Gitanyow Fisheries Authority

September 8, 2022

2022 Kitwanga River Salmon Enumeration Facility Update #6

This is the sixth in-season update for the 2022 operation of the Kitwanga River Adult Salmon Enumeration Facility (KSEF). In this update the Gitanyow Fisheries Authority (GFA) will present the results of the salmon escapement to the Kitwanga River (middle Skeena index) from the start of the program (July 23) to the week ending on September 5, 2022. This year marks the 20th 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 2022 funders and supporters, specifically the Gitanyow Chiefs (Gitanyow Huwilp Sustainability Fund), the Pacific Salmon Commission's Northern Endowment Fund 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. All the in-season updates for this year are available on our website: www.gitanyowfisheries.com

Upstream view of KSEF on September 6, 2022

High water in 2022 prevented the installation of the KSEF by the usual start date of July 10. However, GFA was able to install the in-river KSEF components between July 21-23, 2022 and the fence was rendered fish tight by the afternoon of July 23. The later than normal start will be considered when producing final estimates of salmon escapement for this year. For 2022, we once again will be operating both a manual counting box and a digital video camera recorder (DVR) at the KSEF site.

Of note for this update, water levels were high (up to 1.31m and 1.20m after cleaning) on August 30-31 after heavy rainfall in the Kitwanga River Watershed, and some of the panels had to be left opened to relieve pressure on the fence and potentially prevent permanent damage to the facility. It is not known how many fish passed through the KSEF uncounted during this time. Logs and other debris were carried down the river and were lodged on the facility and the fence itself during this period. Fortunately, no damage to the site was observed but GFA crews spent considerable time cleaning the site of debris however, the fence was rendered fish tight again on the morning of September 1, and has remained fish tight since this time.

Downstream view of KSEF, showing high water on August 31, 2022

The water levels at the KSEF are currently at 0.81m, approximately 0.10m above the long-term average and water temperatures are normal for this time of year, currently fluctuating between 11-13°C.

Like in previous years, the KsF (smolt fence) located at the outlet of Gitanyow Lake will be used again this year to count adult sockeye through a DVR camera system. The KsF DVR has been operational since July 11, 2022, and up to August 7th, 728 adult sockeye have passed through this secondary upper counting facility. Prior to July 11, the KsF was operated as a smolt fence and adult sockeye would have been prevented from swimming upstream undetected.

For 2022, the total sockeye return will be reported through both the KsF and the KSEF for comparison purposes and all other salmon counts will only be reported when they migrate past the KSEF.

Total salmon counts to the end of **September 5, 2022 through the KsF** and end of **September 5, 2022 through the KSEF**:

KsF

Sockeye= 1,462

KSEF* **Note counts are to be considered minimum estimates through the fence due to period where panels were open.**

Sockeye= 584 Chinook= 969 Pink= 10,305 Chum= 232 Coho= 226

This year's **sockeye** escapement through the KSEF compares to a previous maximum observed to the day of 17,518 in 2010, which resulted in an overall escapement of 20,804 and the minimum observed to the day of 47 in 2019, which resulted in overall escapements of 125. Based on average run timing for Kitwanga sockeye to the day (2003-2019) it is predicted that approximately **66.2%** of the run should have passed the KSEF. For more information on cumulative Kitwanga sockeye salmon abundance through the KSEF by day, refer to the sockeye salmon graph below.

View of a sockeye through the KsF camera box on August 7, 2022 (left photo) and view of a sockeye through the KSEF camera box on August 9, 2022 (right photo)

To date we have counted **969 Chinook** (plus 65 jacks) through the KSEF. This year's Chinook escapement compares to a maximum observed to the day of 3,223 in 2007, which resulted in an overall escapement of 3,225 and the minimum observed to the day of 583 in 2018, which resulted in an overall escapement of 618 for the year. Based on average run timing for Kitwanga Chinook to the day (2003-2019 and 2021) it is predicted that approximately **99%** of the run should have passed the KSEF. Of note, because the KSEF operations started 13 days later than the usual start date of July 10, it is likely that a small number of Chinook may have passed the site before it became fish tight. Based on average run timing between July 10-23 (2003-2019 and 2021) approximately 5.3% of the run would have been missed. The final Kitwanga Chinook escapement for 2022 will be adjusted in the post-season to account for the late start. For more information on cumulative Kitwanga Chinook salmon abundance by date, refer to the Chinook graph below.

