



RioTinto

# Nechako Reservoir / River / Freshet Information Sharing – Community Leaders

5 July 2023

Prepared by Andrew Czornohalan & Simon Matte

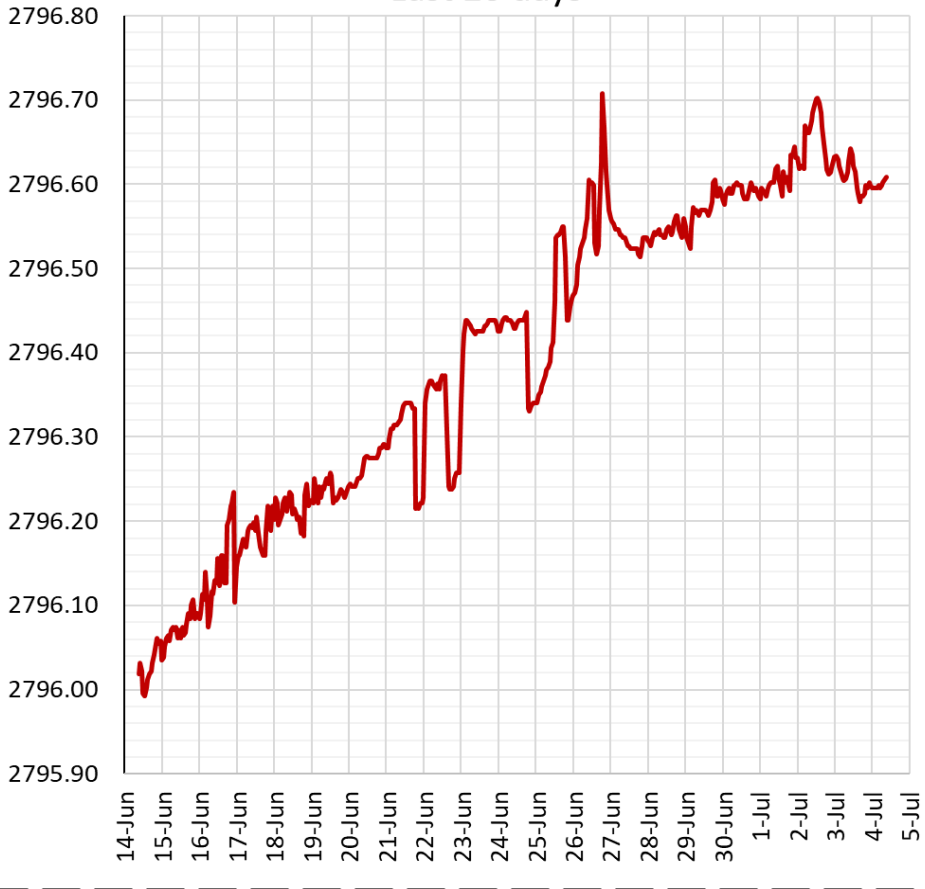


# Reservoir Elevation - Last 20 days

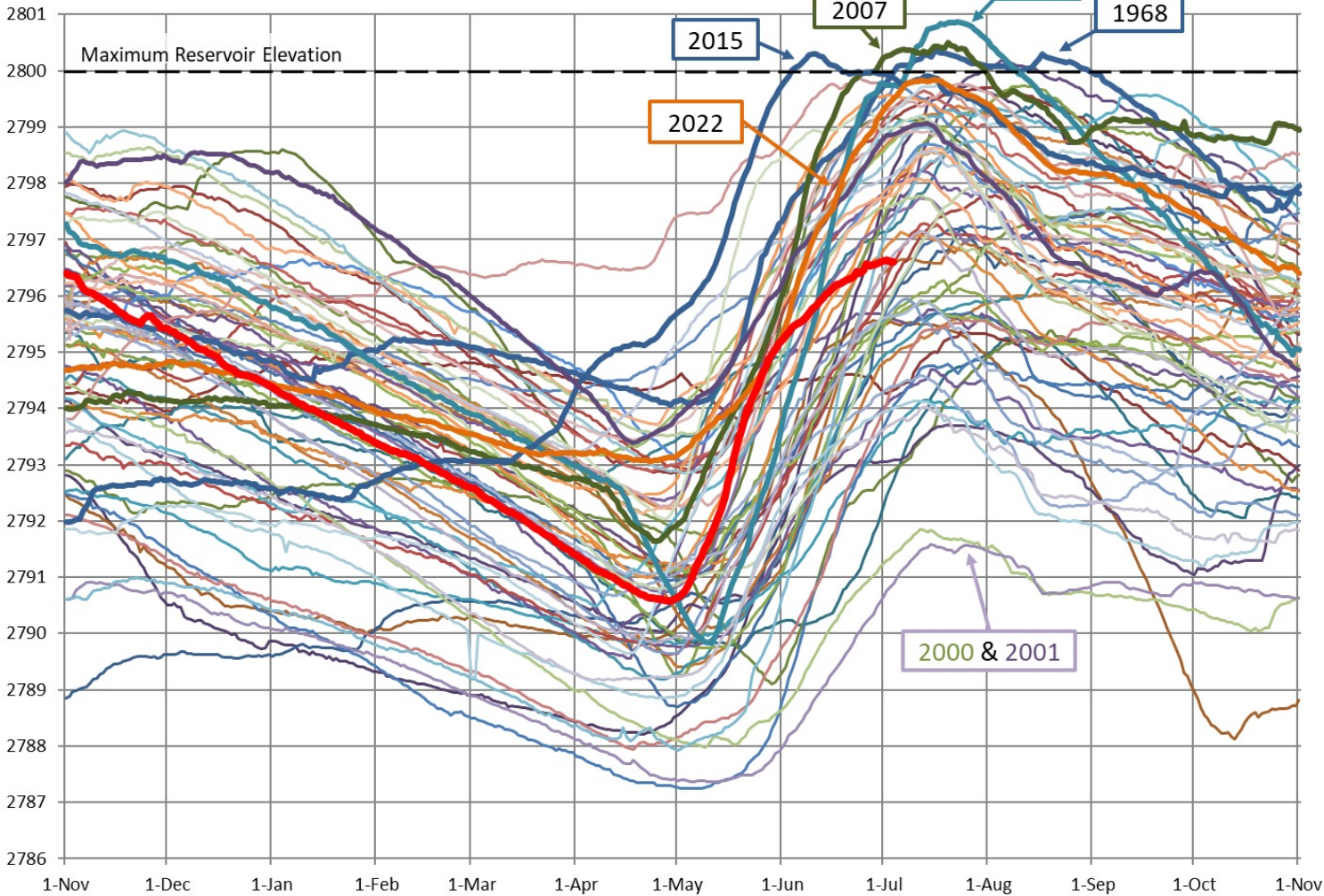
*Current reservoir level*

