

Tote Road Site CV-049

Location and Crossing Description

UTM Coordinates: 17W 529654 E 7926545 N

Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-049: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-057

Location and Crossing Description

UTM Coordinates: 17W 528379 E 7928657 N

Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: Site provides some summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021; however, culverts are becoming increasingly full of sediment and may soon create a blockage to fish movements if not remediated. Remediation recommended for winter months.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-057: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-058

Location and Crossing Description

UTM Coordinates: 17W 528322 E 7928839 N

Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-058: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-059

Location and Crossing Description

UTM Coordinates: 17W 528094 E 7929347 N

Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-059: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-060

Location and Crossing Description

UTM Coordinates: 17W 527622 E 7930342 N

Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-060: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-072

Location and Crossing Description

UTM Coordinates: 17W 526897 E 7934576 N

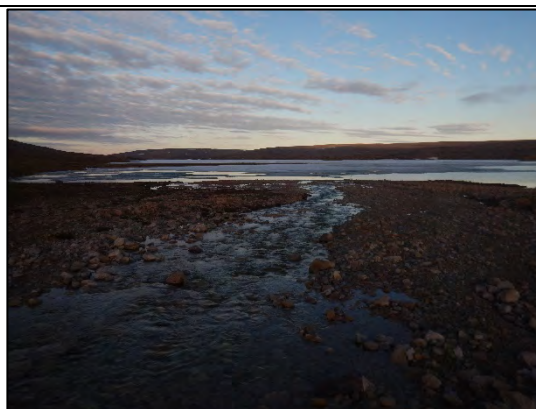
Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



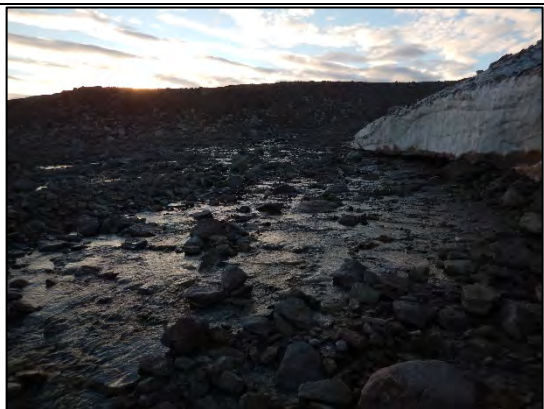
A



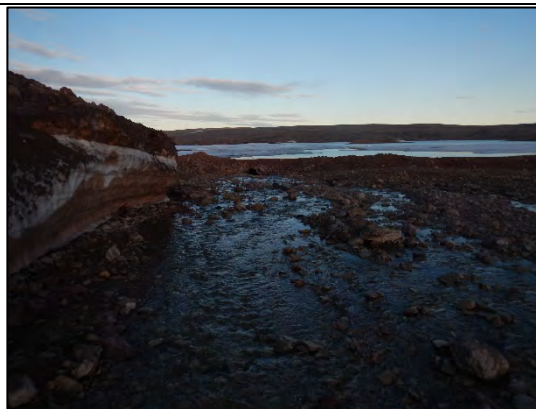
B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-072: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-076

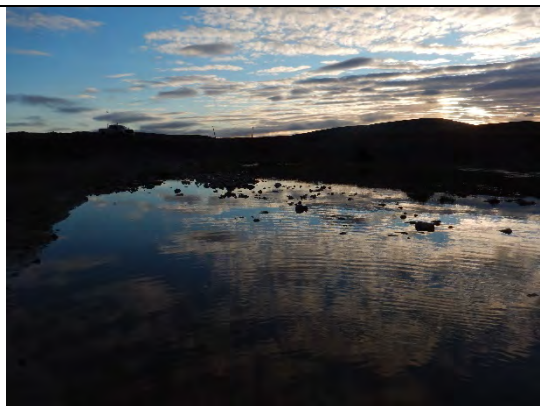
Location and Crossing Description

UTM Coordinates: 17W 526586 E 7935498 N

Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: Small stream providing summer rearing habitat for juvenile Arctic Char. There were no issues affecting fish passage in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-076: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-078