A sampled Chinook at the KSEF on August 5, 2022 (left photo) and a view of Chinook through the camera box at KSEF on August 9, 2022 (right photo).

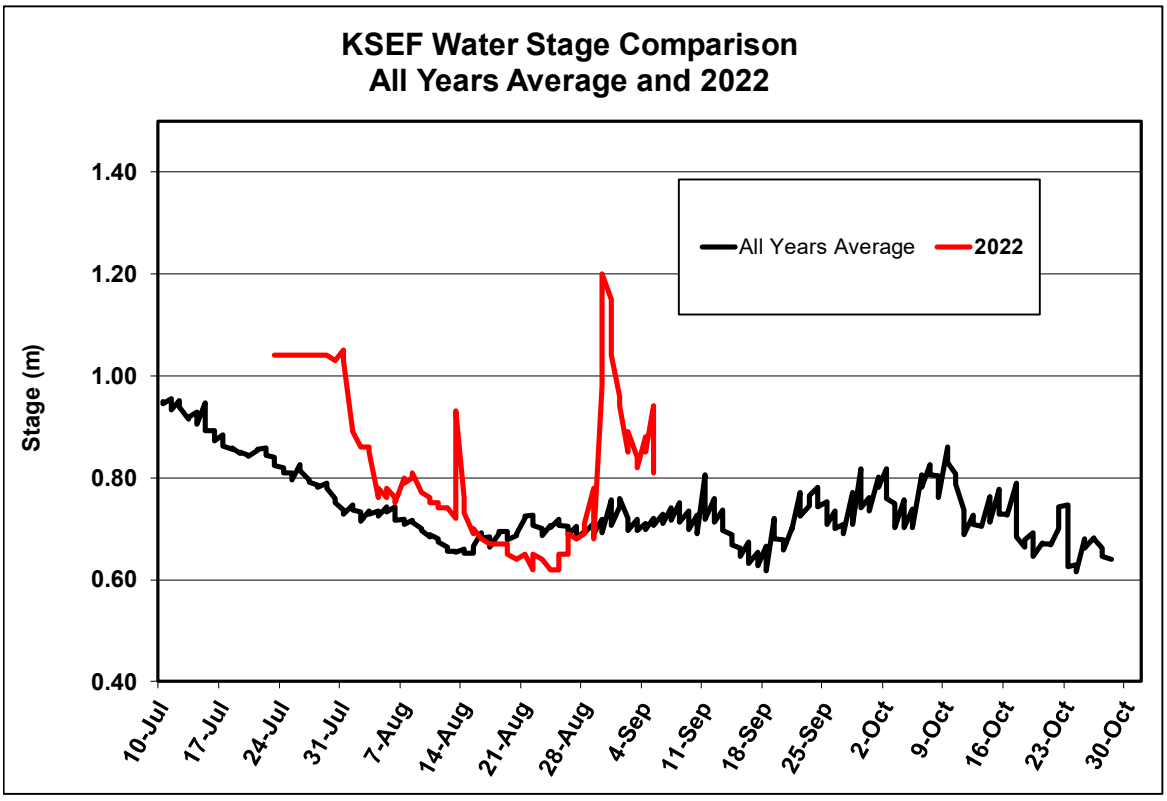
To date we have counted **10,305 pink** salmon through the KSEF. This year's even year pink escapement compares to a maximum observed to the day of 70,903 in 2014, which resulted in an overall escapement of 75,416 and the minimum observed to the day of 1,735 in 2008, which resulted in an overall escapement of 4,245 for the year. Based on average run timing for pink salmon to the day (2004-2018) it is predicted that **91.4%** of the run should have passed the KSEF. For more information on cumulative Kitwanga even-year pink salmon abundance by date, refer to the pink salmon graph below.

