Nechako Fisheries Conservation Program

Annual Report

Executive Summary of Activities in 2020-2021 and Proposed Work Program for 2021-2022

March 31, 2021

Contents

Administration

Technical Committee Operations

The Technical Committee undertook minimal activities in Year 33 of the NFCP and communicated via email and conference calls. During the year, the Technical Committee undertook the projects approved for the 2020/2021 fiscal year.

2020/2021 Program Summary

In the 2020/2021 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 2020/2021 program year was $99,820.

Proposed 2021/2022 Program

The proposed 2021/2022 (Year 34) 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 2021/2022 projects is shown in Table 1. Table 2 provides a comparison of the proposed Year 34 program budget with the approved budgets for the previous 2 years.

Table 1. NFCP: Proposed 2021/2022 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, Committee Meetings and Web-site Maintenance

***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 34 (2020/2021).

	2019/2020		2020/2021		2021/2022	
	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

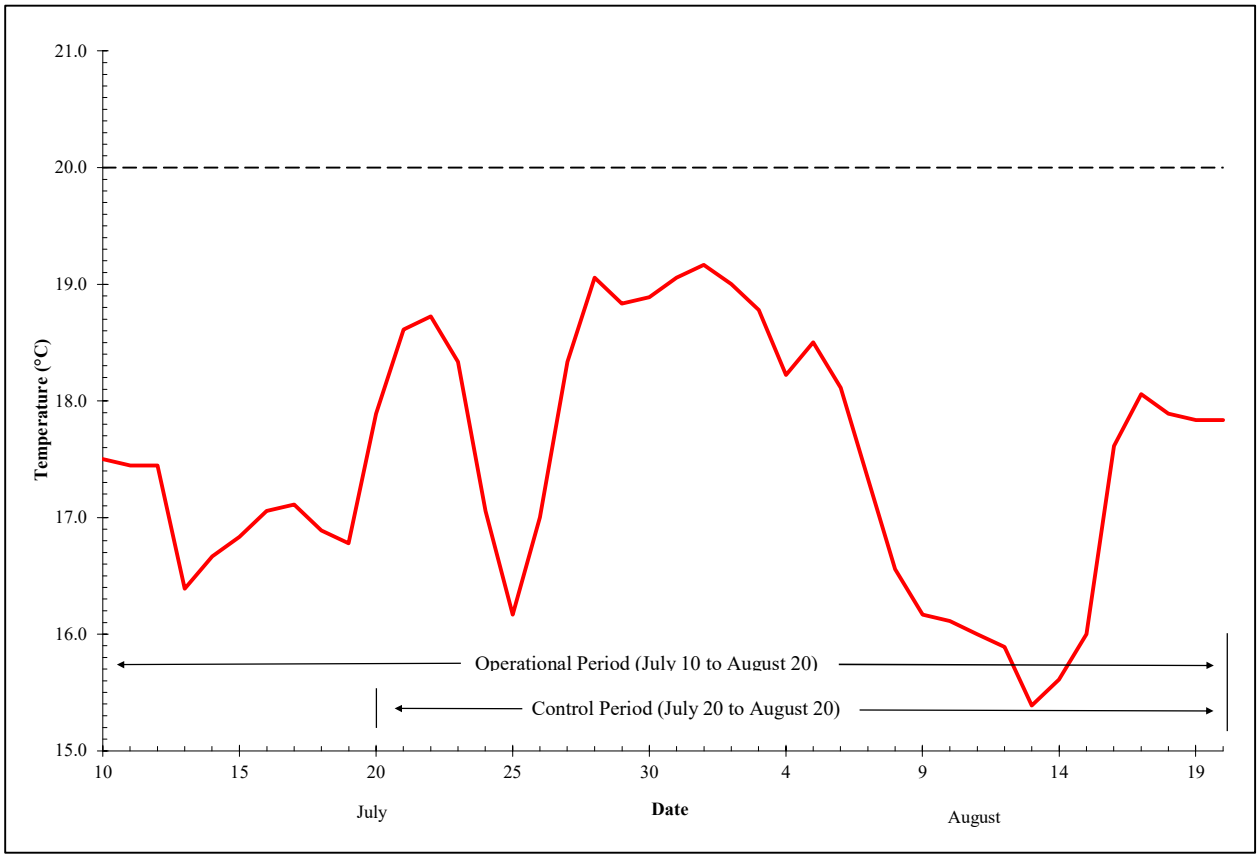
Remedial Measures

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	YEAR 33 2021/2022
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. 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 2020 STMP (July 10 to August 20), there were no temperature exceedances. The total volume of water released during the STMP was 7,628 m^3/s, and the average release was 181.6 m^3/s.	The 2021/2021 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, 2020.

