Gitanyow *Fisheries* Authority

October 9, 2018

2018 Kitwanga River Salmon Enumeration Facility Update #11

The Gitanyow Fisheries Authority (GFA) is pleased to announce that the Kitwanga River Adult Salmon Enumeration Facility (KSEF) is operational for 2018. Like in other years GFA will be providing weekly updates on salmon escapement to the Kitwanga River (middle Skeena index) from July through to October. This year marks the 16th consecutive year that GFA has implemented the program, which collects important in-season pacific salmon stock assessment and biological information. GFA would like to thank their 2018 funders and supporters, specifically the Gitanyow Chiefs (Gitanyow Huwilp Sustainability Fund), the Pacific Salmon Commission and Fisheries and Oceans Canada. GFA would also like to acknowledge and thank the Gitwangak Wilp Simadeeks for allowing GFA to continue to work within their traditional territory, as set out by our 2002 agreement.

As in other years, weekly updates will be distributed and posted on our website: www.gitanyowfisheries.com

Drone Photograph of KSEF taken on August 7, 2018. Note very low water conditions.

GFA staff installed the in-river KSEF components from July 4-9, under lower than normal water levels. The fence was rendered fish tight during the evening of July 9 and operational (diverting fish through sample boxes) on the afternoon of July 10, which is the usual starting date for the project. Water levels at the KSEF are still very low, some of the lowest conditions ever recorded at the site since operations started in 2003. Currently levels are at 0.48m, approximately 38% below the long-term average (see KSEF water stage graph below for more detail).

Photograph of KSEF taken on September 10, 2018. Note water conditions are still relatively low.

Upper daily water temperatures in the Kitwanga River are slightly lower than normal (~1°C) and are currently fluctuating between 1 - 8°C. Total salmon counts to the night of **October 8, 2018** are as follows:

Sockeye = 828 Chinook = 618 Pink = 2,736 Chum = 271 Coho = 13

To date we have counted **828 sockeye** through the KSEF and the KsF (see update #1 for explanation why both facilities were used for this years counts). This year's sockeye escapement compares to a previous **maximum** observed to the day of 20,800 in 2010, which resulted in an overall escapement of 20,804 and the **minimum** observed to the day of 240 in 2007, which resulted in overall escapements of 240. Based on average run timing for Kitwanga sockeye to the day (2003-2017) it is predicted that approximately **86%** of the run

should have passed the KSEF. For more information on cumulative Kitwanga sockeye salmon abundance by day, refer to the sockeye salmon graph below.

Like last year GFA will be tracking radio tagged sockeye throughout the Kitwanga Watershed to learn more about their freshwater habits and identify key spawning areas for 2018. To date 48 sockeye have been tagged.

