

APPENDIX 9A

Berry Pit Expansion: 2022 Fish and Fish Habitat Data Report



**Berry Pit Expansion: 2022 Fish and
Fish Habitat Data Report**

Final Report

July 21, 2023

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BERRY PIT EXPANSION: 2022 FISH AND FISH HABITAT DATA REPORT

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Executive Summary

Marathon Gold Corporation (Marathon) contracted Stantec Consulting Ltd. (Stantec) to complete a Fish and Fish Habitat Study associated with the conceptual mine site layout for the proposed Berry Pit Expansion, including Berry Pit, Waste Rock Storage Area, and associated infrastructure (the Berry Pit Expansion). Field investigations were completed during August 2022 and built on previous studies completed to support the Valentine Gold Project (the Approved Project), conducted in 2011 and 2018 to 2021 (Stantec 2012, 2019, 2020, 2021, 2022a,b). The results of the 2022 Fish and Fish Habitat Study (and previous studies where appropriate) will be used to support the Environmental Registration / Environmental Assessment (EA) Update for the Berry Pit Expansion.

Gill netting and minnow trapping of representative bog holes that occur within the Berry Pit Expansion footprint resulted in no fish captures, despite substantial effort. These results confirm that fish are absent from bog holes within the Berry Pit Expansion. The results are consistent with fishing investigations of other bog holes on the Valentine Gold Property that have confirmed the absence of fish from bog holes (Stantec 2021).

The shoreline of Valentine Lake nearest the Berry Pit Expansion is stable, and substrate is primarily boulders and rubble, with little to no cover or aquatic vegetation. Streams surveyed near the Complex are small, shallow, headwater streams. Stream 37, which flows into Pond ValP2, contains fish habitat for stickleback in its lower 80 m reach. A natural barrier 80 m upstream of Pond ValP2 prevents stickleback from accessing the remaining watercourse upstream. No other fish species are present in Stream 37, which is consistent with the results of fishing activity conducted in 2012, which confirmed that Pond ValP2 contained stickleback only (Stantec 2012).

Stream 38 is a small rocky fish-bearing watercourse, 105 m in length and approximately 1 m wide, which drains into Valentine Lake. Brook trout were confirmed present in the lower 70 m of Stream 38 and fish can likely access the entire 105 m stream length during times of high flow.

Streams 39 and 40 were found to be overland drainage channels with no connectivity to Valentine Lake and were determined to not be fish habitat. Streams 41 and 42 were assessed as part of a desktop exercise and are categorized as fish habitat based on their connectivity to Pond ValP3. Stream 41 is approximately 90 m long and 1 m wide, while Stream 42 is approximately 50 m long and 4 m wide.



1.0 INTRODUCTION

Marathon Gold Corporation (Marathon) is currently developing the Valentine Gold Project (the Approved Project), an open pit gold mine near Valentine Lake, in central Newfoundland. The Approved Project is located approximately 57 km south of Buchans. Marathon is considering expanding the Approved Project through the development of the Berry Pit Expansion, consisting of the Berry pit, a waste rock pile, a topsoil stockpile, shared low grade ore and overburden stockpiles with the Marathon pit, and associated water management infrastructure.

Stantec Consulting Ltd. (Stantec) was retained by Marathon to conduct a number of environmental surveys of the proposed Berry Pit Expansion, including Aquatic Baseline Surveys. The results of the baseline surveys will be used to support the environmental assessment (EA) and permitting of the Berry Pit Expansion (Figure 1.1).

The 2022 Fish and Fish Habitat Study builds on previous aquatic environment studies conducted in 2011, 2018, 2019, 2020, and 2021 (Stantec 2012, 2019, 2020a,b, 2021, 2022). The 2022 Fish and Fish Habitat Study will determine fish presence/absence in streams and bog holes and provide fish habitat information on the shoreline of Valentine Lake potentially affected by the development of the Berry Pit Expansion.



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Stream ID	Description
1	Outlet of ValP3
2	ValP3 to M3
3	Inlet to M3
4	Inlet to M4
5	Outlet of M4
6	M5 to M6
7	M7 to M6
8	M1 to M7
9	Outlet of M7
10	Confluence with M7/M8 and Victoria River
11	Outlet of M8
13	Unnamed Tributary to Valentine Lake
14	Unnamed Tributary to Victoria River
15	Tributary flowing SW to VicP2 outflow
16	Falls to Victoria Lake
17	Outlet of VicP2 to Falls
18	VicP1 to VicP2
19	Val P1 to Val P2
20	ValP2 to Falls
21	Falls to Valentine Lake
26	Outlet of L1
27	Outlet of L2
28	Unnamed Tributary to Victoria Lake Reservoir
29	Unnamed Tributary to Victoria Lake Reservoir
30	Unnamed Tributary to Victoria Lake Reservoir
31	Unnamed Tributary to Victoria River
32	Unnamed Tributary to Victoria River
34	Unnamed Tributary to Victoria River
35	Outlet of Valentine Lake
36	Outlet of M2
37	Inlet to ValP2
38	Unnamed Tributary to Valentine Lake
39	Overland Drainage Channel
40	Overland Drainage Channel
41	Unnamed Tributary to ValP3
42	Unnamed Tributary to ValP3

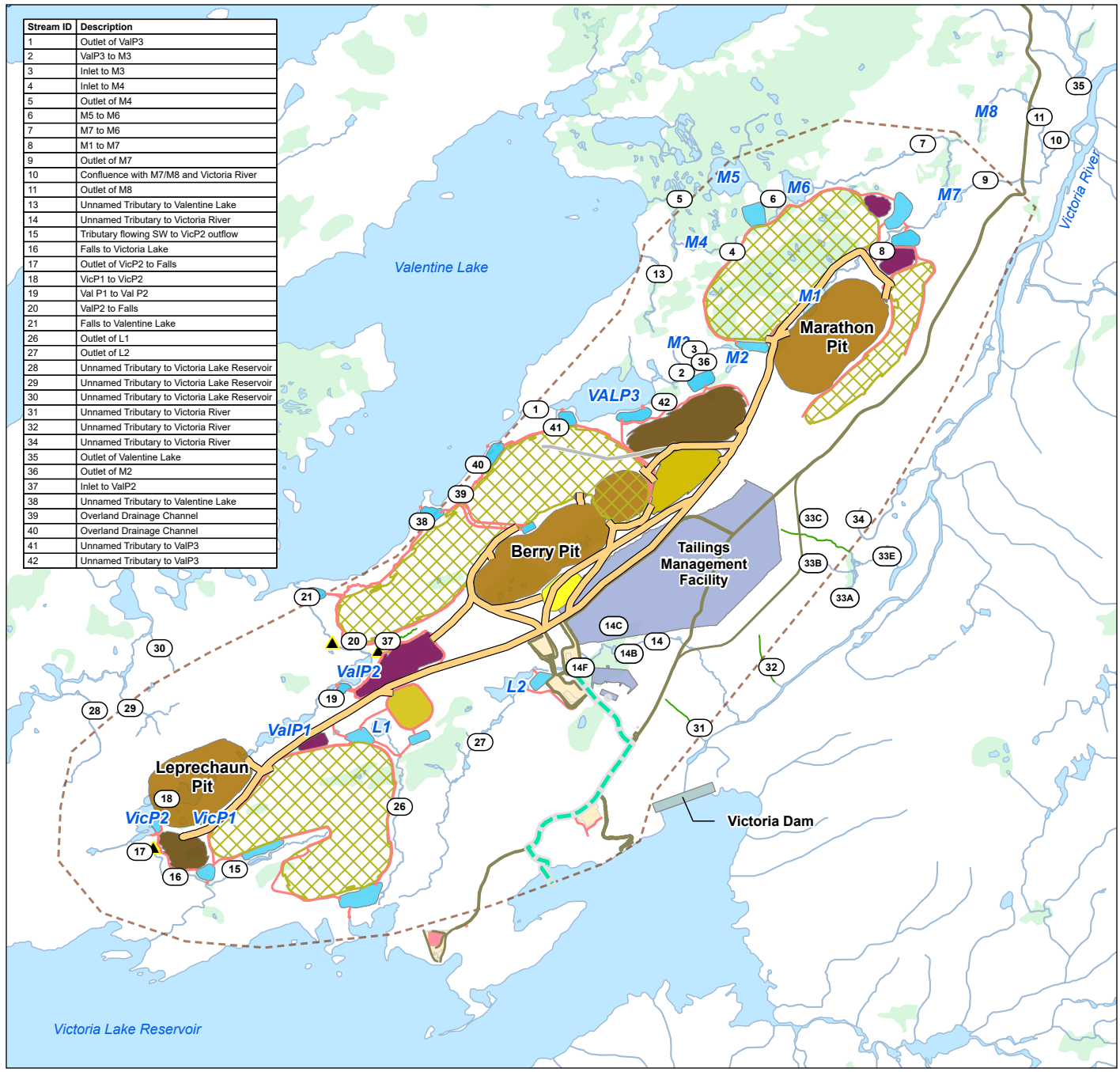
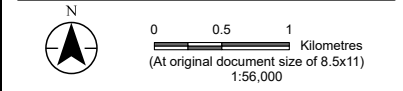


