	RPD (%)
			Date Samples	24-Sep-21				28-Sep-22			
Physical Tests											
Moisture	1.0	%						-	-		
Physical Tests	1	pH	5.71	5.79	YES	1.39	4.54	4.53	YES	0.22	
Organic Content					NO						
Leachable Anions & Nutrients											
Nitrate (N)	2	mg/kg			NO				NO		
Nitrite (N)	0.5	mg/kg			NO				NO		
Nitrate + Nitrite (N)	3	mg/kg			NO				NO		
Total Kjeldahl Nitrogen	100	mg/kg	1	1.25	NO		0.99	1.04	NO		
Organic / Inorganic Carbon											
Fraction Organic Carbon	0.001	g/g	0.107	0.105	YES	1.89	0.092	0.098	YES	6.32	
Total Organic Carbon	0.05	%	10.7	10.5	YES	1.89	9.2	9.8	YES	6.32	
Metals											
Aluminum	50	mg/kg	17400	16200	YES	7.14	20700	23300	YES	11.82	
Antimony	0.2	mg/kg	0.2	0.18	NO		0.46	0.51	NO		
Arsenic	1	mg/kg	5.17	4.63	YES	11.02	30.5	32.3	YES	5.73	
Barium	0.50	mg/kg	98.7	94.6	YES	4.24	210	221	YES	5.10	
Beryllium	0.2	mg/kg	0.44	0.41	NO		0.71	0.78	YES	9.40	
Bismuth	1	mg/kg	0.21	<0.20	NO		0.52	0.57	NO		
Boron	5.0	mg/kg	7	6.9	NO		8	8.9	NO		
Cadmium	0.1	mg/kg	0.362	0.314	YES	14.20	1.12	1.21	YES	7.73	
Calcium	50	mg/kg	7580	7300	YES	3.76	7430	8280	YES	10.82	
Chromium	1	mg/kg	43	42.8	YES	0.47	44.1	48.7	YES	9.91	
Cobalt	0.10	mg/kg	11	10.4	YES	5.61	19.6	21.7	YES	10.17	
Copper	0.50	mg/kg	52.6	49.5	YES	6.07	45.2	49.7	YES	9.48	
Iron	50	mg/kg	22900	22000	YES	4.01	55600	59900	YES	7.45	
Lead	1	mg/kg	9.17	8.24	YES	10.68	33.3	35.6	YES	6.68	
Lithium	2	mg/kg	15.6	15.3	YES	1.94	15.8	17.8	YES	11.90	
Magnesium	50	mg/kg	7900	7470	YES	5.60	5190	5640	YES	8.31	
Manganese	1.0	mg/kg	275	259	YES	5.99	1770	1840	YES	3.88	
Mercury	0.05	mg/kg	0.0818	0.0707	NO		0.129	0.142	NO		
Molybdenum	0.5	mg/kg	1.11	1.04	NO		1.15	1.25	NO		
Nickel	0.50	mg/kg	33.5	31.6	YES	5.84	32.5	35.6	YES	9.10	
Phosphorus	50	mg/kg	1080	1000	YES	7.69	3070	3210	YES	4.46	

Sample Area			SED-DUP-01	L-15-B6-SED1	Meets RPD Detection Limit Trigger?	RPD (%)	SED-DUP-02	L-15-B5-SED3	Meets RPD Detection Limit Trigger?	RPD (%)
Date Samples			24-Sep-21				28-Sep-22			
Parameter	**Lowest Detection Limit**	**Units**								
Potassium	200	mg/kg	1790	1750	YES	2.26	1560	1690	YES	8.00
Selenium	0.5	mg/kg	1.46	1.42	NO		1.99	2.19	YES	9.57
Silver	0.2	mg/kg	0.18	0.17	NO		0.16	0.18	NO	
Sodium	50	mg/kg	154	135	NO		192	208	YES	8.00
Strontium	1	mg/kg	25.6	25.1	YES	1.97	27.9	29.6	YES	5.91
Sulfur	1000	mg/kg	2000	2000	NO		2800	3100	NO	
Thallium	0.050	mg/kg	0.231	0.216	YES	6.71	0.303	0.333	YES	9.43
Tin	2	mg/kg	<2.0	<2.0	NO		<2.0	<2.0	NO	
Titanium	5	mg/kg	532	507	YES	4.81	393	433	YES	9.69
Tungsten	0.5	mg/kg	<0.50	<0.50	NO		<0.50	<0.50	NO	
Uranium	0.05	mg/kg	1.71	1.63	YES	4.79	2.38	2.6	YES	8.84
Vanadium	5	mg/kg	45.8	44.6	YES	2.65	59.6	65.4	YES	9.28
Zinc	5	mg/kg	90.1	81.6	YES	9.90	120	131	YES	8.76
Zirconium	1	mg/kg	3.2	3.3	NO		2.8	3.1	NO	