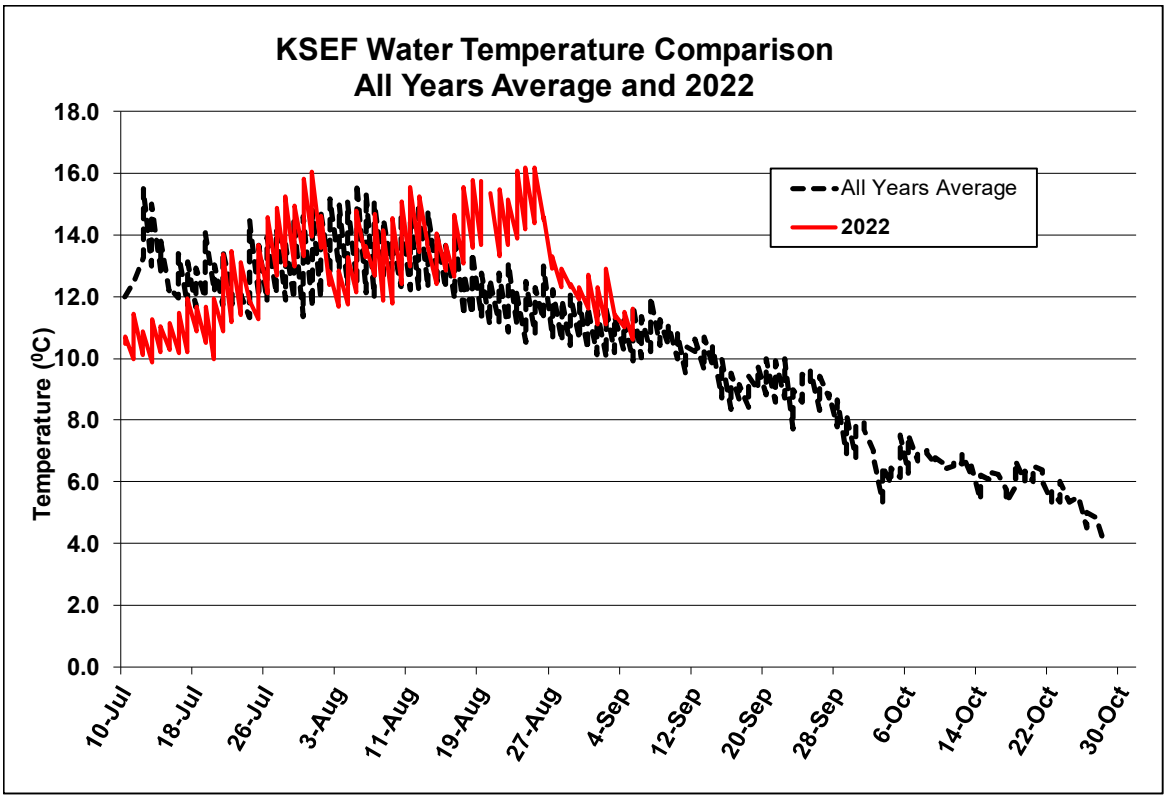
View of a pink salmon through the camera box at KSEF on August 8, 2022