Figure No. **1.1**
Berry Complex and the Approved Valentine Gold Project Site Plan
 Client/Project: Marathon Gold Corporation 1214175555_005a
 Berry Complex Expansion
 2022 Fish and Fish Habitat Data Report
 Project Location: Valentine Lake
 Central Newfoundland, CA
 Prepared by NW on 2023-02-22



- Legend**
- # Watercourse ID
 - ▲ Fish Passage Barrier
 - Mine Site
- Mine Features**
- Haul Road Center
 - Other Road
 - Pipeline
 - Ditch / Drainage Channel
 - Open Pit
 - Overburden Stockpile
 - Low-grade Ore (LGO) Stockpile
 - High-grade Ore (HGO) Stockpile
 - Topsoil Stockpile
 - Waste Rock Pile
 - Tailings Management Facility
 - Explosives Facility
 - Other Mine Infrastructure
 - Sedimentation Pond
- Other Features**
- Watercourse
 - Channel Present - Not Fish Bearing
 - Waterbody
 - Wetland
 - Victoria Dam

Notes

1. Coordinate System: NAD 1983 UTM Zone 21N
2. Data Sources: Stantec, Marathon Gold Corp.
3. Background: Natural Resources Canada CanVec;



2.0 AQUATIC BACKGROUND AND REGULATORY CONTEXT

2.1 OBJECTIVES

The purpose of the 2022 Fish and Fish Habitat study is to:

- Conduct fish sampling to determine fish presence/absence within streams and isolated waterbodies (bog holes) in the Berry Pit Expansion
- Characterize fish habitat in streams and along the shoreline of Valentine Lake near the Berry Pit Expansion

2.2 REGULATORY CONTEXT

The data collected as part of the previous studies and the 2022 Study may be used to support regulatory processes in several ways:

- Support the assessment of potential interactions and environmental effects of the Berry Pit Expansion on the aquatic environment
- Identify fish bearing waters to support mine planning activities related to locating Berry Pit Expansion components to avoid waters frequented by fish, where feasible
- Support the determination of harmful alteration, disruption or destruction (HADD) of fish habitat and the requirement for offsetting under the *Fisheries Act* for streams and waterbodies affected by the Berry Pit Expansion



3.0 METHODS

The 2022 field study included fishing activities (electrofishing, gill netting, and minnow trapping) and habitat classification of water frequented by fish as described below. The field surveys for this study were completed between August 17 and 25, 2022.

3.1 STUDY AREA

The Study Area for the 2022 Fish and Fish Habitat Study is comprised of waterbodies and watercourses located within or in close proximity to the footprint of the proposed Berry Pit Expansion (Figure 3.1). For ease of reference, each stream and bog hole is given a descriptive name and identifying number on Figure 3.1. It should be noted that the conceptual layout for the Berry Pit Expansion continued to evolve throughout the summer and fall of 2022, and fieldwork was completed in advance of a finalized conceptual layout. The locations targeted for field investigation during the 2022 study were:

- Bog holes IT08, IT09, IT10, IT12 and IT13
- Streams 37, 38, 39 and 40
- The shoreline of Valentine Lake near the Berry Pit Expansion

In addition, Streams 41 and 42 were assessed as part of a desktop exercise to support the Berry Pit Expansion layout.



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Stream ID	Description
1	Outlet of ValP3
2	ValP3 to M3
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14	Unnamed Tributary to Victoria River
19	Val P1 to Val P2
20	ValP2 to Falls
21	Falls to Valentine Lake
27	Outlet of L2
31	Unnamed Tributary to Victoria River
36	Outlet of M2
37	Inlet to ValP2
38	Unnamed Tributary to Valentine Lake
41	Unnamed Tributary to ValP3
42	Unnamed Tributary to ValP3

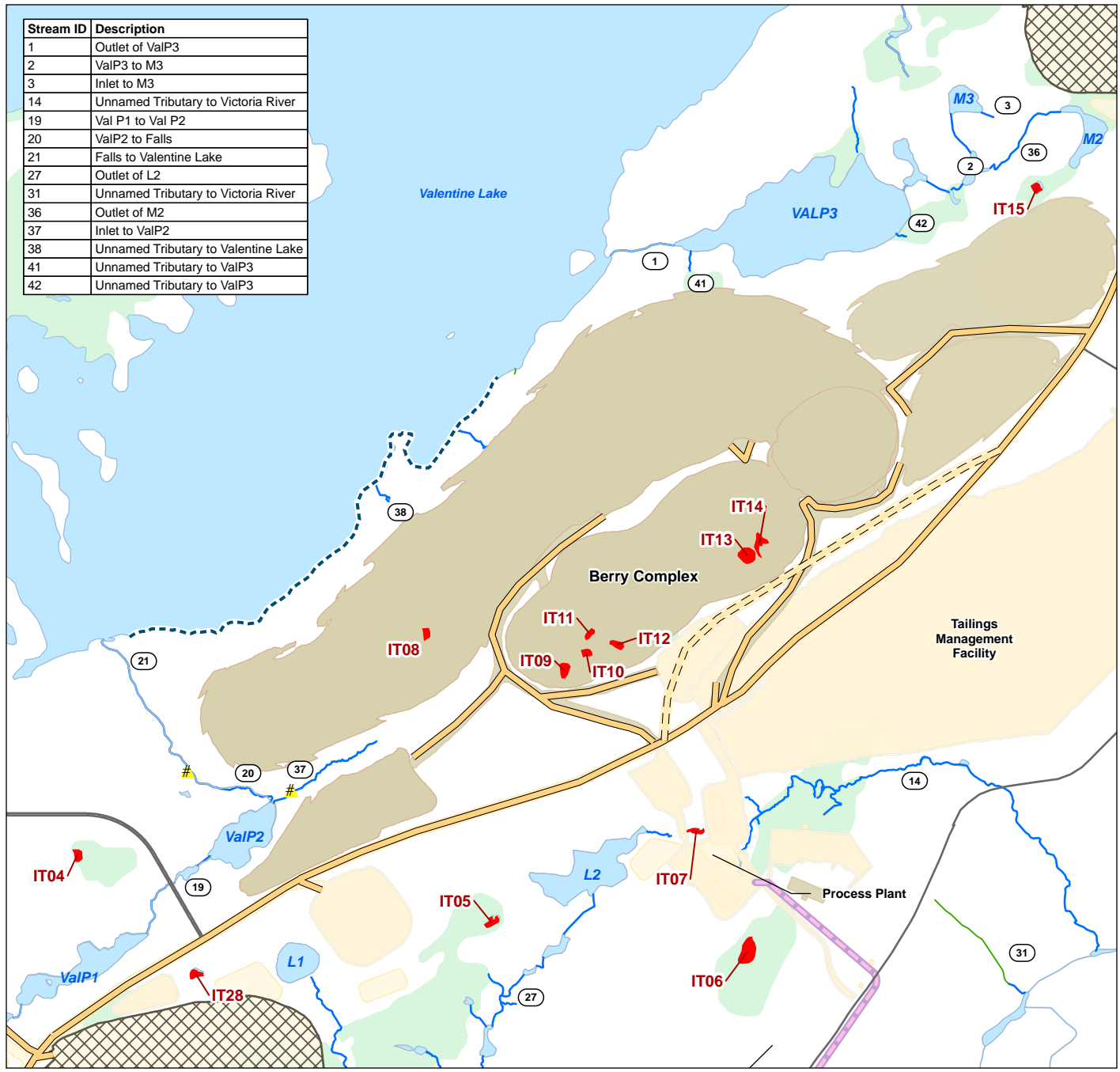
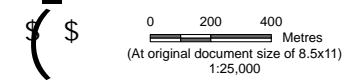
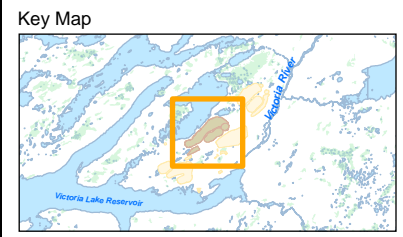


Figure No. **3.1**
Title
Fish and Fish Habitat Survey Areas

Client/Project: Marathon Gold Corporation 121417555_006b
 Berry Complex Expansion
 2022 Fish and Fish Habitat Data Report
 Project Location: Valentine Lake
 Central Newfoundland, CA
 Prepared by NW on 2023-02-22



- Legend**
- Watercourse ID
 - Fish Passage Barrier
 - Bog Hole
- Mine Features**
- Haul Road Center
 - Future Haul Road
 - Other Road
 - Pipeline
 - Berry Complex
 - Other Mine Infrastructure
- Other Features**
- Watercourse
 - Channel Present - Not Fish Bearing
 - Shoreline Survey Extent
 - Wetland
 - Waterbody



Notes

- Coordinate System: NAD 1983 UTM Zone 21N
- Data Sources: Stantec, Marathon Gold Corp.
- Background: Natural Resources Canada CanVec;



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3.2 FISH SAMPLING

Fishing was conducted according to methods described in Sooley et al. (1998) and conditions outlined in Experimental License NL-6821-22 obtained from Fisheries and Oceans Canada (DFO).

