Communicating Results with Sport Salmon Head Recovery Letters

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Mark Recovery Program, DFO Science

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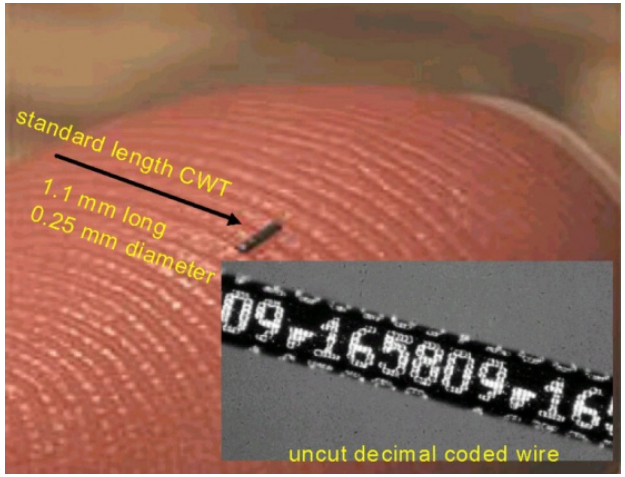
EXIT
BAR MUST BE REMOVED
SPORT
Sport
SALMONID HEAD RECOVERY PROGRAM

Terminology

- CWT = coded wire tag
- PST = Pacific Salmon Treaty
- Ad-clip = adipose clip
- MRP = Mark Recovery Program
- DFO or CDFO = Fisheries and Oceans Canada



Adipose Fin Clip

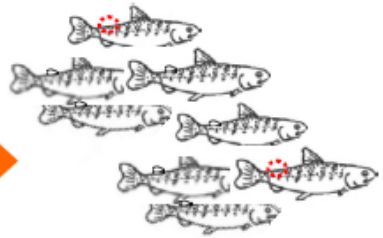
ANNUAL CYCLE OF THE CODED WIRE TAG (CWT) PROGRAM

SALMON HEAD RECOVERY PROGRAM

Hatcheries implant tiny 1mm segments of coded wire into the snouts of some juvenile Chinook and Coho. Each code indicates where and when the fish was released.

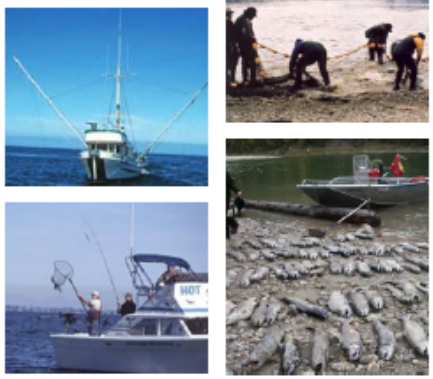
The adipose fin is clipped to distinguish these hatchery fish from wild fish.

The fish are released and begin their migration to the ocean.

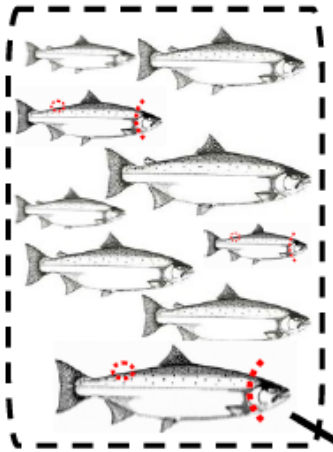


SCIENCE BASED RESULTS ARE USED TO MANAGE FISHERIES, ASSESS THE HEALTH OF STOCKS, EVALUATE HATCHERY METHODS AND PLAN FOR ANOTHER SEASON.

Fisheries and Oceans Canada | Pêches et Océans Canada



When returning adults are caught they are sampled in ocean and river fisheries and on the spawning grounds.

