

Nechako Fisheries Conservation Program
Annual Report

Executive Summary of Activities in 2019-2020 and Proposed Work
Program for 2020-2021

March 31, 2020

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Administration

Technical Committee Operations

The Technical Committee undertook minimal activities in Year 32 of the NFCP and communicated via email and conference calls. During the year, the Technical Committee undertook the projects approved for the 2019/2020 fiscal year.

2019/2020 Program Summary

In the 2019/2020 operating period 3 of 3 planned projects were conducted by the Nechako Fisheries Conservation Program. Planned projects included:

	Person-Days	Person-Day Costs	Disbursements	Total Expenses
3 Remedial Measures Projects	141	\$70,500	\$29,320	\$99,820

The total program budget for the 2019/2020 program year was \$99,820.

The Technical Committee rebuilt the NFCP web-site: nfc.org

Proposed 2020/2021 Program

The proposed 2020/2021 (Year 33) Nechako Fisheries Conservation Program includes:

	Person-Days	Person-Day Costs	Disbursements	Total Expenses
3 Remedial Measures Projects	141	\$70,500	\$29,320	\$99,820

Remedial measures projects are the same as those conducted previously since the start of NFCP activities in 1988. Note that the costs for carrying out these projects are borne by RTA.

A breakdown of person-days and disbursements for proposed 2020/2021 projects is shown in Table 1. Table 2 provides a comparison of the proposed Year 33 program budget with the approved budgets for the previous 2 years.

Table 1. NFCP: Proposed 2020/2021 Program.

REMEDIAL MEASURES	DAYS	DISBURSEMENTS*	RESPONSIBLE
Summer Temp Management	\$54,750	\$15,910	RTA
Flow Control	\$11,250	\$3,410	RTA
Flow Discrepancy Project	\$4,500	\$10,000	RTA
TOTAL	\$70,500	\$29,320	\$99,820
COMMITTEE OPERATIONS**	***	\$50,000	

*Includes contracts

**Includes Independent Member, Annual Meeting and Report, Technical Report Production, and Committee Meetings

***As required by each party. In recent years there have been no committee expenses

Table 2. Nechako Fisheries Conservation Program Previous Years' Budgets and Proposed Budget for Year 33 (2020/2021).

	2018/2019		2019/2020		2020/2021	
	DAYS	EXPENSES	DAYS	EXPENSES	DAYS	EXPENSES
REMEDIAL MEASURES						
Summer Temperature Management	\$54,750	\$15,910	\$54,750	\$15,910	\$54,750	\$15,910
Flow Control	\$11,250	\$3,410	\$11,250	\$3,410	\$11,250	\$3,410
Flow Discrepancy Project	\$4,500	\$10,000	\$4,500	\$10,000	\$4,500	\$10,000
Sub-Total Remedial Measures	\$70,500	\$29,320	\$70,500	\$29,320	\$70,500	\$29,320
MONITORING						
Enumeration						
Carcass Recovery						
Sub-Total Monitoring	\$0	\$0	\$0	\$0	\$0	\$0
GRAND TOTAL	\$70,500	\$29,320	\$70,500	\$29,320	\$70,500	\$29,320

Comparison of Completed Year 32 and Proposed Year 33 Projects

Remedial Measures

Summer Temperature Management Program

Nechako River flows and water temperatures are managed using a computer- based program referenced in the Settlement Agreement. The program protocol uses a trend analysis developed from five-day meteorological forecasts to schedule releases from Skins Lake Spillway to maintain mean daily water temperatures at, or below, 20.0°C in the Nechako River upstream of the Stuart River (Finmoore).

