

Grays Bay Road and Port

Stantec Site ID: 87
UTM: 12 Easting: 499820

Stream Classification: Large Permanent
Northing: 7387654

Survey Date:
August 3, 2025



Left: Aerial View

Top Right: Upstream centreline

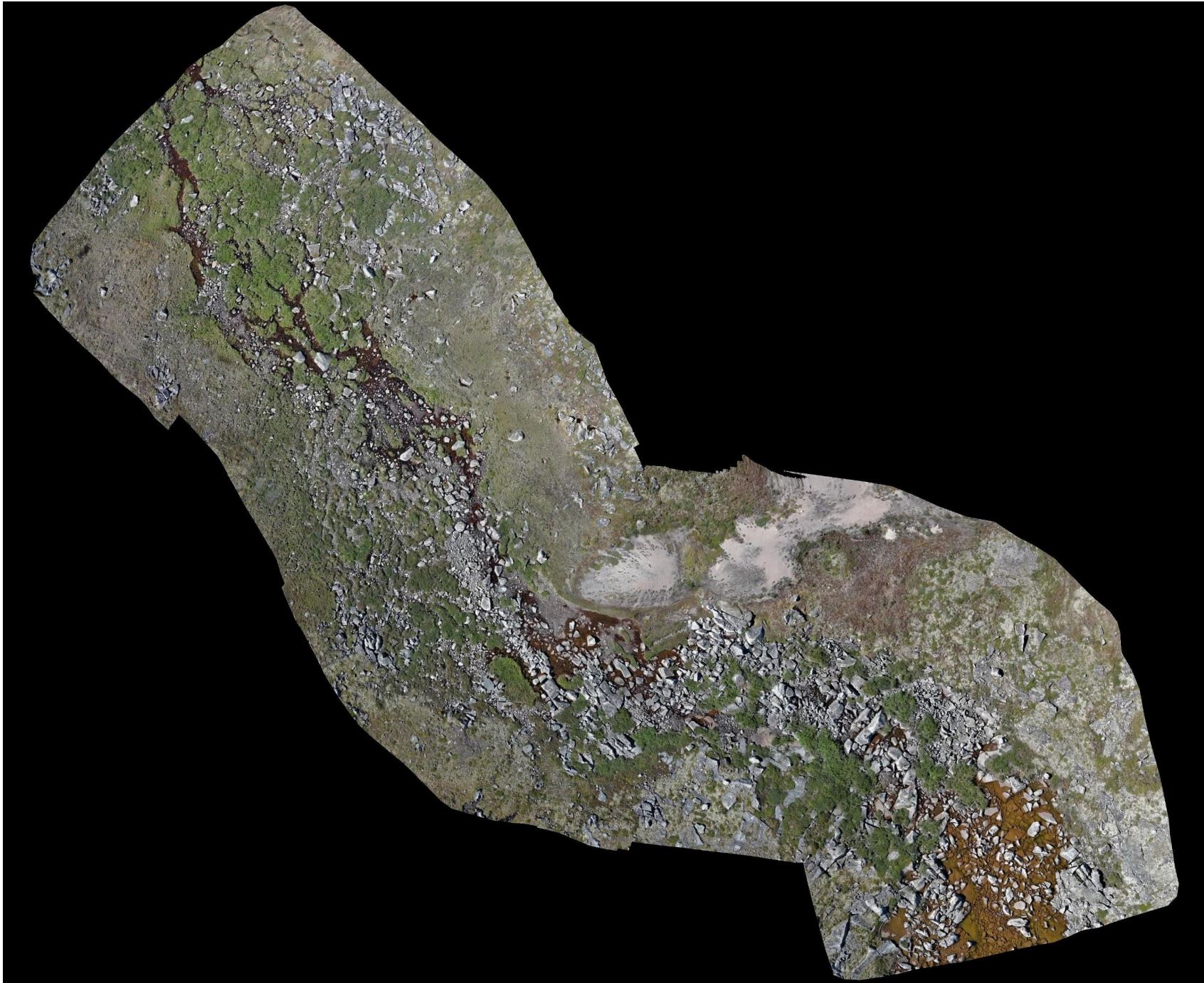
Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: 72
UTM: 12 Easting: 497044