**2796.60 ft**

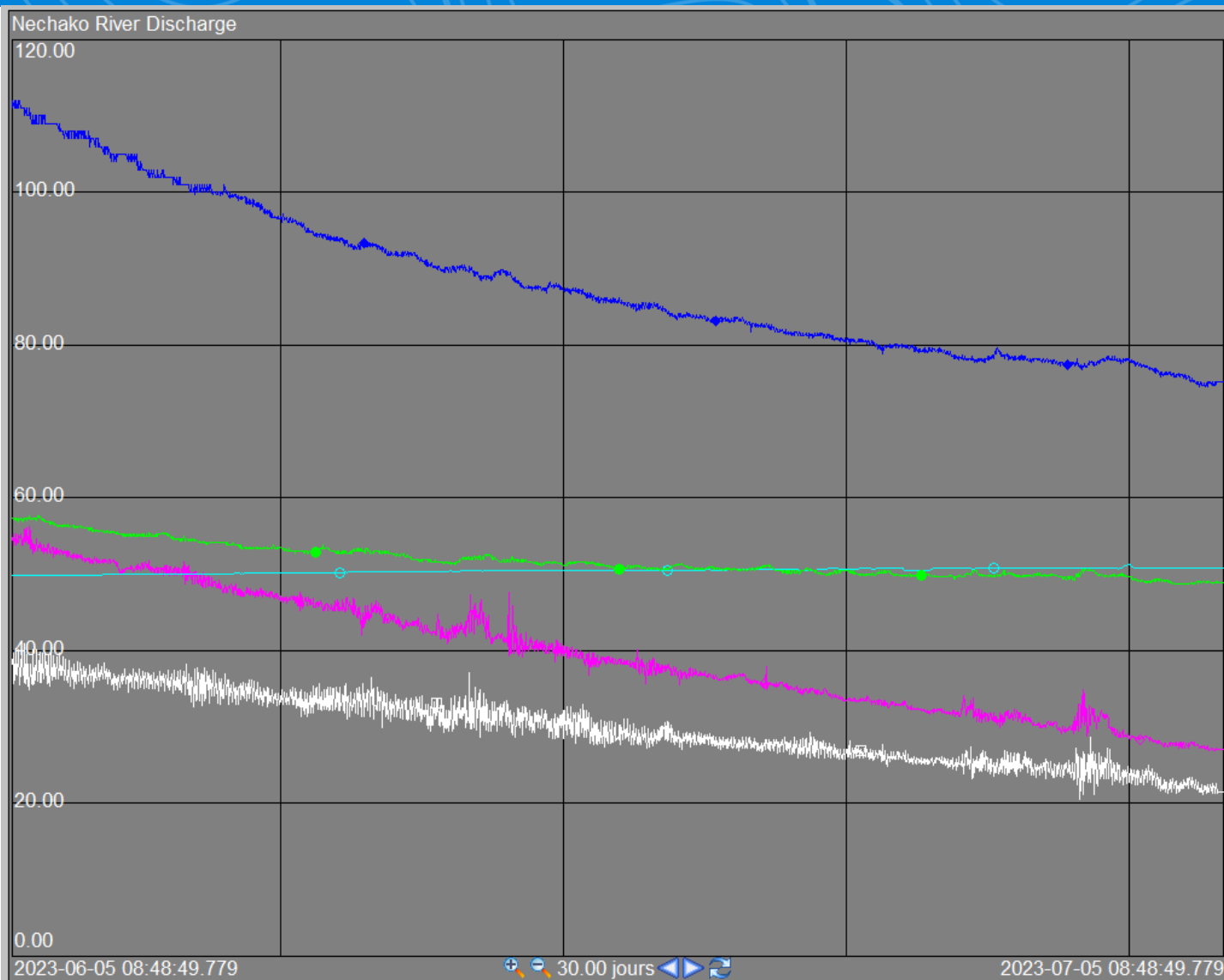
Last 20 days



**Nechako Reservoir Historical Elevation since 1957**

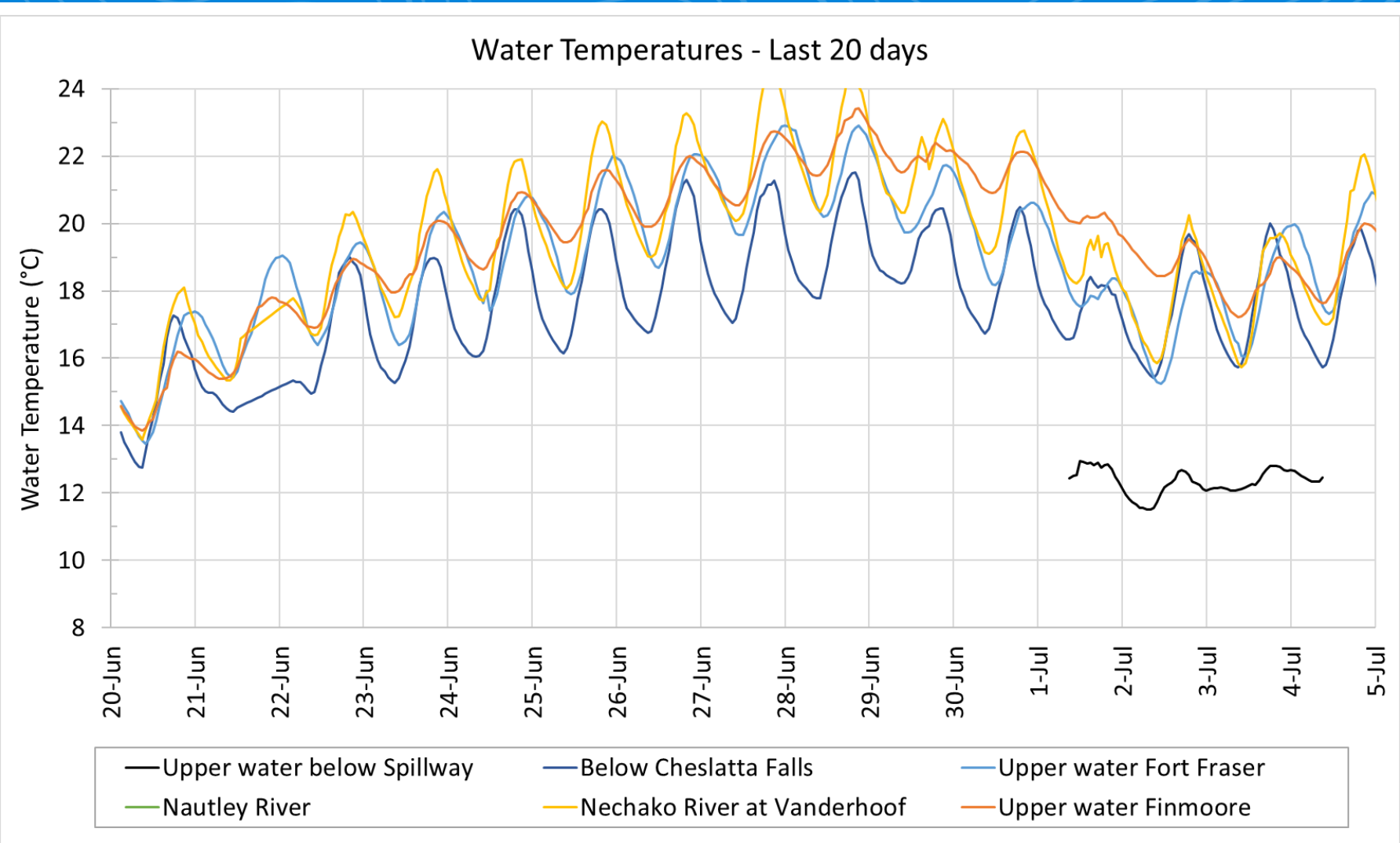


# Flows - Last 30 days



Current values (m <sup>3</sup> /s)	
Vanderhoof	75
Skins Lake	51
Cheslatta Falls	49
Nautley	27
Stellako	22

