

Mainland Enhancement of Salmonoid Species Society

M.E.S.S.S. Report - Rotation 6
DFO Area 12 Stock Assessment 2023

Enumeration Period: October 13-19, 2023

Stream Technicians: Ian Clevenger, Bogdan Kraft, Mikaere Berryman-Kamp, Ra Kulchein.

1. 2023 Stream Escapement and Biosample Data

| Stream | Date MM.DD | PK | CM | CO | JK | SK/ MH | 20 min | Morts PK/CM/CO | Air °C | H2O °C | pH | DO mg/L |
|----------------|---------------|---------------|----------------|---------------|----|----------------------|-----------|-------------------|-----------|-----------|------|------------|
| Ahta (6) | 10.19 | 1/ 10 | 12/ 53 | 16/ 85 | 0 | 4/ 10 | 0 | 8/0/0 | na | na | na | na |
| Viner (6) | 10.16 | 13/ 23 | 56/ 101 | 4/ 11 | 6 | 1/ 2 | 0 | 19/0/0 | 17 | 12.0 | 6.53 | 14.70 |
| Shoal (6) | 10.13 | 0 | 0 | 0 | 0 | 0 | 0 | 0/7/0 | 15.5 | 12.2 | 6.29 | 14.98 |
| Scott Cove (6) | 10.13 | 0 | 0 | 13/ 52 | 2 | 0 | 1 | 0/0/0 | 14 | 14.0 | 5.89 | 13.90 |
| Wahkana (6) | 10.19 | 0 | 0 | 0 | 0 | 0 | 0 | 0/0/0 | na | na | na | na |
| Maple (6) | 10.13 | 0 | 0 | 0 | 0 | 0 | 0 | 0/0/0 | 15 | 11.0 | 5.29 | 14.99 |
| Carriden (6) | 10.18 | 0 | 0 | 0 | 0 | 0 | 0 | 0/0/0 | 13.5 | 12.8 | 6.20 | 14.24 |
| Embley (5) | 10.18 | 0 | 1/ 2 | 0 | 0 | 0 | 0 | 0/0/0 | 15.5 | 13.2 | 5.98 | 15.74 |
| Connector (1) | 10.14 | 0 | 0 | 0 | 0 | 5/ 7 | - | 0/0/0 | 14 | 11.1 | 5.31 | 15.03 |
| Loose Lake (1) | 10.14 | 0 | 0 | 0 | 0 | 0 | - | 0/0/0 | 14 | 11.7 | 6.13 | 16.12 |
| Minihump (2) | 10.15 | 0 | 0 | 0 | 0 | 2171/ 3340 | - | 0/0/0 | 16 | 12.9 | 5.93 | 15.35 |

Table 1. Area 12 systems escapement and biosample data. Observed numbers (non-bold) represent salmon observed. **Bolded** numbers represent estimates expanded factoring observer efficiency.

Abbreviations: Pink Salmon (PK), Chum (CM), Coho (CO), Jacks (JK), Sockeye (Sk), 20 minute estuary survey (20 min)

1. Escapement Records For Rotation #1

| Stream | <u>2017</u> | | | | <u>2018</u> | | | | <u>2019</u> | | | |
|------------|-------------|-------|--------|--------|-------------|---------|----------|-------|-------------|---------|--------|------|
| | Date | Pink | Chum | Coho | Date | Pink | Chum | Coho | Date | Pink | Chum | Coho |
| Ahta | 10/12 | 13/17 | 34/93 | 3/8 | 10/13 | 81/111 | 113/239 | 8/27 | 11/10 | 17/23 | 75/119 | 2-3 |
| Viner | 10/15 | 0/0 | 80/408 | 0/0 | 10/15 | 0/0 | 947/2331 | 0/0 | 08/10 | 0/0 | 18/40 | 0/0 |
| Shoal | 10/14 | 0/0 | 0/5 | 0/0 | 10/16 | 0/0 | 9/24 | 0/0 | 09/10 | 0/0 | 0/1 | 0/0 |
| Scott Cove | 10/16 | 0/0 | 2/7 | 10/165 | 10/15 | 0/0 | 0/0 | 1/100 | 08/10 | 0/0 | 0/0 | 5/82 |
| Wahkana | 10/12 | 0/0 | 2/3 | 0/0 | 10/13 | 0/0 | 15/22 | 0/0 | 11/10 | 0/0 | 0/0 | 0/0 |
| Embley | 10/13 | 0/0 | 1/11 | 0/0 | 10/19 | 2/21 | 1/13 | 0/0 | 12/10 | 0/0 | 0/0 | 0/0 |
| Maple | 09/26 | 0/0 | 0/0 | 0/0 | 09/26 | 0/0 | 0/0 | 0/0 | 09/30 | 0/0 | 0/0 | 0/0 |
| Carriden | 09/16 | 0/0 | 0/0 | 0/0 | 10/29 | 0/0 | 0/0 | 0/0 | 10/12 | 0/0 | 0/0 | 0/0 |
| Loose Lake | 10/16 | 0/0 | 0/0 | 0/0 | 09/29 | 0/0 | 0/0 | 0/0 | 10/10 | 0/0 | 0/0 | 0/0 |
| Minihump | 10/17 | 0/0 | 0/0 | 0/0 | 10/14 | 494/706 | 0/0 | 0/0 | 09/10 | 238/476 | 0/0 | 0/0 |
| Connector | 10/14 | 2/3 | 0/0 | 0/0 | 10/16 | 17/21 | 0/0 | 0/0 | 09/10 | 5-17 | 0/0 | 0/0 |