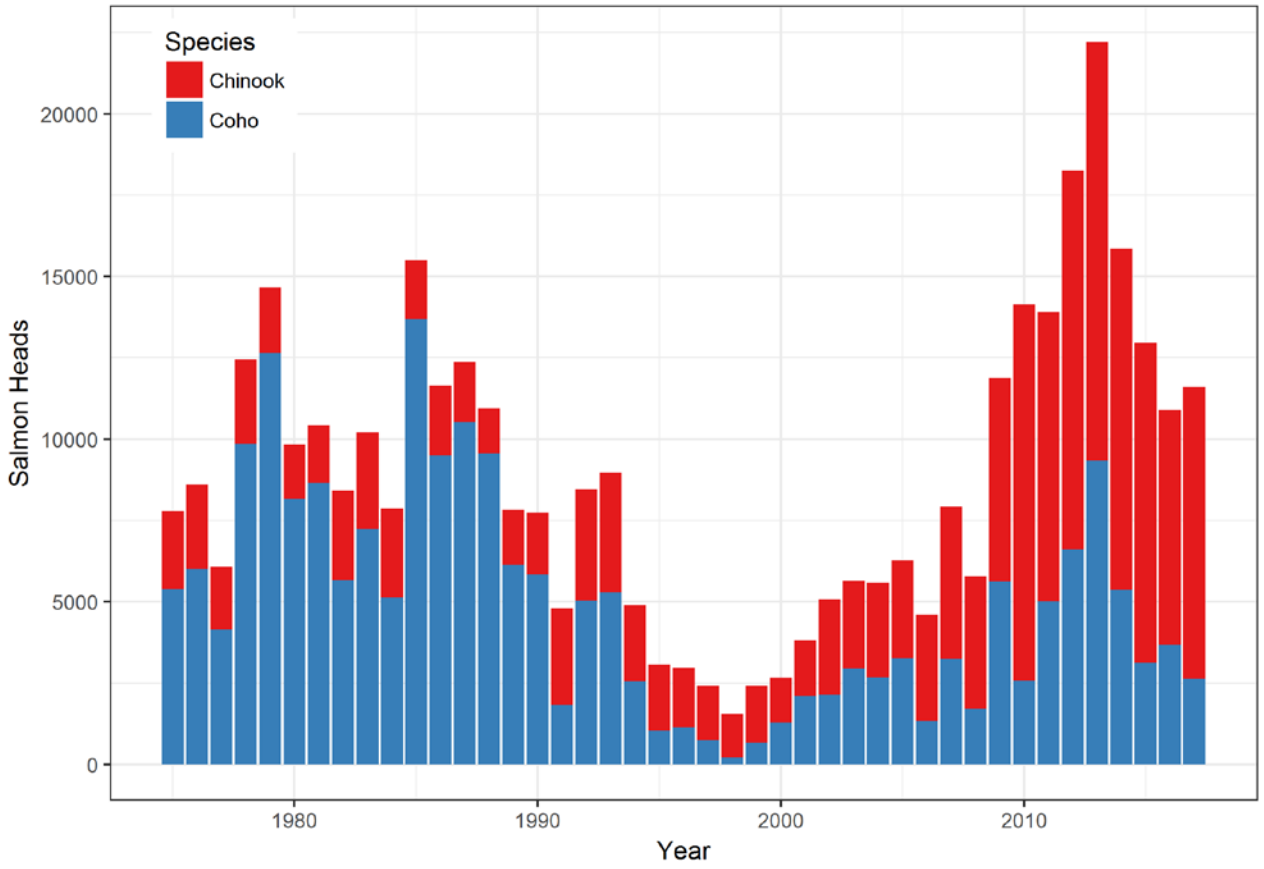


Heads or snouts are submitted for dissection to recover CWTs.

The tags are removed and read under magnification.

CWT data and catch estimates are entered into a database and analyzed to determine the abundance, distribution and survival of stocks.

Sport Head Recoveries

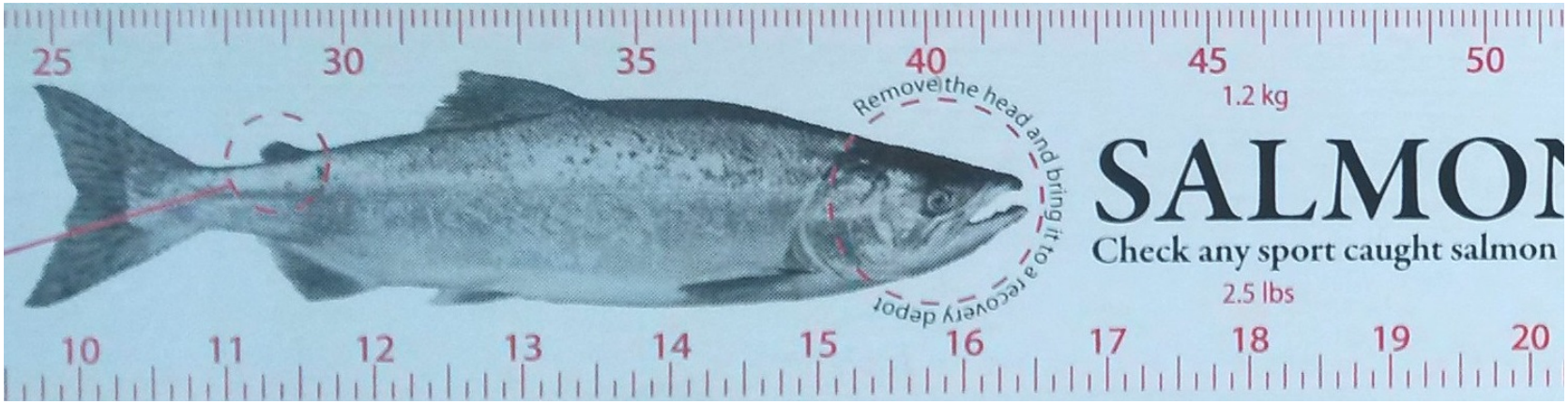


Prizes


MISSING FIN ??
KEEP THE HEAD!!


