## **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	СМ	СО	JK	SK/ MH	20 min	Morts PK/CM/CO	Air °C	H2O °C	pН	DO mg/L
Ahta (6)	10.19	1/ 10	12/ <b>53</b>	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/ <b>52</b>	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/ <b>3340</b>	-	0/0/0	16	12.9	5.93	15.35

<u>Table 1.</u> 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

	<u> 2017</u>				<u>2018</u>			<u>2019</u>				
Stream	Date	Pink	Chum	Coho	Date	Pink	Chum	Coho	Date	Pink	Chum	Coho
Ahta	10/12	13/ <b>1</b> 7	34/93	3/8	10/13	81/111	113/ <b>23</b> <b>9</b>	8/27	11/10	17/2	75/119	2-3
Viner	10/15	0/0	80/ <b>408</b>	0/0	10/15	0/0	947/ <b>23</b> <b>31</b>	0/0	08/10	0/0	18/40	0/0
Shoal	10/14	0/0	0/5	0/0	10/16	0/0	9/ <b>24</b>	0/0	09/10	0/0	0/1	0/0
Scott Cove	10/16	0/0	2/7	10/ <b>16 5</b>	10/15	0/ <b>0</b>	0/ <b>0</b>	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/ <b>0</b>	0/ <b>0</b>	10/14	494/ <b>70</b> <b>6</b>	0/ <b>0</b>	0/ <b>0</b>	09/10	238/ 476	0/0	0/0
Connector	10/14	2/3	0/0	0/0	10/16	17/ <b>21</b>	0/0	0/0	09/10	5-17	0/0	0/0

	<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

<u>Table 2 & 3.</u> 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

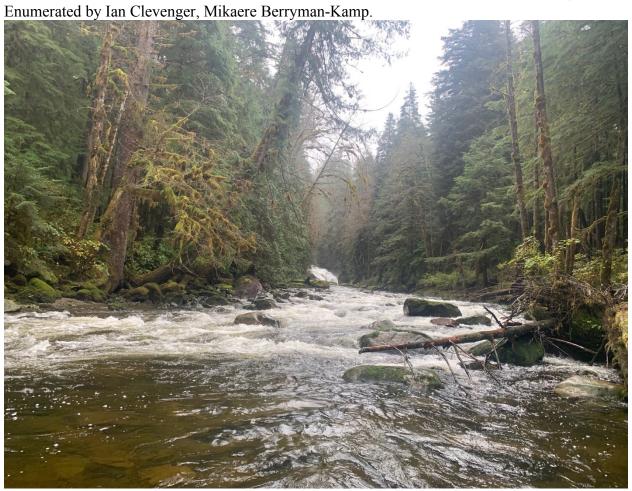


Photo 1 – Water levels in the upper segment of Ahta. Waterfall seen in background.

### **Estuary Survey**

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

- -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.

- -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 segement of Shoal Harbour Creek.

## **Estuary Survey**

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

- -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.

- -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

October 19, 2023

Enumerated by Ian Clevenger, Mikaere Berryman-Kamp.



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.

- -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 logiam, partially digested fish fins.

## Estuary Survey

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

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

Carriden Creek October 18, 2023

Enumerated by Ian Clevenger, Ra Kulchein.





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

## **Estuary Survey**

- -0 jumpers.
- -2 eagles.

- -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.

- -Decrease in fish seen as well as observer efficiency.
- -Redds noted in various parts of stream. Often where gravel placement occurred.

## **Minihump Creek**

October 15, 2023



Photo 9 – Minihumps congregating below a cedar bough.

- -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

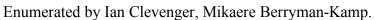




Photo 10 – Minihumps in the lower portion of Connector creek, seen to the left and down from the horizontal log in photo.

- -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

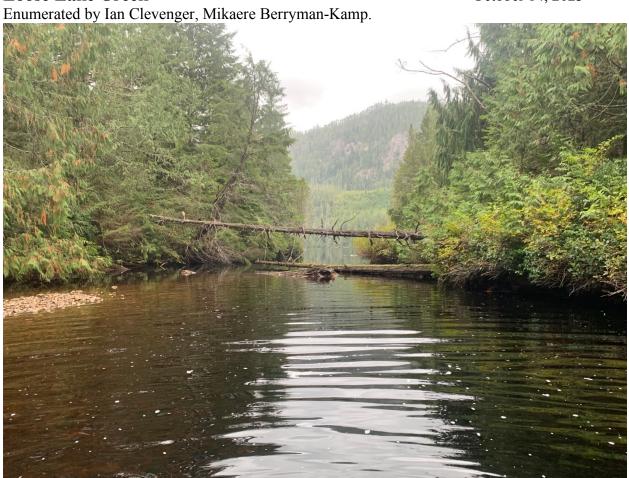


Photo 11 – Lower Loose Lake Creek where the stream meets Loose Lake.

## River

-No fish seen in system.