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2020 NASS RIVER SALMON STOCK ASSESSMENT UPDATE – THURSDAY, 25 JUNE

The following is the first general weekly public update for 2020 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 2020

1. Fishwheel Assessment data: 31 May to 24 June. Data summary below.
2. Meziadin Fishway data: Counts to begin on 1 July.
3. Kwinageese Weir data: Video-weir operations to begin early to mid-July depending on water levels.

GITWINKSIHLKW (GW) FISHWHEELS - NASS RIVER TEST FISHERY – STARTED IN 1994 [27th year]:

The Nass River test fishery fishwheels began operation on 31 May for tagging and historical catch index assessments for salmon and summer-run steelhead. All fish caught in the GW fishwheels to date were released alive after tagging and/or counting.

Fishwheels 1 and 2 are currently operating 0.4 m higher than average water levels (3.3 m vs. 2.9 m) based on 1994–2019 operations. The Nass River water temperature is currently 1.6°C cooler than average (7.5°C vs. 9.1°C) based on 1994–2019 operations. A high-water event occurred from June 20 to June 22 that shutdown the fishwheels for three days. The estimated discharge of the Nass River reached 3,500 m³/s (water gauge height reached 5.5 m) and few fish are anticipated to have passed the fishwheels through the GW canyon under these water levels. Fishwheels resumed operation at approximately 2,200 m³/s (water gauge height approximately 3.6 m). A chart of the water levels at the test fishery follows the text summary that compares current levels to historical levels.

GREASE HARBOUR (GH) FISHWHEELS:

Start-up dates of the upper fishwheels were on 6 June (FW3, FW5, and FW6) for the current operation of three fishwheels at Grease Harbour (upstream of Ts'im Anwiihlist), located approximately 16 km upstream of GW fishwheels. The GH fishwheels are used for in-season mark-recapture tag recoveries of salmon, 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. No harvesting from the fishwheels has been permitted to date. The total Nass fishwheel catches this year are well below average for Sockeye and Chinook salmon, steelhead, and Pacific Lamprey.

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	42	58	0	2	0	0	6
HISTORICAL AVG CUM CATCH (00-19) TO DATE	1,900	600	0	10	0	0	40
HISTORICAL AVG CUM TOTAL CATCH (00-19)	42,000	4,000	14,000	1,000	12,000	130	700
AVERAGE DAILY CATCH (5 D) OF ADULTS - GW	1	0	0	0	0	0	0
AVERAGE DAILY CATCH (5 D) OF ADULTS - GH	0	0	0	0	0	0	0
FISHWHEEL TOTAL TAGGED (OR ADIPOSE FIN MARKED)	30	53	0	0	0	0	4
FISHWHEEL TOTAL JACKS	5	17	0	NA	NA	NA	NA
HISTORICAL MEAN JACKS (00-19) TO DATE	28	34	0	NA	NA	NA	NA

Other adult species and juvenile salmon catches at the fishwheels to date include: 44 Rainbow Trout, 10 Whitefish, 5 Cutthroat Trout, 4 Sculpin, 2 Suckers, 2 Peamouth Chub , 91 salmon smolts (58 Coho, 31 Chinook, 2 Sockeye), and 1 baby duck.

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 are currently based on historical catch index methods. The current run sizes for 2020 are well below average for Nass Sockeye and Chinook salmon when compared to means to date from 1994 to 2019. Summer-run steelhead estimates begin on 1 July and the run size target is based on a minimum return goal as steelhead will continue to enter the Nass River after the fishwheels shutdown in mid-September.

	SOCK	CHIN	COHO	STEEL
IN-SEASON RUN SIZE ESTIMATE TO DATE	753	861		-
<i>HISTORICAL MEAN RUN SIZE TO GW FOR DATE (94-19)</i>	31,000	6,200	-	-
RUN SIZE TARGET 2020 (MIN. FOR STEELHEAD)	230,000	15,000	65,000	4,200

In-season preliminary forecast projections above Gitwinksihlkw are shown below. Estimates to Gitwinksihlkw are based on two methods, mean run timing and linear-regression of the in-season to final estimates to date. The current run size projection for Nass Sockeye is ranging between 189,000 and 254,000 to reach the run size goal (~230,000 for 2020) based on the in-season to final method with a point estimate of 222,000 based on mean-run timing (10%; range: 2–23%) of the run entered to date. The current run size projection for Nass Chinook is ranging between 10,000 and 20,000 to reach the run size goal (15,000) based on in-season to final method with a point estimate of 15,000 based on mean-run timing (35%; range: 10–70%) of the run entered to date.

IN-SEASON FORECASTS TO GW - METHODS:	SOCK	CHIN	COHO	STEEL	24-Jun-20
1. RUN TIMING METHOD (94-19) - Mean Run timing	Too Early	Too Early	Too Early	Too Early	
Lower (-2 S.D.)	Too Early	Too Early	Too Early	Too Early	
Upper (+2 S.D.)	Too Early	Too Early	Too Early	Too Early	In-season/Final
2. IN-SEASON TO FINAL (regression):	222,000	15,000	Too Early	Too Early	r ² (CH) = 0.26
95% CI - lower	189,000	10,000	Too Early	Too Early	r ² (SO) = 0.51
95% CI - upper	254,000	20,000	Too Early	Too Early	r ² (CO) =
<i>GW RUN SIZE TARGET (DEPENDING ON HARVESTS ABOVE GW)</i>	<i>230,000</i>	<i>15,000</i>	<i>65,000</i>	<i>4,200</i>	r ² (ST) =
Run Timing % Return Estimate to GW fishwheels	10%	35%	0%	0%	

Net Escapement Estimates for adult Nass salmon to date are shown below and relative to the Upper Nass net aggregate escapement goals.