YEAR 32

2019/2020

The Summer Temperature Management Program (STMP) was undertaken to attempt to prevent the mean daily water temperatures in the Nechako River above the Stuart River confluence (at Finmoore) from exceeding 20.0°C between July 20 and August 20. Water temperatures were managed by regulating Skins Lake Spillway releases to control flows in the Nechako River below Cheslatta Falls and at Vanderhoof. During the 2019 STMP, a Stop Order was issued by the government of British Columbia in response to the Big Bar Landslide on the Fraser River. The Stop Order was officially implemented on August 3, 2019 by the Comptroller of Water Rights and remained in place until September 1, 2019.

Recorded mean daily water temperatures in the Nechako River upstream of the Nechako-Stuart River confluence (at Finmoore) are shown in Figure 1. Over the duration of the 2019 STMP (July 10 to August 20), there were twelve temperature exceedances (eight occurred outside of the control period of July 20 to August 20 and the remaining four occurred

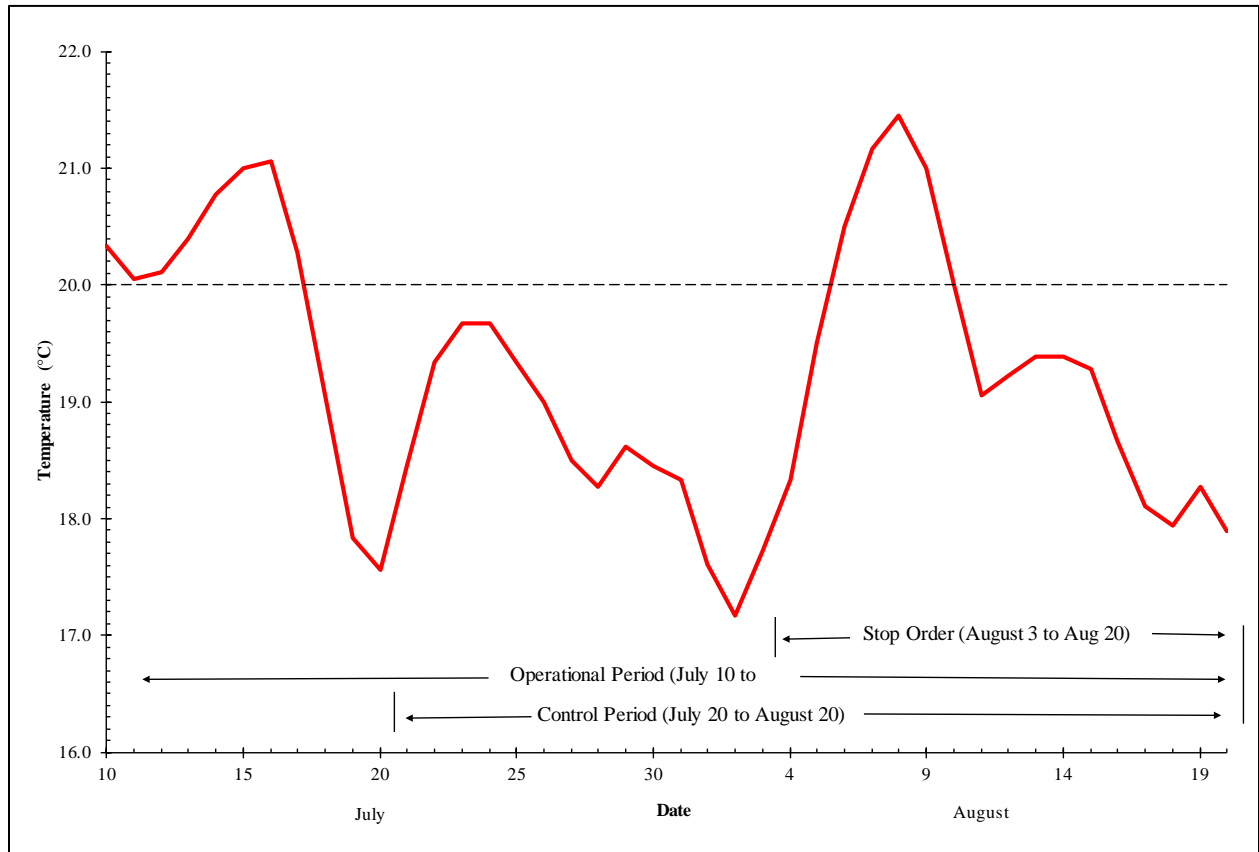
during the Big Bar Landslide Stop Order). The total volume of water released during the STMP was 6,947 m³/s, and the average release was 161.5 m³/s.