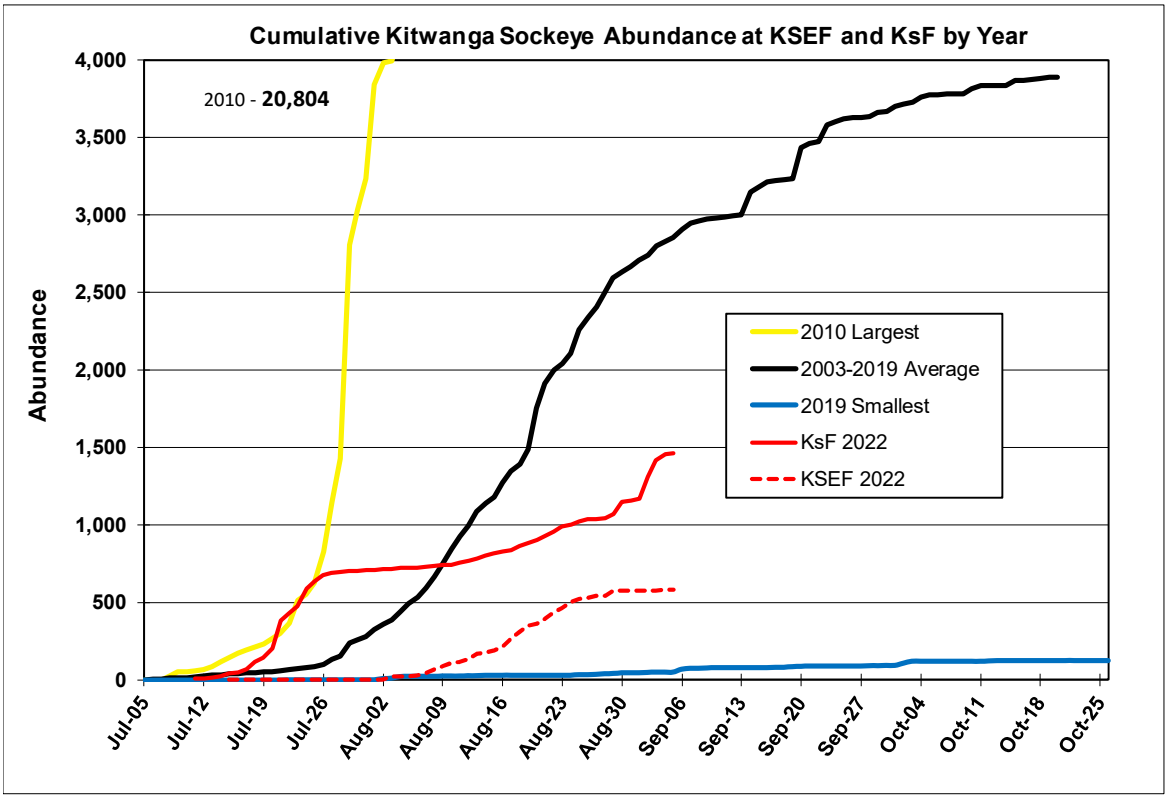
To date we have counted **232 chum salmon** through the KSEF. This year's chum escapement compares to a **maximum** observed to the day of 1,312 in 2005, which resulted in an overall escapement of 1,862 and a **minimum** observed to the day of 17 in 2008 which resulted in an overall escapement of 150 for the year. Based on average run timing for chum salmon to the day (2003-2019) it is predicted that approximately **48%** 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.

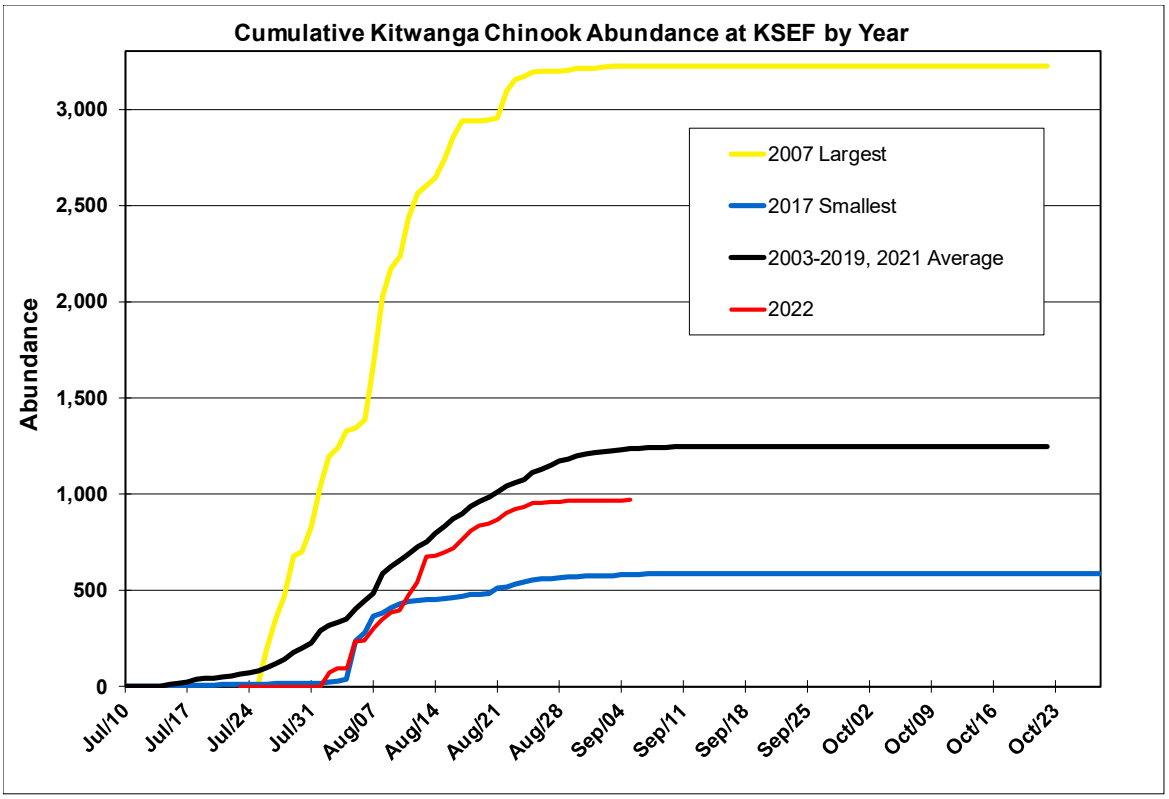
View of a chum salmon through the camera box at KSEF on August 11, 2022.