Salmon Head Recovery Program 2014
2013
Salmon Head Recovery Program
2008
SALMON HEAD RECOVERY PROGRAM
SALMONID HEAD RECOVERY
2004
2007
SALMONID HEAD RECOVERY
2000
SALMONID HEAD RECOVERY
2002
2012
SALMON HEAD RECOVERY PROGRAM
2006
1993
Salmonid Head Recovery
1996
SALMONID HEAD RECOVERY
SALMON HEAD RECOVERY
2009
PROGRAM
2003
SALMONID HEAD RECOVERY

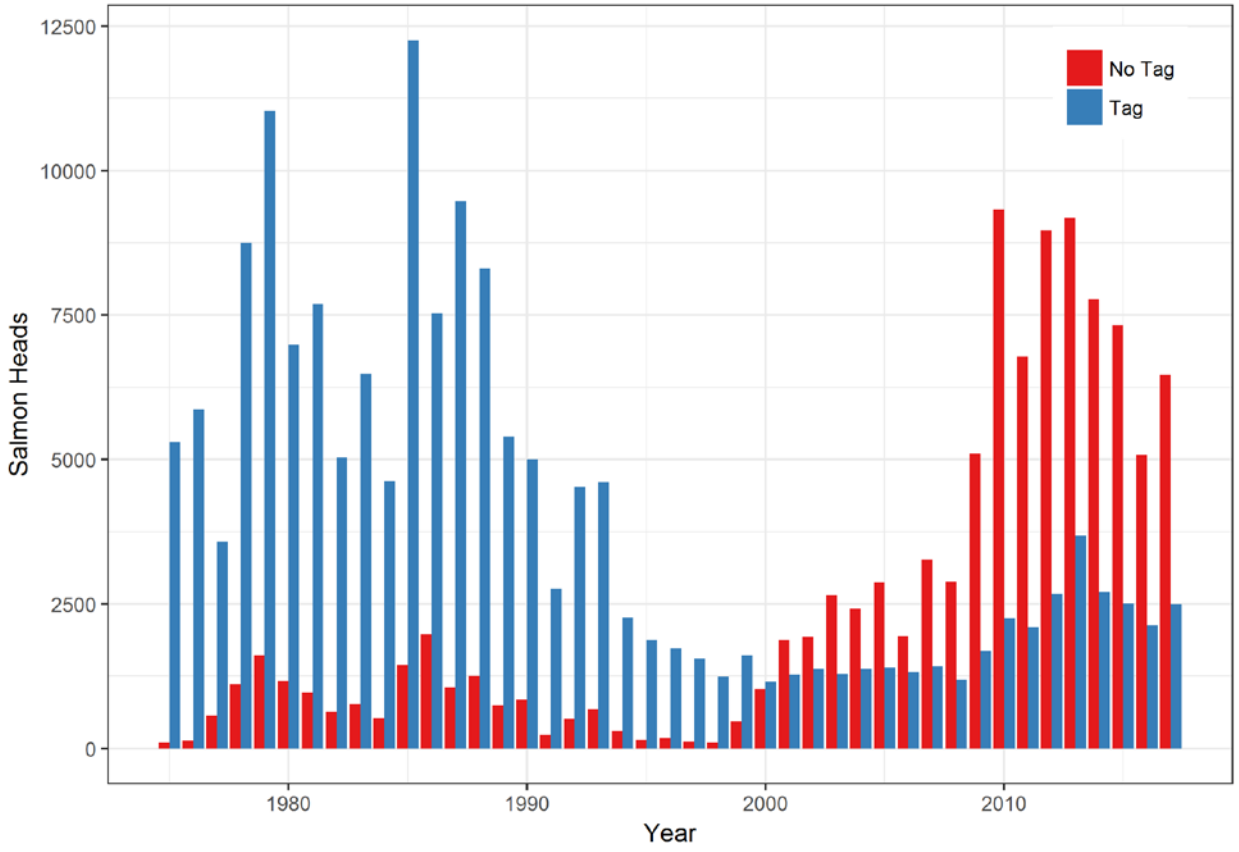
Lesson Learned



Mass Marking

- Allows fisheries to occur while protecting wild stock and adult management
- Frustration in sport fishers contributing salmon heads for CWTs
- In 1975, ~98% of submitted Chinook and Coho were tagged
- In 2017, ~28% Chinook and ~16% Coho submitted were tagged