IN-SEASON NET ESCAPEMENT ESTIMATES	SOCK	CHIN	COHO	STEEL
HARVEST ESTIMATES ABOVE GW TO DATE	17	261	-	-
NET ESCAPEMENT (ABOVE GW):	736	600	-	-
<i>NET ESCAPEMENT TARGET (UPPER RIVER ONLY)</i>	<i>200,000</i>	<i>13,000</i>	<i>60,000</i>	<i>4,000</i>

HARVEST ESTIMATES FOR ADULT NASS SALMON & STEELHEAD

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

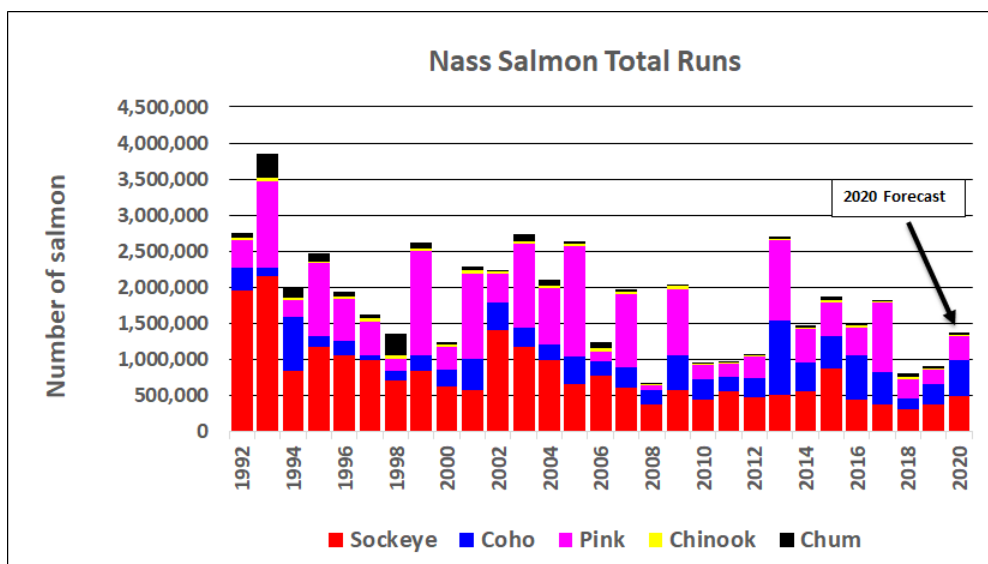
Alaskan Southeast fisheries started on 21 June 2020 for gillnet fisheries in District 101 (Tree Point) and District 106 (Sumner and Upper Clarence) and seine fisheries in District 102 (Middle Clarence). District 101 (Lower Clarence/Revilla), District 103 (Cordova), and District 104 (Noyes/Dall) seine fisheries have not opened to date. The table below shows preliminary catch estimates of salmon in Alaskan net fisheries in Districts 101–106 (and mean catch comparisons from 2000 to 2019) based on data from ADFG. Only District 102 seine has reported two days of fishing so far. The average total mean harvest of Nass salmon in Alaskan net fisheries from 2000 to 2019 is 112,000 Sockeye (range: 22,000–300,000), 64,000 Pink (range: 4,000–192,000), 147,000 Coho (range: 59,000–530,000), and 6,000 Chum (<1,000–24,000). Harvest data will be updated each week when available from ADFG’s website.

IN-SEASON SE ALASKAN CUM. SALMON CATCH ESTIMATES (ADFG WEBSITE) - 2020									WEEK END:		27-Jun-20
DISTRICTS	AREA	SOCK CATCH	AVG (00-19)	CHIN CATCH	AVG (00-19)	PINK CATCH	AVG EVE (00-18)	CHUM CATCH	AVG (00-19)	COHO CATCH	AVG (00-19)
DIST 101 GN	TREE PT	0	14,000	0	700	0	1,700	0	21,000	0	900
DIST 106 GN	UPP. CLAR	0	12,000	0	600	0	1,000	0	11,000	0	6,000
DIST 101 SN	LOW CLAR	0	0	0	0	0	0	0	0	0	0
DIST 102 SN	MID CLAR.	100	1,000	0	200	4,300	1,800	7,000	44,000	300	2,000
DIST 103 SN	CORDOVA	0	0	0	0	0	0	0	0	0	0
DIST 104 SN	NOYES/DALL	0	0	0	0	0	0	0	0	0	0
CUMULATIVE TOTAL		100	27,000	0	2,000	4,000	5,000	7,000	76,000	300	9,000

Green - opened; Red - closed.

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

Due to very low Nass salmon run sizes to date, Area 3 commercial net fisheries have not opened. DFO to make a public announcement on Friday, June 26. The pre-season forecast for 2020 predicted better returns than the past two years.



NISGA'A DOMESTIC AND SALE FISHERIES:

Nisga'a domestic and sale fisheries are monitored by the Nisga'a Fisheries and Wildlife Department and began on 19 May 2020. Cumulative harvests to week ending **20 JUNE** are shown in the table below for Food, Social, and Ceremonial (FSC) catches. Due to low Nass salmon run size to date no sale fisheries have been considered. For the same week ending period, mean cumulative harvests from 2000 to 2019 are shown for comparison. The current total harvests estimated in 2020 to date are below average for all Nass salmon and steelhead (see table below).

Reported Week Ending Period		DOMESTIC (FSC) HARVESTS TO WK END - 2020		TOTAL HARVESTS TO DATE INCLUDING SALE FISHERIES AND ESTIMATED RELEASE MORTALITIES 2020	
CHINOOK	20-Jun-20	1,531	2,200	1,534	2,200
SOCKEYE	20-Jun-20	460	4,400	461	10,700
PINK	20-Jun-20	0	15	0	17
COHO	20-Jun-20	0	1	0	1
CHUM	20-Jun-20	0	32	0	32
STEELHEAD	20-Jun-20	22	57	32	57
TOTAL		2,000	6,700	2,000	13,000
* Mean harvests from 2000-2019 for week end periods. Total harvests include all gear types estimates (net, angling, seine, etc.) and release mortality (60% of releases).					

Nisga'a Sale fishery information for 2020:

- No sale fisheries have been permitted to date with Food, Social and Ceremonial fisheries, the highest priority.