Notes:
1. YES denotes that the average of the two sample concentrations was greater than 5x the requested detection limit (RDL).
2. Bold values indicate RPD values that were greater than 30%.

Table G1-3: Sediment Quality Assurance and Control Results 2020

		Sample Area	L-15-DUP	L-15-S-02	Meets RPD Detection Limit Trigger?	RPD (%)
		Date Sampled	20-09-11	20-09-10		
Parameter	Lowest Detection Limit	Units				
Physical Tests						
pH	pH Units	1	4.97	5.04	YES	1.40
Moisture	%	1	89	89	YES	0.00
Leachable Anions & Nutrients						
Total Kjeldahl Nitrogen	mg/kg	100	12,300	12,700	YES	3.20
Nitrite (N)	mg/kg	0.5	<0.5	<0.5	NO	
Nitrate (N)	mg/kg	2	<2	<2	NO	
Nitrate + Nitrite (N)	mg/kg	3	<3	<3	NO	
Total Organic Carbon	mg/kg	500	120,000	120,000	YES	0.00
Metals						
Aluminum (Al)	mg/kg	50	19,000	17,000	YES	11.11
Antimony (Sb)	mg/kg	0.2	0.52	0.51	NO	
Arsenic (As)	mg/kg	1	12	12	YES	0.00
Barium (Ba)	mg/kg	0.5	140	130	YES	7.41
Beryllium (Be)	mg/kg	0.2	0.52	0.52	NO	
Bismuth (Bi)	mg/kg	1	<1.0	<1.0	NO	
Boron (B)	mg/kg	5	9.3	9.2	NO	
Cadmium (Cd)	mg/kg	0.1	0.69	0.72	YES	4.26
Calcium (Ca)	mg/kg	50	7,100	7,200	YES	1.40
Chromium (Cr)	mg/kg	1	45	43	YES	4.55
Cobalt (Co)	mg/kg	0.1	14	13	YES	7.41
Copper (Cu)	mg/kg	0.5	48	47	YES	2.11
Iron (Fe)	mg/kg	50	38,000	37,000	YES	2.67
Lead (Pb)	mg/kg	1	29	29	YES	0.00
Magnesium (Mg)	mg/kg	50	7,900	7,600	YES	3.87
Manganese (Mn)	mg/kg	1	990	1,000	YES	1.01
Mercury (Hg)	mg/kg	0.05	0.12	0.13	NO	
Molybdenum (Mo)	mg/kg	0.5	1.4	1.4	NO	
Nickel (Ni)	mg/kg	0.5	34	33	YES	2.99
Phosphorus (P)	mg/kg	50	1,700	1,700	YES	0.00
Potassium (K)	mg/kg	200	2,000	1,900	YES	5.13
Selenium (Se)	mg/kg	0.5	1.9	1.8	YES	5.41
Silver (Ag)	mg/kg	0.2	<0.20	0.22	NO	
Sodium (Na)	mg/kg	50	170	160	NO	
Strontium (Sr)	mg/kg	1	24	24	YES	0.00

		Sample Area	L-15-DUP	L-15-S-02	Meets RPD Detection Limit Trigger?	RPD (%)
		Date Sampled	20-09-11	20-09-10		
Parameter	**Lowest Detection Limit**	**Units**				
Thallium (Tl)	mg/kg	0.05	0.33	0.36	YES	8.70
Tin (Sn)	mg/kg	1	<1.0	1	NO	
Titanium (Ti)	mg/kg	5	510	450	YES	12.50
Uranium (U)	mg/kg	0.05	2.1	2.1	YES	0.00
Vanadium (V)	mg/kg	5	59	57	YES	3.45
Zinc (Zn)	mg/kg	5	110	110	YES	0.00

Notes:
1. YES denotes that the average of the two sample concentrations was greater than 5x the requested detection limit (RDL)
2. < denotes values that were less than the RDL.
3. Bold values indicate RPD values that were greater than 30%.