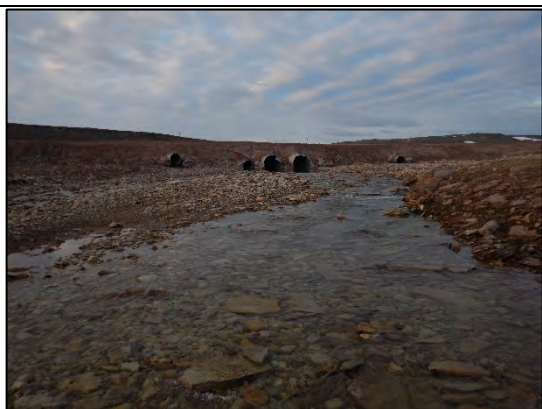
Location and Crossing Description

UTM Coordinates: 17W 525852 E 7936787 N

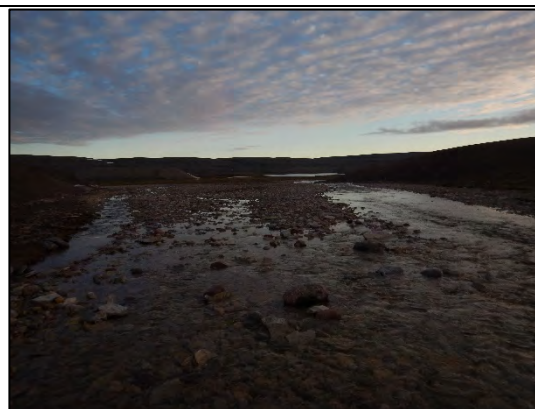
Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-078: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-079

Location and Crossing Description

UTM Coordinates: 17W 525538 E 7937314 N

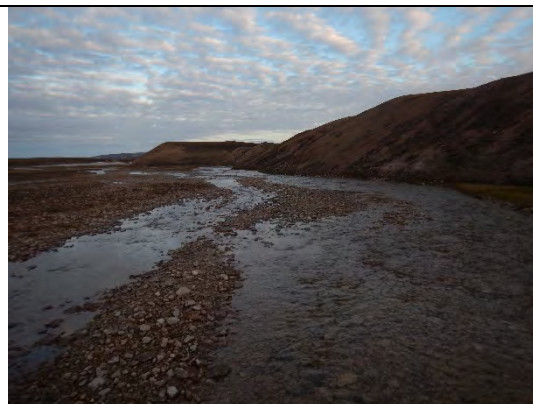
Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: Site provides abundant summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-079: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
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Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-099

Location and Crossing Description

UTM Coordinates: 17W 521886 E 7945397 N

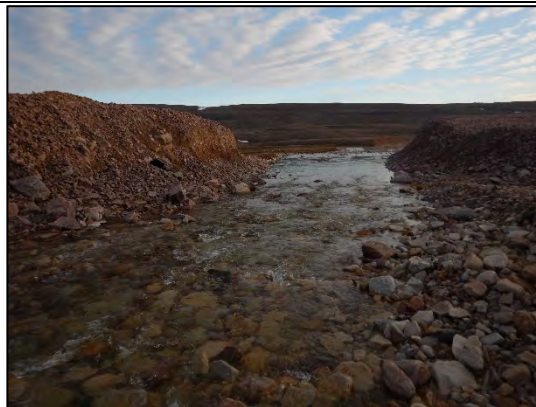
Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: A large stream with abundant fish habitat. Water velocities in the culverts can be high enough to restrict upstream access to larger juveniles during periods of very high flows. There were no fish passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-099: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-102

Location and Crossing Description

UTM Coordinates: 17W 521934 E 7950591 N

Dated Surveyed: 03-Jul-21; 01-Sep-21

Summary: This stream typically provides summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



A



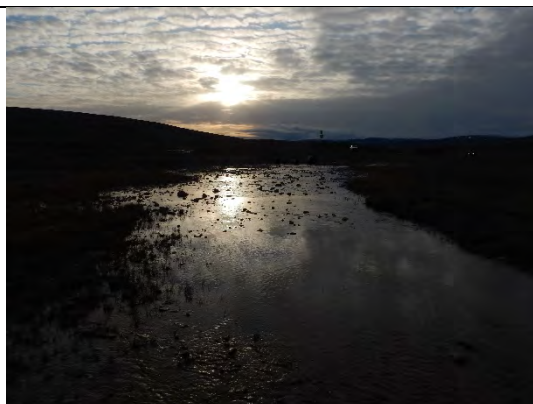
B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-102: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-104