CWTs in Sport Salmon Heads



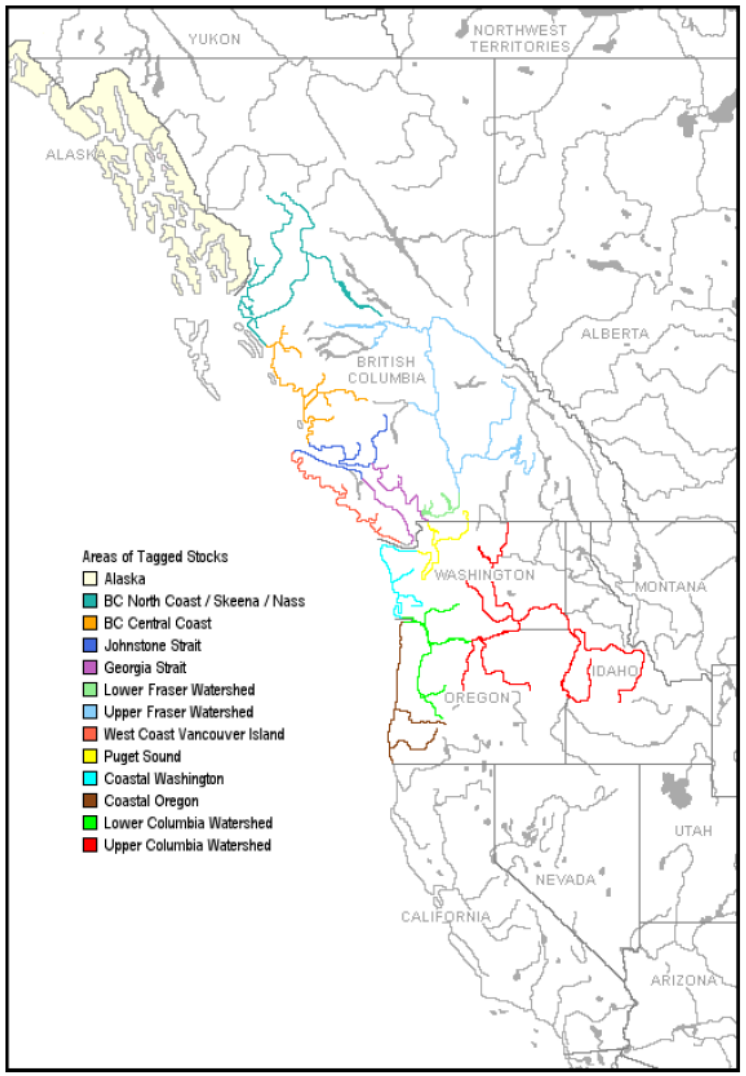
2017 Letters

Dear DOE JOE

Thank you for participating in the Salmon Head Recovery Program by turning in the head(s) from your adipose fin-clipped Coho and/or Chinook. The recovery of coded wire tags (CWTs) is essential to fulfill Canada's needs for the assessment and enhancement of salmon stocks, as well as our Canada/U.S. Pacific Salmon Treaty obligations.

Please take a moment to review the following information resulting from your submitted salmon head(s) and in particular where and when you caught your fish:

Your Catch Information			Tag Information			
Head #	Catch Location (Area)	Month / Year	Tag Code	Species	Brood Year	Hatchery / Location of Origin
2	Ball Point (16)	Aug / 2015	NO TAG	Chinook		


YUKON
NORTHWEST TERRITORIES
ALASKA
ALBERTA
BRITISH COLUMBIA
WASHINGTON
MONTANA
IDAHO
OREGON
UTAH
NEVADA
CALIFORNIA
ARIZONA
Areas of Tagged Stocks
Alaska
BC North Coast / Skeena / Nass
BC Central Coast
Johnstone Strait
Georgia Strait
Lower Fraser Watershed
Upper Fraser Watershed
West Coast Vancouver Island
Puget Sound
Coastal Washington
Coastal Oregon
Lower Columbia Watershed
Upper Columbia Watershed

Angler Feedback in 2015

"Anglers want to know where and when their fish was tagged. No data is a huge disincentive to participation... Bottom line - I didn't fill out any labels or turn in any marked heads last summer. In fact, none of my immediate ocean fishing acquaintances did either."

2016 Results From Recreational Fisheries

The table below shows the top 10 hatcheries which contributed the most coded wire tags (CWTs) to the program in 2016 broken out into different catch areas (columns). It also includes the number of tags that came from all other hatcheries as well as tags that came from wild stocks. Each number is the combined count of Chinook and Coho tags that were recovered.

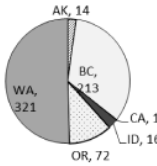
	Origin (Hatchery/Wild)	North Coast (1-6, 101-106)	Central Coast (7-10, 107-109)	Johnstone Strait (11-12)	Central Georgia Strait (13-16)	South Georgia Strait (17-19A, 28, 29)	Juan de Fuca (19B, 20)	W. Coast Van. Island (21-27, 121-127)	Alberni Inlet (23)	Freshwater (All Areas)	Total
1	Robertson Creek (BC)	55	33	2			19	120	31	1	261
2	Snootli Creek (BC)	50	53							12	115
3	Quinsam River (BC)	14	58	37	1			1			111
4	Cowichan River (BC)		5	42	36	10	7	7			107
5	Chilliwack River (BC)		1	23	13	26	4	16		19	102
6	Big Qualicum River (BC)	1	11	42	29	5	5	6		1	100
7	Similkameen River (WA)	71	6				1	19			97
8	Lyons Ferry (WA)	14	11	2				49			76
9	Shuswap River (BC)	18	10	17			4	2		27	78
10	Inch Creek (BC)		2	14	8	3	10	3		31	71
	All Other Canadian Hatcheries	73	75	55	20	26	25	30	1	22	327
	All Other US Hatcheries	329	84	22	21	27	112	349	1		945
	Canadian Wild Stocks	2	2								4
	US Wild Stocks	10						7			17
	Total	637	351	256	128	97	187	609	33	113	2411

This table shows the number of recovered CWTs from Chinook caught in 2016, by age and catch area. A 4 year old fish caught in 2016 started life from an egg laid down during spawning in 2012, otherwise known as the brood year.