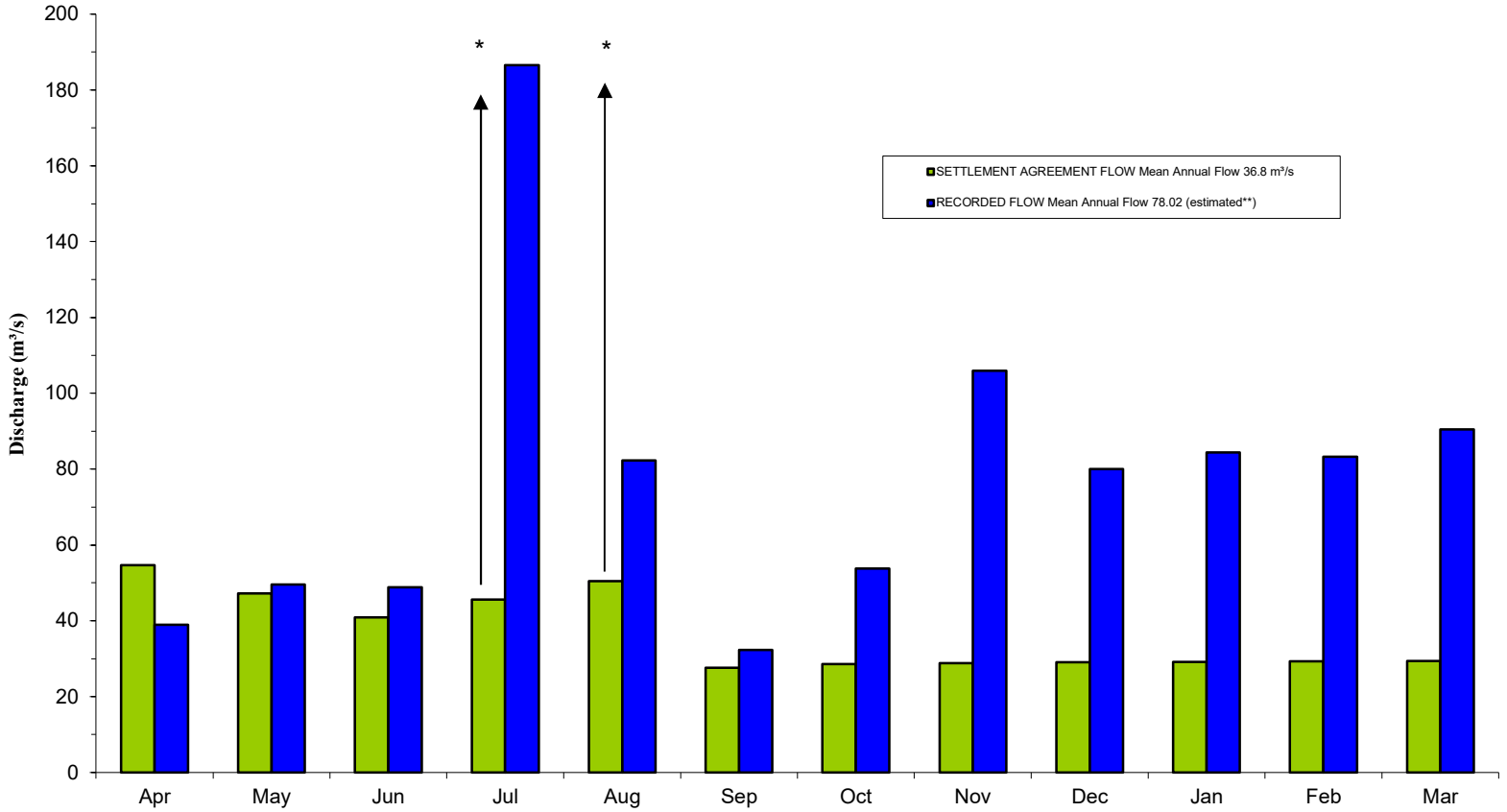


Flow Control

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.