Stream Classification: Large Permanent
Northing: 7353694

Survey Date:
August 2, 2025



Left: Aerial View

Top Right: Upstream centreline

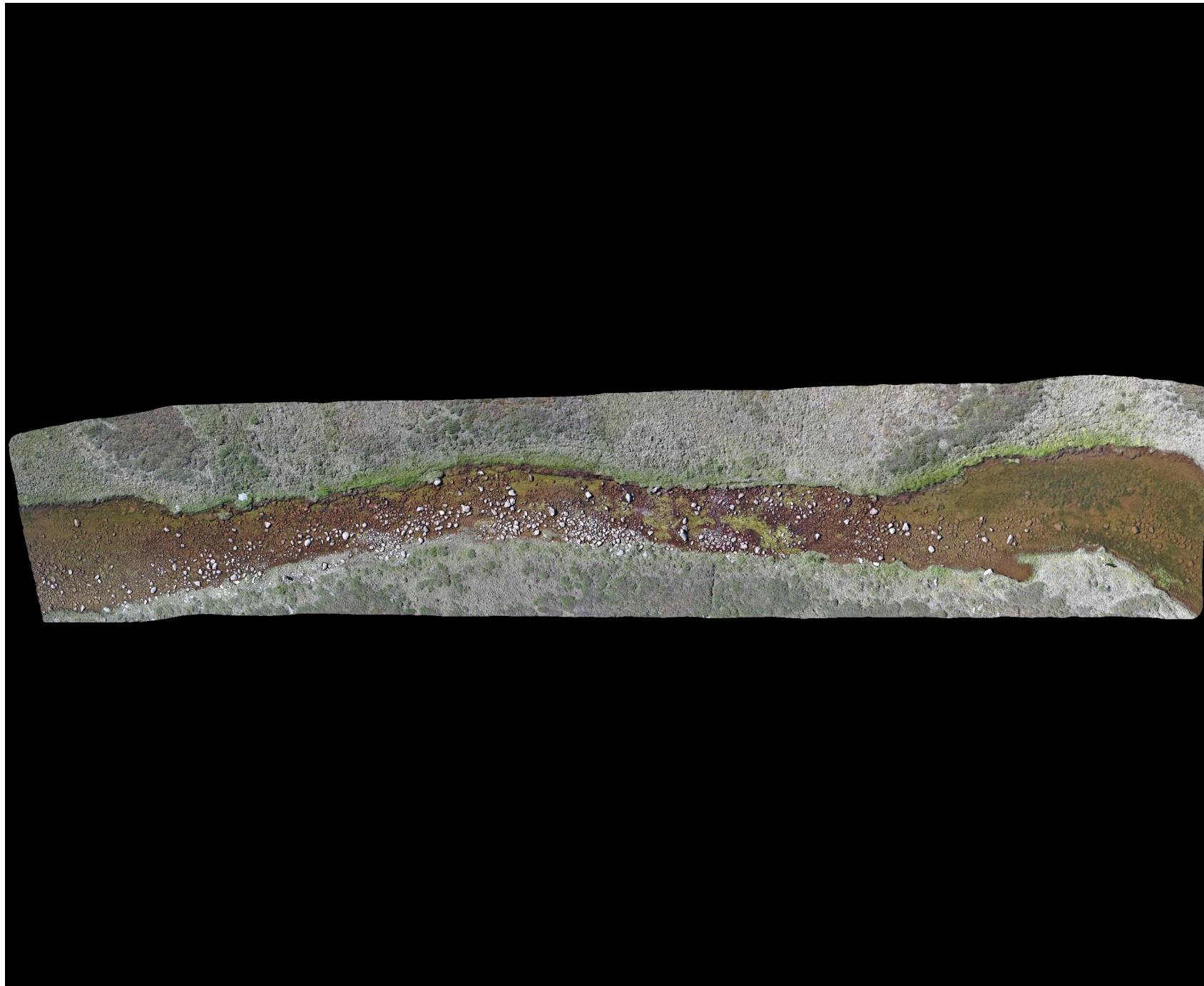
Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: 71
UTM: 12 Easting: 495087.9