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

NISGA'A TOTAL HARVEST SUMMARY	SOCK	CHIN	COHO	PINK-EVE	CHUM	STEEL
MARINE SALE FISHERY TOTAL	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
IN-RIVER SALE FISHERY TOTAL	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
INDIVIDUAL SALE (IS) FISHERY TOTAL	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	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: 20 JUNE	461	1,534	0	0	0	32
SUB TOTAL (NLG TREATY FISHERIES)	461	1,534	0	0	0	32
NLG SOCK DEMONSTRATION FISHERY HARVEST - DFO INVENTORY	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED	CLOSED
GRAND TOTAL	461	1,534	0	0	0	32

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 2019, preliminary forecasts for Nass salmon and Nisga'a entitlement allocations for 2020 were calculated using pre-season forecast models. The pre-season forecasts were used for general planning purposes until in-season forecasts were available. 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.

Pre-season TRTC forecasts (50% probability estimates) for 2020 predicted a below average return forecasts for Nass Sockeye (386,000 vs. 550,000), Nass Chinook (23,000 vs. 30,000), Nass Pink (291,000 vs. 540,000); and Nass Chum (29,000 vs. 42,000; below the 45,000 escapement goal), and above average return forecast for Nass Coho (290,000 vs. 194,000) based on mean TRTC estimates from 1994 to 2019. When reviewing Nass salmon returns over a 36-year period (1985–2019), the forecasted returns in 2020 were projected to be poor for Sockeye (8th worst), Chinook (9th worst), Pink (10th worst), and Chum (14th worst); and good for Coho (5th best).

PRE-SEASON TRTC & ENTITLEMENT FORECASTS	SOCK	CHIN	COHO	PINK-EVE	CHUM
HISTORICAL MEAN TRTC (1994-2019)	548,000	30,000	194,000	540,000	42,000
PRE-SEASON TRTC FORECAST (50% PROBABILITY)	386,000	23,000	290,000	291,000	29,000
PRE-SEASON NISGA'A ENTITLEMENT	59,000	4,800	19,200	11,000	500
CUM UNDERAGE (+)/OVERAGE (-) AVAILABLE OR OWED: 2000-19	-1,828	rebuild	2,067	-2,886	< esc. goal
TOTAL PRE-SEASON NISGA'A CATCH POTENTIAL	57,000	4,800	21,000	8,000	500

Total Return to Canada estimates for Nass Salmon							Ranking - Poorest return from 1 to 29					
Year	Sockeye	Pink	Chinook	Coho	Chum	Total	Sockeye	Pink	Chinook	Coho	Chum	Total
1992	1,572,000	328,000	35,000	160,000	54,000	2,149,000	28	12	19	13	21	27
1993	1,586,000	874,000	45,000	62,000	239,000	2,806,000	29	22	27	2	29	29
1994	590,000	184,000	43,000	351,000	105,000	1,273,000	19	6	24	27	27	14
1995	855,000	829,000	22,000	68,000	83,000	1,857,000	25	21	7	3	26	22
1996	694,000	465,000	42,000	126,000	40,000	1,367,000	23	18	23	8	18	15
1997	574,000	416,000	36,000	33,000	31,000	1,090,000	18	16	20	1	15	12
1998	446,000	143,000	46,000	72,000	182,000	889,000	13	3	28	4	28	7
1999	645,000	1,259,000	29,000	107,000	68,000	2,108,000	21	28	14	6	24	25
2000	539,000	292,000	33,000	134,000	26,000	1,024,000	17	11	16	10	12	10
2001	380,000	995,000	48,000	247,000	36,000	1,706,000	7	26	29	21	17	21
2002	1,279,000	365,000	28,000	319,000	18,000	2,009,000	27	14	12	26	7	24
2003	1,024,000	1,019,000	44,000	176,000	76,000	2,339,000	26	27	25	16	25	28
2004	681,000	696,000	33,000	136,000	58,000	1,604,000	22	19	16	11	22	19
2005	522,000	1,348,000	28,000	216,000	33,000	2,147,000	16	29	12	20	16	26
2006	637,000	136,000	44,000	130,000	60,000	1,007,000	20	2	25	9	23	8
2007	351,000	896,000	40,000	179,000	13,000	1,479,000	5	23	22	17	4	17
2008	333,000	51,000	30,000	139,000	4,000	557,000	3	1	15	12	1	1
2009	425,000	810,000	39,000	362,000	22,000	1,658,000	11	20	21	28	8	20
2010	392,000	185,000	27,000	184,000	9,000	797,000	9	7	11	19	3	5
2011	458,000	174,000	18,000	121,000	7,000	778,000	14	4	4	7	2	4
2012	419,000	270,000	16,000	161,000	16,000	882,000	10	9	2	14	6	6
2013	437,000	976,000	16,000	511,000	15,000	1,955,000	12	25	2	29	5	23
2014	487,000	399,000	23,000	267,000	22,000	1,198,000	15	15	9	22	8	13
2015	753,000	422,000	33,000	181,000	48,000	1,437,000	24	17	16	18	19	16
2016	362,000	349,000	18,000	277,000	24,000	1,030,000	6	13	4	23	10	11
2017	341,000	926,000	11,000	288,000	24,000	1,590,000	4	24	1	24	10	18
2018	294,000	256,000	22,000	89,000	50,000	711,000	1	8	7	5	20	2
2019	326,000	175,000	20,000	175,000	26,000	722,000	2	5	6	15	12	3
2020	386,000	291,000	23,000	290,000	29,000	1,019,000	8	10	9	25	14	9

* Color coding from mean averages from 1992-2019: Green - above average; Yellow - below average but higher than 1 SD; and Red - below average and lower than 1 SD.

Average:	94-19	548,000	540,000	30,000	194,000	42,000	1,354,000
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In-season Total Return to Canada (TRTC) and Nisga'a entitlement estimates for Nass salmon:

Preliminary in-season TRTC estimates estimated by NFWD for Nass Sockeye (248,000; range: 211,000–283,000) and Chinook (21,000; range: 15,000–27,000) salmon are based on early run size ranges estimated from in-season to final regression methods and run timing status of returns to Area 3 to date for Nass Sockeye (10%) and Chinook (22%) salmon. The current return estimates suggest pre-season forecasts are tracking lower for Nass Sockeye and Chinook; but the recent high-water event slowed migration.