3.2.1 Bog Holes

Bog holes are isolated, small waterbodies, common around the Approved Project. During the EA of the Approved Project, a total of 28 bog holes were identified in the vicinity of the mine site. Seven of the 28 bog holes are within the footprint of the potential Berry Pit Expansion. An ice thickness survey was completed in March 2020 to determine if bog holes were frozen to the bottom, thereby excluding the possibility of fish presence, or if water was present below the ice, offering a possibility of fish presence (Stantec 2020a). Five bog holes had adequate water depth to potentially support fish populations, and these were fished to determine fish presence/absence; none contained fish (Stantec 2021). These results were sufficient for DFO to determine that bog holes within and adjacent to the Approved Project were not fish habitat. Although not required, Marathon chose to conduct additional fish sampling of bog holes within the footprint of the Berry Pit Expansion, to definitively determine fish presence/absence.

3.2.1.1 Bog Hole Selection for Additional Fish Sampling

The results of the 2020 Ice Thickness Survey (Table 3.1; Stantec 2020a) were used to determine which of the seven bog holes within the Berry Pit Expansion had potential to contain fish; five of the bog holes (IT08, IT09, IT10, IT12, and IT13) had adequate total water depth (in excess of 80 cm), while two (IT11 and IT14) did not. Given the potential to overprint these bog holes with Berry Pit Expansion features, these five bog holes were selected for fish sampling in 2022. Field investigation identified that bog holes IT09 and IT10 were connected, so IT09 was selected for fish sampling.

Table 3.1 Ice Thickness, Water Depth Below Ice, and Total Depth for Bog Holes in the Berry Pit Expansion (from Stantec 2020a)

Location	Ice Thickness (cm)	Water Depth Below Ice (cm)	Total Bog Hole Depth (cm)
IT08	54.5	35.5	90
IT09	71	18	89
IT10	73	16	89
IT11	64.5	3.5	68
IT12	73.5	31.5	105
IT13	56	32	88
IT14	63	0	63



3.2.1.2 Bog Hole Fishing Methods

Fish sampling of bog holes was conducted using minnow traps and gill nets. Two gill nets, one consisting of a 15 m panel with 25 mm mesh size, and the other 15 m panel with 38 mm mesh size, were deployed in each bog hole (except IT09/IT10 which was fished by 25 mm mesh, only) by stringing the gill net across the bog hole using a rope (Photo 1). A minnow trap baited with cat food was also set at each bog hole (Photo 2), with the exception of IT09/10. The gill nets and minnow trap were fished for two to three consecutive days.



Photo 1 Gill Net Set in Bog Hole



Photo 2 Minnow Trap Set in Bog Hole

3.2.2 Streams

Fish sampling in streams was conducted by index (qualitative) electrofishing using a backpack electrofishing unit (Smith Root LR-24). Electrofishing was conducted at Streams 37, 38, 39 and 40. The time fished at each stream section was recorded. Captured fish were measured (with a representative number weighed), identified to species, and released alive. Fish data obtained from the sampling are included in Appendix A.

3.3 FISH HABITAT CLASSIFICATION

3.3.1 Streams

Stream habitat was classified according to methods outlined in McCarthy et al. (2007 Draft) “*Standard Methods Guide for the Classification of Riverine Habitats in Newfoundland and Labrador*”. Streams 37, 38, 39 and 40 were classified on the ground by walking the stream length. Streams 40 and 41 were classified as part of a desktop exercise using available LiDAR and aerial imagery.



BERRY PIT EXPANSION: 2022 FISH AND FISH HABITAT DATA REPORT

Field delineated streams were characterized by obtaining velocity measurements and depth readings at $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of the stream width within approximately 50 m reaches/segments of the stream. Within each 50 m segment the habitat was described based on substrate type, mesohabitat type, stream gradient, riparian vegetation, and cover. Detailed stream habitat information is provided in Appendix B. Photos looking upstream (US) and downstream (DS) were taken within each stream segment at representative locations and GPS coordinates were recorded. Potential barriers to fish migration were noted, photographed and georeferenced. Representative photographs are included in Appendix C.

In situ water quality measurements including temperature, pH and conductivity were collected in Stream 37 with a YSI2030 water quality meter.

3.3.2 Lake

Lacustrine (lake) habitat classification along the shoreline of Valentine Lake was conducted according to methods described in the “*Standard Methods Guide for the Classification/Quantification of Lacustrine Habitat in Newfoundland and Labrador*” (Bradbury et al. 2001) and included classification based on substrate type and amount of aquatic vegetation. Each 100 m section of the shoreline was described based on substrate type, mesohabitat type, riparian vegetation, and cover. Photos were taken facing northeast and southwest along the shore.

Detailed lake habitat information is provided in Appendix B and photographs taken at each location are provided in Appendix C

4.0 RESULTS

4.1 FISH SAMPLING

Bog holes and stream sections were fished to determine the fish species present and to determine if these areas are fish habitat.

4.1.1 Bog Holes

Four bog holes (IT08, IT09/IT10, IT12, and IT13) were fished by use of gill nets and minnow traps. Fishing effort is summarized in Table 4.1. No fish were captured in the bog holes. The fish sampling conducted confirmed that fish were not present in IT08, IT09/IT10, IT12 and IT13. These results are consistent with those of previous fishing effort conducted in bog holes (Stantec 2021) and demonstrates that fish are absent from bog holes within the proposed Berry Pit Expansion and from other bog holes in proximity to the Approved Project.



Table 4.1 Summary of 2022 Fish Sampling by Gear Type in Bog Holes

Bog Hole	Gear	Effort (hours)	Total Catch
IT08	Gill net	145.6	0
	Minnow trap	72.6	0
IT09/IT10	Gill net	72.3	0
IT12	Gill net	144	0
	Minnow trap	72.1	0
IT13	Gill net	145	0
	Minnow trap	72.1	0

4.1.2 Streams

The fishing effort and catch for the four streams fished in 2022 are summarized in Table 4.2. Detailed fish sampling data are provided in Appendix A.

Of the four streams sampled, brook trout (Photo 3) were confirmed to be present only in Stream 38. Although no threespine stickleback were captured in the streams fished, they were observed in the lower reach of Stream 37, downstream of a small (0.40 m) natural falls that presents a complete barrier for stickleback passage. No fish species at risk were captured in streams in the Study Area.



Photo 3 Photo of Representative Brook Trout

Table 4.2 Summary of 2022 Fish Sampling in Streams 2022

Location	Gear Type	Effort	Count	Brook Trout Fork Length (mm)			All Species CPUE (#fish/100 seconds)
				Minimum	Average	Maximum	
Stream 37	EF	544 seconds	0	-	-	-	0
	MT	95.8 hours	0	-	-	-	0
Stream 38	EF	374 seconds	8	45	60	89	2.1
Stream 39	EF	144 seconds	0	-	-	-	0
Stream 40	EF	40 seconds	0	-	-	-	0

Note:
 EF = Electrofishing; MT = Minnow Trap
 CPUE = Catch per unit of effort



4.2 FISH HABITAT CLASSIFICATION

4.2.1 Streams

Fish habitat was classified for six streams that are within the footprint of the Berry Pit Expansion. Four were surveyed in the field and two were assessed using desktop aerial imagery. These streams were generally small (<2 m wide) and shallow (<0.5 m) or were ephemeral. A summary of habitat characteristics for streams surveyed in 2022 is provided in Table 4.3. The complete stream habitat classification data set is included in Appendix B, and representative photos are provided in Appendix C.

Stream 37 is a small headwater stream draining a bog into pond ValP2. The headwaters consist of pools of disconnected wetland seepage that are not fish habitat. The downstream reaches of the watercourse consist of shallow riffles and mostly cobble substrate. Approximately 80 m upstream of the confluence with ValP2, a 0.4 m high natural falls presents a barrier to fish passage for stickleback (the only species present in this stream). Stream 37 had a water temperature of 17.4°C, dissolved oxygen of 9.1 mg/L, conductivity of 56.6 µS/cm, and pH of 7.73.

Stream 38 is a small and rocky fish-bearing watercourse, 105 m in length, which drains into Valentine Lake. The lower 70 m is composed mainly of shallow riffles and runs, and generally has steep slopes and minimal in-stream cover. The upper heavily braided reaches consist of intermittent channels, likely accessible to fish during higher flow events.

Streams 39 and 40 are overland drainage channels with no connectivity to Valentine Lake. There was heavy rainfall prior to surveys and only Stream 39 had visible flow. Several other overland drainages with defined or undefined channels occur along the shoreline of Valentine Lake; these had steep slopes (greater than 20%) and no connectivity with Valentine Lake, and therefore do not constitute fish habitat.