Stream Classification: Large Permanent
Northing: 7351871.9

Survey Date:
August 2, 2025



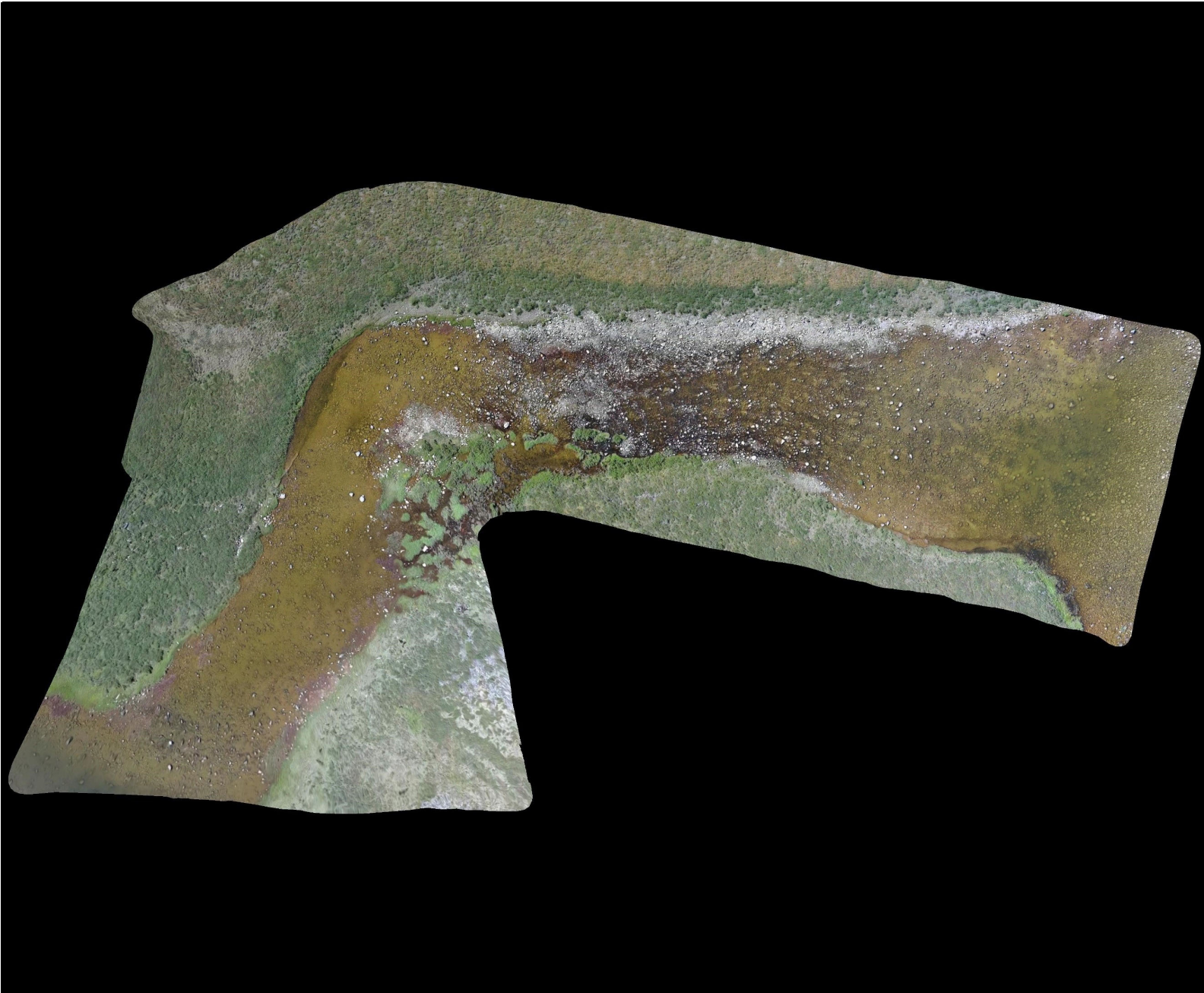
Left: Aerial View

Top Right: Upstream centreline

Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: 68	Stream Classification: Large Permanent
UTM: 12 Easting: 490337.9	Northing: 7348989
Survey Date: August 2, 2025	



Left: Aerial View
Top Right: Upstream centreline
Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: 63
UTM: 12 Easting: 484853