Based on the current in-season TRTC returns, the preliminary in-season Nisga'a entitlement ranges for Nass Sockeye is between 22,000 and 37,000+ with a current harvest estimate of 461 to date, and for Nass Chinook, between 3,200 and 5,700+, with a current harvest of 1,534.

IN-SEASON TRTC & ENTITLEMENT ESTIMATES	SOCK	CHIN	COHO	PINK-EVE	CHUM
PROJECTED TRTC BASED ON INSEASON TO FINAL REGRESSION	248,000	21,000	Pre-season	Pre-season	Pre-season
ESTIMATED %TRTC TO DATE: MEAN. RUN TIMING	10%	22%	0%	0%	0%
Lower (95% CI)	211,000	15,000	Pre-season	Pre-season	Pre-season
Upper (95% ci.)	283,000	27,000	Pre-season	Pre-season	Pre-season
IN-SEASON NISGA'A ENTITLEMENT TARGET	25,000	4,400	Pre-season	Pre-season	Pre-season
MINIMUM	22,000	3,200			
MAXIMUM	37,000	5,700			

The next Nass River general stock assessment update from the Nisga'a Fisheries and Wildlife Department is planned for: **Thursday, 2 July 2020.**

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

Weekly email updates are posted after each 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 spaghetti tagged at Gitwinksihlkw fishwheels on 12 June 2020.



Photo 2. Chinook Salmon caught and operculum tagged at Gitwinksihlkw fishwheels on 12 June 2020.



Photo 3. Chinook Salmon caught and operculum tagged at Gitwinksihlkw fishwheels on 13 & 15 June 2020.



Photo 4. Chinook Salmon caught and operculum tagged at Gitwinksihlkw fishwheels on 15 June 2020.



Photo 5. Chinook Salmon caught and operculum tagged at Gitwinksihlkw fishwheels on 18 June 2020.



Photo 6. Baby duck (Mallard) caught at GW fishwheels on 18 June 2020.

Photos courtesy of NFWD's senior crew leader, Ben Guno Jr, and fishwheels crews.



Photo 7. Fishwheels 1 & 2 at Gitwinksihlkw, 19 May 2020.



Photo 8. Fishwheel 2 at Gitwinksihlkw, 15 June 2020.



Photo 9. Fishwheel 2 at Gitwinksihlkw, 18 June 2020.



Photo 10. Fishwheel 1 at Gitwinksihlkw, 18 June 2020.



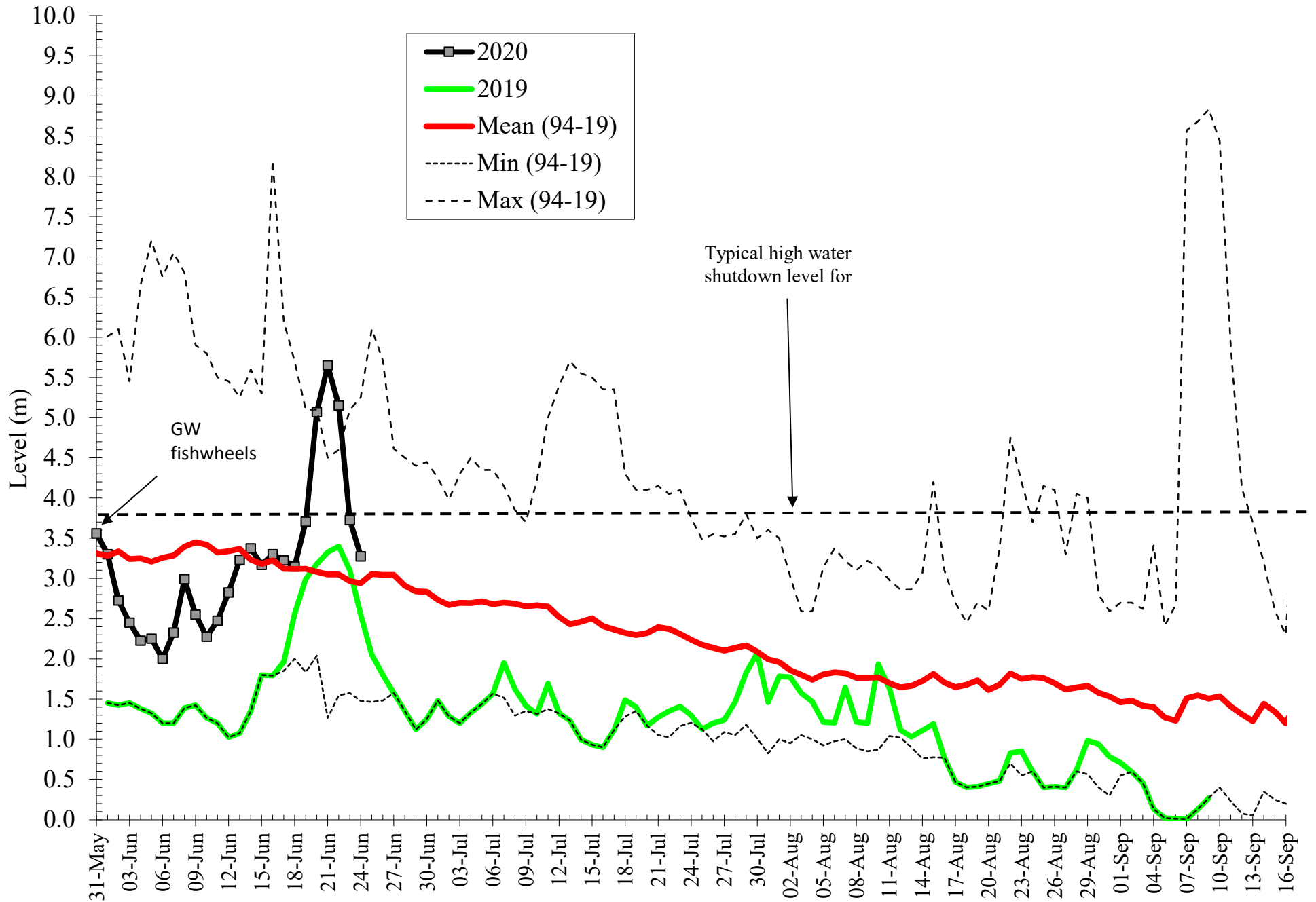
Photo 11. Gitwinksihlkw fishwheels shutdown on 22 June 2020 due to high water.