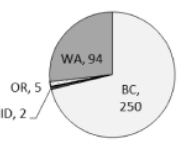
Catch Area (Fishery)	Age					Total
	2yr	3yr	4yr	5yr	6yr	
Northern BC		56	280	222	18	576
Central BC	1	60	189	44	5	299
Johnstone Strait	2	88	117	7	1	215
Central Georgia Strait	5	47	52	1		105
South Georgia Strait	7	57	25			89
Juan de Fuca	21	56	69	5		151
W. Coast Van. Island	26	185	232	55	5	503
Alberni Inlet	1	7	21	1		30
Freshwater	6	11	36	19	3	75
Totals	69	567	1021	354	32	2043

The following pie charts show the proportions of CWTs by province or state that came from Chinook & Coho caught in 2016. Each pie chart represents a catch area or fishery and each number represents the count of tags recovered. (AK = Alaska, BC = British Columbia, CA = California, ID = Idaho, OR = Oregon, WA = Washington)

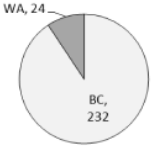
Northern BC (1-6, 101-106)



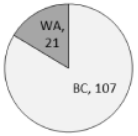
Central Coast (7-10, 107-109)



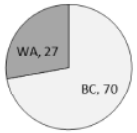
Johnstone Strait (11-12)



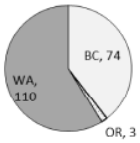
Central Georgia Strait (13-16)



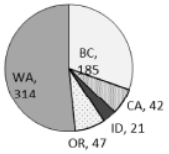
South Georgia Strait (17-19A, 28, 29)



Juan de Fuca Strait (19B, 20)



W. Coast Van. Island (21-27, 121-127)



This table shows the number of submitted heads from sport-caught Chinook and Coho in 2016 by area and month.

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Grand Total
COHO	Northern BC			1		1	58	136	112	6				314
	Central BC						14	165	190	17				386
	Johnstone Strait		1	1			21	174	183	104	3			487
	Central Georgia Strait	1					60	277	127	37	5			507
	South Georgia Strait					8	37	68	30	25	7			175
	Juan de Fuca				1		8	21	143	316	46			535
	W. Coast Van. Island						44	382	276	92	3			797
	Alberni Canal			1			1	1	10	6				19
	Freshwater				1			4	3	40	215	68		331
	Coho Total	1	1	3	2	9	243	1,228	1,074	643	279	68	0	3,551
CHINOOK	Northern BC	2	1	5	2	63	681	376	498	25	2			1,655
	Central BC				2	8	179	209	163	10				571
	Johnstone Strait		1	1	4	37	124	115	145	42	1			470
	Central Georgia Strait	4	7	5	20	48	76	72	58	29	6		4	329
	South Georgia Strait	7	11	13	35	92	69	29	35	33	1	7	14	346
	Juan de Fuca	62	49	40	59	80	113	137	203	68	17	12	21	861
	W. Coast Van. Island	6	8	13	46	56	528	1243	686	106	1			2,693
	Alberni Canal				1			2	30	3				36
	Freshwater						9	16	16	27	21	3		92
	Chinook Total	81	77	77	169	384	1,779	2,199	1,834	343	49	22	39	7,053
	Grand Total	82	78	80	171	393	2,022	3,427	2,908	986	328	90	39	10,604