# Observed Water Temperatures – Last 20 days

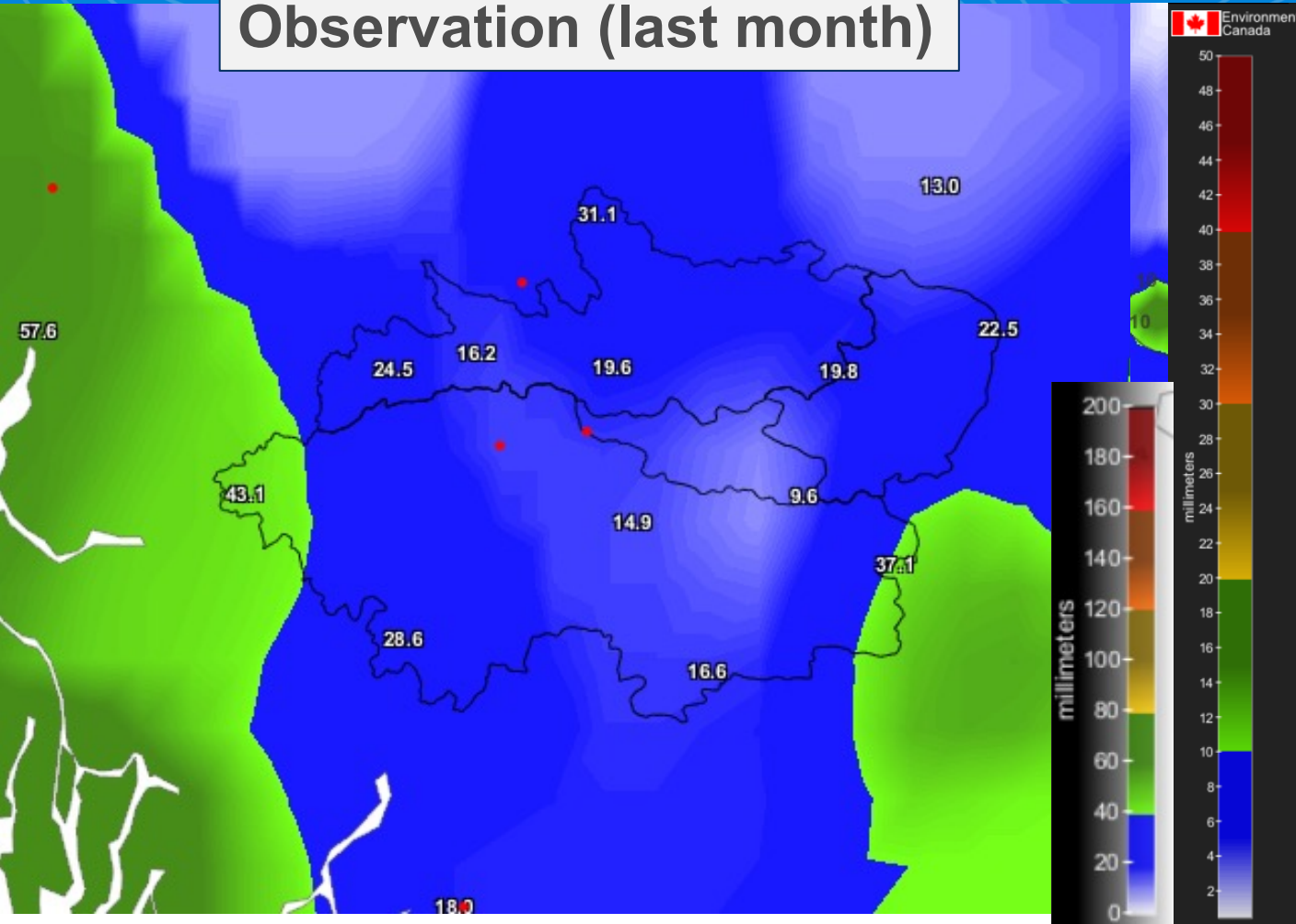


Average – Last 24h (°C)	
Upper water below spillway	N/A
Nechako River below Cheslatta Falls	17.7
Upper water Fort Fraser	19.2
Nautley River	N/A
Nechako River at Vanderhoof	19.4
Upper water Finmoore	18.8

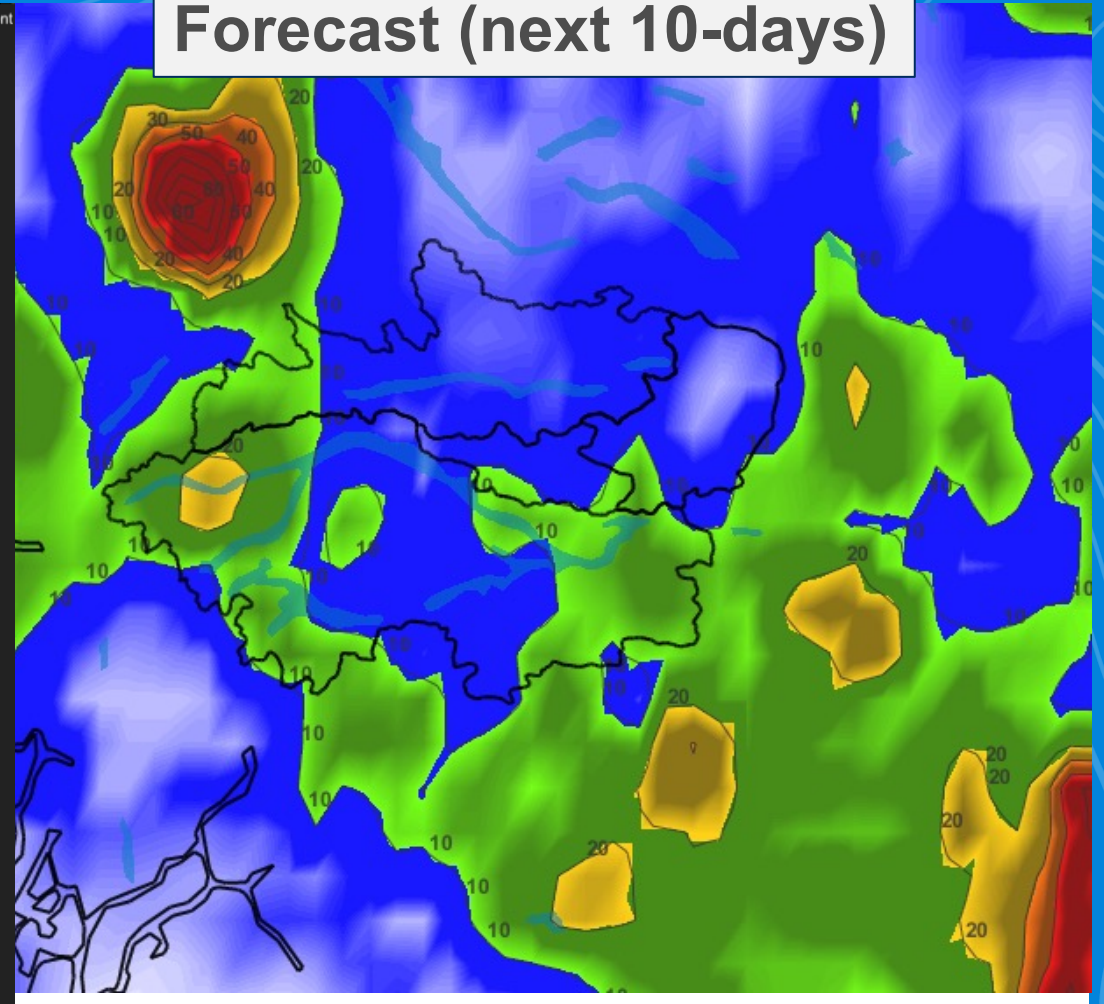


# Past & Future cumulative precipitation

Observation (last month)



Forecast (next 10-days)