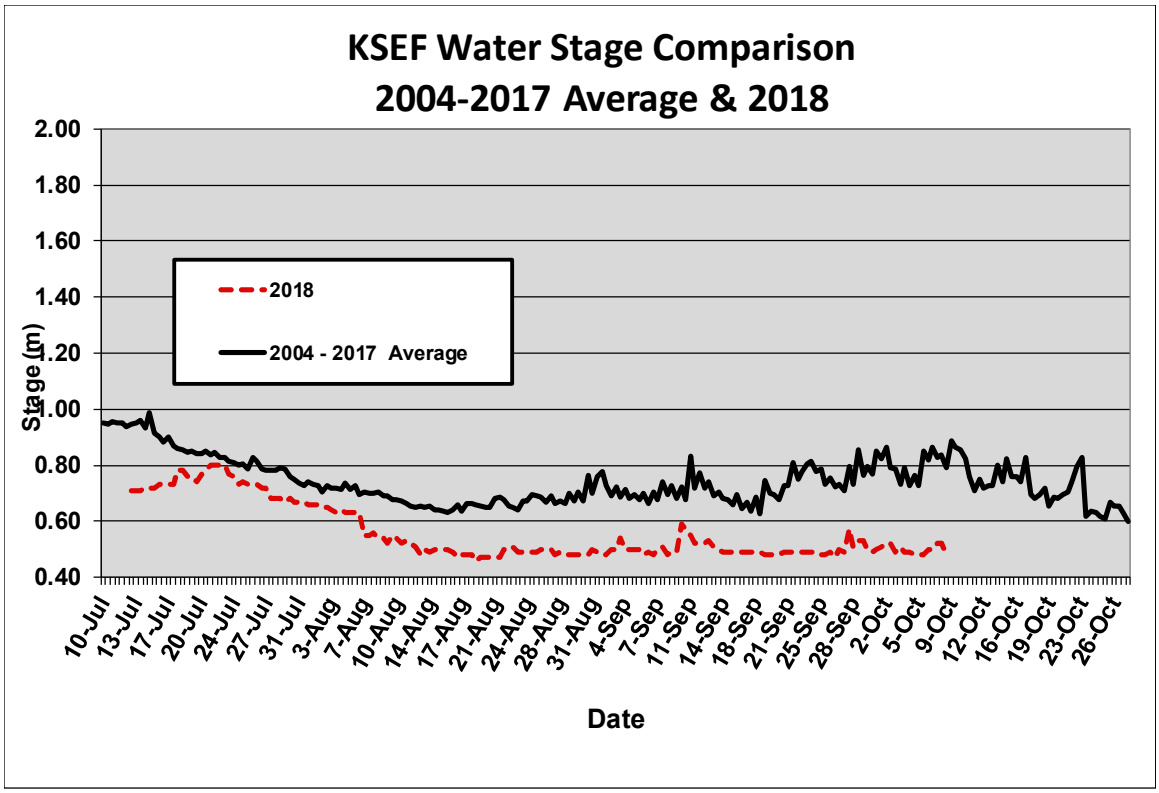
To date we have counted **618 Chinook** through the KSEF. Based on average run timing for Kitwanga Chinook to the day (2003-2017) it is predicted that **all** of the run should have passed the KSEF. For more information on cumulative Kitwanga Chinook salmon abundance by date, refer to the Chinook graph below.

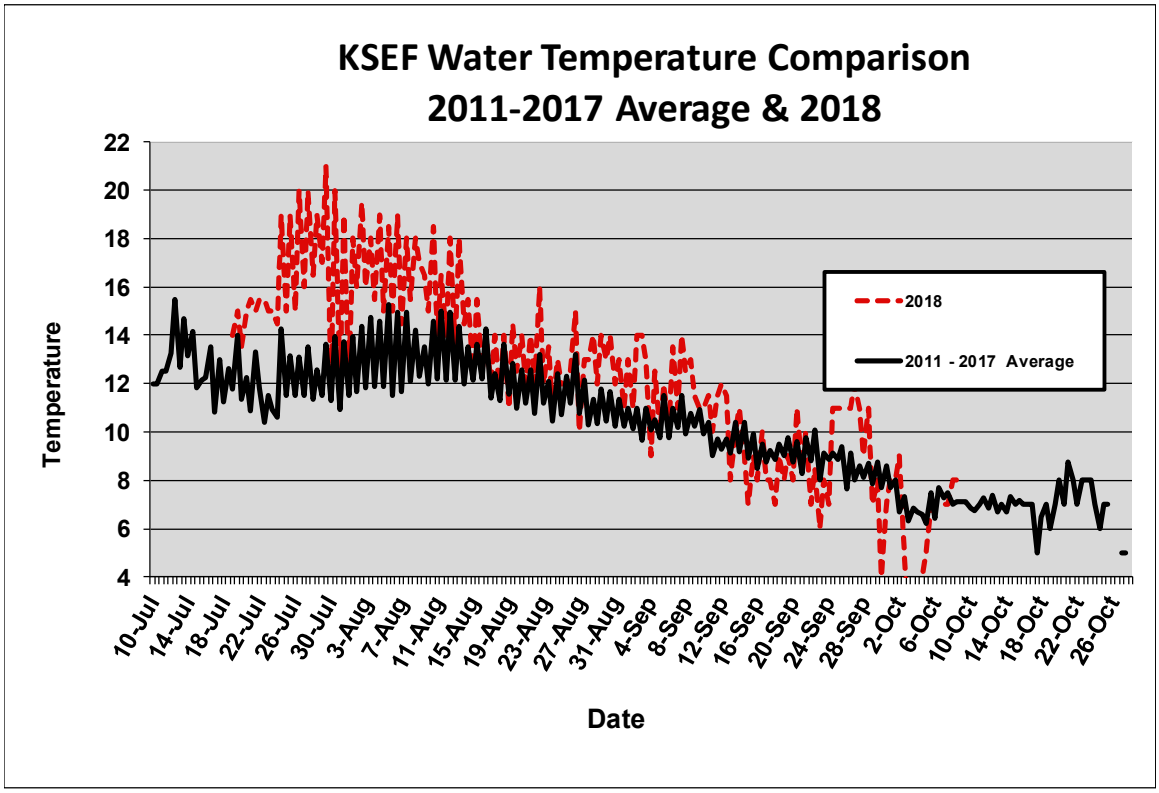
As a pilot project for this year we have installed and operated a digital video camera recorder (DVR) to the KSEF project (Thank you DFO and Rob Dams for loaning us the equipment). The DVR has been in place and operational since July 24, 2018 and has been passing both sockeye and chinook successfully. Fish seem more comfortable moving through the camera box than through our regular sample box areas and to date approximately 80% of the fish enumerated through the KSEF to date have been counted through the DVR camera box.