Location and Crossing Description

UTM Coordinates: 17W 521732 E 7952788 N

Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: Though water levels are occasionally low (e.g., 2019), this stream typically provides summer rearing habitat for juvenile Arctic Char. There were no passage issues in 2021.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-104: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-106

Location and Crossing Description

UTM Coordinates: 17W 521663 E 7953392 N

Dates Surveyed: 03-Jul-21; 01-Sep-21

Summary: Stream provides summer rearing habitat for juvenile Arctic Char, though it frequently becomes dry following freshet without additional inputs of precipitation. An existing ramp (installed in 2018) designed to improve access received additional modifications in 2019 and 2020. Similar issues existed in 2021. Additional remediation may be required to improve the effectiveness of the ramp at providing fish passage during the periods of low water often experienced by this stream.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-106: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-111

Location and Crossing Description

UTM Coordinates: 17W 521355 E 7954524 N

Dates Surveyed: 27-Jun-21; 01-Sep-21

Summary: This stream provides summer rearing habitat for juvenile Arctic Char. Culvert was reinstalled during the winter of 2018/2019 with a high perch. Remediation measures in fall 2019 were insufficient to improve fish access and issues remained in 2021. Additional remediation required. See remediation Appendix for details.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-111: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-112

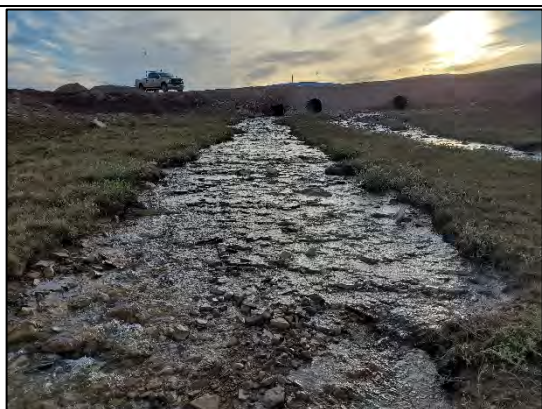
Location and Crossing Description

UTM Coordinates: 17W 521033 E 7954935 N

Dates Surveyed: 27-Jun-21; 01-Sep-21

Summary: This stream provides summer rearing habitat for juvenile Arctic Char. There were no fish passage issues in 2021.

Photos



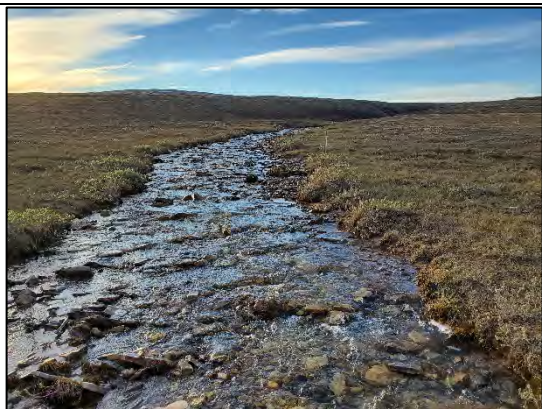
A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-112: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall (upstream photo includes only the left culvert).

**Baffinland Iron Mines
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Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-114

Location and Crossing Description

UTM Coordinates: 17W 520278 E 7956528 N

Dates Surveyed: 27-Jun-21; 01-Sep-21

Summary: This stream provides habitat for juvenile Arctic Char. Perched culverts that may affect upstream access were remediated in fall 2019 and minor repairs to the works were completed in fall 2020. The remediation structure was destroyed during freshet and/or during snow clearing activities in 2021. New remediation measures will be required.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-114: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-115