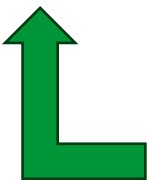
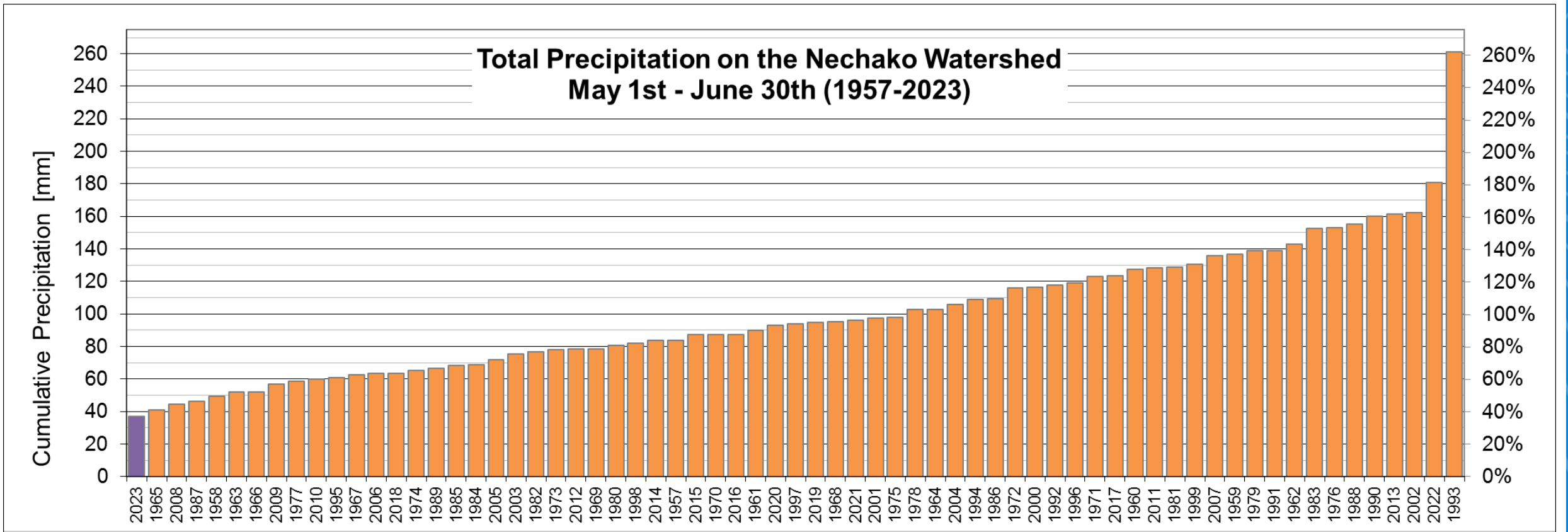


Nechako Reservoir watershed area-average = 28 mm

Nechako Reservoir watershed area-average = 5-25 mm



# Past cumulative precipitation

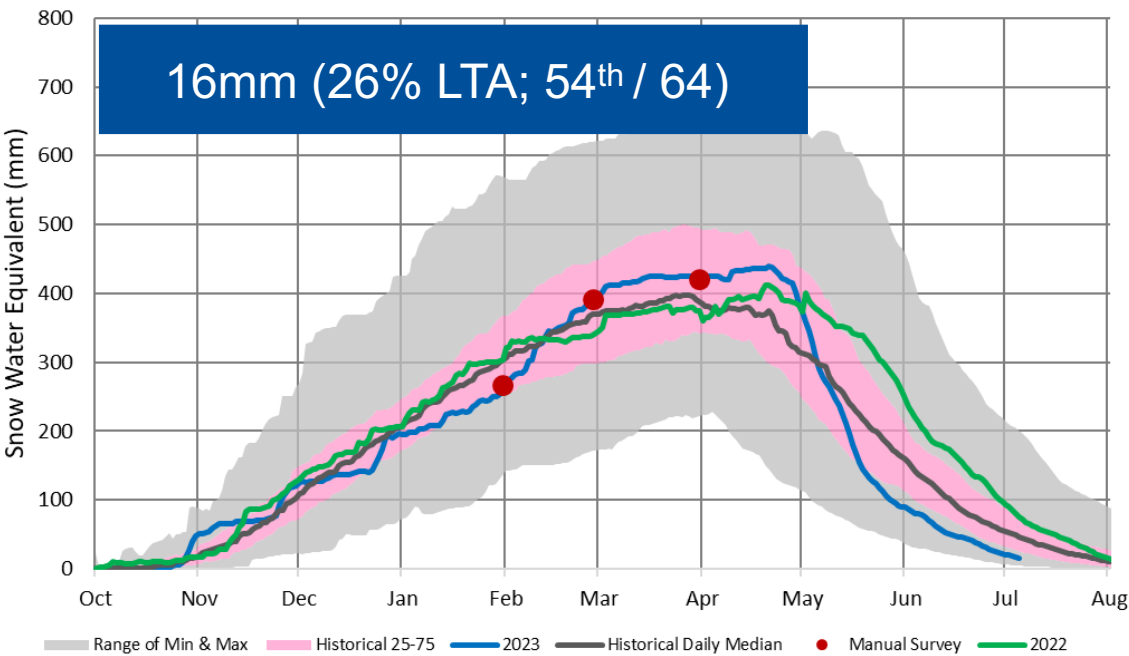


Period	Total Precip.	Rank
June	26 mm (44% LTA)	5th driest
May-June	37 mm (37% LTA)	1st
April-May-June	84 mm (59% LTA)	5th driest

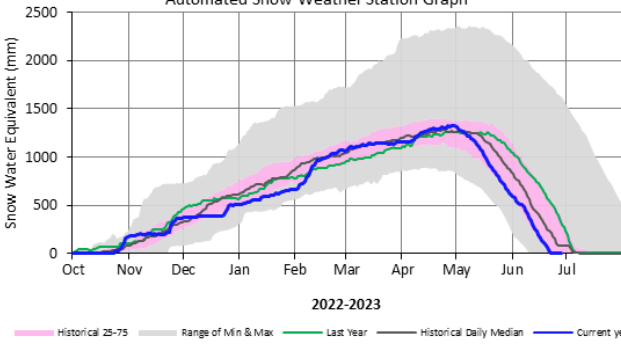


# Current Snowpack

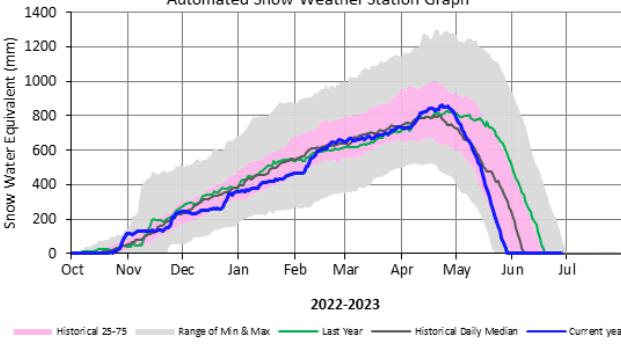
Nechako Reservoir Snowpack



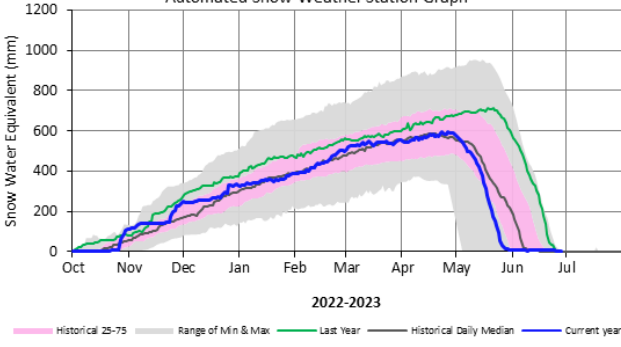
Tahtsa Lake  
Automated Snow Weather Station Graph



Mount Pondsosy  
Automated Snow Weather Station Graph

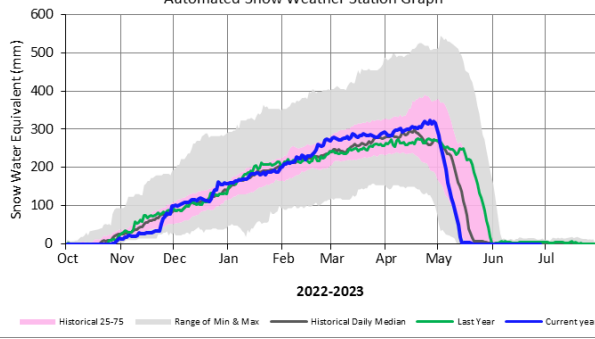


Mount Wells  
Automated Snow Weather Station Graph



Station	Current Value (mm)	LTA* (mm)	%LTA*	Percentile Rank*
Tahtsa Lake	0	165	0%	0%




