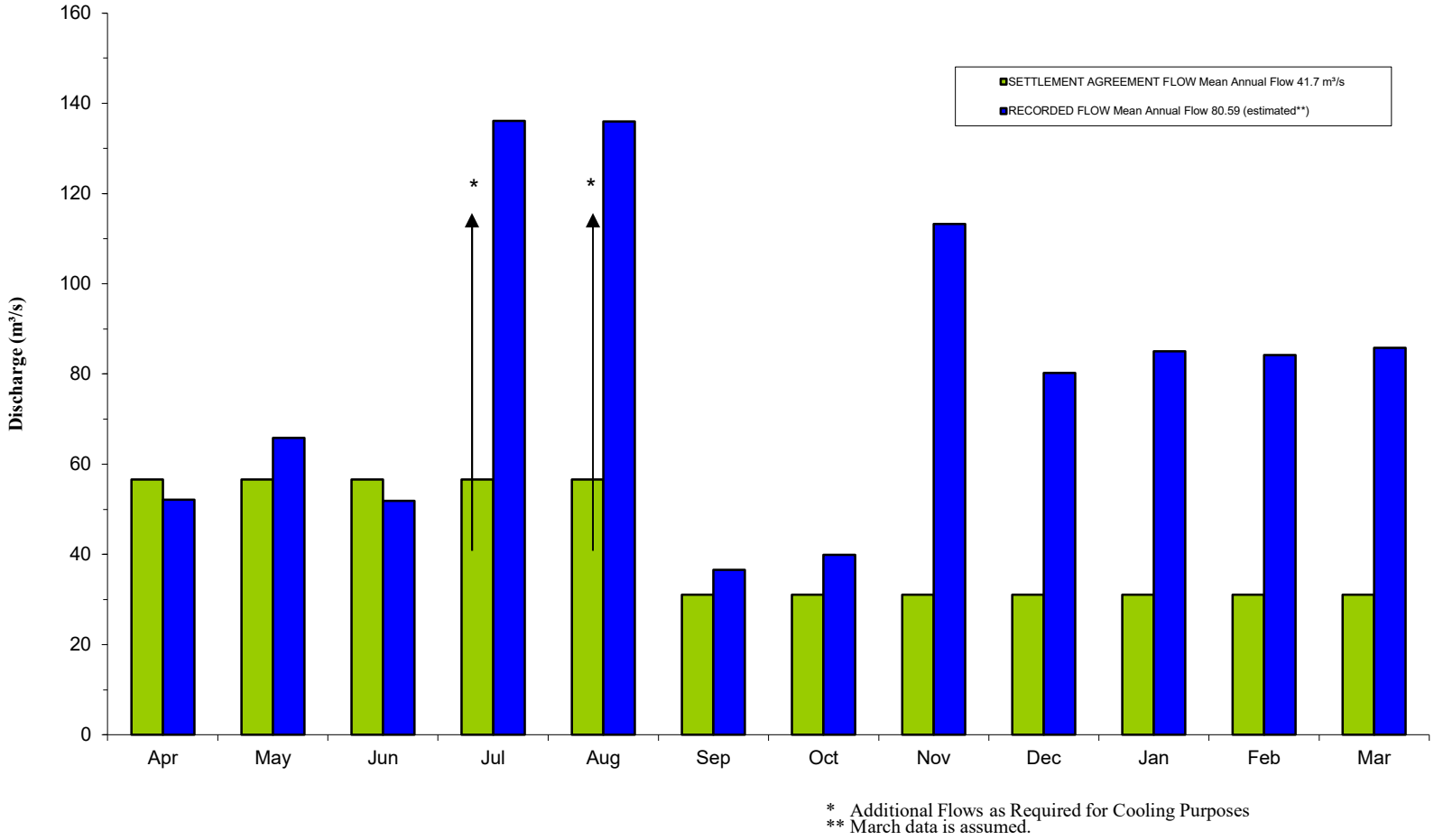
YEAR 32	YEAR 33
2019/2020	**2021/2022**
In 2020/2021, the release of the Annual Water Allocation was initiated in April lower than in prior years (31.4 m^3/s) as noted in Figure 2. Releases remained at this rate until mid-April where they were increased to normal levels (49.1 m^3/s) and remained at this 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 m^3/s through the spawning period in September. It is anticipated the releases will average 32 m^3/s or more for the remainder of the winter for the Annual Water Allocation to be fully utilized (36.8 m^3/s). A summary of the daily discharges at Skins Lake is shown in Figures 2 to 5.	In 2021/2022, 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 2020 to March 2021