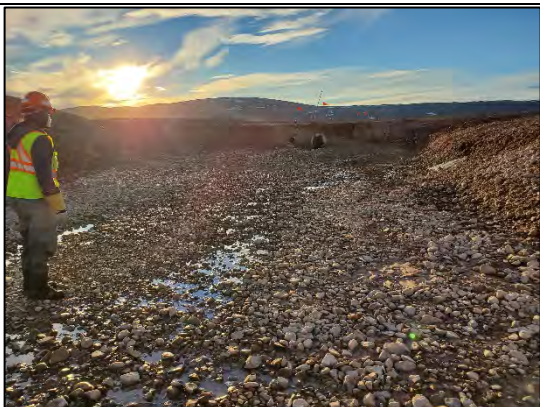
Location and Crossing Description

UTM Coordinates: 17W 519222 E 7958135 N

Dates Surveyed: 27-Jun-21; 01-Sep-21

Summary: Stream has been regularly surveyed and is dry most years. The stream was nearly dry during both surveys in 2021 and no fish were present.

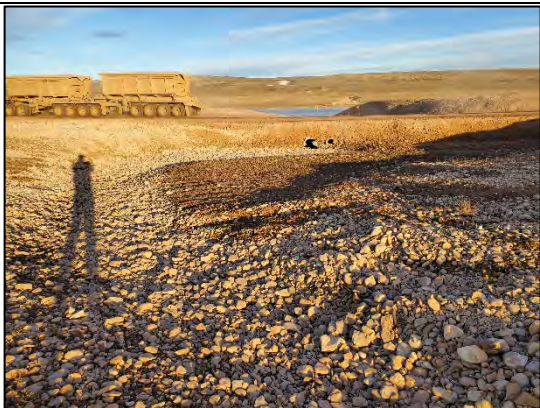
Photos



A



B



C



D

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-115: (A,C) looking upstream during spring; and (B,D) looking at the culvert during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-128

Location and Crossing Description

UTM Coordinates: 17W 513556 E 7965889 N

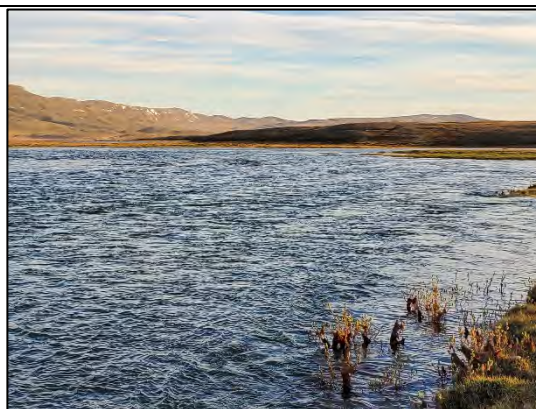
Dates Surveyed: 27-Jun-21; 01-Sep-21

Summary: A bridge crossing of a major river that has consistently provided abundant fish habitat with no passage issues in 2021.

Photos



A



B



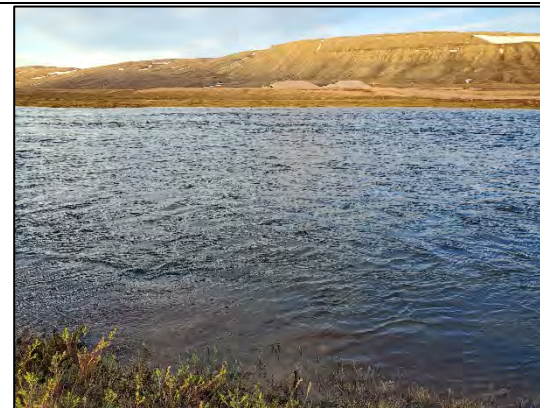
C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-128: (A,D) looking upstream; (B,E) looking downstream; and (C,F) looking across during spring.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-129

Location and Crossing Description

UTM Coordinates: 17W 512381 E 7966783 N

Dated Surveyed: 27-Jun-21; 01-Sep-21

Summary: This site has consistently provided good quality summer rearing habitat for juvenile Arctic Char and is the first large tributary upstream of the impassable falls on Phillips Creek (i.e., fish use is restricted to land-locked Arctic Char). Small culvert perch was remediated in fall 2019 and minor repairs to the remediation works were conducted in fall 2020. The structure was damaged, and the perch reoccurred in 2021. Alternate remediation measures may be required. Upstream overwintering lake provides additional habitat.