Lu Lake  
Automated Snow Weather Station Graph

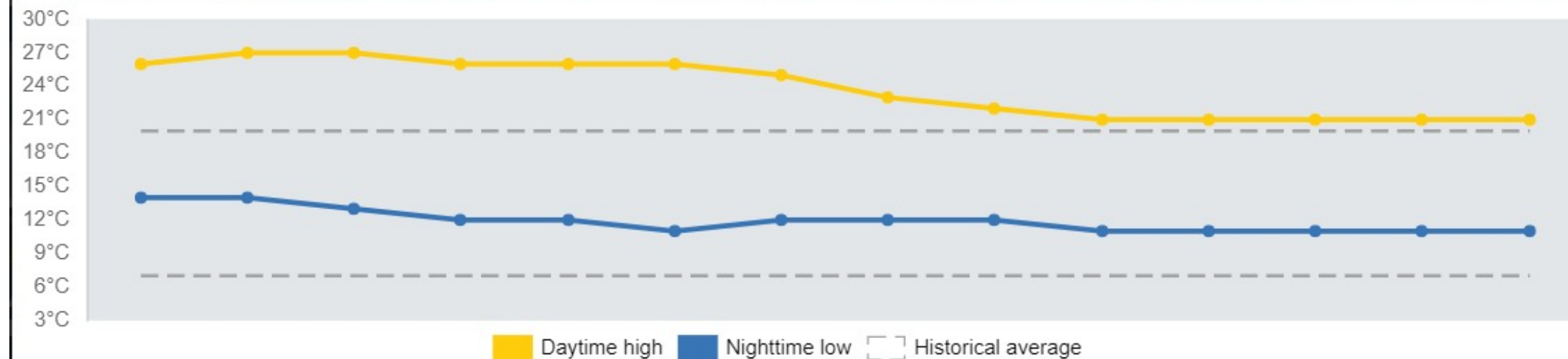




# Weather Forecast

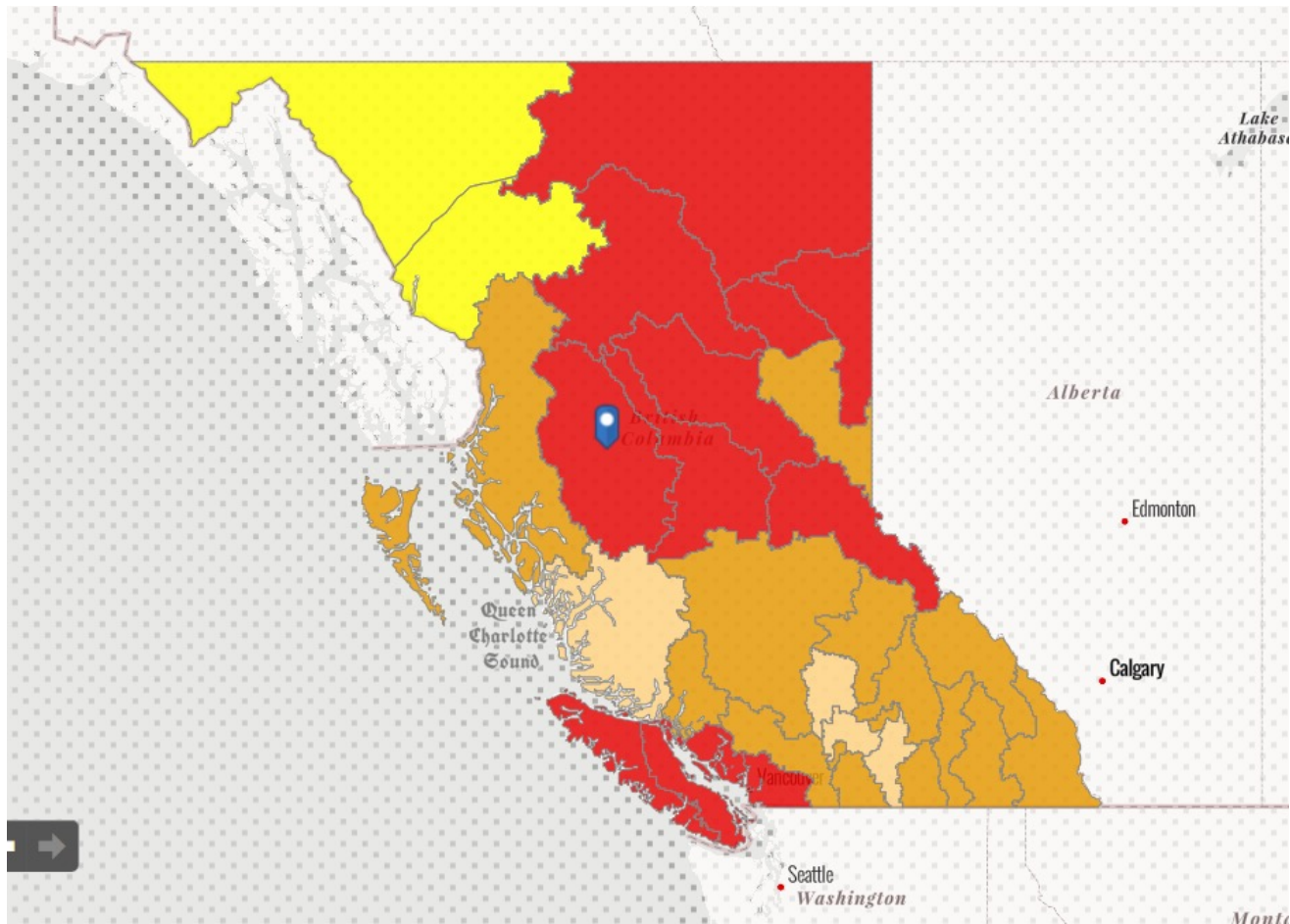
## Marilla Weather

	Thu 07/06	Fri 07/07	Sat 07/08	Sun 07/09	Mon 07/10	Tue 07/11	Wed 07/12	Thu 07/13	Fri 07/14	Sat 07/15	Sun 07/16	Mon 07/17	Tue 07/18	Wed 07/19
Day	 26°	 27°	 27°	 26°	 26°	 26°	 25°	 23°	 22°	 21°	 21°	 21°	 21°	 21°
POP	30 %	60 %	40 %	40 %	20 %	30 %	20 %	40 %	20 %	10 %	10 %	20 %	60 %	20 %
Night	 14°	 14°	 13°	 12°	 12°	 11°	 12°	 12°	 12°	 11°	 11°	 11°	 11°	 11°
POP	40 %	40 %	40 %	40 %	30 %	10 %	10 %	40 %	20 %	10 %	10 %	30 %	60 %	20 %