YEAR 33

2020/2021

The 2020/2021 Summer Water Temperature Management Project will follow the same protocol and will be conducted in a manner consistent with previous project years.

Figure 1. Recorded Mean Daily Temperatures in the Nechako River above the Stuart River Confluence: July 10 to August 20, 2019.



Flow Control

The NFCP Technical Committee is responsible for the management of the annual water allocation from Nechako Reservoir to best benefit fish in the Nechako River.

YEAR 32

2019/2020

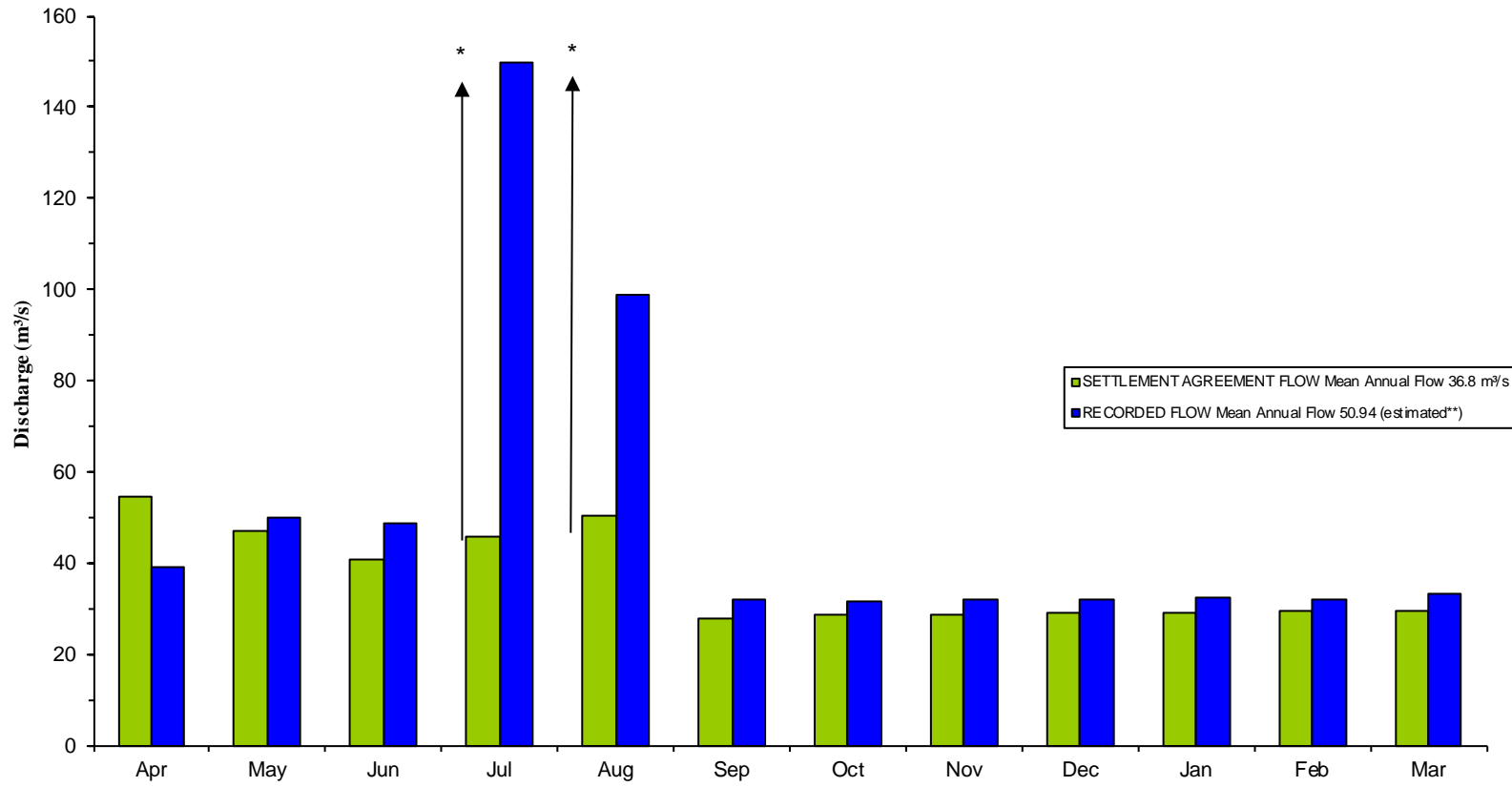
In 2019/2020, the release of the Annual Water Allocation was initiated in April lower than in prior years ($31.9 \text{ m}^3/\text{s}$) as noted in Figure 2. Releases remained at this rate until mid-April when they were increased to normal levels ($49.5 \text{ m}^3/\text{s}$) and remained at this rate until the start of the STMP in July. Following the STMP, releases were decreased in late August to control the discharge in the Nechako River below Cheslatta Falls to approximately $32 \text{ m}^3/\text{s}$ through the spawning period in September. It is anticipated the releases will average $32 \text{ m}^3/\text{s}$ or more for the remainder of the winter for the Annual Water Allocation to be fully utilized ($36.8 \text{ m}^3/\text{s}$). A summary of the daily discharges at Skins Lake is shown in Figures 2 to 5.