Photos



A



B



C



D



E



F

Photos 1. Photographs at the Tote Road crossing CV-129: from downstream of the road looking upstream (A), downstream (B), and across (C) during spring; looking at the downstream end of the culvert during spring (D) and fall (E); and looking at the upstream end of the culvert during fall (F).

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-186

Location and Crossing Description

UTM Coordinates: 17W 560705 E 7913498 N

Dates Surveyed: 04-Jul-21; 25-Aug-21

Summary: Site provides summer rearing habitat for both species. No fish passage issues in 2021.

Photos



A



B



C



D



E

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-186: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-187

Location and Crossing Description

UTM Coordinates: 17W 560957 E 7913414 N

Dates Surveyed: 04-Jul-21; 25-Aug-21

Summary: Site provides summer rearing habitat for both species, though upstream reaches become dry as water levels decrease. No fish passage issues in 2021.

Photos



A



B



C



D



E

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-187: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-216

Location and Crossing Description

UTM Coordinates: 17W 542764 E 7921724 N

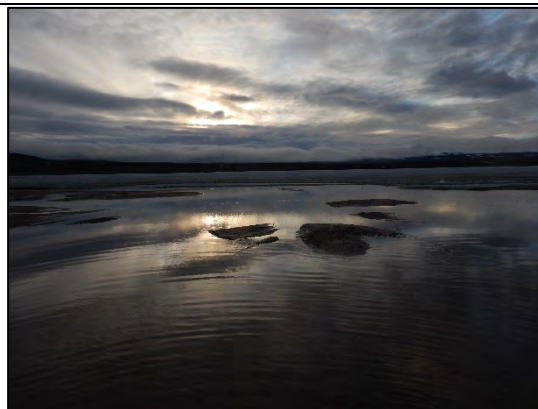
Dates Surveyed: 04-Jul-21; 02-Sep-21

Summary: A small stream that provides habitat for Ninespine Stickleback and small juvenile Arctic Char (especially young-of-the-year from Muriel Lake). A slight perch was remediated in 2019 and small repairs to the structure were completed in fall 2020. The structure was damaged during freshet or snow clearing activities in early 2021. Alternative remediation may be required.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-186: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-217

Location and Crossing Description

UTM Coordinates: 17W 524321 E 7922189 N

Date Surveyed: 04-Jul-21

Summary: A bridge/culvert crossing with abundant habitat for both species and no passage issues in 2021.

Photos



A



B



C

Photos 1. Photograph downstream of the Tote Road crossing CV-217: (A) looking upstream; (B) looking downstream; and (C) looking across.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-223

Location and Crossing Description

UTM Coordinates: 17W 555705 E 7914676 N

Date Surveyed: 05-Jul-21

Summary: This large river (Tom River) includes both bridge and culvert crossings. All channels provide abundant summer rearing habitat for Arctic Char. No fish passage issues in 2021.

Photos



A



B

Photos 1. Photographs downstream (A) and upstream (B) of the Tote Road crossing CV-223.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – No