# Provincial Advisories - Drought

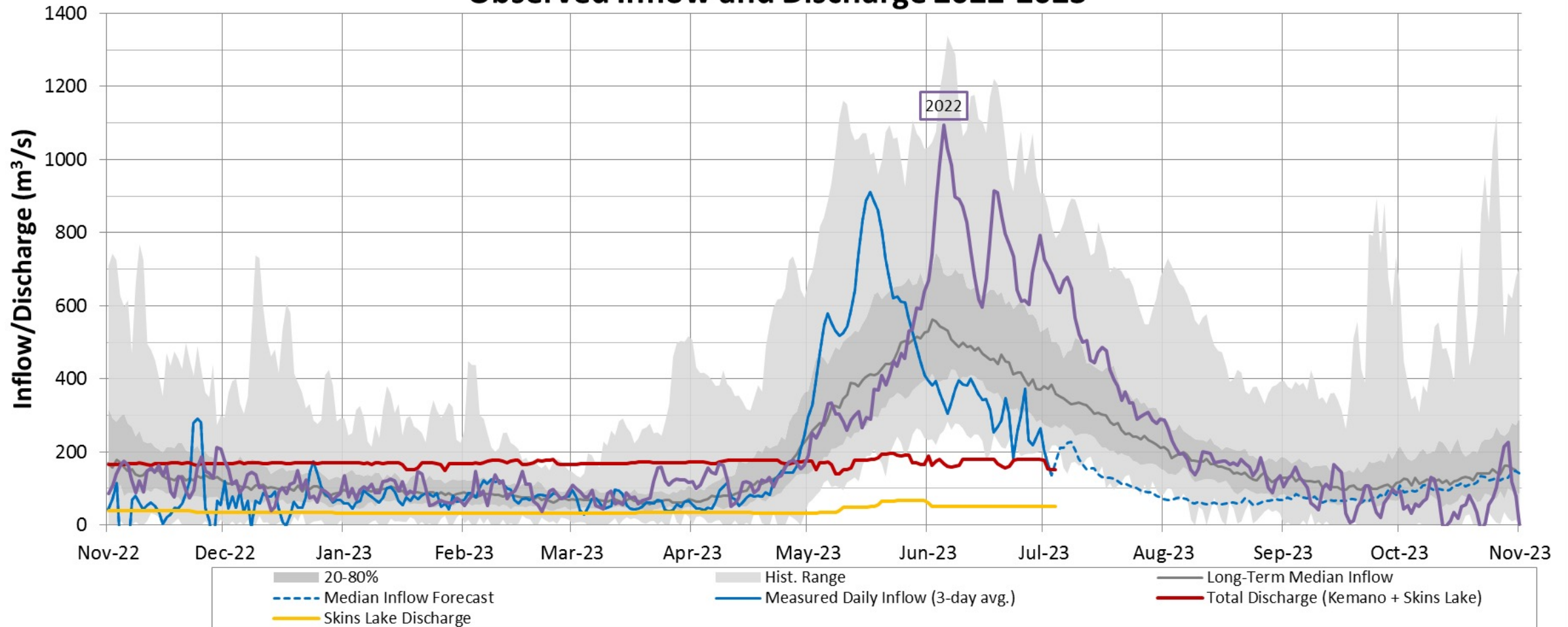


Last updated : June 29th  
Drought Level 4 : Adverse Impacts Likely

Source: British Columbia Drought Information Portal  
Water Management Branch – Ministry of Forests

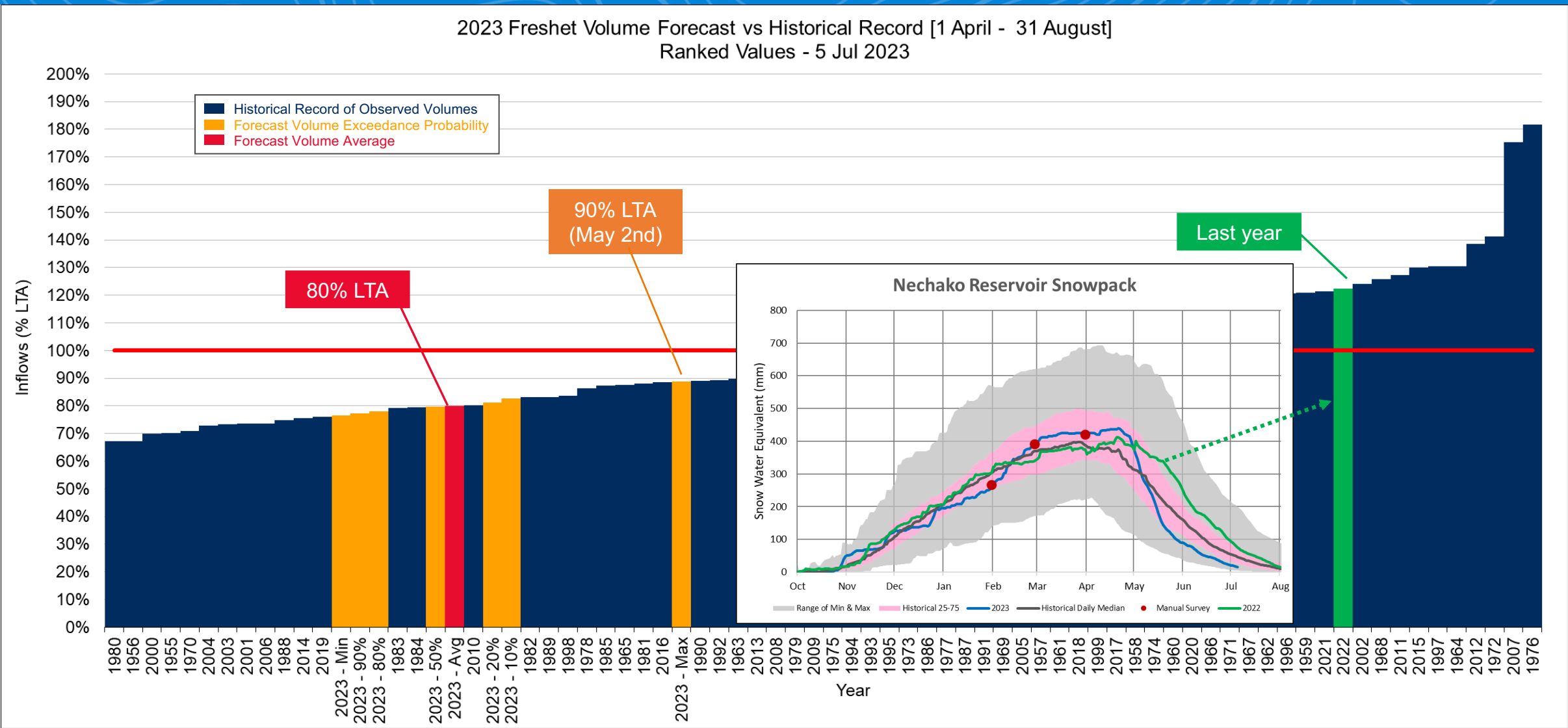
# Observed Inflows & Discharge vs Historical