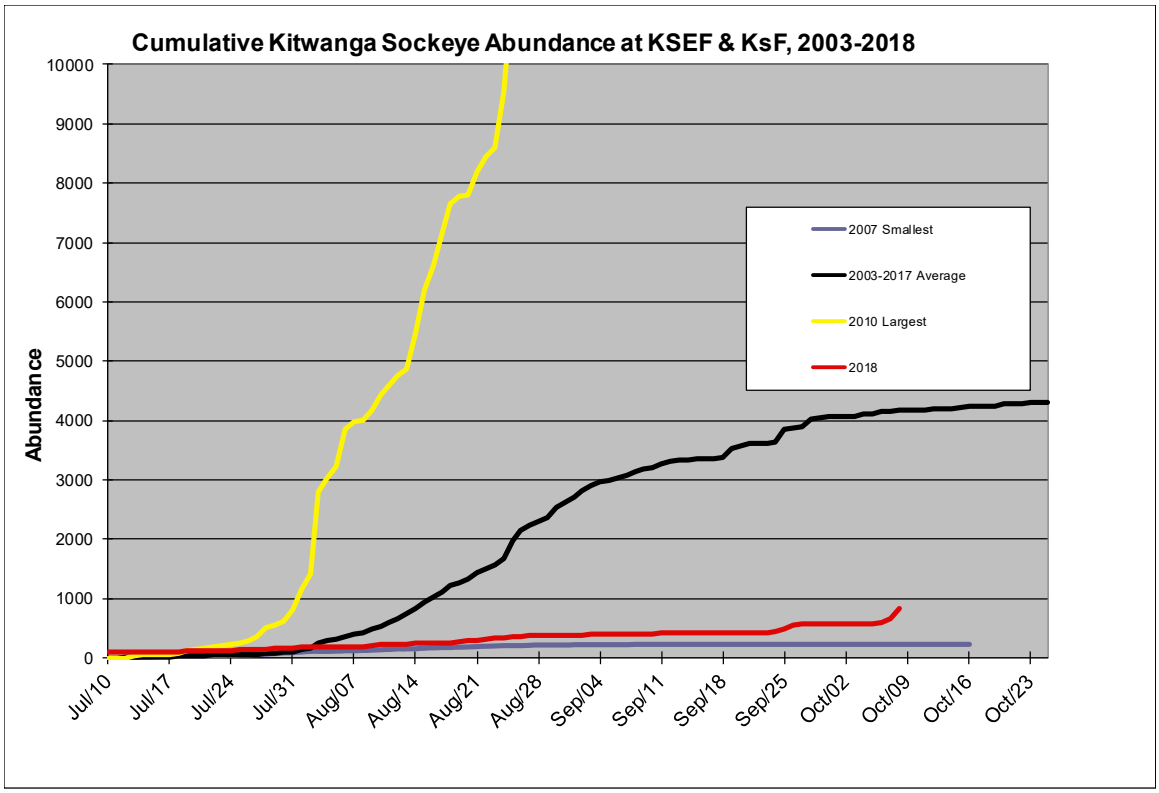
To date we have counted **2,736 pink salmon** through the KSEF. This year's even year pink escapement compares to a **maximum** observed to the day of 75,408 in 2014, which resulted in an overall escapement of 75,416 and the **minimum** observed to the day of 4,240 in 2008, which resulted in an overall escapement of 4,245 for the year. Based on average run timing for pink salmon to the day (2003-2017) it is predicted that **all** of the run should now have passed the KSEF. For more information on cumulative Kitwanga even year pink salmon abundance by date, refer to the pink salmon graph below.