Table G2-1: Phytoplankton Duplicate Sample Results 2022

Year	Sample ID	Month	Class	Genus	Species	Unit	Units/L	Biovolume Unit (µm^3)	Biovolume (Total µm^3)
2022	SW-DUP-03	September	Chlorophyceae	Unidentified		Single Cell	54000	160	8640000
2022	SW-DUP-03	September	Cyanophyceae	Anabaena	sp.	Filament	6000	4680	28080000
2022	SW-DUP-03	September	Chlorophyceae	Staurastrum	sp.	Single Cell	1000	6750	6750000
2022	SW-DUP-03	September	Euglenophyceae	Trachelomonas	sp.	Single Cell	1000	4500	4500000
2022	SW-DUP-03	September	Bacillariophyceae	Cyclotella	sp.	Single Cell	34000	4000	136000000
2022	SW-DUP-03	September	Cryptophyceae	Cryptomonas	sp.	Single Cell	29000	5625	163125000
2022	SW-DUP-03	September	Cyanophyceae	Cyanodictyon	sp.	Colony	5000	8000	40000000
2022	SW-DUP-03	September	Bacillariophyceae	Nitzschia	sp.	Single Cell	1000	640	640000
2022	SW-DUP-03	September	Chlorophyceae	Oocystis	sp.	Colony	5000	4500	22500000
2022	SW-DUP-03	September	Dinophyceae	Gymnodinium	sp.	Single Cell	2000	18750	37500000
2022	SW-DUP-03	September	Chlorophyceae	Tetraedron	sp.	Single Cell	10000	400	4000000
2022	SW-DUP-03	September	Bacillariophyceae	Fragilaria	crotonensis	Single Cell	64000	1280	81920000
2022	SW-DUP-03	September	Chlorophyceae	Crucigenia	quadrata	Single Cell	20000	12	240000
2022	SW-DUP-03	September	Cyanophyceae	Gomphosphaeria	sp.	Colony	1000	27000	27000000
2022	SW-DUP-03	September	Bacillariophyceae	Asterionella	formosa	Single Cell	3000	810	2430000
2022	SW-DUP-03	September	Chrysophyceae	Dinobryon	bavaricum	Single Cell	5000	540	2700000
2022	SW-DUP-03	September	Bacillariophyceae	Attheya	sp.	Single Cell	1000	6000	6000000
2022	SW-DUP-03	September	Chlorophyceae	Planctonema	lauterbornii	Filament	1000	1600	1600000
2022	SW-DUP-03	September	Chrysophyceae	Dinobryon	sp.	Single Cell	44000	540	23760000
2022	SW-DUP-03	September	Cyanophyceae	Aphanizomenon	sp.	Filament	6000	1280	7680000
2022	SW-DUP-03	September	Cyanophyceae	Aphanocapsa	sp.	Colony	15000	27000	405000000
2022	SW-DUP-03	September	Cryptophyceae	Unidentified		Single Cell	391000	324	126684000
2022	SW-DUP-03	September	Chlorophyceae	Kirchneriella	sp.	Colony	3000	8000	24000000
2022	SW-DUP-03	September	Bacillariophyceae	Stephanodiscus	sp.	Single Cell	2000	62500	125000000
2022	SW-DUP-03	September	Bacillariophyceae	Tabellaria	sp.	Single Cell	60000	2400	144000000
2022	SW-DUP-03	September	Chlorophyceae	Elakatothrix	sp.	Single Cell	5000	180	900000
2022	SW-DUP-03	September	Cyanophyceae	Merismopedia	sp.	Single Cell	157000	8	1256000
2022	SW-DUP-03	September	Chlorophyceae	Schroederia	sp.	Single Cell	15000	180	2700000
2022	SW-DUP-03	September	Chrysophyceae	small chrysophytes		Single Cell	313000	64	20032000
2022	SW-DUP-03	September	Chrysophyceae	Stichogloea	sp.	Colony	1000	8000	8000000