**Nechako Reservoir Operation**  
**Observed Inflow and Discharge 2022-2023**





# Spring Freshet Inflow Volume



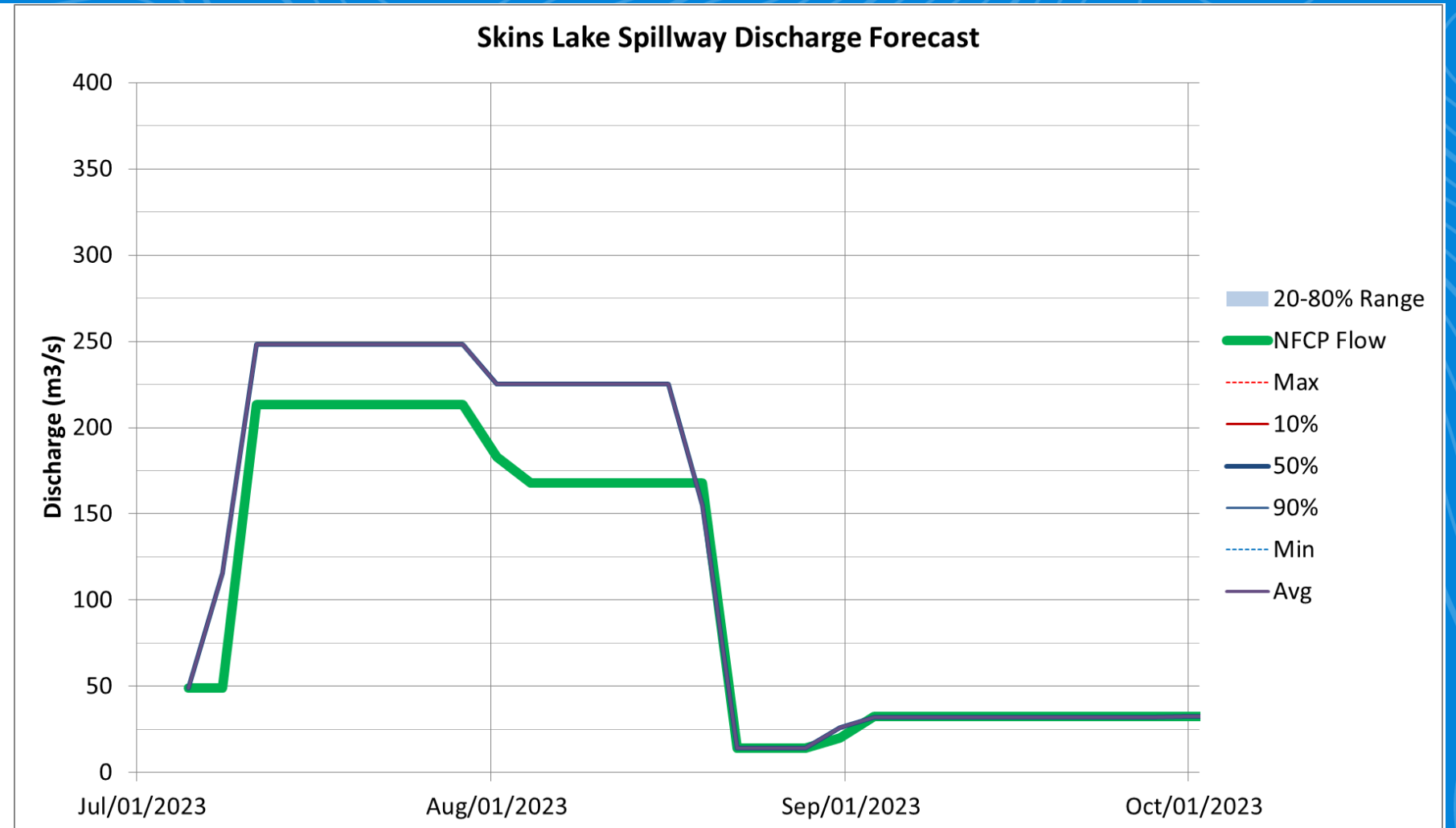
# Skins Lake Spillway Release Forecast

Current = **~50 m<sup>3</sup>/s**

Minimum = **49 m<sup>3</sup>/s**

STMP historical average  
Discharge = **192 m<sup>3</sup>/s**

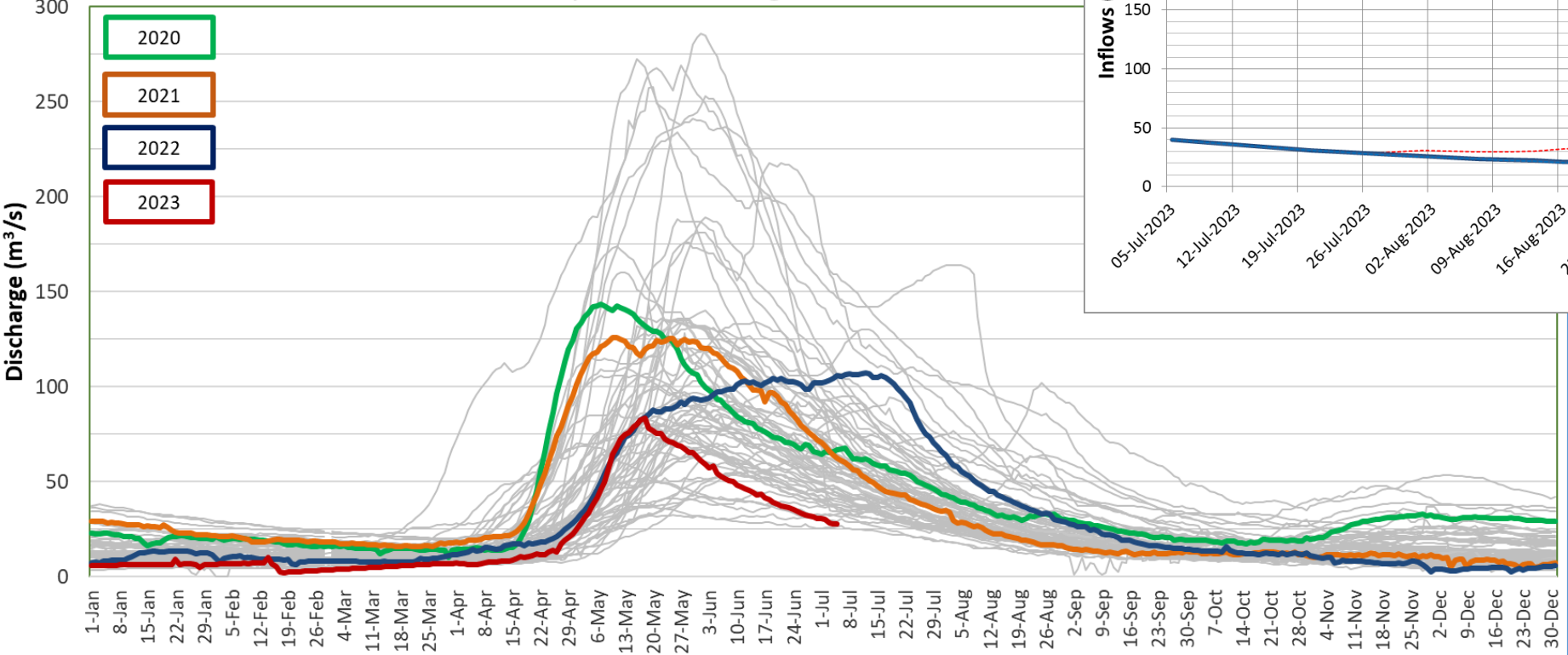
STMP modeled Discharge =  
**238 m<sup>3</sup>/s**  
(same as 2003 & 2012, 2nd  
and 3rd highest on record)