2016 BC Chinook coded wire tag recoveries grouped by catch area and month.

Catch Area	Areas of Tagged Stocks	Alaska	Skeena Watershed	BC Central Coast	Johnstone Strait	Georgia Strait	West Coast Vancouver Island	Lower Fraser Watershed	Thompson River	Puget Sound	Coastal Washington	Lower Columbia Watershed	Upper Columbia Watershed	Coastal Oregon	California
North Coast (1-6, 101-106)	Jan-Apr	-	-	-	-	25%	-	-	25%	25%	-	-	25%	-	-
	May	-	-	11%	11%	-	11%	-	-	4%	-	4%	61%	-	-
	June	2%	4%	10%	5%	1%	7%	-	2%	3%	8%	7%	43%	8%	-
	July	1%	8%	11%	12%	2%	12%	-	6%	1%	8%	9%	25%	5%	-
	August	-	1%	5%	11%	3%	23%	-	1%	1%	6%	13%	22%	12%	-
	September	-	-	-	-	-	14%	-	-	-	14%	-	43%	29%	-
	Oct-Dec	-	-	-	-	-	-	-	-	-	-	100%	-	-	-
Central Coast (7-10, 107-109)	May	-	-	-	-	-	-	-	-	100%	-	-	-	-	-
	June	-	-	44%	26%	2%	6%	-	-	12%	-	2%	8%	-	-
	July	-	-	27%	23%	9%	9%	-	-	14%	-	-	16%	2%	-
	August	-	-	2%	48%	17%	17%	-	2%	2%	-	-	13%	-	-
Johnstone Strait (11-12)	May	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
	June	-	-	-	12%	18%	12%	-	12%	35%	-	6%	6%	-	-
	July	-	-	-	35%	6%	3%	3%	16%	16%	-	6%	13%	-	-
	August	-	-	-	59%	8%	8%	-	3%	5%	-	3%	14%	-	-
	September	-	-	-	33%	-	33%	-	-	-	-	-	33%	-	-
Georgia Strait North (13-16)	Jan-Apr	-	-	-	-	69%	-	13%	-	19%	-	-	-	-	-
	May	-	-	-	-	77%	-	10%	-	13%	-	-	-	-	-
	June	-	-	-	-	54%	-	22%	1%	19%	-	1%	1%	-	-
	July	-	-	-	1%	62%	-	12%	18%	7%	-	-	-	-	-
	August	-	-	-	28%	49%	-	12%	4%	4%	-	-	2%	-	-
	September	-	-	-	44%	39%	-	11%	-	3%	-	3%	-	-	-
	Oct-Dec	-	-	-	100%	-	-	-	-	-	-	-	-	-	-
Georgia Strait South (17-19A, 28, 29)	Jan-Apr	-	-	-	-	25%	-	56%	-	13%	-	-	6%	-	-
	May	-	-	-	-	35%	-	30%	-	30%	-	5%	-	-	-
	June	-	-	-	-	36%	-	14%	-	50%	-	-	-	-	-
	July	-	-	-	-	50%	-	50%	-	-	-	-	-	-	-
	August	-	-	-	-	44%	-	22%	-	33%	-	-	-	-	-
	September	-	-	-	-	53%	-	47%	-	-	-	-	-	-	-
	Oct-Dec	-	-	-	-	-	-	20%	-	80%	-	-	-	-	-
Juan de Fuca (19B, 20)	Jan-Apr	-	-	-	-	-	-	-	-	100%	-	-	-	-	-
	May	-	-	-	-	-	-	-	11%	89%	-	-	-	-	-
	June	-	-	-	-	5%	-	-	26%	42%	-	16%	11%	-	-
	July	-	-	-	-	10%	-	5%	15%	60%	5%	5%	-	-	-
	August	-	-	-	-	11%	24%	5%	3%	43%	5%	5%	3%	-	-
	September	-	-	-	-	21%	46%	4%	-	18%	4%	4%	4%	-	-
	Oct-Dec	-	-	-	-	17%	-	33%	-	50%	-	-	-	-	-
North West Vancouver Island (25-27, 125-127)	Jan-Apr	-	-	-	-	-	-	-	-	60%	-	-	40%	-	-
	May	-	-	-	-	-	-	-	-	-	-	-	100%	-	-
	June	-	-	-	-	2%	2%	-	4%	12%	2%	10%	56%	6%	8%
	July	-	-	-	-	2%	11%	2%	-	10%	2%	19%	39%	8%	7%
	August	-	-	-	-	5%	27%	4%	-	19%	3%	8%	21%	5%	9%
	September	-	-	-	-	-	50%	-	-	25%	-	-	-	-	25%
South West Vancouver Island (21-24, 121-124)	Jan-Apr	-	-	-	-	-	-	-	-	60%	-	40%	-	-	-
	May	-	-	-	-	14%	-	-	-	57%	-	29%	-	-	-
	June	-	-	-	-	5%	-	5%	-	41%	-	15%	22%	-	12%
	July	-	-	-	-	4%	5%	13%	-	27%	-	17%	21%	-	14%
	August	-	-	-	-	5%	40%	7%	-	7%	1%	14%	16%	4%	6%
	September	-	-	-	-	-	57%	-	-	21%	-	7%	14%	-	-
Alberni Inlet (23)	July	-	-	-	-	-	-	-	-	100%	-	-	-	-	-
	August	-	-	-	-	-	100%	-	-	-	-	-	-	-	-
	September	-	-	-	-	-	100%	-	-	-	-	-	-	-	-
Fresh Water	June	-	56%	44%	-	-	-	-	-	-	-	-	-	-	-
	July	-	47%	53%	-	-	-	-	-	-	-	-	-	-	-
	August	-	31%	-	-	-	-	-	69%	-	-	-	-	-	-
	September	-	-	-	-	-	-	22%	78%	-	-	-	-	-	-
	Oct-Dec	-	-	-	-	7%	-	93%	-	-	-	-	-	-	-

Percentages of 2016 BC Coho coded wire tag recoveries grouped by catch area and month.

