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2018 NASS RIVER SALMON STOCK ASSESSMENT UPDATE – MONDAY, 18 JUNE

The following is the first general public update for 2018 of Nass River salmon and summer-run steelhead stock assessments from the Nisga'a Lisims Government Fisheries and Wildlife Department.

All data presented in this update are preliminary and subject to change with further assessment information that becomes available and should be interpreted cautiously. For in-season assessment purposes only.

NASS RIVER ASSESSMENT OPERATIONS UPDATE

OPERATIONAL ASSESSMENT INFORMATION FOR 2018

1. Fishwheel Assessment data: 1 June to 17 June (see below)
2. Meziadin Fishway data: Operation will begin on 1 July
3. Kwinageese Weir data: Operation will begin in mid-July

GITWINKSIHLKW (GW) FISHWHEELS (NASS TEST FISHERY –STARTED IN 1994 [25th year]):

The Nass River test fishery fishwheels began operation on 1 June for tagging and historical catch index assessments for salmon and summer-run steelhead. All fish caught in the GW fishwheels were released alive after tagging and/or counting. Fishwheels 1 and 2 are currently operating at 0.7 m lower than average water levels (2.4 m vs. 3.2 m) based on 1994–2017 operations after operating at record low water levels (up to 2.4 m lower than historical averages). A chart of the water levels at the test fishery follows the text summary that compares current levels to historical levels. The Nass River water temperature is 2.0 °C above average (10.4°C vs. 8.4°C) based on the 1994–2017 operations.

GREASE HARBOUR (GH) FISHWHEELS:

Start-up dates of the GH fishwheels were from 5 June (FW5), 6 June (FW6), 7 June (FW3), and 15 June (FW4). Four fishwheels are currently operating at Grease Harbour (upstream of Ts'im Anwiihlist). The GH fishwheels are used for in-season mark-recapture tag recoveries, abundance estimates passing upstream, additional tagging (adult Chinook and Chum salmon, and Pacific Lamprey), and for selective harvesting when permitted by Nisga'a Lisims Government. Of the 73 Sockeye caught at all fishwheels to date, all have been released.

The Nass fishwheel catches are currently below average for Sockeye, Chinook, and steelhead, and above average for Pacific Lamprey. Weekly comparisons of salmon and steelhead catches at the Gitwinksihlkw fishwheels and all fishwheels to historical levels since 1994 follow the text summary as well as a catch summary of all fish species to date. Total fishwheel catches of salmon, steelhead, and Pacific Lamprey to date are shown below including tagging results and jacks caught.

FISHWHEEL CATCH SUMMARIES	SOCK	CHIN	COHO	STEEL	PINK-EVE	CHUM	LAMP
FISHWHEEL TOTAL CATCH OF ADULTS	73	49	0	2	0	0	22
HISTORICAL AVG CUM CATCH (00-17) TO DATE	300	100	0	5	0	0	3
HISTORICAL AVG CUM TOTAL CATCH (00-17)	43,000	5,000	13,000	1,300	14,000	140	500
AVERAGE DAILY CATCH (5 D) OF ADULTS - GW	12	4	0	0	0	0	0
AVERAGE DAILY CATCH (5 D) OF ADULTS - GH	1	4	0	0	0	0	3
FISHWHEEL TOTAL TAGGED (OR ADIPOSE FIN MARKED)	58	47	0	0	0	0	21
FISHWHEEL TOTAL JACKS - GW ONLY	16	3	0	NA	NA	NA	NA
HISTORICAL MEAN JACKS AT GW (94-17) TO DATE	1	2	0	NA	NA	NA	NA

Other adult species and juvenile salmon catches at the fishwheels to date include: 16 Rainbow Trout, 14 Pikeminnow, 12 Peamouth Chubs, 9 Redside Shiners, 9 Whitefish (Round), 7 Cutthroat Trout, 1 Dolly Varden, 0 Suckers, 14 salmon smolts (1 Coho, 0 Chinook, 13 Sockeye), and 1 seal.

RUN SIZE AND ESCAPEMENT ESTIMATES FOR NASS SALMON & SUMMER-RUN STEELHEAD

In-season estimates of run size and projected forecasts to Gitwinksihlkw fishwheels for adult Nass salmon and summer-run steelhead are shown below and currently based on historical catch index methods. The current run sizes for 2018 are currently below average for Nass Sockeye and Chinook salmon when compared to means to date from 1994 to 2017. Summer-run steelhead estimates begin on 1 July.