YEAR 33

2020/2021

In 2020/2021, flow allocation will again be managed by the NFCP to best utilize the annual water allocation.

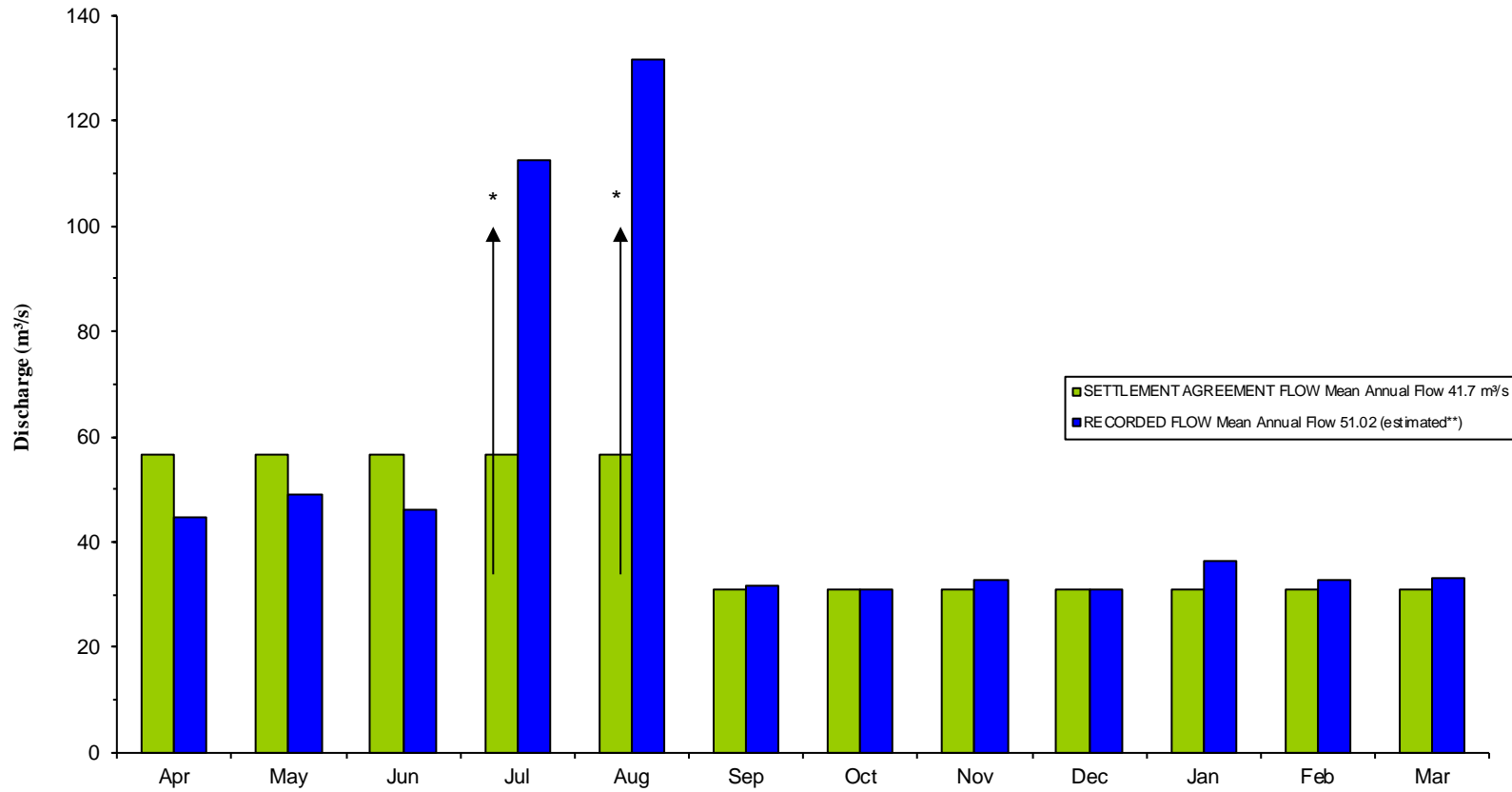
Figure 2 - Comparison between Settlement Agreement and Recorded Skins Lake Spillway Release, April 2019 to March 2020