Attachment H Photographic Record

Site overview facing southwest of L-15 (August 2022)

DFO crew pulling in gillnets with fish

Lake Trout captured from gillnet

Field crews measuring and weighing fish

Plate H1-1: Broadscale Monitoring Surveys August 2022

L-1 site overview facing north (March 2021)

L-1 site overview facing northeast (August 2021)

L-5 site overview facing east (March 2021)

Coniferous forest surrounding L-5 (June 2021)

Plate H1-2: Sampling Location Lakes 1 and 5

Site overview facing west (June 2022)

Black bear on shore foraging (June 2022)

Flooded ATV trail at Lake 2 outflow to Springpole Lake (July 2022)

Channel leading to Springpole Lake from Lake 2 outflow (July 2022)

Plate H1-3: Sampling Location Lake 2

Lifting boat over dam on the edge of the Lake 16 (June 2022)

Looking down stream of dam at Lake 16, low flow stream (June 2022)

L-17 site overview facing west (May 2021)

L-17 site overview facing northeast (September 2021)

Plate H1-4: Lakes 16 and 17

Lake 18 Site overview with some mid-lake emergent vegetation (June 2022)

Island on NW section of Lake 18 (June 2022)

SW-09 site overview facing north (May 2021)

SW-09 site overview facing northeast (August 2021)

Plate H1-5: Lake 18 and SW-09

Small inlet discharging into Lake 19 (June 2022)

Small inlet discharging into Lake 19 (July 2022)

Site overview (June 2022)

Site overview (July 2022)

Plate H1-6: Sample Location Lake 19

Emergent aquatic vegetation along shoreline

Large emergent boulder facing shoreline

Exposed rock and burned trees line the shoreline

Rocky shoreline with mostly coniferous trees

Plate H1-7: Sample Location Birch Lake October 2022

Small beaver pond in Stream 16

Beaver dam with woody debris

Northern Pike captured via backpack electrofishing in mouth of Stream 16

Woody debris in Stream 16 channel

Plate H1-8: Stream 16 June 2022

Site overview looking towards a bay with a grassy shoreline

Site overview

Grasses and fen mats create flooded shoreline

Flooded shoreline with woody debris

Plate H1-9: Pike Spawning Habitat in Late Spring (June 2022)

Example of River Darter captured during surveys

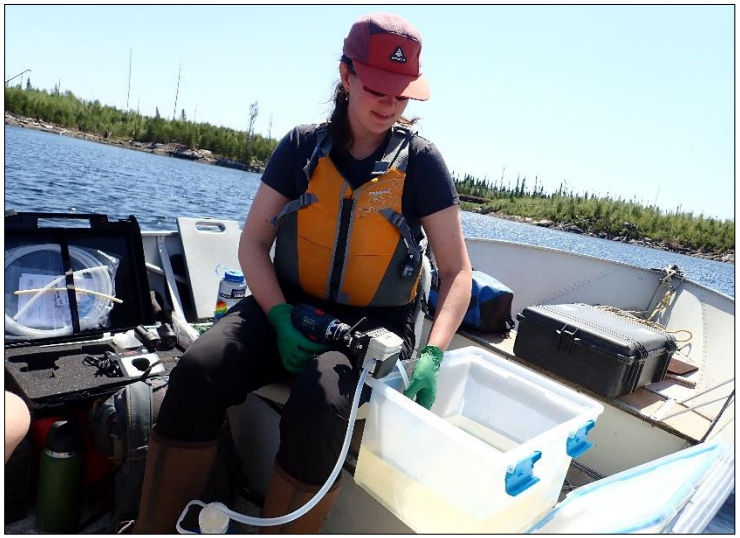
Example of Cisco captured during surveys

Example of Rock Bass captured during surveys

Bluntnose minnow captured during surveys

Plate H1-10: Examples of Fish Species Captured During Field Investigations

Potential Birch River (LS-eDNA-02) Lake Sturgeon Spawning Location (May 2023)



Sampling setup for eDNA (May 2023)

Pesew Falls (May 2023)

LS-eDNA-01 Sample Location (May 2023)

Plate H1-11: Spring Lake Sturgeon eDNA Sampling (May 2023)