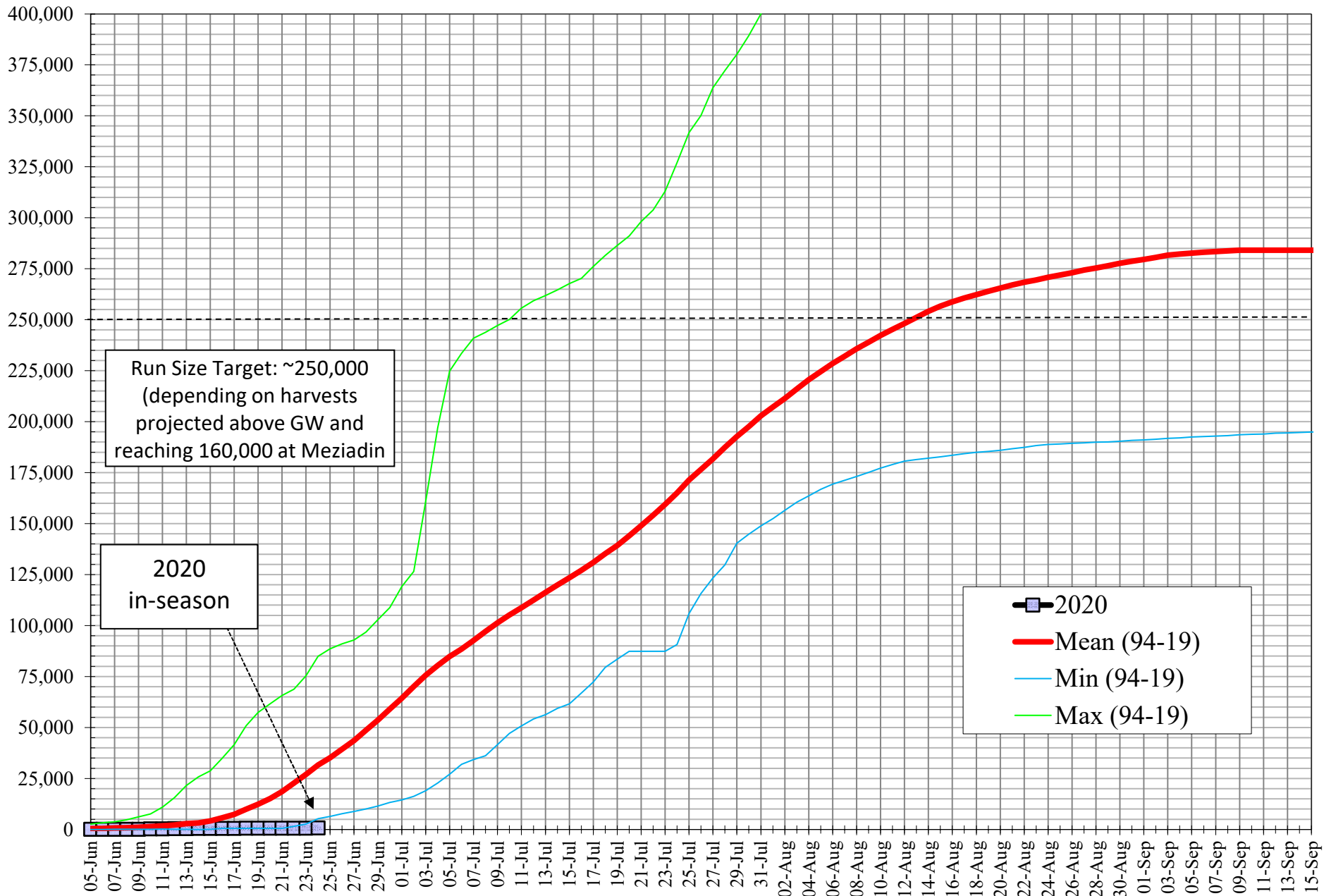
Photo 12. Fishwheel crew measuring large Chinook Salmon for input into morphometric model to predict sex, 18 June 2020.

Photos courtesy of NFWD's senior crew leader, Ben Guno Jr, and fishwheels crews.