	SOCK	CHIN	COHO	STEEL
IN-SEASON RUN SIZE ESTIMATE TO DATE	2,175	967	-	-
HISTORICAL MEAN RUN SIZE TO GW FOR DATE (94-17)	8,000	1,400	-	-
RUN SIZE TARGET 2018 (MIN. FOR STEELHEAD)	250,000	15,000	65,000	4,200

Net Escapement Estimates for adult Nass salmon and summer-run steelhead to date are shown below and relative to the Upper Nass escapement goals.

IN-SEASON NET ESCAPEMENT ESTIMATES	SOCK	CHIN	COHO	STEEL
HARVEST ESTIMATES ABOVE GW TO DATE	7	201	-	-
NET ESCAPEMENT (ABOVE GW):	2,807	766	-	-
NET ESCAPEMENT TARGET (UPPER RIVER ONLY)	200,000	13,000	60,000	4,000

HARVEST ESTIMATES FOR ADULT NASS SALMON & STEELHEAD

ALASKAN FISHERIES IN SE ALASKA (information courtesy from ADFG's website):

Alaskan gillnet fisheries start dates in 2018: District 101 (Tree Point) and District 106 (Sumner and Upper Clarence) opened on 17 June. Alaskan seine fisheries start dates in 2018: District 101 (Lower Clarence/Revilla) – not open yet; District 102 (Middle Clarence) on 17 June; District 103 (Cordova) – not open yet, and District 104 (Noyes/Dall) – not open yet. No catches of salmon in Alaskan net fisheries in Districts 101–104 have been reported to date for week ending **17 JUNE**. The average total mean harvest of Nass Sockeye in Alaskan fisheries from 2000 to 2017 was 120,000 (range: 28,000–300,000).

CANADIAN COMMERCIAL NET FISHERIES IN AREA 3 (information courtesy from DFO Prince Rupert):

Area 3 commercial net fisheries have not opened to date due to low pre-season forecasts for Nass Chinook and Sockeye salmon. Discussions on future openings will occur this week with tentative plans to open the following week.

NISGA'A DOMESTIC (FSC) AND SALE FISHERIES:

Nisga'a domestic and sale fisheries are monitored by the Nisga'a Fisheries and Wildlife Department and began on 6 May 2018. Cumulative harvests to week ending **9 JUNE** are shown in the table below for FSC catches. For the same week ending period, mean cumulative harvests from 2000 to 2017 are shown for comparison. The current total harvests estimated in 2018 to date are below average for Nass Sockeye salmon and steelhead, and average for Chinook. No sale fisheries have been conducted to date and none are planned this week.

NISGA'A NATION CUMULATIVE DOMESTIC (FSC) AND TOTAL CATCH SUMMARY FOR NASS SALMON AND STEELHEAD, 2018.					
FSC Reported Week Ending Period		DOMESTIC (FSC) HARVESTS TO WK END - 2018		TOTAL HARVESTS TO DATE INCLUDING SALE FISHERIES - 2018	
NASS SPECIES	Wk end	Harvest	Mean*	Harvest	Mean*
CHINOOK	9-Jun-18	699	700	699	700
SOCKEYE	9-Jun-18	171	1,000	171	2,000
PINK	9-Jun-18	0	0	0	0
COHO	9-Jun-18	0	0	0	0
CHUM	9-Jun-18	0	0	0	0
STEELHEAD	9-Jun-18	21	60	21	60

* Mean harvests from 2000-2017 for week end periods. Harvests include all gear types estimates (net, angling, seine, fishwheels, etc.).

The total harvest summary of Nass salmon and steelhead to date in all of the Nisga'a harvest fisheries is as follows:

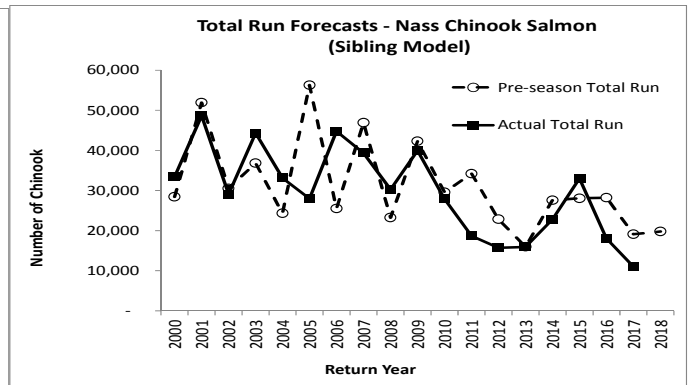
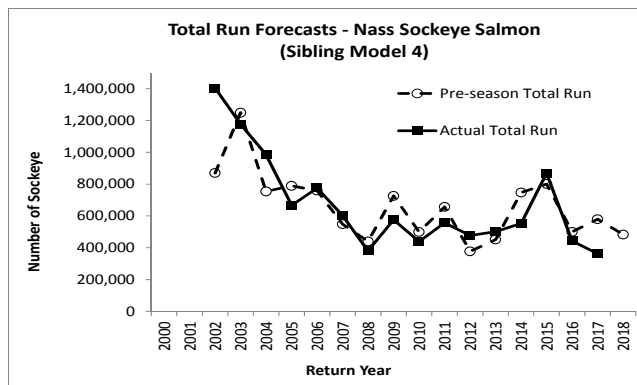
NISGA'A TOTAL HARVEST SUMMARY	SOCK	CHIN	COHO	PINK-EVE	CHUM	STEEL
MARINE SALE FISHERY TOTAL	0	0	0	0	0	CLOSED
IN-RIVER SALE FISHERY TOTAL	0	0	0	0	0	CLOSED
INDIVIDUAL SALE (IS) FISHERY TOTAL	0	0	0	0	0	CLOSED
NLG COMMUNAL SELECTIVE TREATY FISHERY - GH FISHWHEELS	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
NLG COMMUNAL SELECTIVE TREATY FISHERY - SEINE	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
DOMESTIC (FSC) GILLNET FISHERY - WK END: JUNE 9	171	699	0	0	0	21
SUB TOTAL (NLG TREATY FISHERIES)	171	699	0	0	0	21
NLG SOCK DEMONSTRATION FISHERY HARVEST - DFO INVENTORY	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
GRAND TOTAL	171	699	0	0	0	21

TOTAL RETURN TO CANADA (TRTC) AND NISGA'A ENTITLEMENT ESTIMATES FOR NASS SALMON

Pre-season TRTC and Nisga'a entitlement forecasts:

Based on the preliminary Nass salmon return and age information from 2017, preliminary forecasts for Nass salmon and Nisga'a entitlement allocations for 2018 were calculated using pre-season forecast models. Forecast models used were a combination of sibling (Sockeye and Chinook only) and brood year mean returns that project 25%, 50%, and 75% probability point estimates. Mean absolute accuracy for pre-season total run predictions to actual are 80% for Nass Sockeye, 69% for Chinook, 52% for Pink, 62% for Coho, and 71% for Chum from 2002 to 2017.

Pre-season TRTC forecasts (50% probability estimates) for 2018 predict a below average return forecast for Nass Sockeye (377,000 vs. 557,000), Nass Area even-year Pink (635,000 vs. 704,000), Nass Chinook (19,000 vs. 30,000), Nass Chum (33,000 vs. 35,000; well below the 45,000 escapement goal), and above average return forecast for Nass Coho (223,000 vs. 215,000) based on mean TRTC estimates from 2000 to 2017. When reviewing Nass salmon returns over a 34-year period (1985–2017), the forecasted returns in 2018 are projected to be poor for Chinook (28th), Sockeye (27th) and Chum (22nd); fair for Pink (17th); and good for Coho (10th) with caution for Coastal Nass Coho returns that returned in low numbers in 2015.



NASS SALMON TOTAL RETURN TO CANADA ESTIMATES, 1985-2017 & 2018 FORECAST					
YEAR	SOCKEYE	PINK	CHINOOK	COHO	CHUM
1985	660,000	1,230,000	32,500	190,000	73,000
1986	378,000	580,000	64,400	205,000	84,000
1987	413,000	911,000	35,800	128,000	75,000
1988	259,000	335,000	28,100	43,000	47,000
1989	363,000	1,501,000	48,700	130,000	79,000
1990	286,000	304,000	44,200	242,000	76,000
1991	727,000	1,680,000	16,300	46,000	58,000
1992	1,572,000	401,000	35,400	160,000	66,000
1993	1,586,000	1,093,000	45,400	62,000	292,000
1994	590,000	225,000	42,800	351,000	129,000
1995	855,000	1,037,000	21,700	68,000	102,000
1996	694,000	570,000	41,600	126,000	49,000
1997	574,000	519,000	36,300	33,000	38,000
1998	446,000	174,000	45,700	72,000	223,000
1999	645,000	1,573,000	29,000	107,000	83,000
2000	539,000	356,000	32,800	134,000	32,000
2001	380,000	1,224,000	48,000	243,000	44,000
2002	1,279,000	446,000	28,400	314,000	22,000
2003	1,024,000	1,270,000	43,600	172,000	93,000
2004	681,000	849,000	32,500	131,000	70,000
2005	522,000	1,684,000	27,700	211,000	40,000
2006	637,000	164,000	43,000	125,000	73,000
2007	351,000	1,118,000	39,100	175,000	15,000
2008	333,000	62,000	30,100	132,000	4,000
2009	425,000	998,000	38,900	354,000	26,000
2010	392,000	225,000	27,200	180,000	11,000
2011	458,000	204,000	18,200	115,000	8,000
2012	419,000	325,000	15,300	158,000	20,000
2013	434,000	1,208,000	15,500	504,000	18,000
2014	485,000	485,000	22,200	264,000	26,000
2015	752,000	512,000	32,200	176,000	57,000
2016	362,000	830,000	17,500	272,000	28,000
2017	334,000	1,660,000	10,700	284,000	28,000
2018	377,000	635,000	19,000	223,000	33,000
AVERAGES:					
85+	610,000	753,000	34,000	176,000	64,000
00+	557,000	704,000	30,000	215,000	35,000