Stream Classification: Large Permanent
Northing: 7340163

Survey Date:
August 2, 2025



Left: Aerial View

Top Right: Upstream centreline

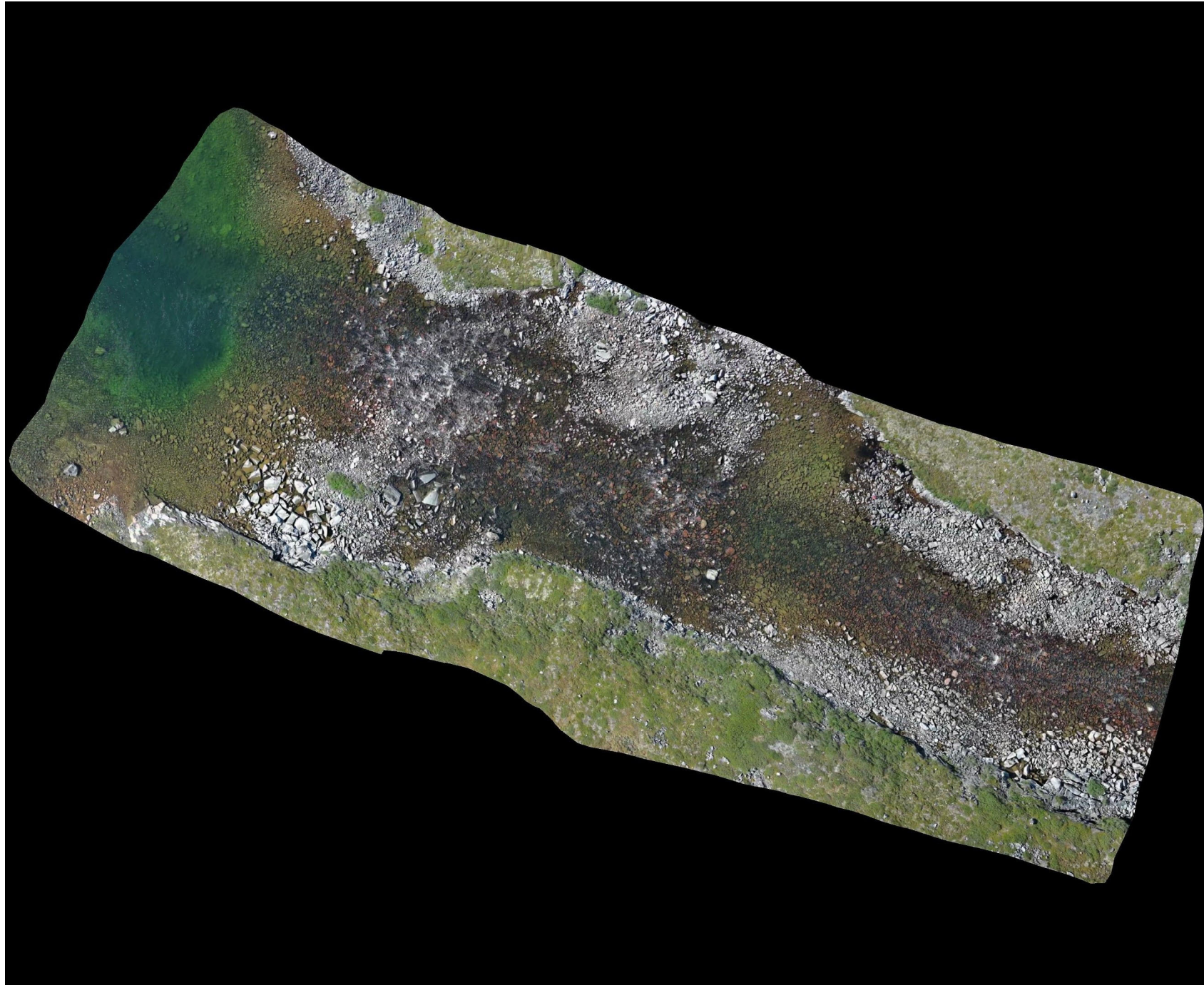
Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: 62 (BURNSIDE)
UTM: 12 Easting: 481384.9