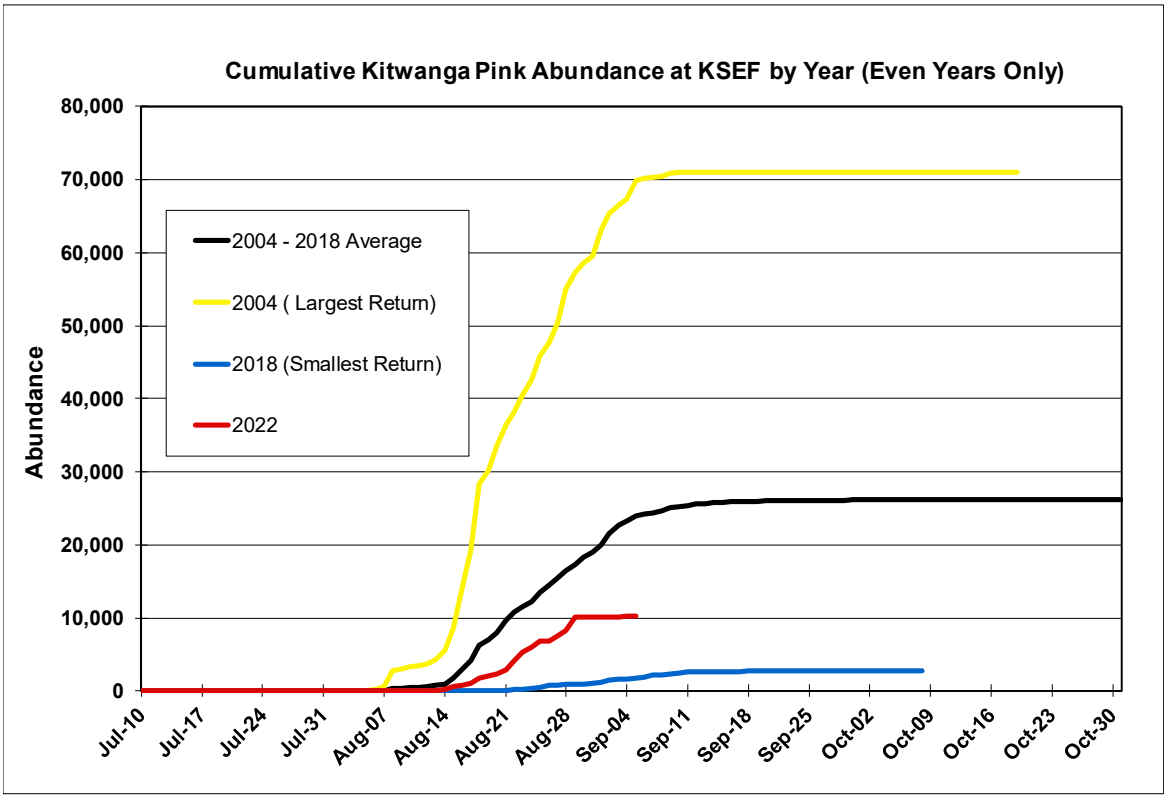
To date we have counted **226 coho salmon** through the KSEF. This year's coho escapement compares to a **maximum** observed to the day of 2,406 in 2009, which resulted in an overall escapement of 12,080 and a **minimum** observed to the day of 6 in 2018, which resulted in an overall escapement of 551 for the year. Based on average run timing for coho salmon to the day (2003-2019) it is predicted that approximately **14.1%** 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.