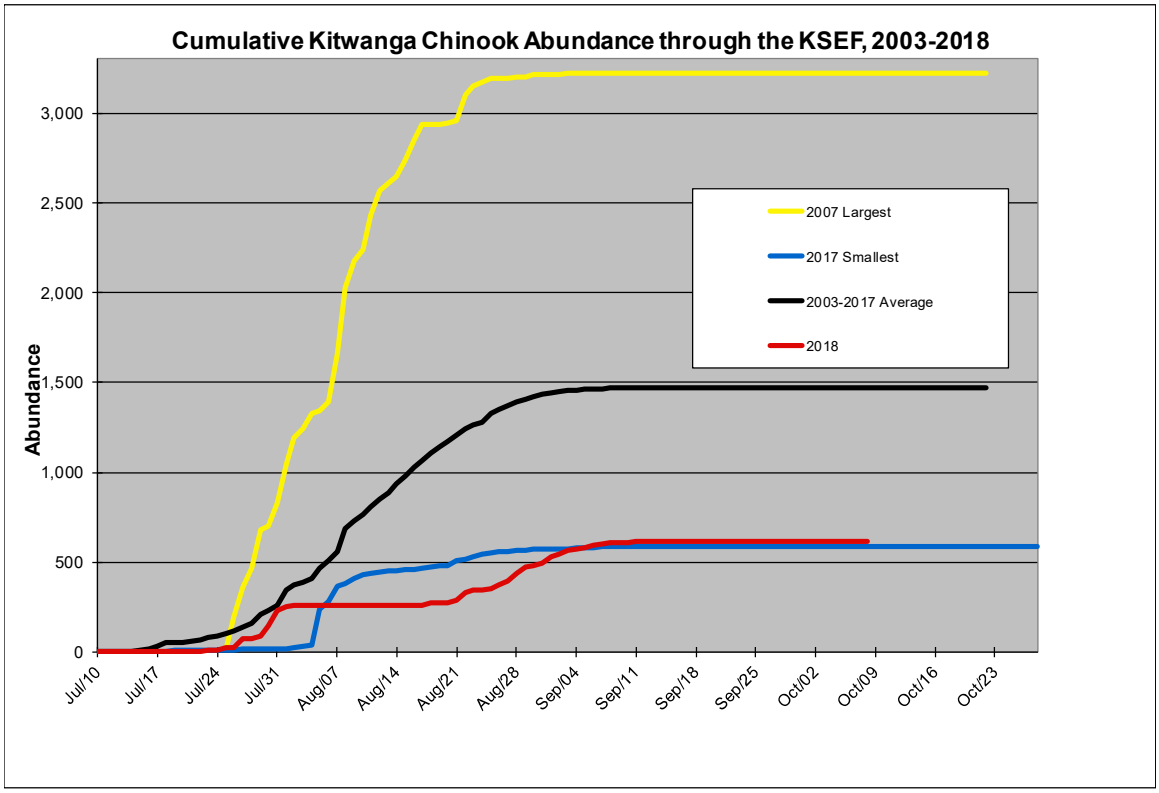
To date we have counted **271 chum salmon** through the KSEF. This year's chum escapement compares to a **maximum** observed to the day of 1,862 in 2005, which resulted in an overall escapement of 1,862 and the **minimum** observed to the day of 150 in 2008, which resulted in an overall escapement of 150 for the year. Based on average run timing for chum salmon to the day (2003-2017) it is predicted that **all** of the run should now have passed the KSEF. For more information on cumulative Kitwanga chum salmon abundance by date, refer to the chum salmon graph below.