In addition to the streams that were subject to ground truthing, Streams 41 and 42 were assessed as part of a desktop exercise using available aerial imagery and LiDAR. Stream 41 originates from a bog and flows for approximately 90 m, emptying into ValP3. Based on aerial imagery, Stream 41 consists of a single narrow reach (approximately 1 m in width). It consists of riffle/run habitat and coarse substrates (i.e., cobble and boulder). Aerial imagery indicates there is connectivity with ValP3 and therefore Stream 41 is assumed to be fish habitat.

Stream 42 flows approximately 50 m from a bog into ValP3. Based on aerial imagery, the stream consists of a single narrow reach (approximately 4 m in width). It likely consists of slow-flowing glide habitat and fine substrates. Aerial imagery indicates there is connectivity with ValP3 and therefore Stream 42 is assumed to be fish habitat.

Figure 4.1 provides the habitat characteristics of streams assessed as part of the 2022 Fish and Fish Habitat Surveys and identifies whether the streams are considered fish bearing.



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Stream ID	Description
1	Outlet of ValP3
2	ValP3 to M3
3	Inlet to M3
14	Unnamed Tributary to Victoria River
19	Val P1 to Val P2
20	ValP2 to Falls
21	Falls to Valentine Lake
27	Outlet of L2
31	Unnamed Tributary to Victoria River
36	Outlet of M2
37	Inlet to ValP2
38	Unnamed Tributary to Valentine Lake
41	Unnamed Tributary to ValP3
42	Unnamed Tributary to ValP3

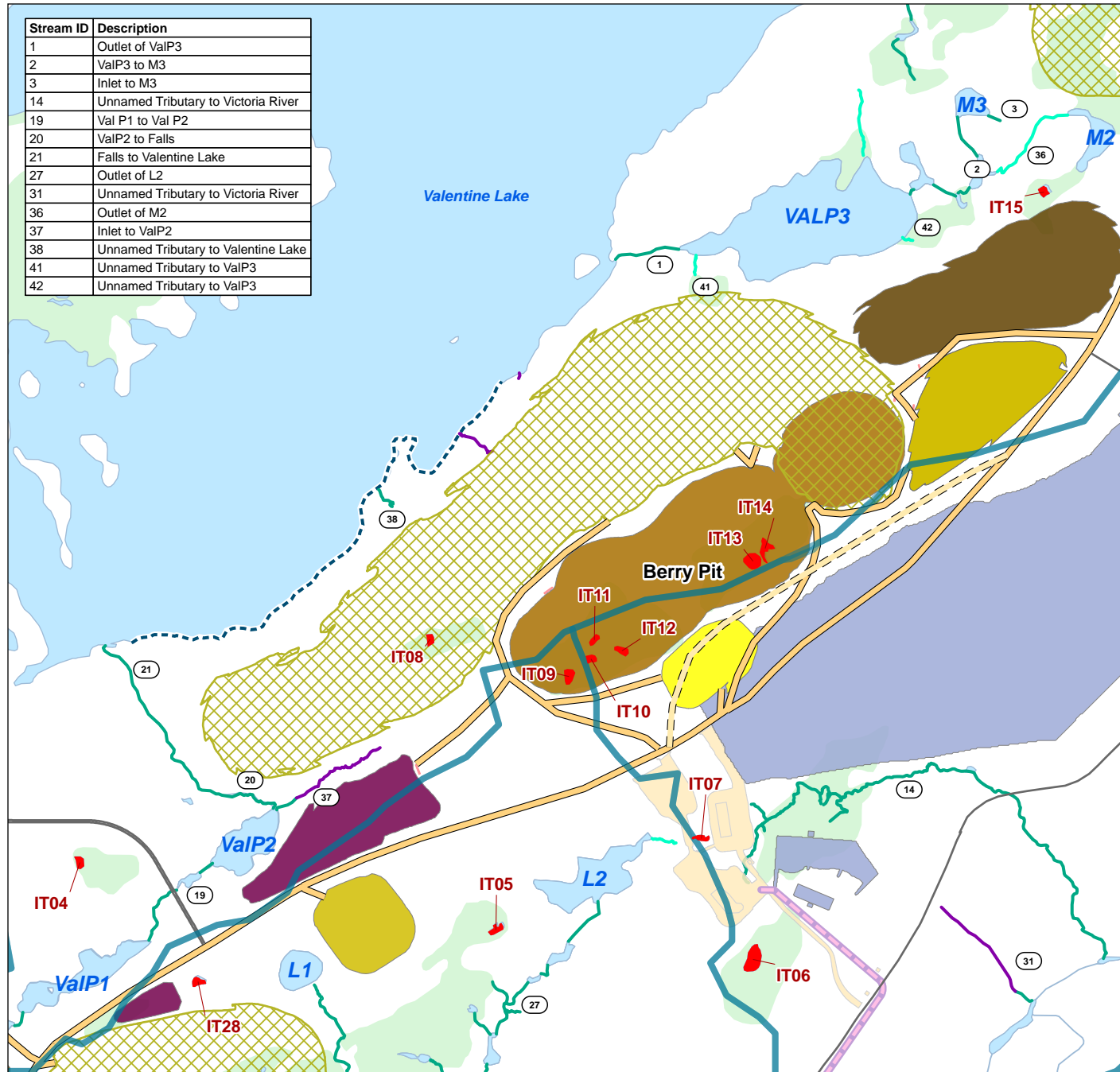


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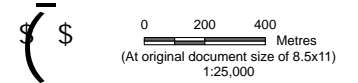
4.1

Title

Streams In Proximity to the Berry Complex

Client/Project: Marathon Gold Corporation 121417555_007a
 Berry Complex Expansion
 2022 Fish and Fish Habitat Data Report

Project Location: Valentine Lake
 Central Newfoundland, CA
 Prepared by NW on 2023-02-22



Legend

Watercourse and Waterbody Fish Bearing / Habitat Status

- Assumed Fish Bearing
- Confirmed Fish Bearing
- Channel Present - Not Fish Bearing
- Shoreline Survey Extent
- V Watercourse ID
- Watercourse
- Waterbody
- Watershed Boundary
- Wetland
- Bog Hole

Mine Features

- Haul Road Center
- Future Haul Road
- Other Road
- Pipeline
- Open Pit
- Topsoil Stockpile
- Overburden Stockpile
- Low-grade Ore (LGO) Stockpile
- High-grade Ore (HGO) Stockpile
- Waste Rock Pile
- Tailings Management Facility
- Other Mine Infrastructure

Notes

1. Coordinate System: NAD 1983 UTM Zone 21N
2. Data Sources: Stantec, Marathon Gold Corp.
3. Background: Natural Resources Canada CanVec;



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Table 4.3 Summary of Habitat Characteristics for Streams in Proximity to the Berry Pit Expansion

Location	Wetted Stream Width (m)	Channel Stream Width (m)	Mean Depth (m)	Average Slope (%)	Dominant Habitat Type	Dominant Substrate Type	Dominant Riparian Vegetation	Average Overhead Cover	Average Instream Cover	Comments
Stream 37	0.86	1.21	0.14	1.0	Riffle (65%)	Rubble (50%)	Grass (40%)	0%	0%	Small headwater stream draining a bog into pond ValP2. Headwaters consist of pools of disconnected wetland seepage with observed manganese and iron precipitate. Lower 80 m reach confirmed to be fish habitat (stickleback observed). A barrier is present 80 m upstream of confluence with ValP2. Upstream of the barrier was confirmed to not be fish habitat.
Stream 38	0.93	1.26	0.14	1.3	Flat (~55%)	Muck (42%)	Trees (43%)	~45%	~5%	Small, rocky watercourse that drains from a bog into Valentine Lake, confirmed to be fish habitat.
Stream 39	1.23	1.47	0.03	5	Riffle (~60%)	Boulder (59%)	Shrub (48%)	~45%	0%	Small, rocky stream with very low flow, confirmed to not be fish habitat.
Stream 40	Not fish habitat. Overland drainage channel with no flow for approximately 20 m upstream of the confluence with Valentine Lake. Headwater stream.									
Stream 41	Fish habitat. Small stream with connectivity to pond ValP3.									
Stream 42	Fish habitat. Small stream with connectivity to pond ValP3.									



4.2.2 Valentine Lake Shoreline

Approximately 2.5 kilometres of the Valentine Lake shoreline was characterized during the 2022 habitat survey due to its proximity to the Berry Pit Expansion. The shoreline bank is stable and the substrate is dominated by boulders (greater than 25 cm in size; 47%), followed by rubble (14-25 cm; 33%). The shoreline riparian vegetation is comprised of shrubs (44%), trees (41%) and grasses (15%). There is no overhead cover and aquatic vegetation is sparse.

Representative photos are provided in Appendix C and the shoreline lake habitat classification data is included in Appendix B.