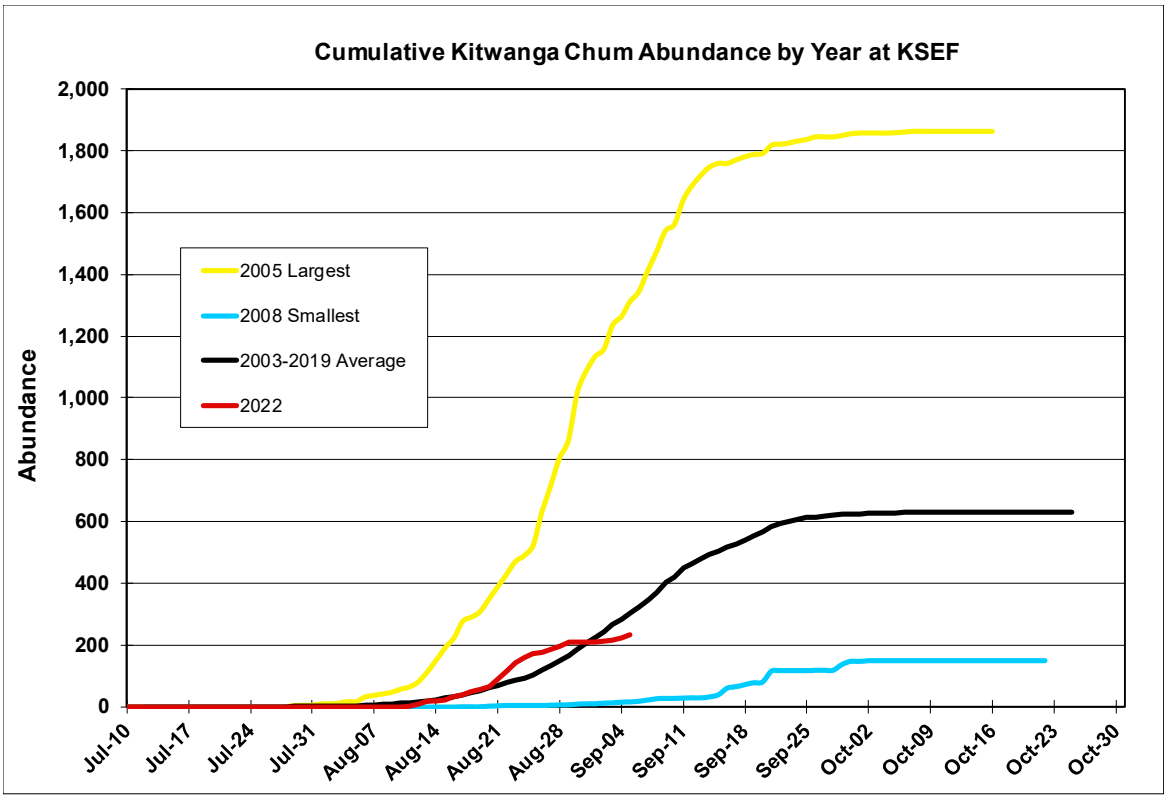


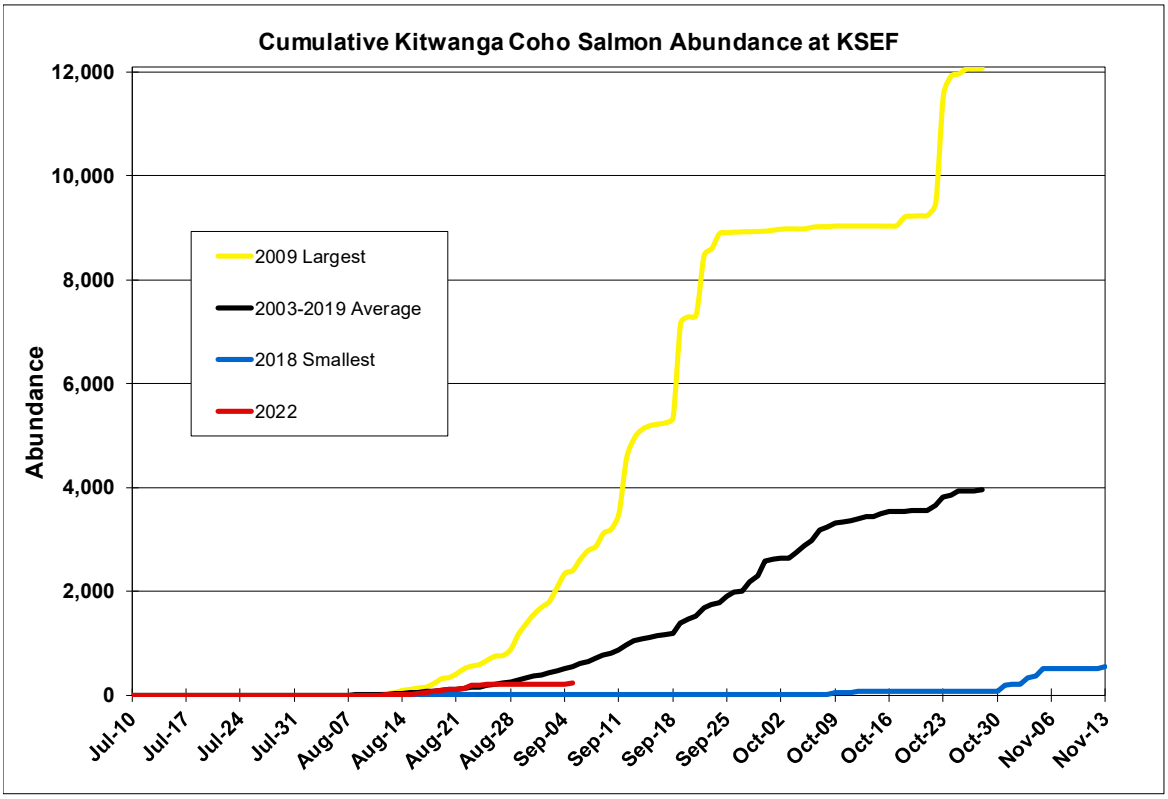

KSEF Water Temperature Comparison
All Years Average and 2022
Temperature (°C)
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
10-Jul
18-Jul
26-Jul
3-Aug
11-Aug
19-Aug
27-Aug
4-Sep
12-Sep
20-Sep
28-Sep
6-Oct
14-Oct
22-Oct
30-Oct
All Years Average
2022


Cumulative Kitwanga Sockeye Abundance at KSEF and KsF by Year
Abundance
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2010 - 20,804
Jul-05
Jul-12
Jul-19
Jul-26
Aug-02
Aug-09
Aug-16
Aug-23
Aug-30
Sep-06
Sep-13
Sep-20
Sep-27
Oct-04
Oct-11
Oct-18
Oct-25
2010 Largest
2003-2019 Average
2019 Smallest
KsF 2022
KSEF 2022


Cumulative Kitwanga Chinook Abundance at KSEF by Year
Abundance
3,000
2,500
2,000
1,500
1,000
500
0
2007 Largest
2017 Smallest
2003-2019, 2021 Average
2022
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


Cumulative Kitwanga Pink Abundance at KSEF by Year (Even Years Only)
Abundance
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
2004 - 2018 Average
2004 (Largest Return)
2018 (Smallest Return)
2022
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


Cumulative Kitwanga Chum Abundance by Year at KSEF
Abundance
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2005 Largest
2008 Smallest
2003-2019 Average
2022
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


Cumulative Kitwanga Coho Salmon Abundance at KSEF
Abundance
12,000
10,000
8,000
6,000
4,000
2,000
0
2009 Largest
2003-2019 Average
2018 Smallest
2022
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
Nov-06
Nov-13