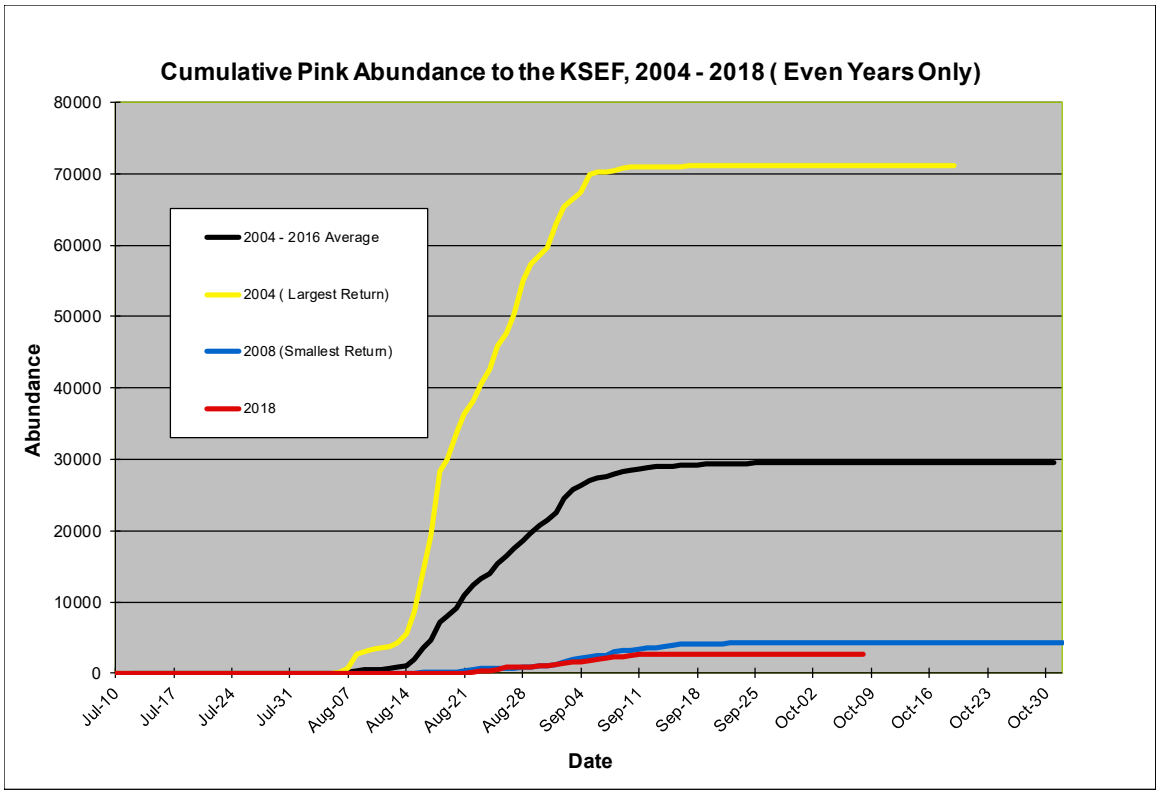
To date we have counted **13 coho salmon** through the KSEF. This year's coho escapement compares to a **maximum** observed to the day of 9,030 in 2009, which resulted in an overall escapement of 12,080 and the **minimum** observed to the day of 406 in 2016, which resulted in an overall escapement of 1,307 for the year. Based on average run timing for coho salmon to the day (2003-2017) it is predicted that approximately **81%** of the run should now have passed the KSEF. For more information on cumulative Kitwanga coho salmon abundance by date, refer to the coho salmon graph below.