Tote Road Site CV-224

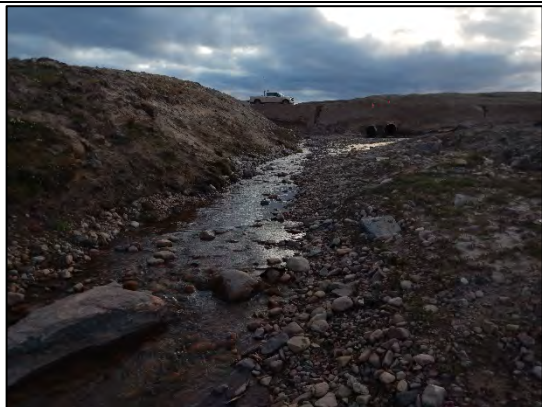
Location and Crossing Description

UTM Coordinates: 17W 556238 E 7915044 N

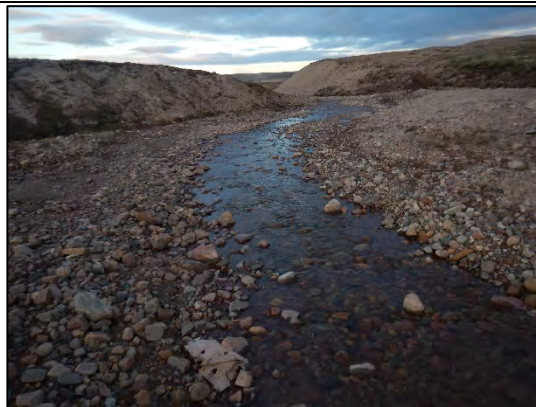
Dates Surveyed: 05-Jul-21; 07-Sep-21

Summary: The site provides summer rearing habitat for both species. The fish passage culvert was still frozen after peak freshet at the time of the spring 2021 survey. No other fish passage issues were observed in 2021. Crossing should be monitored every spring for recurrence of ice damming.

Photos



A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-224: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes

Tote Road Site CV-225

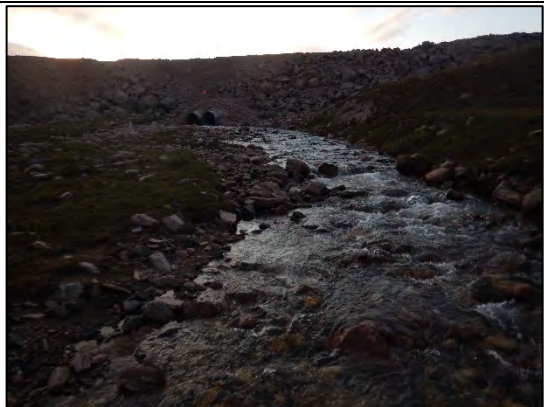
Location and Crossing Description

UTM Coordinates: 17W 557421 E 7915187 N

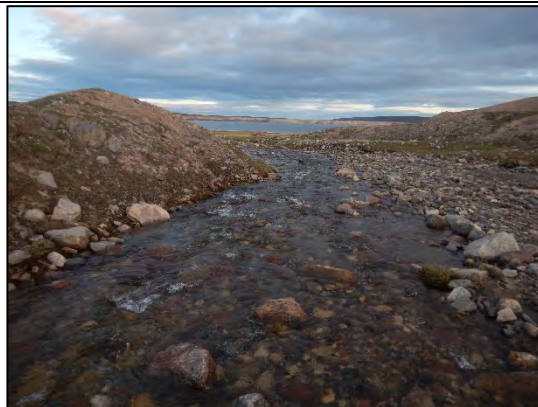
Dates Surveyed: 05-Jul-21; 07-Sep-21

Summary: Site provides summer rearing habitat for both species. Remediation completed in early spring 2020 successfully reduced perching. However high culvert velocities remain a potential issue and spring ice damming inside the culverts is common. Continue monitoring of road and culverts going forward.

Photos



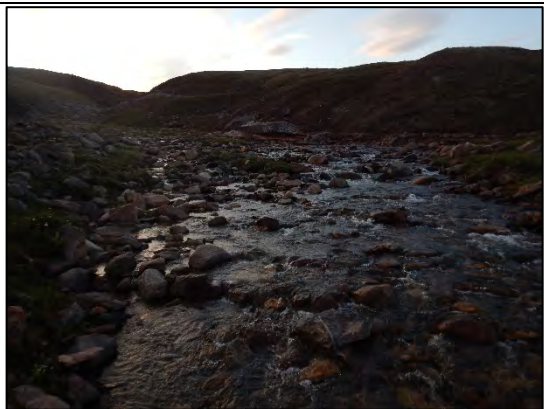
A



B



C



D



E



F

Photos 1. Photographs downstream (top) and upstream (bottom) of the Tote Road crossing CV-225: (A,D) looking upstream during spring; (B,E) looking downstream during spring; and (C,F) looking at culverts during fall.

**Baffinland Iron Mines
Mary River Project**



Fish Habitat

Arctic Char - Yes

Ninespine Stickleback – Yes