| | <u>2020</u> | | | | <u>2021</u> | | | | <u>2022</u> | | | |
|------------|-------------|------|------|------|-------------|---------------|------------|------|-------------|---------------|-------|-------|
| Stream | Date | Pink | Chum | Coho | Date | Pink | Chum | Coho | Date | Pink | Chum | Coho |
| Ahta | 10/20 | 1-2 | 0/0 | 0/0 | 10/13 | 2/4 | 12/59 | 0/0 | 10/17 | 1362/ 1833 | 18/35 | 21/43 |
| Viner | 10/21 | 0/0 | 2-5 | 0/0 | 10/14 | 0/0 | 53/ 102 | 2/10 | 10/18 | 2/4 | 7/27 | 0/0 |
| Shoal | 10/15 | 0/0 | 0/0 | 0/0 | 10/18 | 0/0 | 0/42 | 0/0 | 10/15 | 0/1 | 0/35 | 0/2 |
| Scott Cove | 10/15 | 0/0 | 0/0 | 3-24 | 10/16 | 0/0 | 0/0 | 0/1 | 10/15 | 0/0 | 0/1 | 0/0 |
| Wahkana | 10/15 | 0/0 | 0/0 | 0/0 | 10/13 | 0/0 | 5/8 | 0/0 | 10/17 | 0/0 | 0/0 | 0/0 |
| Embley | 10/ 22 | 0/0 | 0/0 | 0/0 | 10/03 | 0/0 | 0/0 | 0/0 | 10/13 | 205/ 261 | 0/0 | 7/14 |
| Maple | 10/19 | 0/0 | 0/0 | 0/0 | 10/07 | 0/1 | 0/0 | 0/0 | 10/16 | 0/0 | 0/0 | 0/0 |
| Carriden | 10/22 | 0/0 | 0/0 | 0/0 | 10/03 | 0/0 | 0/0 | 0/0 | 10/18 | 0/0 | 0/0 | 0/0 |
| Loose Lake | 10/19 | 0/0 | 0/0 | 0/0 | 10/04 | 0/0 | 0/0 | 2/4 | 10/16 | 0/0 | 0/0 | 0/0 |
| Minihump | 10/21 | 0/1 | 0/0 | 0/0 | 10/19 | 572/ 1,271 | 0/0 | 0/1 | 10/15 | 291/ 582 | 0/0 | 0/0 |
| Connector | 10/21 | 0/0 | 0/0 | 0/0 | 10/18 | 7/28 | 0/0 | 0/0 | 10/16 | 20/ 50 | 0/0 | 0/0 |

Table 2 & 3. Escapement records by MESSS from past rotation 2 surveys spanning 2016-2021. Area 12 pink salmon spawn on a fixed two year cycle with a stronger even year, chum salmon run on a 3, 4 and 5 year cycle and coho salmon on a 3 year cycle generally. *Surveys taken from different rotation reports to provide a better representation based on more similar dates.

1. Rotation 6 Highlights

Weather:

- Significant rain events toward end of rotation.
- Fair weather during majority of surveys.
- Cloudy/overcast skies making for higher than usual glare.

Water Levels/Quality:

- Normal water levels throughout creeks with an increase in flow towards the end of the rotation.
- YSI re calibrated before rotation.

Visibility:

- Average visibility for majority of surveys, visibility dropped during and after rain events.
- Good visibility in systems with minihumps.