* Additional Flows as Required for Cooling Purposes

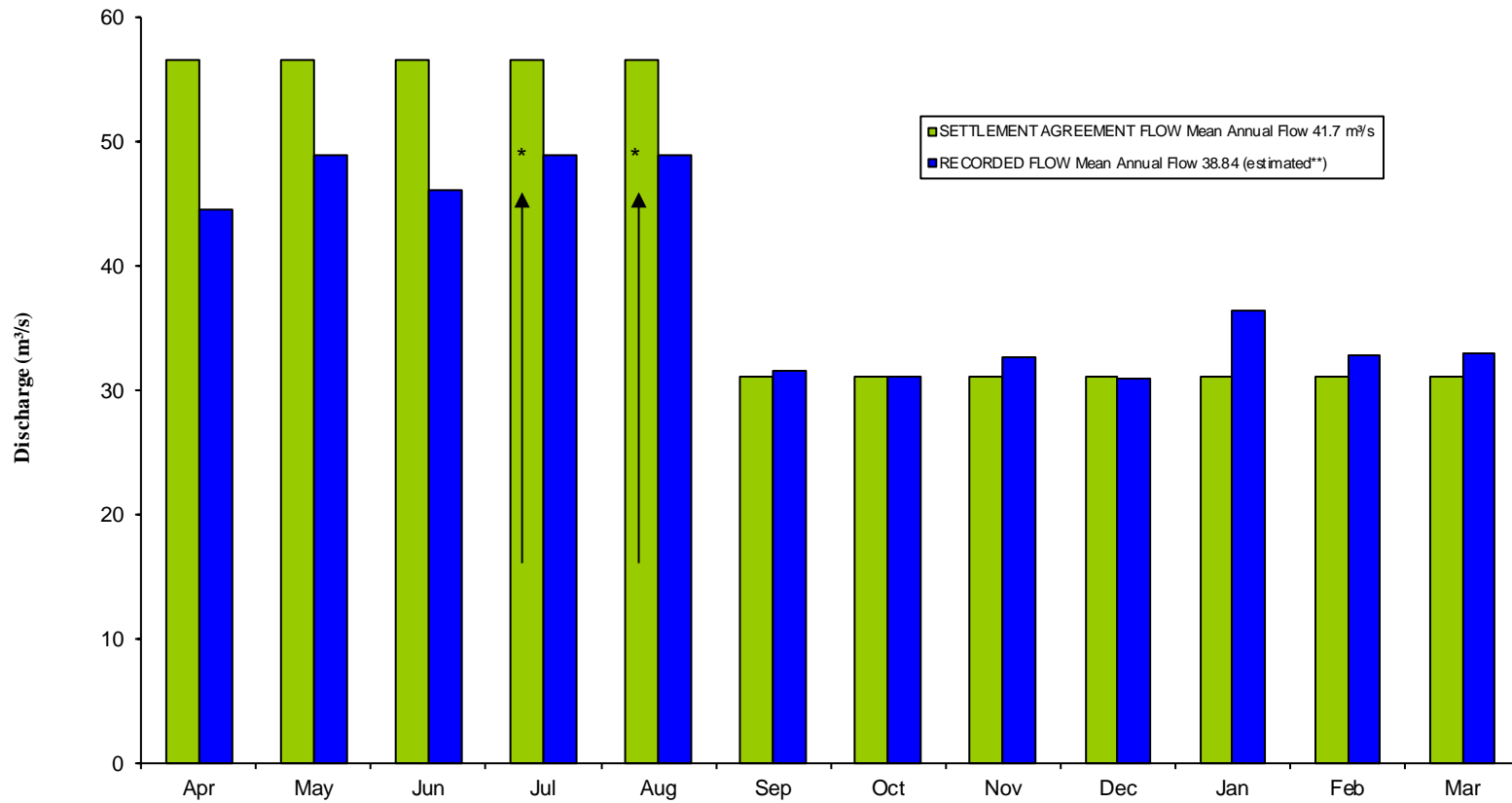
** March data is assumed.

Figure 3 - Comparison between Settlement Agreement and Recorded Flow in Nechako River below Cheslatta Falls, April 2019 to March 2020