Stream Classification: Large Permanent
Northing: 7335612.9

Survey Date:
August 2, 2025



Left: Aerial View

Top Right: Upstream centreline

Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: 1002

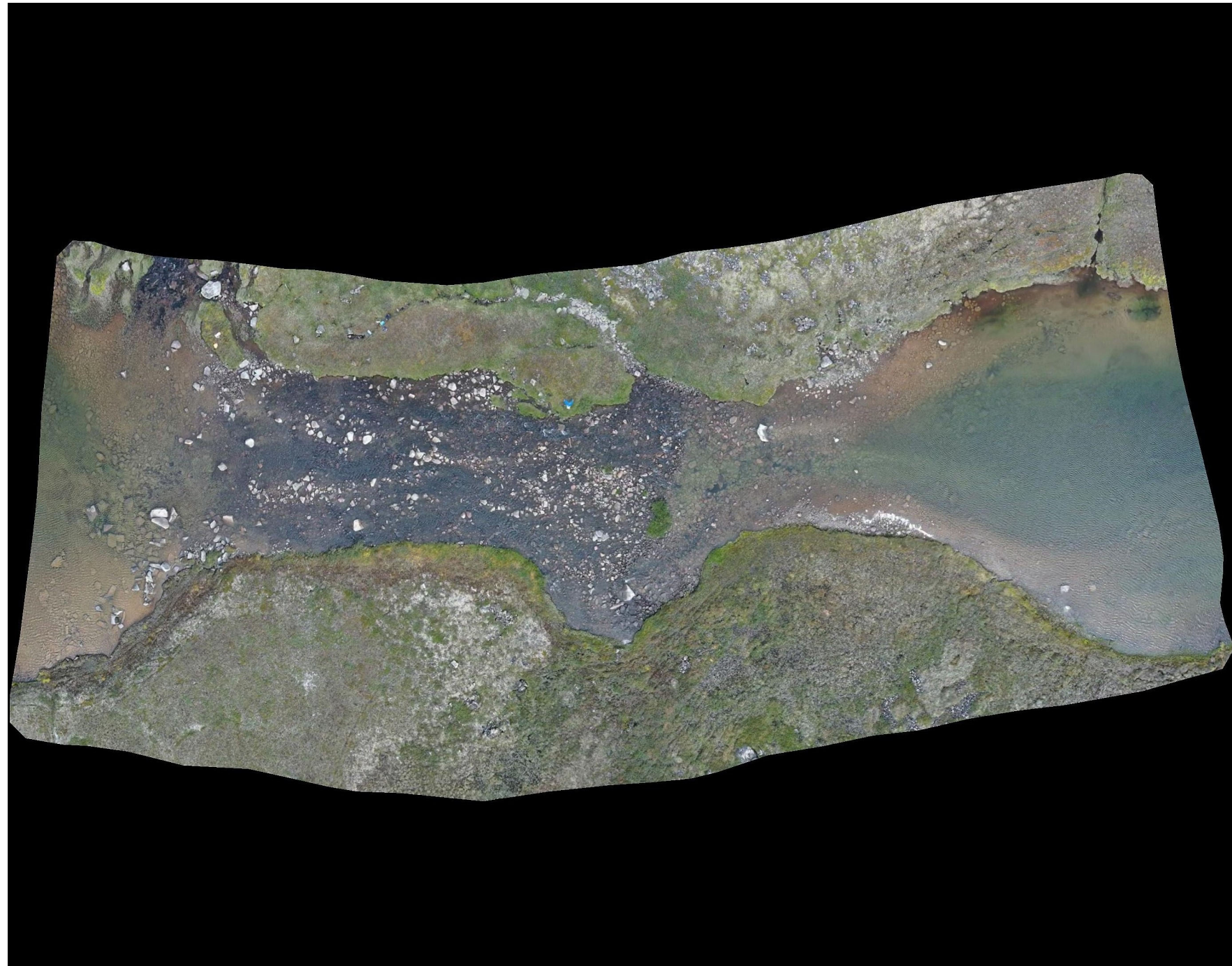
UTM: 12 Easting: 479339.2

Stream Classification: Large Permanent

Northing: 7325844.2

Survey Date:

