Mainland Enhancement of Salmonoid Species Society

M.E.S.S.S. Report - Rotation 4 DFO Area 12 Stock Assessment 2023

Enumeration Period: September 19-22, 2023

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1. 2023 Stream Escapement and Biosample Data

Stream	Date MM.DD	PK	СМ	СО	JK	SK	20 min	Morts PK/CM/CO	Air °C	H2O °C	pН	DO mg/L
Ahta (4)	09.20	6846/ 10 646	49/ 80	27/45	2	19/ 32	4	30/1/0	13	10.9	6.77	15.11
Viner (4)	09.21	34/57	15/ 25	0	0	0	7	19/0/0	14	11.3	6.80	15.32
Shoal (4)	09.19	2/4	4/7	0	0	0	43	0/0/0	11	11.6	6.75	14.36
Scott Cove (4)	09.19	0	0	6/74	22	0	0	0/0/0	11.5	14.3	6.53	11.37
Wahkana (4)	09.20	0	0	0	0	0	0	0/0/0	14	11.2	6.80	15.32
Maple (4)	09.21	5/7	0	0	0	0	0	0/0/0	13.0	10.9	6.18	15.71
Carriden (4)	09.22	0	0	0	0	0	0	0/0/0	15	12.3	6.80	8.13
Simoom (1)	09.22	0	0	0	0	0	2	0/0/0	16.5	10.6	7.59	14.45

<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	09/22	310/3 92	390/ 577	0/0	09/18	3129/ 3687	239/ 328	21/29	09/15	56/ 282	24/61	11-22
Viner	09/23	5/7	638/ 993	1/8	09/13	0/0	184/ 245	0/0	09/14	5-7	17/25	0/0
Shoal	09/17	0/0	0/0	0/0	09/12	1/3	5/13	0/0	09/13	0/0	0/0	0/0
Scott Cove	09/16	0/0	0/0	43/ 159	09/12	0/0	0/0	10/62	09/14	0/0	0/0	4/31
Wahkana	09/24	0/0	2/3	0/0	09/18	0/1	7/12	0/1	09/28	0/0	8/10	0/0
Maple	09/17	0/0	0/0	0/0	09/26	0/2	0/0	0/0	09/17	0/0	0/0	0/0
Carriden	09/16	0/0	0/0	0/0	09/29	0/0	0/0	0/0	09/19	0/0	0/0	0/0
Simoom	09/15	0/0	0/0	0/0	09/13	0/0	0/0	0/0	09/13	0/0	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	09/17	307/ 392	10-14	9-12	09/19	46/ 210	27/ 110	0/0	09/21	9901/ 11325	69/97	13/130
Viner	09/22	3-4	38/55	0/0	09/22	2/3	91/131	0/0	09/22	1/1	4/9	0/0
Shoal	09/16	0/0	0/1	2-4	09/24	0/0	92/128	7/13	09/20	0/0	0/0	2/3
Scott Cove	09/16	0/0	0/0	6/67	09/25	0/0	0/0	3/24	09/20	0/0	0/0	12/80
Wahkana	09/17	0/0	0/0	0/0	09/19	0/0	0/0	0/0	09/21	0/0	0/0	1/2
Maple	09/23	0/0	0/0	0/0	09/25	0/0	0/0	0/0	09/22	0/0	0/0	0/0
Carriden	09/25	0/0	0/0	0/0	09/23	0/0	0/0	0/1	09/26	0/0	0/0	0/0
Simoom	09/22	0/0	0/0	0/0	09/26	0/0	0/0	2/4	09/25	0/0	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 4 Highlights

Weather:

- Colder daily temperatures keeping water temperature low and dissolved oxygen high.
- Periods of significant precipitation (~30mm) between rotations.

Water Levels/Quality:

• Precipitation events significantly affected most streams leading to increased flows and fish moving in.

Visibility:

• Changes in flow led to better visibility in most watersheds (Viner, Maple,) and decreased visibility in Ahta.

Notes:

- Fish are moving through Scott Cove creek at a high rate. Lots of successful jumpers seen at both sets of falls.
- High occurrence of spawning occurring in Ahta. Large amounts of pinks and chum on redds.
- Increased bear sign in Viner, more bear killed fish and fishy looking scats.
- First count of the season for Simoom Sound creek.