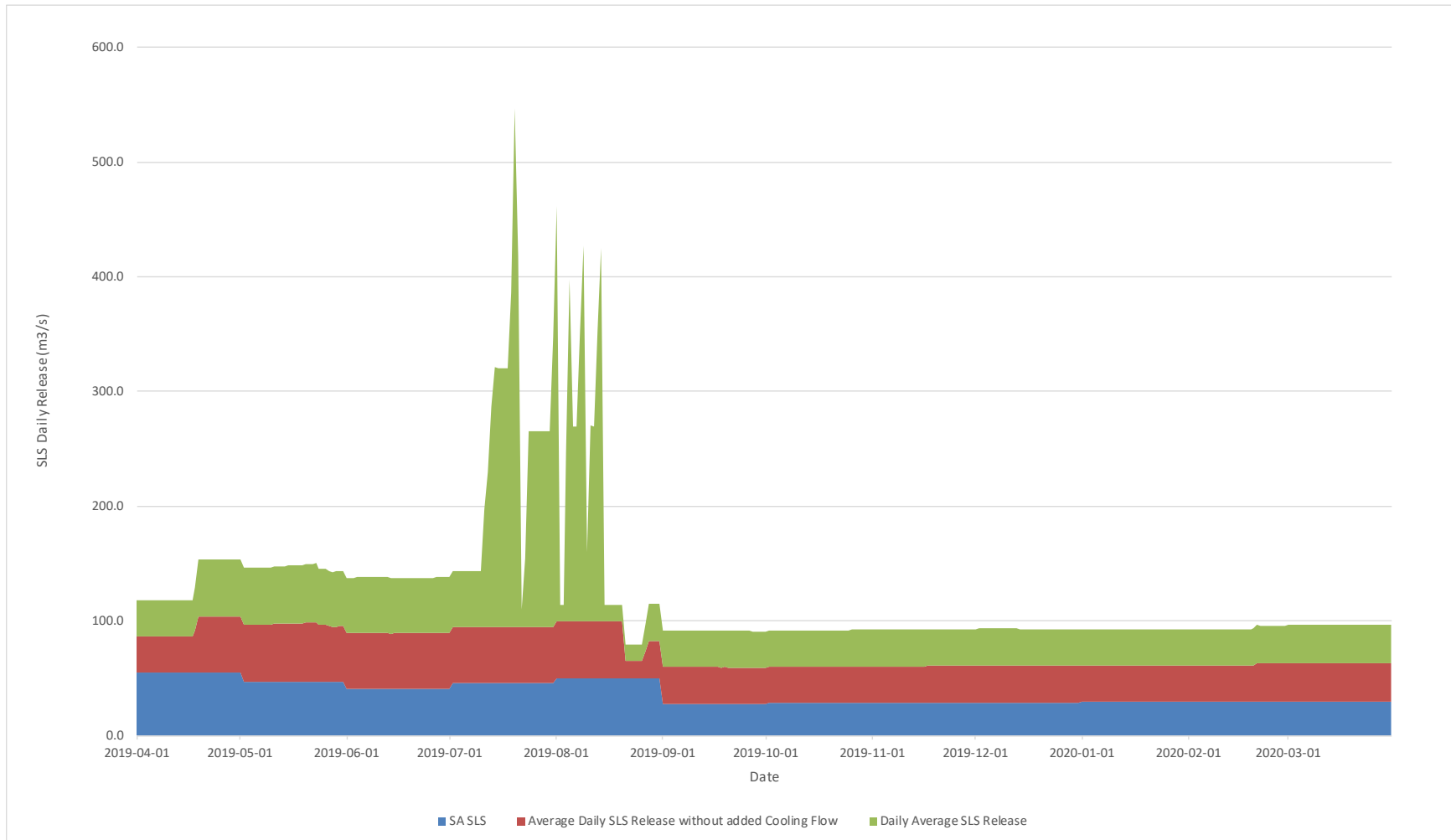
* Additional Flows as Required for Cooling Purposes
 ** March data is assumed.

Figure 4 - Comparison between Settlement Agreement and Recorded Flow in Nechako River below Cheslatta Falls - without Added Cooling Flows, April 2019 to March 2020



* Additional Flows as Required for Cooling Purposes
 ** March data is assumed.

Figure 5. Daily average discharge from the Skins Lake Spillway between April 1, 2019 and March 31, 2020 (March data is assumed)



Flow Discrepancy

Periodically a discrepancy is apparent between the flow records for the Skins Lake Spillway and the Nechako River below Cheslatta Falls. An investigation into the potential reasons for these discrepancies was carried out in February 1999. The investigation indicated that the most likely cause was the use of preliminary data for the station below Cheslatta Falls in making the comparison. There is also the possibility of groundwater recharge occurring in the fall.

YEAR 32

2019/2020

The flow discrepancy project was not undertaken in 2019-20 as no flow anomaly was detected early in the year and discharges from the reservoir were much greater than the minimums required under the 1987 Settlement Agreement for the remainder of the year.

YEAR 33

2020/2021

During 2020 - 2021 a contingency budget will again be established to allow investigation of the source of any observed discrepancy between the Skins Lake Spillway and the WSC gauging station (#08JA017) in the Nechako River below Cheslatta Falls.

Additionally, the Water Survey of Canada will conduct spot checks of the flows at station 08JA4017 to allow a comparison of flows with spillway releases, should an anomaly in the relationships be detected.

Monitoring

Adult Spawner Enumeration

The number of adult chinook salmon returning to the Nechako River is the main performance indicator to evaluate achievement of the Conservation Goal.