Catch Areas	Areas of Tagged Stocks	Alaska	Skeena Watershed	BC Central Coast	Johnstone Strait	Georgia Strait	West Coast Vancouver Island	Lower Fraser Watershed	Thompson River	Puget Sound	Coastal Washington	Lower Columbia Watershed	Upper Columbia Watershed
North Coast (1-6, 101-106)	Jan-Apr	-	100%	-	-	-	-	-	-	-	-	-	-
	June	-	25%	13%	-	-	-	-	-	13%	25%	25%	-
	July	-	44%	17%	-	-	6%	-	-	6%	17%	11%	-
	August	13%	35%	10%	-	-	-	-	-	13%	19%	10%	-
	September	100%	-	-	-	-	-	-	-	-	-	-	-
Central Coast (7-10, 107-109)	July	-	-	50%	-	-	13%	-	-	25%	-	13%	-
	August	-	-	29%	-	12%	6%	-	-	6%	12%	35%	-
Johnstone Strait (11-12)	July	-	-	-	-	13%	0%	13%	-	53%	7%	13%	-
	August	-	-	-	10%	-	10%	-	-	40%	10%	30%	-
	September	-	-	-	50%	-	-	-	-	-	50%	-	-
Georgia Strait North (13-16)	June	-	-	-	-	-	-	100%	-	-	-	-	-
	July	-	-	-	4%	39%	-	43%	4%	4%	-	4%	-
	August	-	-	-	7%	33%	-	37%	4%	11%	4%	4%	-
	September	-	-	-	31%	23%	15%	8%	8%	0%	8%	8%	-
Georgia Strait South (17-19A, 28, 29)	June	-	-	-	-	-	-	-	-	100%	-	-	-
	July	-	-	-	-	-	-	40%	40%	20%	-	-	-
	Oct-Dec	-	-	-	-	-	-	100%	-	-	-	-	-
Juan de Fuca (19B-20)	July	-	-	-	-	-	-	-	-	100%	-	-	-
	August	-	-	-	-	-	9%	0%	27%	55%	-	-	9%
	September	-	-	-	0%	11%	6%	22%	28%	33%	-	-	-
	Oct-Dec	-	-	-	-	-	-	100%	-	-	-	-	-
North West Vancouver Island (25-27, 125-127)	June	-	-	-	-	-	-	-	-	-	-	100%	-
	July	-	-	-	-	-	20%	-	5%	30%	40%	5%	-
	August	-	-	-	-	-	17%	-	0%	67%	0%	17%	-
	September	-	-	-	-	-	-	-	-	-	100%	-	-
South West Vancouver Island (21-24, 121-124)	June	-	-	-	-	-	-	-	40%	60%	-	-	-
	July	-	-	-	-	-	23%	-	-	41%	18%	18%	-
	August	-	-	-	-	-	89%	3%	-	6%	-	3%	-
	September	-	-	-	7%	14%	36%	7%	7%	14%	7%	7%	-
	Oct-Dec	-	-	-	-	-	-	100%	-	-	-	-	-
Alberni Inlet (23)	August	-	-	-	-	-	100%	-	-	-	-	-	-
	September	-	-	-	-	-	100%	-	-	-	-	-	-
Fresh Water	August	-	100%	-	-	-	-	-	-	-	-	-	-
	September	-	50%	-	-	-	50%	-	-	-	-	-	-
	Oct-Dec	-	6%	-	-	3%	-	91%	-	-	-	-	-

Proposed Solution

- Open and transparent data
- Leverage technology
- Share specific and comparable data in season
- Every fisher gets targeted information

Date Caught	Label	Tag	Location Reported	Area Reported	Species Reported	Length (mm)
2017-07-05	1154418	No Tag	Cliffe Point	27	Chinook	700

Technologies Used

- Oracle database with all CWT information
- Access database with fisher and guide contact information (confidential)
- R code within R Studio
- R markdown
- ggmap
- SMTP (simple mail transfer protocol) server

R Markdown

- https://rmarkdown.rstudio.com/

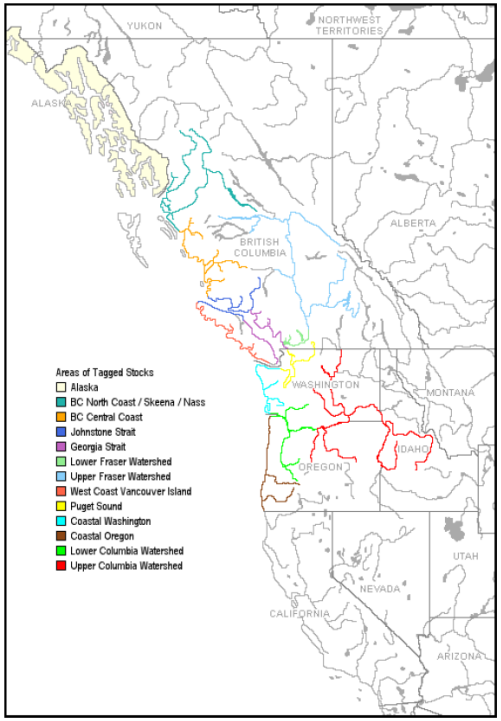
"Your data tells a story. Tell it with R Markdown. Turn your analyses into high quality documents, reports, presentations and dashboards."

- R markdown uses knitr and pandoc to produce static or dynamic output formats

ggmap

- R package using ggplot2
- Maps sources include Google Maps, OpenStreetMap, Stamen
- https://github.com/dkahle/ggmap
- Combines spatial information with your data

Map Format


YUKON
NORTHWEST TERRITORIES
ALASKA
ALBERTA
BRITISH COLUMBIA
WASHINGTON
MONTANA
IDAHO
OREGON
UTAH
NEVADA
CALIFORNIA
ARIZONA
Areas of Tagged Stocks
Alaska
BC North Coast / Skeena / Nass
BC Central Coast
Johnstone Strait
Georgia Strait
Lower Fraser Watershed
Upper Fraser Watershed
West Coast Vancouver Island
Puget Sound
Coastal Washington
Coastal Oregon
Lower Columbia Watershed
Upper Columbia Watershed


2
3
5
4
1
Kamloops
Vernon
Kelowna
Vancouver
Surrey
Victoria
Everett
Wenatchee National Forest
Spokane
WASHINGTON
Olympia
Yakima
Kennewick
Portland