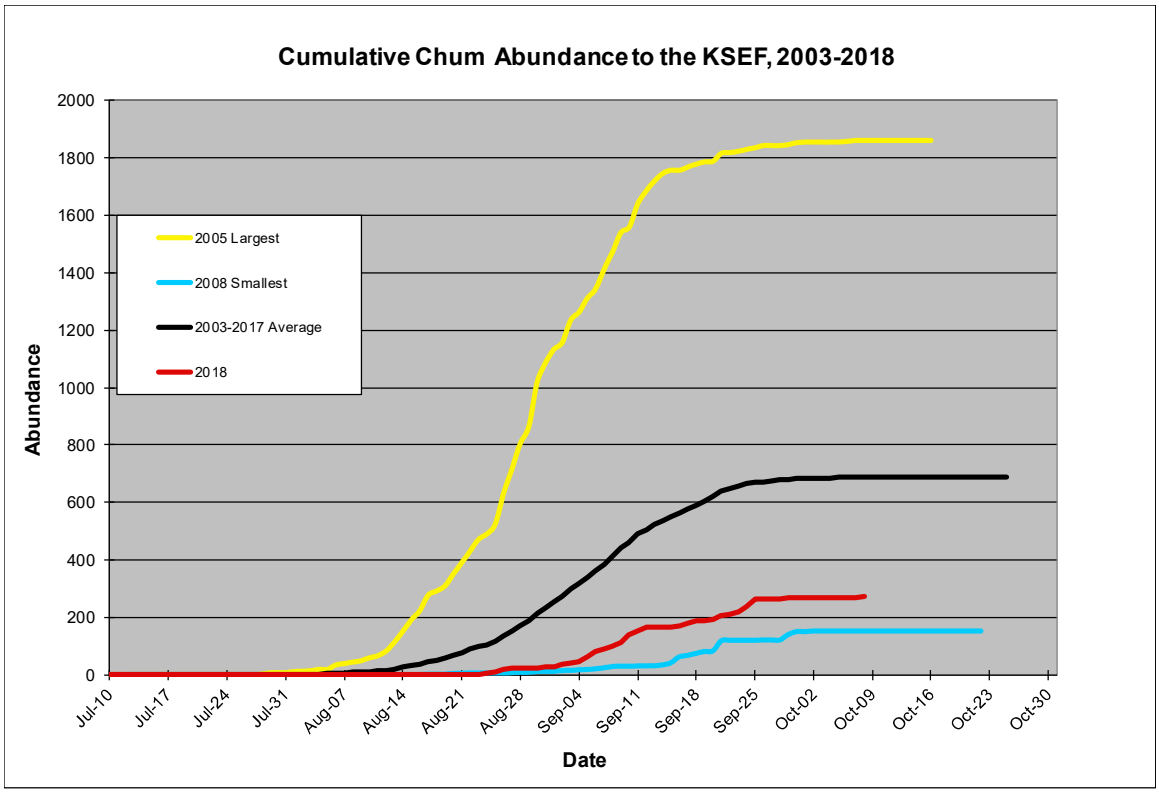

KSEF Water Stage Comparison
2004-2017 Average & 2018
2.00
1.80
1.60
1.40
1.20
1.00
0.80
0.60
0.40
Stage (m)
2018
2004 - 2017 Average
10-Jul
13-Jul
17-Jul
20-Jul
24-Jul
27-Jul
31-Jul
3-Aug
7-Aug
10-Aug
14-Aug
17-Aug
21-Aug
24-Aug
28-Aug
31-Aug
4-Sep
7-Sep
11-Sep
14-Sep
18-Sep
21-Sep
25-Sep
28-Sep
2-Oct
5-Oct
9-Oct
12-Oct
16-Oct
19-Oct
23-Oct
26-Oct
Date