5.0 SUMMARY

Fish sampling confirmed that bog holes within the Berry Pit Expansion are fishless. This is consistent with the results of previous fish sampling conducted in bog holes (Stantec 2021).

Of the four streams surveyed on the ground, only Stream 38 contained brook trout. Stream 37 contained threespine stickleback in the lower portion of the stream near ValP2; however, no stickleback were found upstream of a barrier located 80 m upstream from ValP2, despite substantial fishing effort. Streams 39 and 40 were overland drainage channels with no connectivity to Valentine Lake and no fish were confirmed to be present; therefore Streams 39 and 40 do not constitute fish habitat.

Streams 41 and 42 were assessed using available imagery, have connectivity to ValP3, and are assumed to be fish bearing. The shoreline of Valentine Lake is stable and composed of boulders and rubble, with no overhead cover and sparse aquatic vegetation. The riparian zone consists mostly of shrubs and conifers.



6.0 REFERENCES

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APPENDIX A

Fish Sampling Data

Table A.1 Raw Fish Sampling Data 2022
Berry Pit 2022 Fish and Fish Habitat Survey
Stantec Project No: 121417555

Fishing Method	Coordinates	Site	Location	Start Date	End Date	Fishing Time	Species	Count	L (mm)	W (g)	K	Comment
EF	48.370773, -57.153525	Stream 37	EF-37	2022-08-17	2022-08-17	544 seconds	-	0	-	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	55	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	66	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	56	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	54	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	65	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	45	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	50	-	-	
EF	48.380231, -57.153838	Stream 38	EF-01	2022-08-17	2022-08-17	374 seconds	Brook Trout (<i>Salvelinus fontinalis</i>)	1	89	-	-	
EF	48.382427, -57.148918	Stream 39	EF-39	2022-08-26	2022-08-26	144 seconds	-	0	-	-	-	
EF	48.384641, -57.145592	Stream 40	EF-40	2022-08-26	2022-08-26	40 seconds	-	0	-	-	-	
GN	48.374632, -57.150467	IT-08	GN-01	2022-08-17	2022-08-20	4365 minutes	-	0	-	-	-	25 mm mesh
GN	48.374851, -57.150909	IT-08	GN-02	2022-08-17	2022-08-20	4365 minutes	-	0	-	-	-	38 mm mesh
GN	48.373448, -57.143136	IT-09	GN-03	2022-08-17	2022-08-20	4340 minutes	-	0	-	-	-	38 mm mesh
GN	48.374497, -57.139876	IT-12	GN-04	2022-08-17	2022-08-20	4320 minutes	-	0	-	-	-	25 mm mesh
GN	48.374304, -57.140192	IT-12	GN-05	2022-08-17	2022-08-20	4320 minutes	-	0	-	-	-	38 mm mesh
GN	48.377952, -57.132409	IT-13	GN-06	2022-08-17	2022-08-20	4335 minutes	-	0	-	-	-	25 mm mesh
GN	48.377633, -57.133003	IT-13	GN-07	2022-08-17	2022-08-20	4360 minutes	-	0	-	-	-	38 mm mesh
GN	48.378066, -57.131996	IT-14	GN-08	2022-08-17	2022-08-20	5750 minutes	-	0	-	-	-	38 mm mesh
GN	48.37823, -57.1317	IT-14	GN-09	2022-08-17	2022-08-20	5700 minutes	-	0	-	-	-	25 mm mesh
MT	48.374772, -57.150525	IT-08	MT-01	2022-08-17	2022-08-20	4355 minutes	-	0	-	-	-	
MT	48.374151, -57.139964	IT-12	MT-02	2022-08-17	2022-08-20	4325 minutes	-	0	-	-	-	
MT	48.377392, -57.132563	IT-13	MT-03	2022-08-17	2022-08-20	4360 minutes	-	0	-	-	-	
MT	48.368857, -57.158061	Stream 37	MT-01	2022-08-24	2022-08-25	1385 minutes	-	0	-	-	-	
MT	48.369608, -57.156563	Stream 37	MT-02	2022-08-24	2022-08-25	1455 minutes	-	0	-	-	-	
MT	48.369827, -57.156101	Stream 37	MT-03	2022-08-24	2022-08-25	1450 minutes	-	0	-	-	-	
MT	48.370067, -57.154909	Stream 37	MT-04	2022-08-24	2022-08-25	1450 minutes	-	0	-	-	-	

APPENDIX B

Stream and Lake Habitat Classification Data

Table B.1 Stream Habitat Data
Berry Pit: 2022 Fish and Fish Habitat Data Report
File: 121417555

Waterbody	Sub-Section	Distance (m)	FIL Habitat Unit Number	Coordinates		Wetted Stream Width (m)	Channel Stream Width (m)	Mean Depth (m)			Velocity ² (m/s)			Slope
				Latitude	Longitude			1/4	1/2	3/4	1/4	1/2	3/4	
Stream 37	250 to 300 m US	50	80525	48.369631	-57.156489	0.76	1.21	0.08	0.3	0.3	-	-	-	2
Stream 37	350 to 400 m US	50	80526	48.369993	-57.155204	0.74	1.23	0.25	0.23	0.15	-	-	-	0.5
Stream 37	300 to 350 m US	50	80527	48.369898	-57.155897	1.01	1.25	0.24	0.25	0.17	-	-	-	0.5
Stream 37	100 to 150 m US	50	80528	48.368806	-57.158099	0.63	1.03	0.05	0.08	0.15	-	-	-	4
Stream 37	500 to 515 m US	15	80529	48.370613	-57.153591	Pools of disconnected wetland seepage. Not fish habitat								
Stream 37	450 to 500 m US	50	80530	48.370319	-57.154174	0.63	1.13	0.02	0.1	0.05	0.17	0.14	0.09	0.5
Stream 37	200 to 250 m US	50	80531	48.36925	-57.156906	0.63	0.98	0.07	0.11	0.1	-	-	-	ND
Stream 37	50 to 100 m US	50	80532	48.368796	-57.158176	0.41	0.9	0.07	0.07	0.04	0.25	0.20	0.17	1
Stream 37	150 to 200 m US	50	80533	48.36901	-57.157531	1.68	1.98	0.12	0.2	0.15	0.11	0.11	0.10	4
Stream 37	0 to 50 m US	50	80534	48.368395	-57.159265	1.92	1.95	0.17	0.13	0.12	-	-	-	0.5
Stream 37	400 to 450 m US	50	80535	48.370133	-57.154664	1.19	1.32	0.25	0.28	0.13	Insufficient flow			0.5
Stream 38	80 to 105 m US	25	80470	48.379713	-57.152759	0.51	0.88	0.22	0.22	0.2	-	-	-	1
Stream 38	50 to 95 m US	45	80471	48.37995	-57.153211	1.14	1.35	0.08	0.22	0.18	0.04	0.03	0.03	1
Stream 38	0 to 50 m US	50	80472	48.380357	-57.153539	0.93	1.41	0.09	0.06	0.03	0.20	0.20	0.17	2
Stream 39	150 to 200 m US	50	80581	48.381792	-57.147405	ND	ND	ND	ND	ND	-	-	-	ND
Stream 39	0 to 50 m US	50	80582	48.382451	-57.149	0.9	1.18	0.07	0	0.02	-	-	-	5
Stream 39	50 to 100 m US	50	80583	48.382312	-57.148426	ND	ND	ND	ND	ND	-	-	-	ND
Stream 39	100 to 150 m US	50	80584	48.382033	-57.147879	1.56	1.75	0.05	0.02	0.02	-	-	-	5

Note:
- water velocity measurement not collected as water depth was too shallow.
ND Data not collected.

Table B.1 Stream Habitat Data
Berry Pit: 2022 Fish and Fish Habitat Data Report
File: 121417555