July 31, 2025



Left: Aerial View

Top Right: Upstream centreline

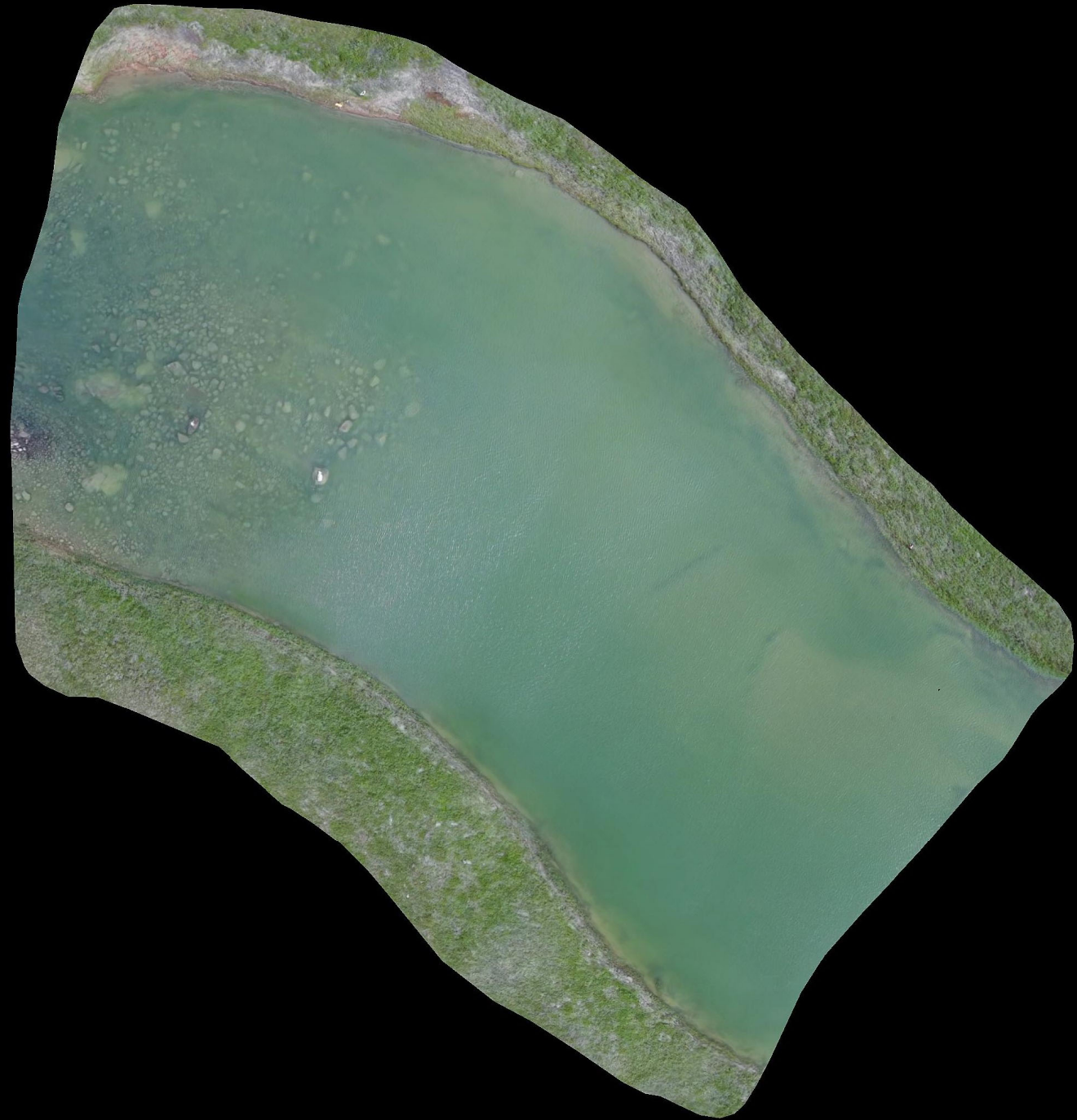
Bottom right: Downstream centreline

Grays Bay Road and Port

Stantec Site ID: WC-004
UTM: 12 Easting: 512896.4

Stream Classification: Large Permanent
Northing: 7516551.9

Survey Date:
July 24, 2025



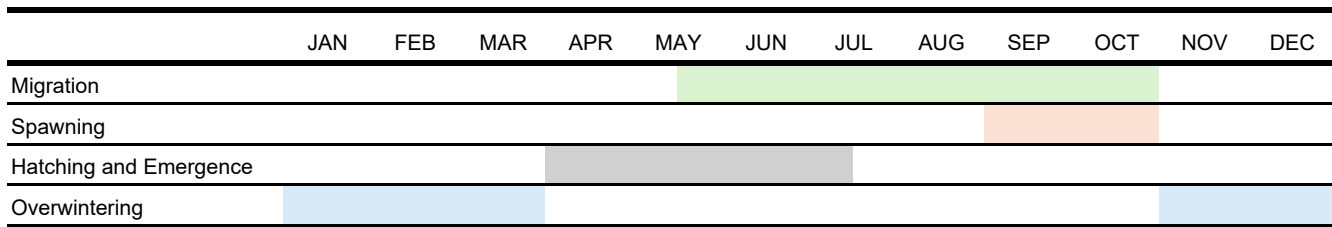
Left: Aerial View

Top Right: Upstream centreline from east bank

Bottom right: Downstream centreline from east bank

Appendix D Species of Importance Periodicity Chart

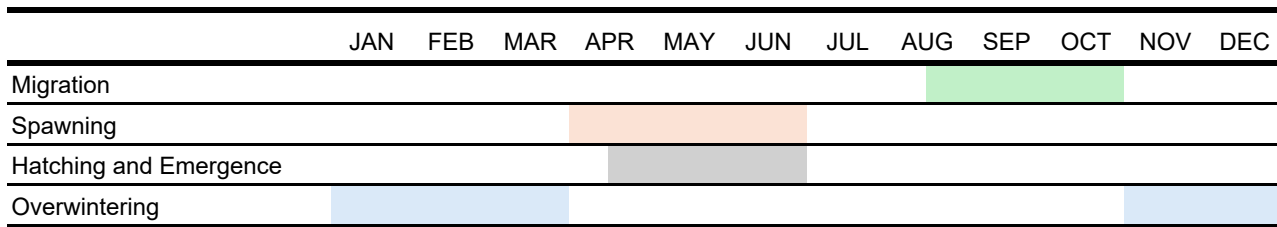
Arctic Char (*Thymallus arcticus*) Periodicity Chart



Notes:

- Migration** Anadromous or “sea-run” Arctic char in northern Canada migrate to marine waters from the spring to fall, where they forage in shallow coastal and intertidal waters. They return to freshwater environments, freshwater streams and rivers in the summer and early fall to spawn (COSEWIC 2010; MMG 2012; Banci and Spicker 2024).
- Spawning** Arctic char spawn in September or October over gravel or rocky shoals in lakes or slow-moving pools in rivers at depths of 1.0 to 4.5 m (Scott and Crossman 1973).
- Hatching and Emergence** Eggs are buried in gravel and remain overwinter and hatch the following spring around April. Emergence from gravel occurs following ice breakup around mid-July (Scott and Crossman 1973).