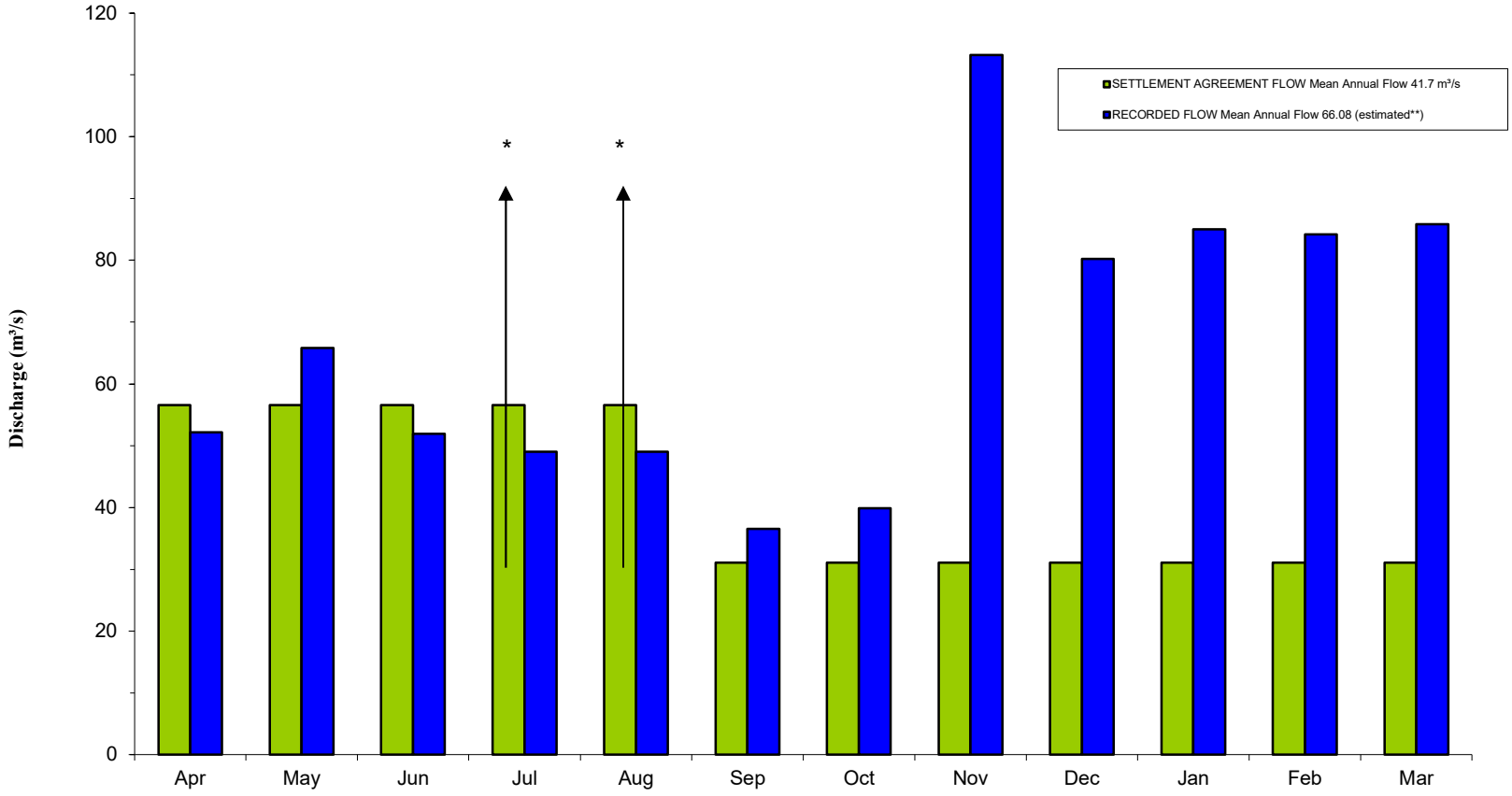
* Additional Flows as Required for Cooling Purposes
** March data is assumed.