Waterbody	Sub-Section	Distance (m)	FIL Habitat Unit Number	Coordinates		Habitat Type (%)			Substrate (%)							
				Latitude	Longitude	Riffle/Run	Pool	Flat	Muck	Silt	Sand	Gravel	Cobble	Rubble	Boulder	Bedrock
Stream 37	250 to 300 m US	50	80525	48.369631	-57.156489	95	5	0	10	10	0	0	0	15	65	0
Stream 37	350 to 400 m US	50	80526	48.369993	-57.155204	0	0	100	100	0	0	0	0	0	0	0
Stream 37	300 to 350 m US	50	80527	48.369898	-57.155897	0	0	100	100	0	0	0	0	0	0	0
Stream 37	100 to 150 m US	50	80528	48.368806	-57.158099	100	0	0	0	10	0	0	10	15	65	0
Stream 37	500 to 515 m US	15	80529	48.370613	-57.153591	0	0	100	100	0	0	0	0	0	0	0
Stream 37	450 to 500 m US	50	80530	48.370319	-57.154174	0	0	100	100	0	0	0	0	0	0	0
Stream 37	200 to 250 m US	50	80531	48.36925	-57.156906	100	0	0	0	10	0	5	5	15	65	0
Stream 37	50 to 100 m US	50	80532	48.368796	-57.158176	100	0	0	0	10	0	0	0	25	65	0
Stream 37	150 to 200 m US	50	80533	48.36901	-57.157531	100	0	0	0	10	0	0	5	15	70	0
Stream 37	0 to 50 m US	50	80534	48.368395	-57.159265	90	0	10	0	0	0	0	0	25	75	0
Stream 37	400 to 450 m US	50	80535	48.370133	-57.154664	0	0	100	100	0	0	0	0	0	0	0
Stream 38	80 to 105 m US	25	80470	48.379713	-57.152759	Braided intermittent channel			Braided intermittent channel							
Stream 38	50 to 95 m US	45	80471	48.37995	-57.153211	90	10	0	0	0	0	10	10	50	30	0
Stream 38	0 to 50 m US	50	80472	48.380357	-57.153539	90	10	0	0	0	0	10	10	50	30	0
Stream 39	150 to 200 m US	50	80581	48.381792	-57.147405	100	0	0	0	5	0	10	5	10	70	0
Stream 39	0 to 50 m US	50	80582	48.382451	-57.149	70	0	30	0	25	25	5	0	10	35	0
Stream 39	50 to 100 m US	50	80583	48.382312	-57.148426	70	0	30	0	10	5	5	10	20	50	0
Stream 39	100 to 150 m US	50	80584	48.382033	-57.147879	100	0	0	0	5	0	10	5	10	75	0

Note:
- water velocity measurement not collected as water depth was too shallow.
ND Data not collected.

Table B.1 Stream Habitat Data

Berry Pit: 2022 Fish and Fish Habitat Data Report

File: 121417555

Waterbody	Sub-Section	Distance (m)	FIL Habitat Unit Number	Coordinates		Riparian Vegetation (%)			Overhead Cover (%)	Instream Cover (%)	Comments
				Latitude	Longitude	Grass	Shrub	Trees			
Stream 37	250 to 300 m US	50	80525	48.369631	-57.156489	10	35	55	40	10	Braided
Stream 37	350 to 400 m US	50	80526	48.369993	-57.155204	30	30	40	20	0	Iron precipitate
Stream 37	300 to 350 m US	50	80527	48.369898	-57.155897	30	30	40	20	0	Iron precipitate
Stream 37	100 to 150 m US	50	80528	48.368806	-57.158099	20	30	50	40	10	Channel braids at 37m
Stream 37	500 to 515 m US	15	80529	48.370613	-57.153591	30	30	40	20	0	Iron precipitate, manganese, very unlikely fish habitat, pools of disconnected wetland seepage, end of visible connected pools
Stream 37	450 to 500 m US	50	80530	48.370319	-57.154174	30	30	40	20	0	Iron precipitate, manganese, very unlikely fish habitat, pools of disconnected wetland seepage
Stream 37	200 to 250 m US	50	80531	48.36925	-57.156906	10	35	55	40	10	Braided
Stream 37	50 to 100 m US	50	80532	48.368796	-57.158176	10	60	30	60	15	Log jam created a barrier to fish passage which prevents fish from accessing upstream. From here upstream is not fish habitat.
Stream 37	150 to 200 m US	50	80533	48.36901	-57.157531	10	35	55	40	10	Braided
Stream 37	0 to 50 m US	50	80534	48.368395	-57.159265	10	60	30	60	15	Sticklebacks observed
Stream 37	400 to 450 m US	50	80535	48.370133	-57.154664	30	30	40	20	0	Iron precipitate, manganese
Stream 38	80 to 105 m US	25	80470	48.379713	-57.152759	Braided intermittent channel				0	Braided intermittent channel.
Stream 38	50 to 95 m US	45	80471	48.37995	-57.153211	40	30	30	60	0	Bottom half is rocky and top through bog, as delineated flows around tree and rejoins off side hill. Braided intermittent channel.
Stream 38	0 to 50 m US	50	80472	48.380357	-57.153539	40	30	30	60	0	Bottom half is rocky and top through bog
Stream 39	150 to 200 m US	50	80581	48.381792	-57.147405	15	45	40	50	15	
Stream 39	0 to 50 m US	50	80582	48.382451	-57.149	10	50	40	60	15	70 cm drop at shoreline. 47 slope
Stream 39	50 to 100 m US	50	80583	48.382312	-57.148426	10	50	40	60	15	
Stream 39	100 to 150 m US	50	80584	48.382033	-57.147879	15	45	40	50	15	

Note:

- water velocity measurement not collected as water depth was too shallow.

ND Data not collected.

Table B.2 Lake Shoreline Habitat Data
Berry Pit Expansion: 2022 Fish and Fish Habitat Data Report
 File: 121417355

Waterbody	Habitat Unit Number	Latitude	Longitude	Stream Sub-Section	Survey Date (UTC)	Riparian Bare (%/bank)	Riparian Grass (%/bank)	Riparian Shrub (%/bank)	Riparian Trees (%/bank)	Riparian Wetland (%/bank)	Riparian Bank Stability	Muck (%/100)	Silt (%/100) <0.06mm	Sand (%/100) 0.06-2 mm	Gravel (%/100) 2-30 mm
Valentine Lake	1	48.374589	-57.167373	0 to 100 m NE	2022-08-25	0	5	60	35	0	Stable	0	0	5	10
Valentine Lake	2	48.374901	-57.166079	100 to 200 m NE	2022-08-25	0	0	50	50	0	Stable	0	0	0	5
Valentine Lake	3	48.374864	-57.164693	200 to 300 m NE	2022-08-25	0	10	40	50	0	Stable	0	0	0	0
Valentine Lake	4	48.37479	-57.163544	300 to 400 m NE	2022-08-25	0	10	40	50	0	Stable	0	0	0	0
Valentine Lake	5	48.374818	-57.162185	400 to 500 m NE	2022-08-25	0	30	30	40	0	Stable	0	0	0	0
Valentine Lake	6	48.375148	-57.161102	500 to 600 m NE	2022-08-25	0	30	30	40	0	Stable	0	0	5	10
Valentine Lake	7	48.375336	-57.159927	600 to 700 m NE	2022-08-25	0	0	60	40	0	Stable	0	0	0	0
Valentine Lake	8	48.375953	-57.158962	700 to 800 m NE	2022-08-25	0	5	55	40	0	Stable	0	0	0	0
Valentine Lake	9	48.376602	-57.157884	800 to 900 m NE	2022-08-25	0	45	45	10	0	Stable	0	0	0	0
Valentine Lake	10	48.377207	-57.156909	900 to 1000 m NE	2022-08-25	0	5	85	10	0	Stable	0	0	0	0
Valentine Lake	11	48.377777	-57.155819	1000 to 1100 m NE	2022-08-25	0	0	20	80	0	Stable	0	0	20	20
Valentine Lake	12	48.37839	-57.154804	1100 to 1200 m NE	2022-08-25	0	0	30	70	0	Stable	0	0	0	0
Valentine Lake	13	48.379222	-57.154473	1200 to 1300 m NE	2022-08-25	0	20	50	30	0	Stable	0	0	0	0
Valentine Lake	14	48.380092	-57.154232	1300 to 1400 m NE	2022-08-25	0	10	40	50	0	Stable	0	0	0	0
Valentine Lake	15	48.380665	-57.153194	1400 to 1500 m NE	2022-08-25	0	10	30	60	0	Stable	0	0	0	5
Valentine Lake	16	48.38146	-57.152675	1500 to 1600 m NE	2022-08-25	0	0	40	60	0	Stable	0	0	0	0
Valentine Lake	17	48.382263	-57.152405	1600 to 1700 m NE	2022-08-25	0	10	40	50	0	Stable	0	0	0	0
Valentine Lake	18	48.382035	-57.151585	1700 to 1800 m NE	2022-08-25	0	10	10	80	0	Stable	0	40	0	0
Valentine Lake	19	48.381243	-57.151631	1800 to 1900 m NE	2022-08-25	0	30	40	30	0	Stable	0	20	0	0
Valentine Lake	20	48.381024	-57.150424	1900 to 2000 m NE	2022-08-25	0	30	40	30	0	Stable	0	0	0	0
Valentine Lake	21	48.381764	-57.149629	2000 to 2100 m NE	2022-08-25	0	30	40	30	0	Stable	0	0	0	0
Valentine Lake	22	48.382555	-57.148847	2100 to 2200 m NE	2022-08-25	0	5	85	10	0	Stable	0	10	0	10
Valentine Lake	23	48.383185	-57.147869	2200 to 2300 m NE	2022-08-25	0	30	30	30	0	Stable	0	0	0	0
Valentine Lake	24	48.383919	-57.147055	2300 to 2400 m NE	2022-08-25	0	30	60	10	0	Stable	0	0	5	5

Table B.2 Lake Shoreline Habitat Data
Berry Pit Expansion: 2022 Fish and Fish Habitat Data Report
 File: 121417555