Daily Water Level at Gitwinksihlkw Fishwheels 2020

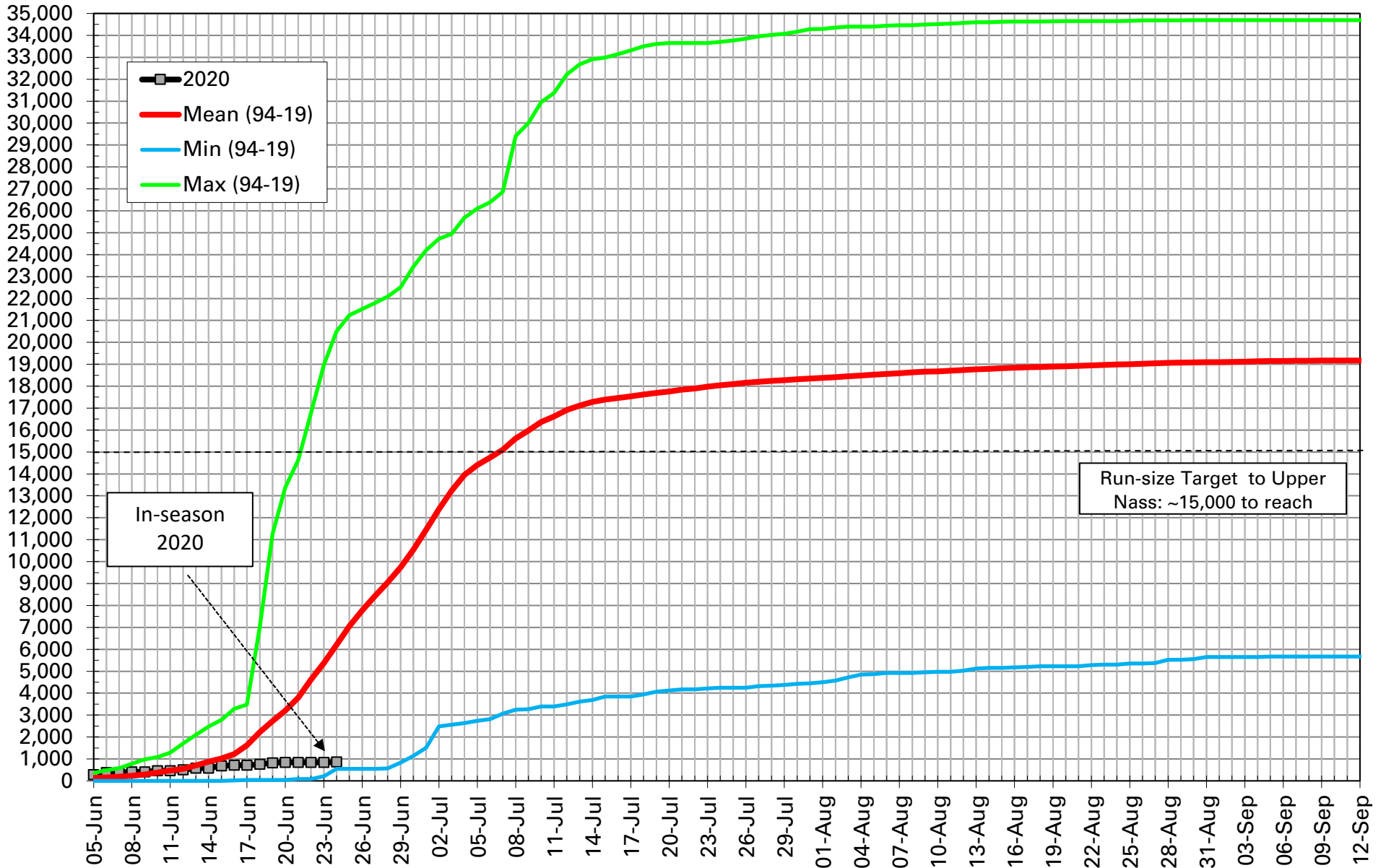


Nass Sockeye Cum. Run Size to Gitwinksilkw Fishwheels 2020 versus 94-19 Mean, Min, Max returns (before upriver harvests)