YEAR 32

2018/2019

In 2019 many of the salmon runs in the Middle and Upper Fraser River failed or were severely reduced by the Big Bar slide. The Technical Committee was greatly concerned about the impact of the slide on the survival of Nechako Chinook spawners in 2019. DFO conducted helicopter overflights in September, 2019 to enumerate the spawner population and calculated that 1438 adults returned to the river (Figure 6). While this escapement is below the lower limit of the Conservation Goal, it is higher than the returns that NFCP monitored in 5 separate years since 1989. Provided that the slide can be suitably remediated to improve salmon passage, the TC does not expect there will be residual impacts on the Nechako Chinook population.

YEAR 33

2020/2021

During 2020, Nechako Chinook spawner enumeration will be carried out by the Stock Assessment Division of DFO.

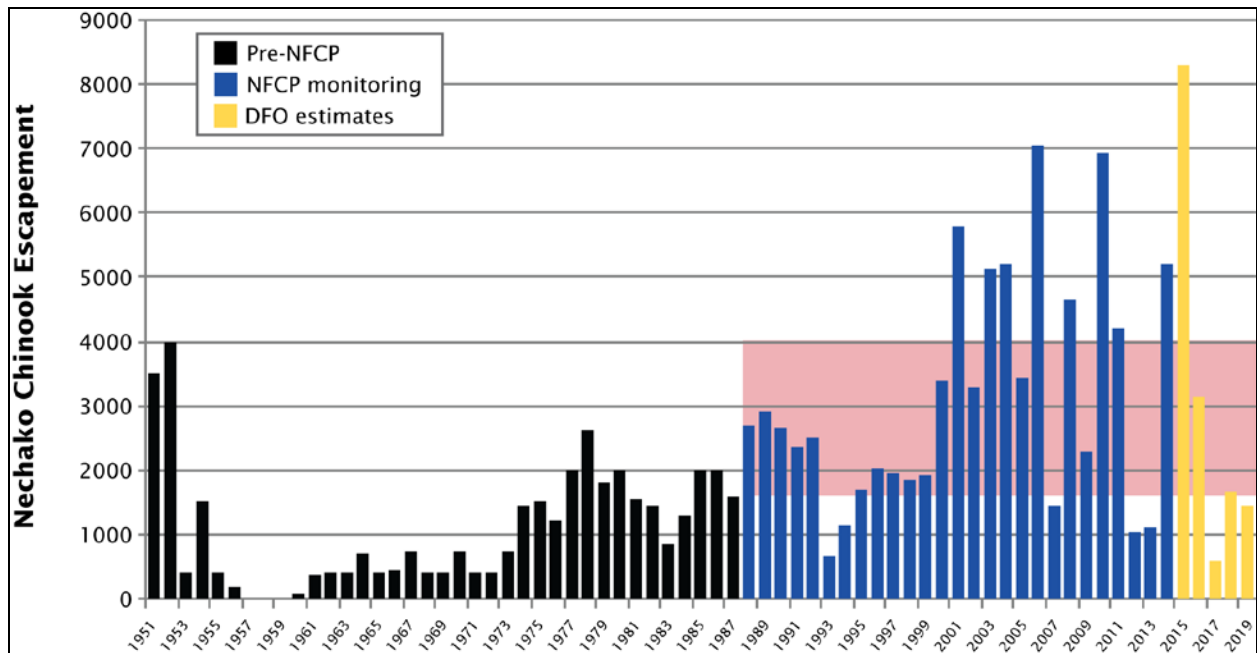


Figure 6. Nechako Chinook escapement time series between 1951 - 2019. Blue bars indicate NFCP monitoring and black bars show pre-NFCP monitoring by DFO. Yellow bars are estimates provided to NFCP by the Stock Assessment Division of DFO. The pink shaded area depicts the lower and upper target ranges of the Conservation Goal.