- Overwintering** Anadromous arctic char return to overwinter in lakes (Scott and Crossman 1973; Banci and Spicker 2024).

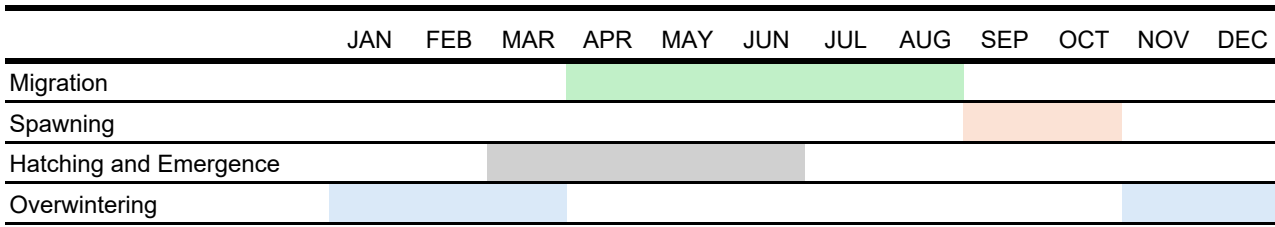
Arctic Grayling (*Thymallus arcticus*) Periodicity Chart



Notes:

- Migration** Lacustrine populations carry out their life cycles (including spawning) in lakes (Northcote 1995; Ellenor 2020). Fluvial populations migrate from large rivers to small tributaries during open water season to spawn and forage and adfluvial populations utilize both lake and stream habitats (Scott and Crossman 1973; West et al. 1992).
- Spawning** Spawning occurs from April to June during freshet when water temperatures rise to ~4°C, in small streams over a variety of substrates that range from silt to cobble and boulders, but most commonly over small, unembedded substrates (Scott and Crossman 1973; West et al. 1992; Ellenor 2020). After spawning, adults return to the lakes and rivers.
- Hatching and Emergence** Egg incubation time varies with temperature, and the young of year (YOY) remain in their natal streams until late summer and out-migrate to deeper overwintering habitats before freeze-up begins (Heim et al. 2015). Hatching takes place 13 - 18 days after spawning at temperatures between 7 to 11 °C. (Scott and Crossman 1973)
- Overwintering** They migrate to deep overwintering grounds in the fall as temperatures decrease and move to spawning areas in the spring once temperatures reach ~4°C.