Cumulative Daily Run Sizes of Adult Nass River Chinook Salmon (≥ 50 cm NFL) to Gitwinksihlkw Fishwheels, 2000-2020.																					IN-SEASON		
Date	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Mean (94-19)	2020 Daily
01-Jun-20											0	0	8	0	0	0	0	0	48	0	0	10	
02-Jun-20											0	0	24	0	0	0	0	0	144	40	48	20	48
03-Jun-20											0	0	24	17	97	0	46	0	240	100	144	50	96
04-Jun-20											122	0	24	50	97	0	68	25	288	181	192	90	48
05-Jun-20										0	244	0	47	67	161	59	91	50	288	361	288	140	96
06-Jun-20						14			23	0	488	0	71	67	290	88	114	151	288	442	384	160	96
07-Jun-20		23				72			69	0	548	21	71	84	483	133	228	201	336	582	384	190	0
08-Jun-20		168				72	47		115	0	731	106	95	134	772	177	319	226	336	783	414	230	30
09-Jun-20		306				72	141		138	0	914	212	102	167	901	177	410	251	336	984	414	300	0
10-Jun-20		345				72	157		208	0	975	212	126	301	1,030	177	547	251	336	1,084	462	380	48
11-Jun-20		352			16	101	157		600	0	1,219	212	134	318	1,287	251	707	251	384	1,144	462	470	0
12-Jun-20	32	559			49	174	157		669	0	1,280	276	142	318	1,706	487	912	251	529	1,184	510	550	48
13-Jun-20	32	1,248			98	405	157		669	0	1,524	467	142	351	2,092	811	1,322	301	577	1,204	584	710	74
14-Jun-20	32	1,409		31	147	506	157		715	0	1,645	616	142	485	2,478	1,976	1,527	352	769	1,224	584	870	0
15-Jun-20	32	1,471		279	245	550	157		738	0	1,828	722	300	619	2,768	2,403	1,573	553	865	1,245	688	1,020	104
16-Jun-20	162	1,731		1,164	636	665	157	25	853	159	2,499	892	457	686	2,929	2,624	1,687	653	1,153	1,365	718	1,220	30
17-Jun-20	851	2,252		2,513	1,908	1,143	157	37	1,222	319	2,742	977	457	686	3,315	3,170	1,801	754	1,393	1,606	718	1,620	0
18-Jun-20	1,411	2,903		5,042	3,946	2,068	157	37	1,315	546	3,352	1,253	489	719	3,701	3,361	2,006	904	1,730	1,766	762	2,220	44
19-Jun-20	2,014	3,209		6,035	4,386	2,633	173	37	1,730	865	4,083	1,401	505	803	3,991	3,730	2,165	1,181	1,874	1,807	823	2,730	61
20-Jun-20	2,930	3,278		7,059	4,418	2,864	361	37	2,168	1,275	5,058	1,593	520	837	4,280	4,172	2,553	1,281	1,874	2,168	846	3,200	23
21-Jun-20	4,190	3,278	866	11,838	4,418	3,153	896	86	2,629	2,345	6,643	1,869	528	937	4,474	5,086	2,826	1,306	1,874	3,473	846	3,790	0
22-Jun-20	5,482	3,278	2,553	16,771	4,418	3,732	1,760	86	2,883	4,484	8,471	2,187	544	1,054	4,860	6,767	3,100	1,331	1,874	4,717	846	4,620	0
23-Jun-20	7,453	3,278	4,421	18,974	4,418	4,600	3,284	210	2,883	6,738	9,933	2,718	552	1,104	4,924	7,976	3,373	1,482	1,922	5,761	846	5,370	0
24-Jun-20	9,457	3,286	5,816	20,510	4,418	6,133	5,357	1,479	3,114	11,109	11,335	3,164	552	1,221	5,600	9,259	3,738	1,784	1,970	6,403	861	6,210	15
25-Jun-20	11,665	3,692	6,144	21,240	4,418	7,840	9,662	1,886	3,483	15,388	12,615	3,461	552	1,238	5,697	10,615	4,331	1,859	2,162	6,945		7,050	
26-Jun-20	12,752	6,380	6,354	21,519	4,418	9,286	12,553	2,613	4,475	15,912	13,834	3,843	552	1,389	5,761	11,676	4,923	2,035	3,123	7,327		7,780	
27-Jun-20	12,979	9,827	6,354	21,798	4,484	9,966	13,024	3,919	5,766	16,686	14,992	4,311	552	1,506	6,276	12,148	5,334	2,085	5,670	8,029		8,430	
28-Jun-20	12,979	10,546	6,354	22,093	4,516	10,472	13,134	5,201	6,873	20,100	15,845	4,757	568	3,079	6,855	12,826	5,676	2,135	7,496	8,390		9,050	
29-Jun-20	12,979	10,738	8,168	22,512	4,908	11,022	13,590	5,571	7,289	22,172	16,454	5,181	828	5,287	7,531	14,168	6,542	2,236	8,553	8,611		9,740	
30-Jun-20	12,979	11,067	9,864	22,776	5,658	11,268	16,292	6,076	7,496	23,447	16,637	5,861	1,135	6,592	8,143	14,890	7,020	2,286	9,322	8,712		10,540	
01-Jul-20	13,140	13,495	10,821	22,900	6,130	11,514	19,340	6,187	8,027	24,198	16,759	6,901	1,506	7,061	8,625	15,849	7,431	2,437	10,187	8,977		11,440	
02-Jul-20	13,754	19,538	11,933	22,915	7,370	11,731	21,414	6,434	8,811	24,721	16,820	7,475	2,578	7,479	9,108	16,999	7,750	2,487	10,427	9,089		12,390	
03-Jul-20	14,734	24,501	12,544	23,117	9,163	12,049	22,419	7,679	8,811	24,949	17,003	8,324	4,233	7,646	9,526	17,765	7,864	2,562	10,859	9,138		13,240	
04-Jul-20	15,251	25,688	13,291	23,427	10,761	12,382	23,001	11,968	8,811	25,382	17,124	8,515	5,574	8,115	9,526	18,620	7,909	2,638	11,052	9,198		13,950	
05-Jul-20	15,413	26,110	13,829	23,877	12,408	12,657	23,535	13,287	8,811	25,837	17,124	8,685	6,062	8,684	9,687	19,078	8,046	2,738	11,292	9,313		14,410	
06-Jul-20	15,413	26,393	14,385	24,637	13,337	12,671	23,786	13,521	8,811	26,087	17,246	8,812	6,819	8,935	10,234	19,387	8,183	2,814	11,436	9,693		14,740	
07-Jul-20	15,424	26,860	14,786	25,211	13,386	12,729	24,053	15,924	8,857	26,224	17,307	9,046	7,434	9,219	10,428	19,579	8,570	3,065	11,580	10,375		15,100	
08-Jul-20	15,553	29,418	15,051	25,956	13,467	13,033	24,116	19,807	9,872	26,338	17,734	9,195	7,671	9,286	10,653	19,741	8,753	3,241	11,868	10,907		15,620	
09-Jul-20	15,919	30,008	15,124	26,189	13,630	13,510	24,242	21,878	12,224	26,543	17,917	9,301	7,789	9,387	10,975	19,756	8,981	3,266	11,964	11,049		15,980	
10-Jul-20	16,414	30,958	15,224	26,406	13,859	14,103	24,367	23,110	15,799	26,747	18,039	9,471	7,797	9,420	11,168	19,770	9,163	3,391	12,109	11,172		16,370	
11-Jul-20	16,835	31,379	15,279	26,530	14,169	14,551	24,587	23,172	18,152	26,952	18,160	9,556	7,797	9,504	11,297	19,829	9,231	3,391	12,253	11,239		16,620	
12-Jul-20	18,170	32,221	15,306	26,654	14,690	14,754	25,137	23,172	19,190	26,998	18,282	9,640	7,797	9,520	11,747	20,051	9,322	3,492	12,493	11,335		16,910	
13-Jul-20	18,762	32,681	15,370	26,732	15,342	14,884	26,064	23,172	19,351	27,066	18,404	9,768	7,805	9,537	11,876	20,286	9,414	3,617	12,541	11,456		17,120	