NASS TRTC RANKINGS BY YEAR FOR SALMON, 1985-2017 & 2018 Forecast					
TRTC	SOCKEYE	PINK	CHINOOK	COHO	CHUM
1985	10	7	17	13	11
1986	26	18	1	12	6
1987	23	14	14	24	10
1988	34	26	23	33	18
1989	28	5	2	23	8
1990	33	28	6	9	9
1991	7	2	31	32	15
1992	2	24	15	18	14
1993	1	11	5	31	1
1994	13	29	9	3	3
1995	5	12	27	30	4
1996	8	19	10	25	17
1997	14	20	13	34	21
1998	19	32	4	29	2
1999	11	4	21	28	7
2000	15	25	16	20	23
2001	25	8	3	8	19
2002	3	23	22	4	28
2003	4	6	7	17	5
2004	9	15	17	22	13
2005	16	1	24	11	20
2006	12	33	8	26	11
2007	30	10	11	16	31
2008	32	34	20	21	34
2009	21	13	12	2	26
2010	24	29	25	14	32
2011	18	31	29	27	33
2012	22	27	33	19	29
2013	20	9	32	1	30
2014	17	22	26	7	26
2015	6	21	19	15	16
2016	29	16	30	6	24
2017	31	3	34	5	24
2018	27	17	28	10	22
Year colors: Best: 1-11 Average: 12-23 Poor: 24-34					

2018 NASS SALMON PRELIMINARY FORECASTS:					
TRTC AND NISGA'A ENTITLEMENT					
TRTC	SOCKEYE	PINK	CHINOOK	COHO	CHUM
75% prob.	343,000	485,000	15,000	209,000	26,000
50% prob.	377,000	635,000	19,000	223,000	33,000
25% prob.	415,000	830,000	27,000	238,000	42,000
NISGA'A ENTITLEMENT					
	SOCKEYE	PINK	CHINOOK	COHO	CHUM
75% prob.	50,000	41,000	3,200	16,700	<500
50% prob.	57,000	65,000	4,000	17,800	2,640
25% prob.	66,000	95,000	5,700	19,000	3,360
Nisga'a cum. overage (-) or underage (+) status from 2000-2017 allocations					
	4,109	16,356	no surplus	3,988	(1,198)
Nisga'a potential harvest at 50% prob. if cumulative overages/underages apply in large return					
	61,000	81,000	4,000	22,000	1,440
Mean Harvests 2000-2017					
	87,000	93,000	7,000	15,000	3,000

In-season TRTC and Nisga'a entitlement estimates:

Pre-season TRTC and Nisga'a entitlement forecasts will be used for guiding current fisheries until greater than 10% of the runs have returned based on mean returns from 2000 to 2017.

The next Nass River general stock assessment update from the Nisga'a Fisheries and Wildlife Department is planned for: **Monday, 25 June 2018.**

Nass stock assessment updates are available at the following links (no passwords are required):

Weekly updates are posted after each Monday's update to DFO and NLG's websites:

- DFO: <http://www.pac.dfo-mpo.gc.ca/fm-gp/northcoast-cotenord/nass-eng.html>
- NLG: <http://www.nisgaanation.ca/stock-assessments>

Daily and weekly run size information are also posted on Mondays, Wednesdays, and Fridays to the following site:

- <ftp://ftp.lgl.com/Nass%20Stock%20Assessment%20Updates/>



Photo 1. Sockeye Salmon caught and tagged at Gitwinksihlkw fishwheels on 11 June 2018.



Photo 2. Chinook Salmon caught and tagged at Gitwinksihlkw fishwheels on 5 June 2018.



Photo 3. Chinook Salmon caught and tagged at Gitwinksihlkw fishwheels on 4 June 2018.



Photo 4. Cutthroat Trout caught at Gitwinksihlkw fishwheels, 14 June 2018.