Figure 3 - Comparison between Settlement Agreement and Recorded Flow in Nechako River below Cheslatta Falls, April 2020 to March 2021



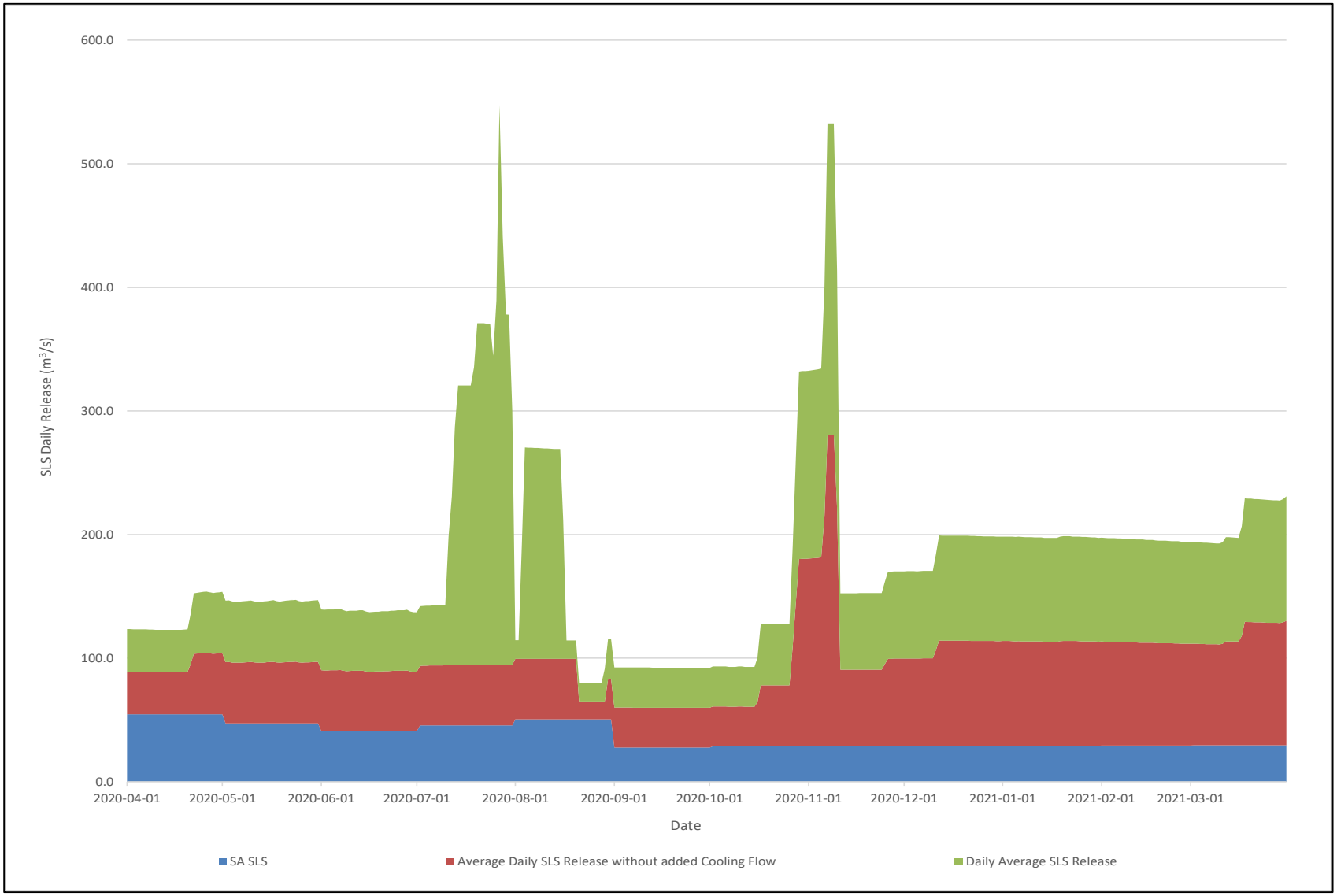
* Additional Flows as Required for Cooling Purposes
** March data is assumed.

Figure 4 - Comparison between Settlement Agreement and Recorded Flow in Nechako River below Cheslatta Falls - without Added Cooling Flows, April 2020 to March 2021



* 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	YEAR 33
2020/2021	**2021/2022**
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.	It is proposed that the flow discrepancy project be suspended and re-instated if flow discrepancies are detected in future years.