Waterbody	Habitat Unit Number	Latitude	Longitude	Stream Sub-Section	Survey Date (UTC)	Cobble (%/100) 30-139 mm	Rubble (%/100) 140-250 mm	Boulder (%/100) 250+ mm	Bedrock (%/100)	CVO Total (%/area)	CVO Riparian Veg (%/area)	CVO LWD (%/area)	CVI Total (%/area)	CVI LWD (%/area)	CVI SWD (%/area)
Valentine Lake	1	48.374589	-57.167373	0 to 100 m NE	2022-08-25	30	30	25	0	0	0	0	0	0	0
Valentine Lake	2	48.374901	-57.166079	100 to 200 m NE	2022-08-25	15	40	40	0	0	0	0	0	0	0
Valentine Lake	3	48.374864	-57.164693	200 to 300 m NE	2022-08-25	10	30	60	0	0	0	0	0	0	0
Valentine Lake	4	48.37479	-57.163544	300 to 400 m NE	2022-08-25	10	20	70	0	0	0	0	0	0	0
Valentine Lake	5	48.374818	-57.162185	400 to 500 m NE	2022-08-25	5	20	75	0	0	0	0	0	0	0
Valentine Lake	6	48.375148	-57.161102	500 to 600 m NE	2022-08-25	50	25	10	0	0	0	0	0	0	0
Valentine Lake	7	48.375336	-57.159927	600 to 700 m NE	2022-08-25	10	30	60	0	0	0	0	0	0	0
Valentine Lake	8	48.375953	-57.158962	700 to 800 m NE	2022-08-25	0	25	75	0	0	0	0	0	0	0
Valentine Lake	9	48.376602	-57.157884	800 to 900 m NE	2022-08-25	0	10	90	0	0	0	0	0	0	0
Valentine Lake	10	48.377207	-57.156909	900 to 1000 m NE	2022-08-25	0	30	70	0	0	0	0	0	0	0
Valentine Lake	11	48.377777	-57.155819	1000 to 1100 m NE	2022-08-25	20	20	20	0	0	0	0	0	0	0
Valentine Lake	12	48.37839	-57.154804	1100 to 1200 m NE	2022-08-25	20	40	40	0	0	0	0	0	0	0
Valentine Lake	13	48.379222	-57.154473	1200 to 1300 m NE	2022-08-25	30	30	40	0	0	0	0	0	0	0
Valentine Lake	14	48.380092	-57.154232	1300 to 1400 m NE	2022-08-25	20	40	40	0	0	0	0	0	0	0
Valentine Lake	15	48.380665	-57.153194	1400 to 1500 m NE	2022-08-25	10	35	50	0	0	0	0	0	0	0
Valentine Lake	16	48.38146	-57.152675	1500 to 1600 m NE	2022-08-25	0	50	50	0	0	0	0	0	0	0
Valentine Lake	17	48.382263	-57.152405	1600 to 1700 m NE	2022-08-25	0	40	60	0	0	0	0	0	0	0
Valentine Lake	18	48.382035	-57.151585	1700 to 1800 m NE	2022-08-25	20	20	20	0	0	0	10	0	0	0
Valentine Lake	19	48.381243	-57.151631	1800 to 1900 m NE	2022-08-25	0	40	40	0	0	0	5	0	0	0
Valentine Lake	20	48.381024	-57.150424	1900 to 2000 m NE	2022-08-25	30	30	40	0	0	0	0	0	0	0
Valentine Lake	21	48.381764	-57.149629	2000 to 2100 m NE	2022-08-25		50	50	0	0	0	0	0	0	0
Valentine Lake	22	48.382555	-57.148847	2100 to 2200 m NE	2022-08-25	10	40	30	0	0	0	0	0	0	0
Valentine Lake	23	48.383185	-57.147869	2200 to 2300 m NE	2022-08-25	0	50	50	0	0	0	0	0	0	0
Valentine Lake	24	48.383919	-57.147055	2300 to 2400 m NE	2022-08-25	20	40	30	0	0	0	0	0	0	0

Table B.2 Lake Shoreline Habitat Data
Berry Pit Expansion: 2022 Fish and Fish Habitat Data Report
 File: 121417555

Waterbody	Habitat Unit Number	Latitude	Longitude	Stream Sub-Section	Survey Date (UTC)	CVI Vegetation (%/area)	IVG Emergent (%/100)	IVG Floating Leafed (%/100)	IVG Free Floating (%/100)	IVG Submerged (%/100)	IVG Filamentous Algae (%/100)	IVG Macrophytic Algae (%/100)	Comments
Valentine Lake	1	48.374589	-57.167373	0 to 100 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	2	48.374901	-57.166079	100 to 200 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	3	48.374864	-57.164693	200 to 300 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	4	48.37479	-57.163544	300 to 400 m NE	2022-08-25	0	0	0	0	0	0	0	Nice gravel/cobble mix within cove
Valentine Lake	5	48.374818	-57.162185	400 to 500 m NE	2022-08-25	1	0	0	0	0	0	0	Pipewart (<i>Eriocaulon</i>) observed
Valentine Lake	6	48.375148	-57.161102	500 to 600 m NE	2022-08-25	0	0	0	0	0	0	0	Nice gravel in cove
Valentine Lake	7	48.375336	-57.159927	600 to 700 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	8	48.375953	-57.158962	700 to 800 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	9	48.376602	-57.157884	800 to 900 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	10	48.377207	-57.156909	900 to 1000 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	11	48.377777	-57.155819	1000 to 1100 m NE	2022-08-25	1	0	0	0	0	0	0	Pipewart observed
Valentine Lake	12	48.37839	-57.154804	1100 to 1200 m NE	2022-08-25	0	0	0	0	0	0	0	Gravel beach in middle of cove
Valentine Lake	13	48.379222	-57.154473	1200 to 1300 m NE	2022-08-25	0	0	0	0	0	0	0	Gravel beach in middle of cove
Valentine Lake	14	48.380092	-57.154232	1300 to 1400 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	15	48.380665	-57.153194	1400 to 1500 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	16	48.38146	-57.152675	1500 to 1600 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	17	48.382263	-57.152405	1600 to 1700 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	18	48.382035	-57.151585	1700 to 1800 m NE	2022-08-25	0	0	0	0	0	0	0	Floating leaf pondweed (<i>Potamogedon</i> sp.) and Pipewart
Valentine Lake	19	48.381243	-57.151631	1800 to 1900 m NE	2022-08-25	1	0	0	0	0	0	0	Burreed (<i>Sparganium</i> sp.), pulpwood and bark
Valentine Lake	20	48.381024	-57.150424	1900 to 2000 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	21	48.381764	-57.149629	2000 to 2100 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	22	48.382555	-57.148847	2100 to 2200 m NE	2022-08-25	0	0	0	0	0	0	0	Algae filaments
Valentine Lake	23	48.383185	-57.147869	2200 to 2300 m NE	2022-08-25	0	0	0	0	0	0	0	
Valentine Lake	24	48.383919	-57.147055	2300 to 2400 m NE	2022-08-25	0	0	0	0	0	0	0	

APPENDIX C

Photos

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 1 Bog Hole IT-08.



Photo 2 Gill Net Sampling at Bog Hole IT-08.



Photo 3 Bog Hole IT-09.



Photo 4 Bog Hole IT-12.

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 5 Bog Hole IT-13.



Photo 6 Gill Net Sampling at Bog Hole IT-13.



Photo 7 Watercourse 37 (HU 80534; 0 to 50 m US) facing upstream.



Photo 8 Watercourse 37 (HU 80534; 0 to 50 m US) facing downstream.

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 9 Watercourse 37 (HU 80532; 50 to 100 m US) log jam presents a potential barrier to fish passage.



Photo 10 Watercourse 37 (HU 80528 100 to 150 m US) facing upstream.



Photo 11 Watercourse 37 (HU 80533; 150 to 200 m US) facing upstream.



Photo 12 Watercourse 37 (HU 80531; 200 to 250 m US) facing downstream.

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 13 Watercourse 37 (HU 80525; 250 to 300 m US) facing downstream.



Photo 14 Watercourse 37 (HU 80527; 300 to 350 m US) facing downstream.



Photo 15 Watercourse 37 (HU 80526; 350 to 400 m US) facing upstream.



Photo 16 Watercourse 37 (HU 80535; 400 to 450 m US) facing upstream.

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 17 Watercourse 37 (HU 80530; 450 to 500 m US), facing upstream, showing pools of disconnected wetland seepage in which minnow trap was set.



Photo 18 Watercourse 38 (HU 80472; 0 to 50 m US), where the watercourse drains into Valentine Lake, facing upstream.



Photo 19 Watercourse 38 (HU 80472; 0 to 50 m), where the watercourse drains into Valentine Lake, facing downstream.



Photo 20 Watercourse 38 (HU 80471; 50 to 100 m US) facing upstream.

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 21 Watercourse 38 (HU 80471; 100 to 150 m US) facing downstream.



Photo 21 Watercourse 38 (HU 80470; 150 to 200 m US) facing upstream.