Lake Trout (*Salvelinus alpinus*) Periodicity Chart



Notes:

- Migration

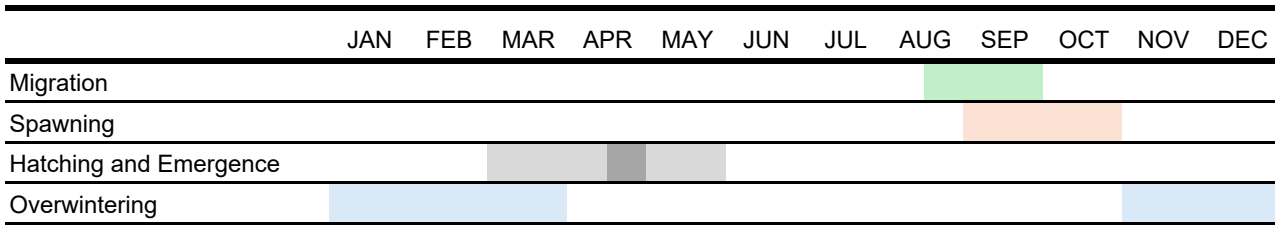
Lake trout have been described as semi-anadromy in the West Kitikmeot region of Nunavut, where they migrate from freshwater to brackish water for feeding in the summer (Swanson et al. 2010; Kissinger et al. 2016) and they migrate to rocky shoals in nearshore areas of lakes (Gunn 1995) for spawning, generally occurs when surface water temperatures are 12 °C or lower (Redick 1967).
- Spawning

In northern Canada, lake trout spawn in the fall from early September to October (Scott and Crossman 1973). They migrate to rocky shoals in nearshore areas of lakes (Gunn 1995); this generally occurs when surface water temperatures are 12 °C or lower (Redick 1967).
- Hatching and Emergence

Eggs remain in the rocky incubator for many months and typically hatch in March or April but can be as late as June. Within a month of hatching lake trout will move deeper to forage and avoid predation, but in the north, lake trout can stay in inshore waters for months or even years (Scott and Crossman 1973).
- Overwintering

After spawning, they disperse in lakes where they remain at various depths throughout the winter months (Scott and Crossman 1973).

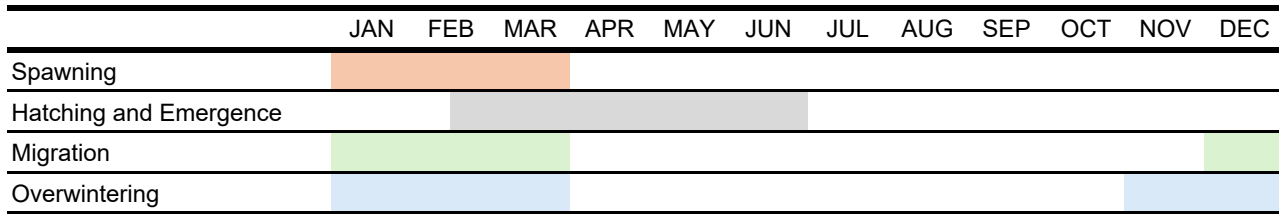
Round Whitefish (*Prosopium cylindraceum*) Periodicity Chart



Notes:

- Migration** Spawning migrations undertaken by some round whitefish populations in late August and September prior to spawning season in September and October (Stewart et al. 2007).
- Spawning** Spawning occurs the autumn, in gravel lake shallows, mouths of rivers, or in shallow river tributaries (Holst 2023; Scott and Crossman 1973).
- Hatching and Emergence** Peak fry emergence occurs in late April but begins as early as March, but depends on when spawning occurred and water temperature, approximately 140 to hatching (Scott and Crossman 1973; Stewart et al. 2007).
- Overwintering** Overwinter period is primarily the late fall and winter months, following their fall spawning season, when they typically move to deeper, colder lake regions or river mouths (Stewart et al. 2007).

Burbot (*Lota lota*) Periodicity Chart



Notes:

Spawning Spawning occurs in both lakes and rivers in the winter from January to March (Scott and Crossman 1973).

Hatching and Emergence Eggs hatch in a month, and YOY appear from late February to June (Scott and Crossman 1973).

Migration Migration is around their winter spawning, and typically occurs from December to March.

Overwintering

GENERAL NOTES:

1. Autumn/fall in Nunavut region is assumed to be September to October based on temperatures
2. Overwintering period is assumed to be the period outside of migration and spawning