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	YEAR 33
2020/2021	**2021/2022**
In 2020 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 during both in 2019 and 2020. DFO conducted helicopter overflights in September, 2020 to enumerate the spawner population and calculated that 1836 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 7 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.	During 2021, Nechako Chinook spawner enumeration will be carried out by the Stock Assessment Division of DFO.

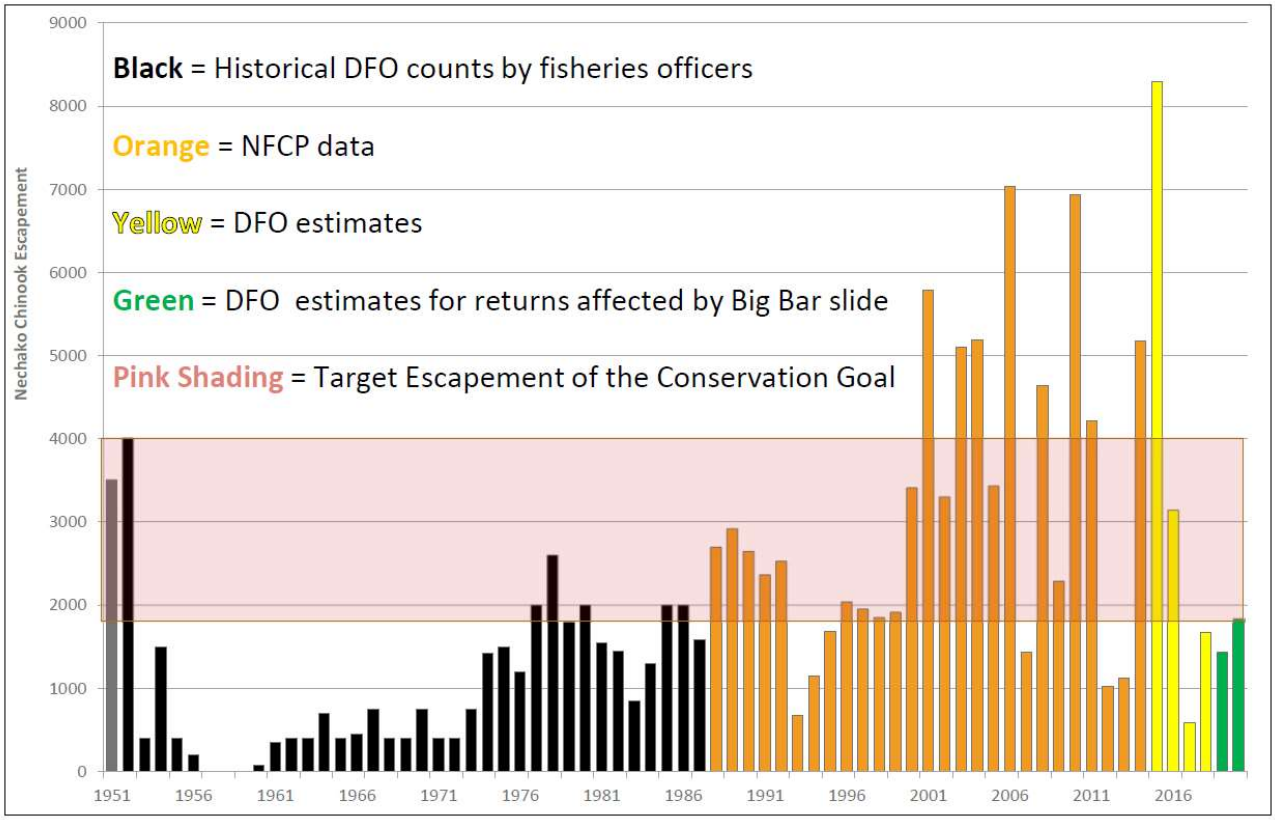


Figure 6. Nechako Chinook escapement time series between 1951 - 2020. Orange bars indicate NFCP monitoring and black bars show pre-NFCP monitoring by DFO. Yellow bars are estimates provided to NFCP by the Stock Assessment Division of DFO. The green bars are DFO estimates for returns affected by the Big Bar slide. The pink shaded area depicts the lower and upper target ranges of the Conservation Goal.