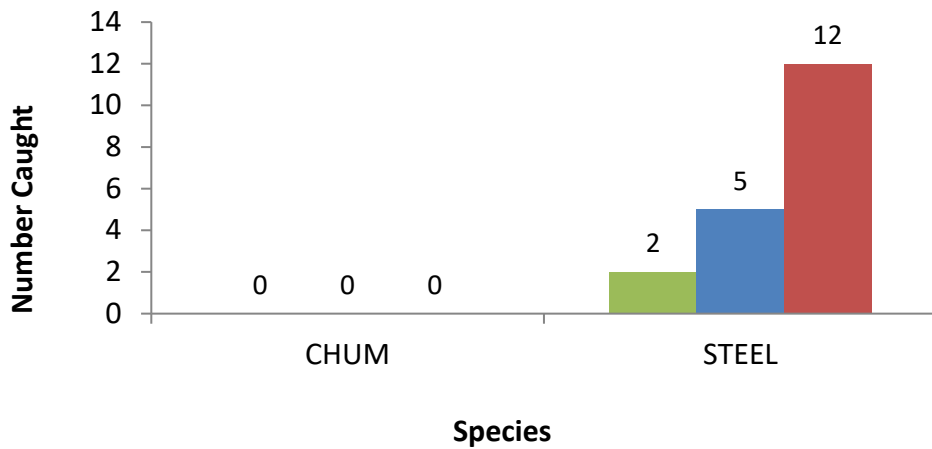
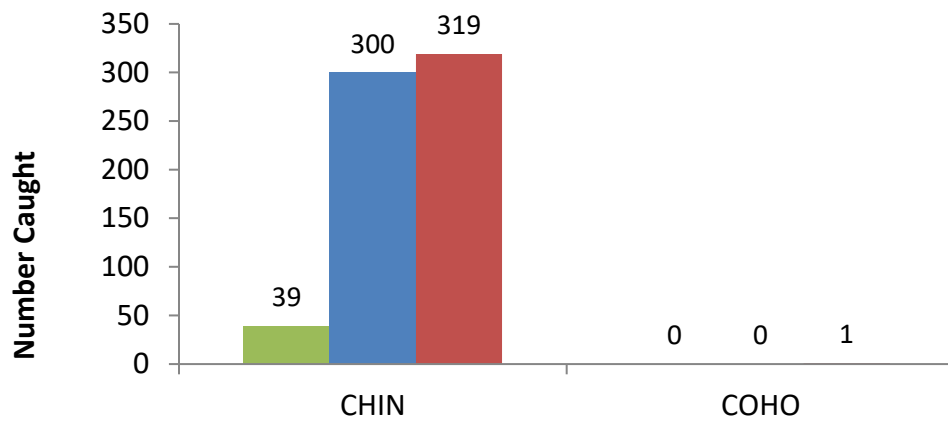
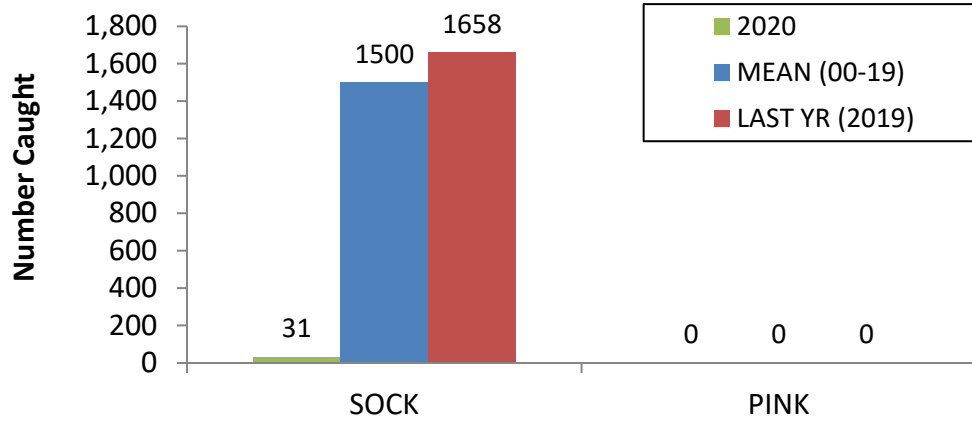
Cumulative Nass Adult Chinook Run Size to Gitwinksihlkw 2020 vs 94-19 Mean, Minimum and Maximum returns (before up river harvests)



Run-size Target to Upper Nass: ~15,000 to reach

In-season 2020

Nass Fishwheel Catches 2020 - GW only (May 31 - Jun 24)



2020 Nass Fishwheel Catches

	GW		GW Total	GH				GH Total	Grand Total
Data	FW1	FW2		FW3	FW4	FW5	FW6		
Chin-adult catch	8	31	39	6	0	5	8	19	58
Chin-tagged	8	29	37	4	0	5	7	16	53
Chin-recaps	0	0	0	0	0	0	0	0	0
Chin-Jacks	1	1	2	4	0	2	9	15	17
Sum of CH Harv	0	0	0	0	0	0	0	0	0
Sockeye-adult catch	7	24	31	2	0	4	5	11	42
Sockeye-tagged	7	23	30	0	0	0	0	0	30
Sockeye-recaps	0	1	1	0	0	0	0	0	1
Sockeye_jacks	1	4	5	0	0	0	0	0	5
Sum of sk_harvest_total	0	0	0	0	0	0	0	0	0
Coho-adult catch	0	0	0	0	0	0	0	0	0
Coho-tagged	0	0	0	0	0	0	0	0	0
Coho-recaps	0	0	0	0	0	0	0	0	0
Coho-jack	0	0	0	0	0	0	0	0	0
Sum of co_harvest_total	0	0	0	0	0	0	0	0	0
Steel-adult catch	1	1	2	0	0	0	0	0	2
Steel-Adipose marked	0	0	0	0	0	0	0	0	0
Steel-unmarked	1	1	2	0	0	0	0	0	2
Steel-recap-total	0	0	0	0	0	0	0	0	0
Pacific Lamprey-catch	0	2	2	1	0	2	1	4	6
Lamprey-tagged	0	0	0	1	0	2	1	4	4
Lamprey-released	0	2	2	0	0	0	0	0	2
Lamprey-recaps	0	0	0	0	0	0	0	0	0
River Lamprey	0	0	0	0	0	0	0	0	0
Pink-adult-catch	0	0	0	0	0	0	0	0	0
Chum-adult-catch	0	0	0	0	0	0	0	0	0
Chum-tagged	0	0	0	0	0	0	0	0	0
Chum-punched	0	0	0	0	0	0	0	0	0
Chum-recaps	0	0	0	0	0	0	0	0	0
Rainbow Trout	7	8	15	8	0	6	15	29	44
Whitefish	0	3	3	1	0	2	4	7	10
Cutthroat Trout	1	1	2	0	0	0	3	3	5
Sculpin	3	0	3	0	0	0	1	1	4
Suckers	1	0	1	0	0	0	1	1	2
Peamouth Chub	0	1	1	0	0	0	1	1	2
Redside Shiner	0	1	1	0	0	0	1	1	2
Dolly Varden	0	0	0	0	0	0	0	0	0
Pikeminnow	0	0	0	0	0	0	0	0	0
Seals	0	0	0	0	0	0	0	0	0