Photo 23 Watercourse 38 (HU 80470; 150 to 200 m US) facing downstream.



Photo 24 Watercourse 39 at Confluence with Valentine Lake, facing upstream.

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Photo 25 Watercourse 39 (HU 80582; 0 to 50 m US).



Photo 26 Watercourse 39 (HU 80584; 50 to 100 m US) facing upstream.



Photo 27 Watercourse 39 (HU 80584; 100 to 150 m US) facing downstream.



Photo 28 Watercourse 40 at Confluence with Valentine Lake - Overland Surface Drainage.

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 29 Valentine Lake Shoreline HU 1 (0 to 100 m NE).



Photo 30 Valentine Lake Shoreline HU 2 (100 to 200 m NE).



Photo 31 Valentine Lake Shoreline HU 3 (200 to 300 m NE).



Photo 32 Valentine Lake Shoreline HU 4 (300 to 400 m NE).

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 33 Valentine Lake Shoreline HU 5 (400 to 500 m NE).



Photo 34 Valentine Lake Shoreline HU 6 (500 to 600 m NE).



Photo 35 Valentine Lake Shoreline HU 7 (600 to 700 m NE).



Photo 36 Valentine Lake Shoreline HU 8 (700 to 800 m NE).

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 37 Valentine Lake Shoreline HU 9 (800 to 900 m NE).



Photo 38 Valentine Lake Shoreline HU 10 (900 to 1000 m NE).



Photo 39 Valentine Lake Shoreline HU 11 (1000 to 1100 m NE).



Photo 40 Valentine Lake Shoreline HU 12 (1100 to 1200 m NE).

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 41 Valentine Lake Shoreline HU 13 (1200 to 1300 m NE).



Photo 42 Valentine Lake Shoreline HU 14 (1300 to 1400 m NE).



Photo 43 Valentine Lake Shoreline HU 15 (1400 to 1500 m NE).



Photo 43 Valentine Lake Shoreline HU 16 (1500 to 1600 m NE).

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT

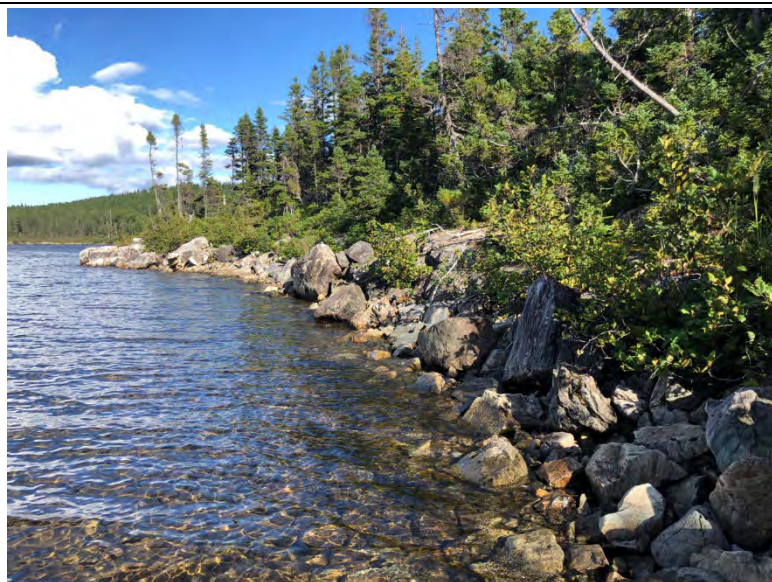


Photo 45 Valentine Lake Shoreline HU 17 (1600 to 1700 m NE).

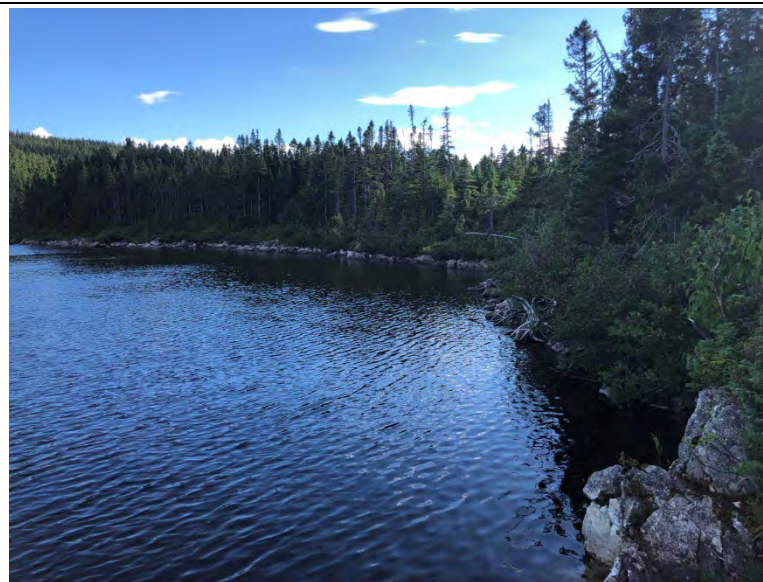


Photo 46 Valentine Lake Shoreline HU 18 (1700 to 1800 m NE).



Photo 47 Valentine Lake Shoreline HU 19 (1800 to 1900 m NE).



Photo 48 Valentine Lake Shoreline HU 20 (1900 to 2000 m NE).

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT

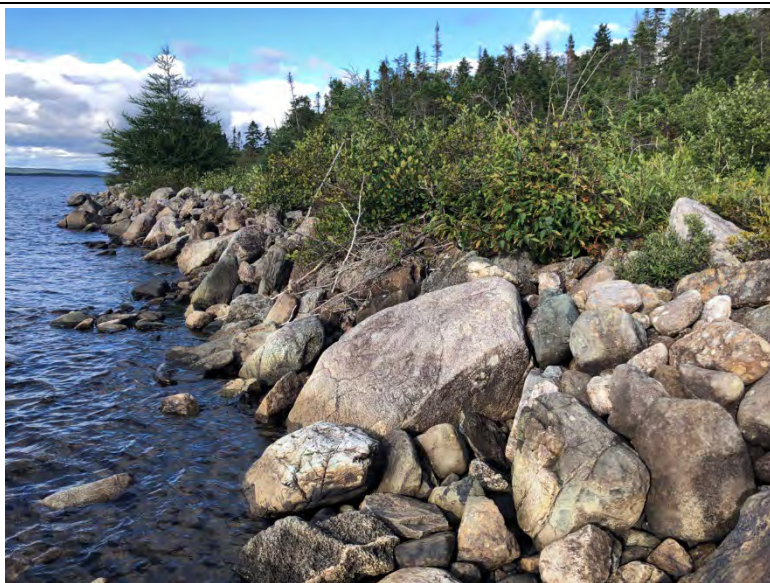


Photo 49 Valentine Lake Shoreline HU 21 (2000 to 2100 m NE).

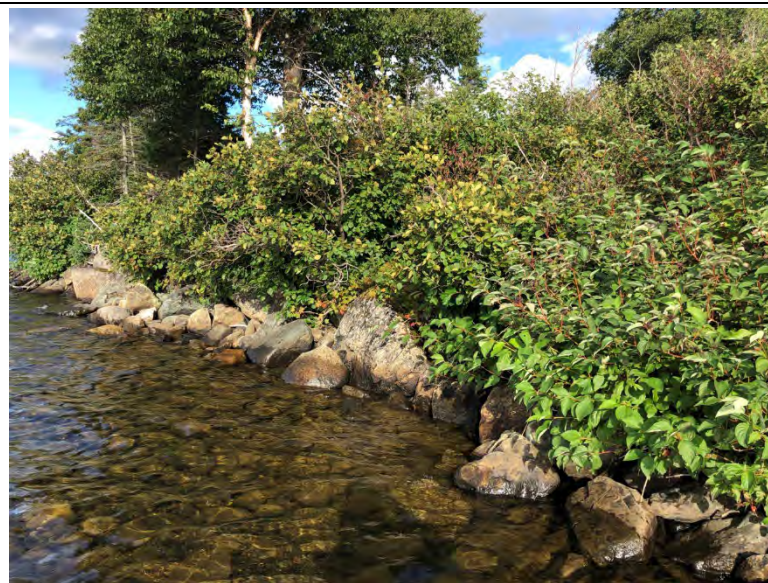


Photo 50 Valentine Lake Shoreline HU 22 (2100 to 2200 m NE).



Photo 51 Valentine Lake Shoreline HU 23 (2200 to 2300 m NE).



Photo 52 Valentine Lake Shoreline HU 24 (2300 to 2400 m NE).

BERRY COMPLEX: 2022 FISH AND FISH HABITAT DATA REPORT



Photo 53 Aquatic Vegetation (Burreed; *Sparganium sp.*), Present Along the Shoreline of Valentine Lake.



Photo 54 Pipewort (*Eriocaulon aquaticum*) Aquatic Vegetation Present on the Shoreline of Valentine Lake.



Photo 55 Pulpwood present along the shoreline of Valentine Lake.