Comparable Catch

Additional Information for your Salmon Head Recoveries and comparable recoveries

Date	Tag	Brood Year	Prov/State	Release Location	Hatchery Location	Stock Location
Your Salmon						
2017-07-20	636843	2014	WA	Wallace R 07.0940	Wallace R Hatchery	Skykomish R 07.0012
Comparable Recoveries						
2017-07-19	636857	2014	WA	Big Soos Cr 09.0072	Soos Creek Hatchery	Big Soos Cr 09.0072
2017-07-12	210440	2014	WA	Lk Washington (King)	Issaquah Hatchery	Issaquah Cr 08.0178
2017-07-20	636843	2014	WA	Wallace R 07.0940	Wallace R Hatchery	Skykomish R 07.0012
2017-07-22	210440	2014	WA	Lk Washington (King)	Issaquah Hatchery	Issaquah Cr 08.0178

Challenges

- Location data provided by fisher?
- Area or location disagreement?
- What if fisher provides wrong species?
- How much information is too much?

Location Data

Occasionally, we modify the location or area used for salmon heads in order to be consistent with other fishers. Please review the changes made for accuracy and contact us if there are any necessary changes.

Label	Location Reported	Modified Location	Area Reported	Modified Area
1219895	East Dundas	Dundas Island	4-H-13	4

Species

We noticed that you did not provide a species for your salmon. Please review the determination by the head lab and contact us if you have any concerns.

Label	Species Reported	Species Determined
1202357	Unknown	Chinook
1202358	Unknown	Chinook

We appreciate your participation in our program; however, we currently limit the species to Chinook or Coho salmon.

Salmon Head Recovery Program
Pacific Biological Station
3190 Hammond Bay Road
Nanaimo, BC V9T 6N7

March 15, 2018

David E. Anderson
144 PACIFIC TERR
NANAIMO, BC
CANADA V9S 3G2

Dear David E. Anderson:

Thank you for participating in the Salmon Head Recovery Program by turning in the head from your adipose fin-clipped salmon. The recovery of coded wire tags (CWTs) is essential to fulfill Canada's needs for assessment and enhancement of salmon stocks, as well as our Canada/US Pacific Salmon Treaty obligations. This letter includes all your salmon heads that have been processed between the dates 2017-01-01 and 2017-12-31 . If you are missing a salmon head, please watch for it in your next letter as collection schedules vary between depot locations.

Salmon Recoveries

Please take a moment to review the following information reported for your submitted salmon head, and in particular where and when you caught your fish.

Date Caught	Label	Tag	Location Reported	Area Reported	Species Reported	Length (mm)
2017-07-05	1154418	No Tag	Cliffe Point	27	Chinook	700

Salmon Releases

Comparable CWT information recovered from salmon caught in the same area and within 7 days of your catch are provided for your interest. The number of days was chosen to find at least three or more comparable recoveries.

Date Caught	Tag	Area	Species	Brood Year	Release or Hatchery Name	Map Location
2017-07-01	636827	27	Chinook	2014	Purdy Cr	1
2017-07-05	183568	27	Chinook	2013	Discovery Pass	2
2017-07-12	183796	27	Chinook	2013	Alberni In	3
2017-07-12	636749	27	Chinook	2013	East Sound Bay (San)	4
2017-07-12	183283	27	Chinook	2014	Cowichan R	5

Brood year refers to the calendar year when eggs are deposited in the stream bed (e.g. 2014 brood Coho eggs were deposited during late 2014. The mature fish return to spawn during the fall of 2017 as 3 year

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olds). In the release or hatchery name column, H = hatchery, R = River and Cr = Creek.

No Tags

In cases when there is no tag in the salmon head, it is usually due to mass marking. Mass marking is the removal of the adipose fin from hatchery Coho or Chinook to create hatchery mark-only fishing opportunities. It is not feasible to tag all hatchery fish, therefore, many do not contain a CWT. This means increased effort is required to detect and obtain enough representative samples of CWTs from all fisheries that are sampled. The US (excluding Alaska) mass marks almost all of their hatchery Chinook and Coho. BC mass marks some Coho, but not Chinook.

To ensure that sufficient CWTs are recovered to support stock assessment, fishery, and hatchery management and to have a complete picture of the abundance, survival and distribution of stocks, the Salmon Head Recovery Program needs ongoing support from the recreational community to recover enough CWTs. More tag recoveries increases the confidence in science to support management decisions. Fewer tag recoveries and a precautionary approach may lead to restrictions over unnecessarily larger areas and/or time periods to conserve stocks of concern.

Future Applications

- T’aaq-wiihak fisheries
- Freezer troll adjudication improvements
- Home use for indigenous peoples
- Any fishery to increase involvement and give feedback

- Co-authors: Nick Komick and Erik Grundmann
- MRP Team: Kathryn Fraser, Brenda Ridgway, Doug Herriott
- DFO Salmon Assessment: Mary Thiess, Section Head and Ann-Marie Huang, Symposium Chair
- JO Thomas & Associates Ltd: Elly Ho, Harvey Tom
- All fishers participating in the CWT program

Questions or Suggestions?

Public Involvement

Canada

Information

Canada