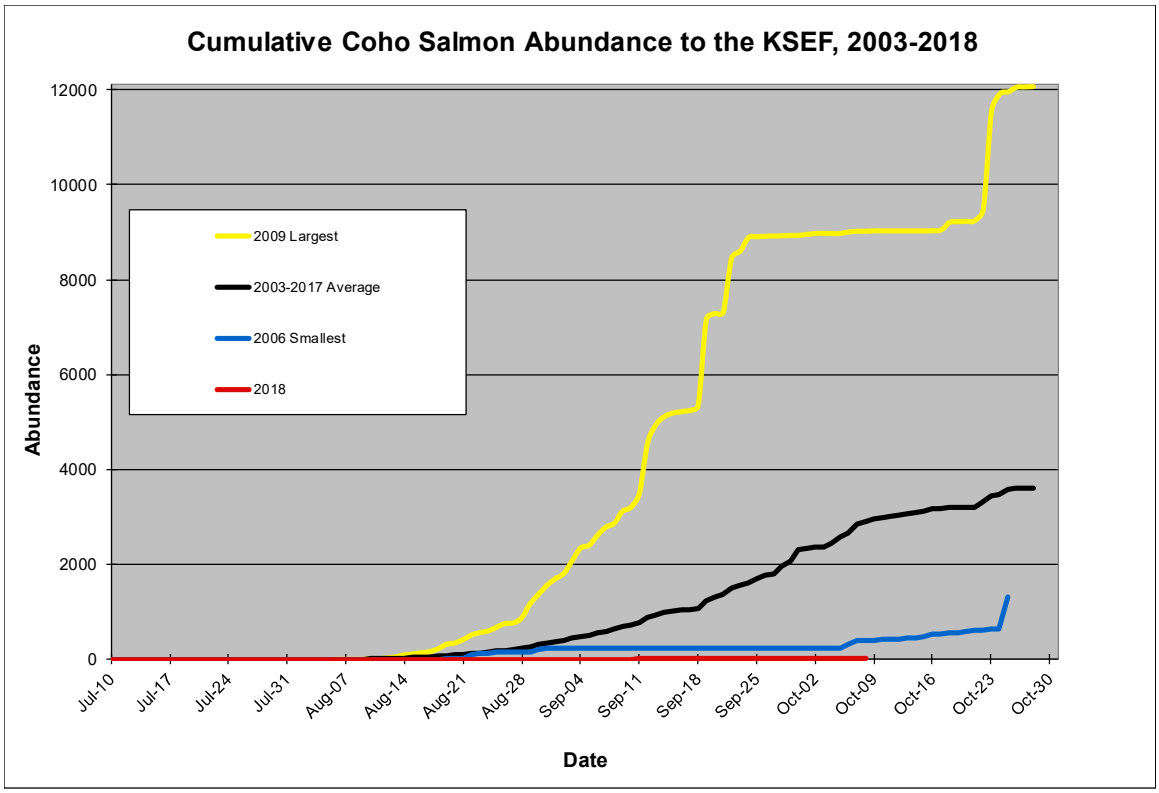

KSEF Water Temperature Comparison
2011-2017 Average & 2018
22
20
18
16
14
12
10
8
6
4
Temperature
2018
2011 - 2017 Average
10-Jul
14-Jul
18-Jul
22-Jul
26-Jul
30-Jul
3-Aug
7-Aug
11-Aug
15-Aug
19-Aug
23-Aug
27-Aug
31-Aug
4-Sep
8-Sep
12-Sep
16-Sep
20-Sep
24-Sep
28-Sep
2-Oct
6-Oct
10-Oct
14-Oct
18-Oct
22-Oct
26-Oct
Date


Cumulative Kitwanga Sockeye Abundance at KSEF & KsF, 2003-2018
Abundance
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jul/10
Jul/17
Jul/24
Jul/31
Aug/07
Aug/14
Aug/21
Aug/28
Sep/04
Sep/11
Sep/18
Sep/25
Oct/02
Oct/09
Oct/16
Oct/23
2007 Smallest
2003-2017 Average
2010 Largest
2018


Cumulative Kitwanga Chinook Abundance through the KSEF, 2003-2018
Abundance
3,000
2,500
2,000
1,500
1,000
500
0
Jul/10
Jul/17
Jul/24
Jul/31
Aug/07
Aug/14
Aug/21
Aug/28
Sep/04
Sep/11
Sep/18
Sep/25
Oct/02
Oct/09
Oct/16
Oct/23
2007 Largest
2017 Smallest
2003-2017 Average
2018


Cumulative Pink Abundance to the KSEF, 2004 - 2018 (Even Years Only)
Abundance
80000
70000
60000
50000
40000
30000
20000
10000
0
2004 - 2016 Average
2004 (Largest Return)
2008 (Smallest Return)
2018
Jul-10
Jul-17
Jul-24
Jul-31
Aug-07
Aug-14
Aug-21
Aug-28
Sep-04
Sep-11
Sep-18
Sep-25
Oct-02
Oct-09
Oct-16
Oct-23
Oct-30
Date


Cumulative Chum Abundance to the KSEF, 2003-2018
Abundance
2000
1800
1600
1400
1200
1000
800
600
400
200
0
2005 Largest
2008 Smallest
2003-2017 Average
2018
Jul-10
Jul-17
Jul-24
Jul-31
Aug-07
Aug-14
Aug-21
Aug-28
Sep-04
Sep-11
Sep-18
Sep-25
Oct-02
Oct-09
Oct-16
Oct-23
Oct-30
Date


Cumulative Coho Salmon Abundance to the KSEF, 2003-2018
12000
10000
8000
6000
4000
2000
0
Abundance
2009 Largest
2003-2017 Average
2006 Smallest
2018
Jul-10
Jul-17
Jul-24
Jul-31
Aug-07
Aug-14
Aug-21
Aug-28
Sep-04
Sep-11
Sep-18
Sep-25
Oct-02
Oct-09
Oct-16
Oct-23
Oct-30
Date