1. Stream Enumeration Notes

Ahta/Hada September 20, 2023

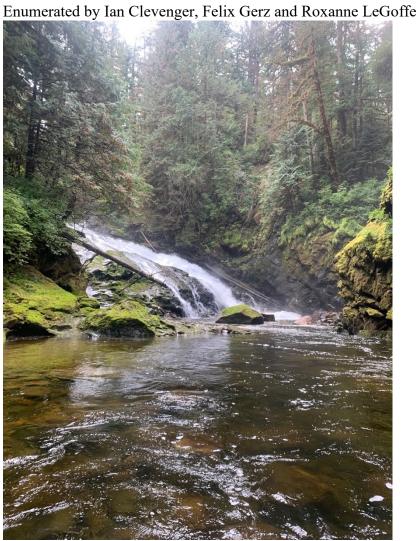


Photo 1 – Water levels at the Ahta falls.

Estuary Survey

- -4 jumpers seen in bay.
- -4 seals seen.

- -Water level increase made for more difficult counting conditions.
- -Increases in numbers of fish seen in holding pools and spawning compared to last rotation.
- -Redds and fish actively spawning in entirety of suitable spawning area.
- -Large amount of grizzly bear tracks and fish filled scats around stream.

Viner River September 21, 2023

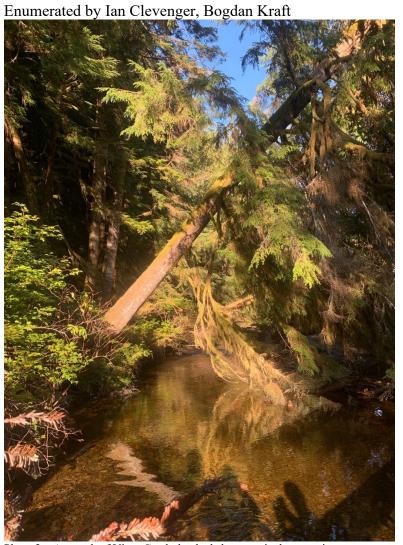


Photo 2 – A stretch of Viner Creek that had chums actively spawning.

Estuary Survey

- -7 Jumpers.
- -150 gulls, 1 bald eagle.
- -Increase in bear sign and kills of pinks.

- -Continued observation of pinks spawning, increase in chums spawning and expansion of spawning to new areas.
- -Fish seen distributed through lower 500m of stream

Shoal Harbour Creek

September 19, 2023

Enumerated by Ian Clevenger



Photo 3- Changes in flow in Shoal Harbour creek, stick marking stream levels before rain.

Estuary Survey

- -43 Jumpers.
- -Mix of both coho and pinks jumping.
- -3 seals seen further out in bay.

- -Good visibility in stream.
- -Majority of fish seen in lower 200m, but actively trying to move upstream.

Scott Cove Creek September 19, 2023





Photo 4 – Water levels at the lower falls on Scott Cove creek, same location where 20 min jumper survey occurs.

Estuary Survey

- -Fish: 146 jumpers extremely active at mouth of river.
- -Large amount of coho seen jumping, pinks occasionally seen jumping right near mouth of creek.

- -Three jumpers noted at lower falls.
- -35 coho seen jumping at 1.5km falls during 20 min survey.
- -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

September 20, 2023



Photo 5 – Water levels on the middle section of Wahkana creek.

Estuary Survey

- -No jumpers seen.
- -No porpoises, eagles or bear sign.

- -Improved water levels but still very slow moving.
- -Fry seen.

Maple Creek

Sept 21, 2023





Photo 6 – Improved flows seen on Maple creek.

Estuary Survey

- -No fish seen.
- -No fresh animal sign.

- -First count with fish seen.
- -Majority of pinks were hiding in woody areas or under riffles.

Carriden Creek Sept 22, 2023

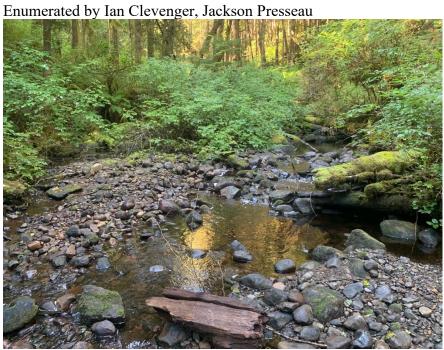


Photo 7 – Flow connectivity restored at Carriden creek

Estuary Survey

- -0 jumpers
- -No seals, sign of eagles or bears

- -1 dead cutthroat trout found.
- -Increased flow due to recent rains.
- -Precipitation within 24hrs of survey.

Simoom Sound Creek

Sept 22, 2023

Enumerated by Ian Clevenger, Felix Gerz



Photo 8 – Step pool section of Simoom Sound creek.

Estuary Survey

- -2 jumpers.
- -1 seal.

- -Cutthroat trout seen in first 200m of stream.
- -Stream temperature and dissolved oxygen levels very conducive to spawning and salmon rearing.