Notes:

- Fresh grizzly sign and bear heard in Shoal Harbour estuary.
- Decreased movement of fish into Scott Cove creek.
- Post spawn pinks and chum flushed out of Ahta with increased flow.
- Large spawned out chum found in Viner.
- First count of the season for Connector and Loose Lake creeks.

1. Stream Enumeration Notes

Ahta/Hada

October 19, 2023

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.



Photo 1 – Water levels in the upper segment of Ahta. Waterfall seen in background.

Estuary Survey

- 0 jumpers seen in bay.
- 1 seal seen, 2 bald eagles seen

River

- High flows due to rain flushing post spawn fish out.
 - Large decrease in bear activity and sign.
 - Coho seen rolling in pools and runs.
 - Chum spawning in side channels and other features out of the main flow.
-

Viner River

October 16, 2023

Enumerated by Ian Clevenger, Bogdan Kraft, Mikaere Berryman-Kamp.



Photo 2 – The large spawned out male chum found in segment 1.

Estuary Survey

- 0 Jumpers.
- 2 bald eagles.
- 18ft tide.

River

- Chums seen spawning in small groups in the first segment.
 - Large spawned out male encountered in first segment.
 - Drop in visibility throughout second segment due to flow and alder leaves in pools.
-

Shoal Harbour Creek

October 14, 2023

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.



Photo 3- Water levels in the second segment of Shoal Harbour Creek.

Estuary Survey

- Fresh grizzly bear tracks, bear heard in bushes.
- 0 jumpers.

River

- Small increase in flows.
 - Little sign of spawning fish other than carcasses.
-

Scott Cove Creek

October 13, 2023

Enumerated by Ian Clevenger, Ra Kulchein, Mikaere Berryman-Kamp.



Photo 4 – Water levels at the both falls on Scott Cove creek, same location where 20 min jumper survey occurs. Lower falls on left, upper falls on the right.

Estuary Survey

-1 jumper.

-10 seals, 1 eagle.

River

-Decreased levels of activity at both falls. More activity at lower falls than upper set.

-Notes: Scott Cove surveys are more beneficial for presence/absence data than population estimates because of how little of the system we are able to survey. Our numbers are largely based on jumper counts. Carrington Bridge was also assessed.

Wahkana Bay Creek

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.

October 19, 2023



Photo 5— Flow and visibility in main portion of Wahkana on the left, small tape worm found instream to the right.

Estuary Survey

- No jumpers seen.
- Hundreds of moon jellies, 10-20 porpoises.

River

- Increased water levels, better visibility than previous surveys.
 - Both segments surveyed for coho and chum moving through the creek.
 - Fresh bear sign (scat + tapeworms), first sign of bears in watershed.
-

Maple Creek

October 13, 2023

Enumerated by Ian Clevenger, Ra Kulchein, Mikaere Berryman-Kamp.



Photo 6 – Water flow through the lower logjam, partially digested fish fins.

Estuary Survey

- Crows and gulls.
- No fresh bear sign, no eagles.

River

- No fish seen.
 - Digested fish fins found in a scat on a log.
 - Good observer efficiency in both segments.
-

Carriden Creek

Enumerated by Ian Clevenger, Ra Kulchein.

October 18, 2023



Photo 7 – Bankful flows in the lower part of Carriden creek. Fresh windthrow along the first segment.

Estuary Survey

-0 jumpers.

-2 eagles.

River

-No fish seen.

-Increased flow due to recent rains.

-River flowing at bankful.

Embley Creek

October 18, 2023

Enumerated by Ian Clevenger, Ra Kulchein.



Photo 8 – Gravel placement above the beaver dam, excavated in some areas.

Estuary Survey

-3 eagles, 1 seal, 0 jumpers seen.

River

-Decrease in fish seen as well as observer efficiency.

-Redds noted in various parts of stream. Often where gravel placement occurred.

Minihump Creek

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.

October 15, 2023



Photo 9 – Minihumps congregating below a cedar bough.

River

- Increase in numbers of minihumps spawning.
 - Minihumps spawning throughout areas with spawning gravels.
 - Multiple deep, dark areas where it was difficult to count schools of minihumps.
-

Connector Creek

October 14, 2023

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.



Photo 10 – Minihumps in the lower portion of Connector creek, seen to the left and down from the horizontal log in photo.

River

- Minihumps seen spawning where creek and lake meet.
- Minihumps noted as larger in body size than those of Minihump Creek.

Loose Lake Creek

October 14, 2023

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.



Photo 11 – Lower Loose Lake Creek where the stream meets Loose Lake.

River

-No fish seen in system.