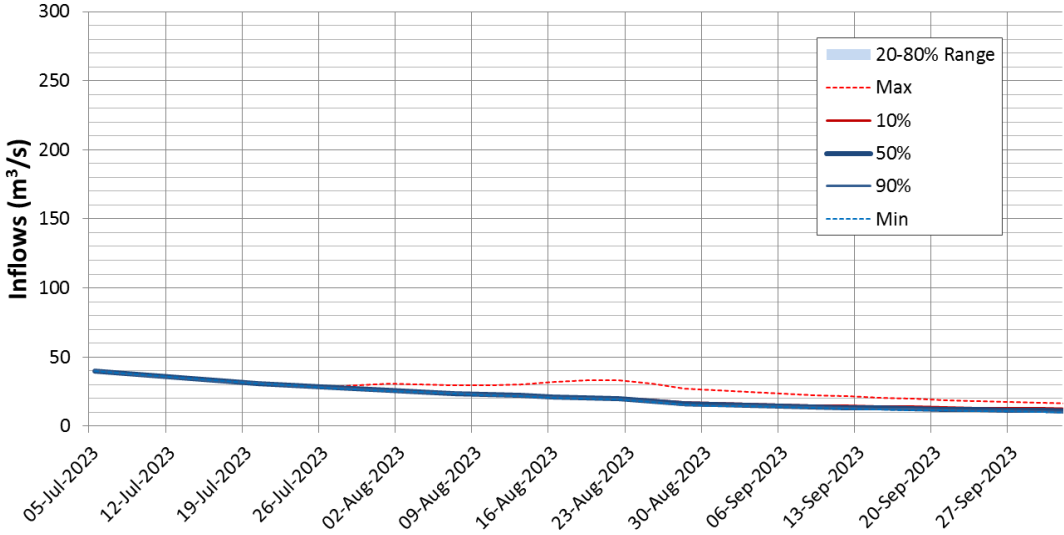
# Nautley River Flows, Forecast

Nautley River discharge 1952-2023



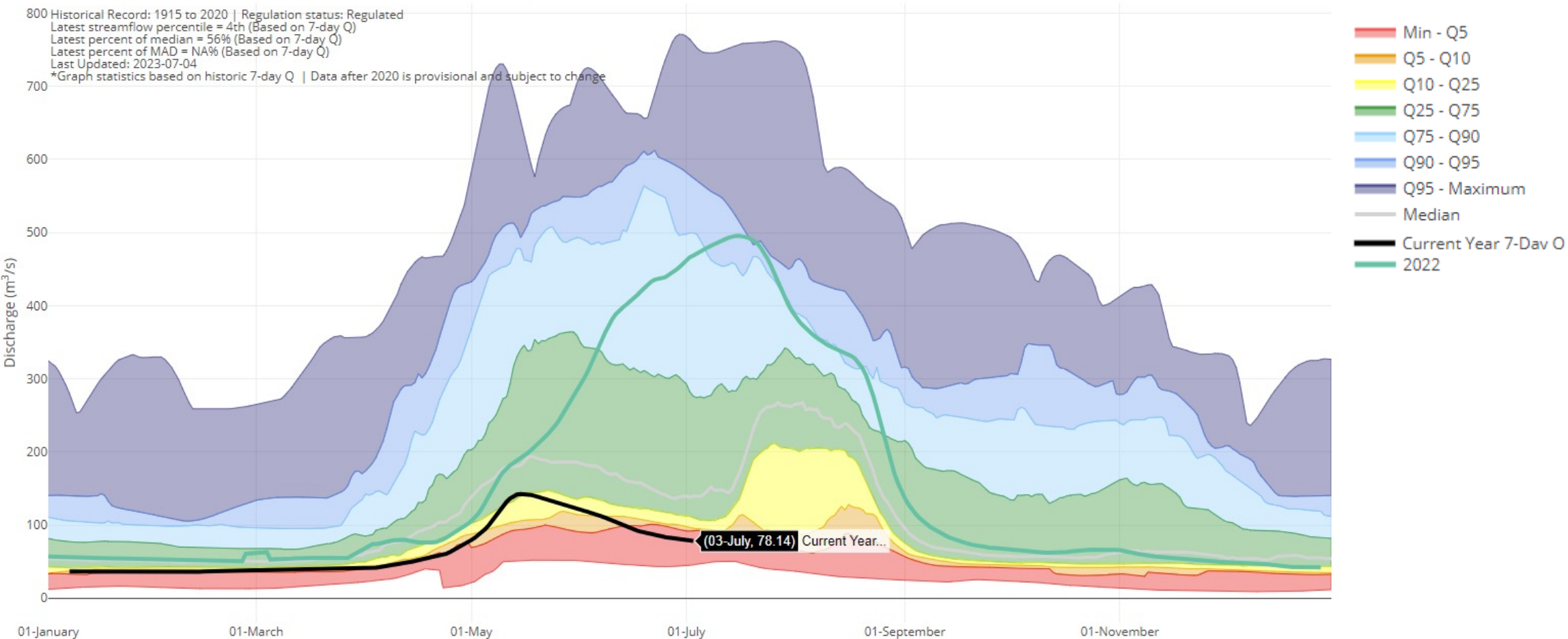
Expected Natural Inflow on Nautley/Nechako Rivers at Vanderhoof

(excludes discharge from Nechako Reservoir)



# Vanderhoof

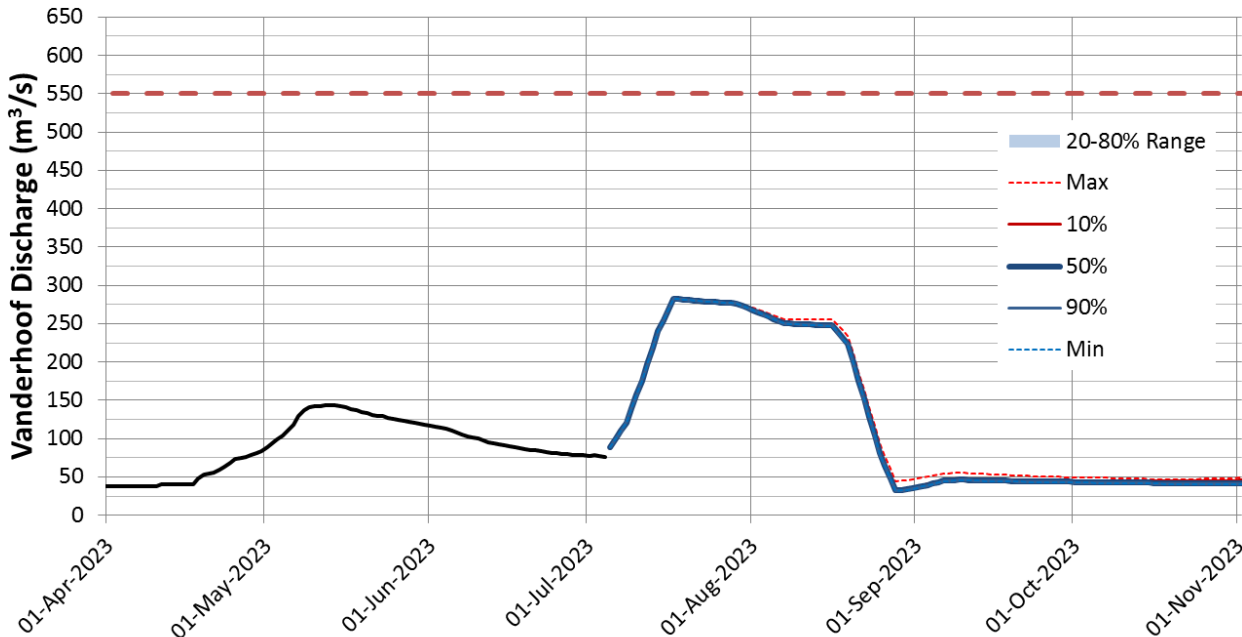
Seven Day Mean Streamflow for 08JC001 NECHAKO RIVER AT VANDERHOOF



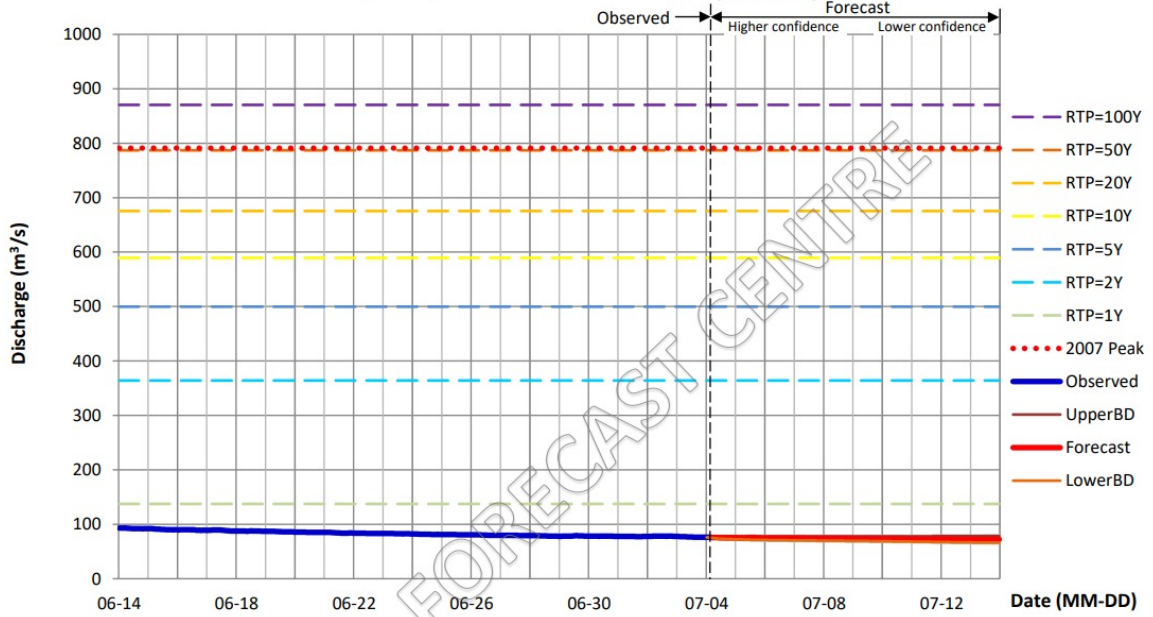


# Forecast – Vanderhoof

Expected Total Discharge at Vanderhoof



NECHAKO RIVER AT VANDERHOOF (08JC001)



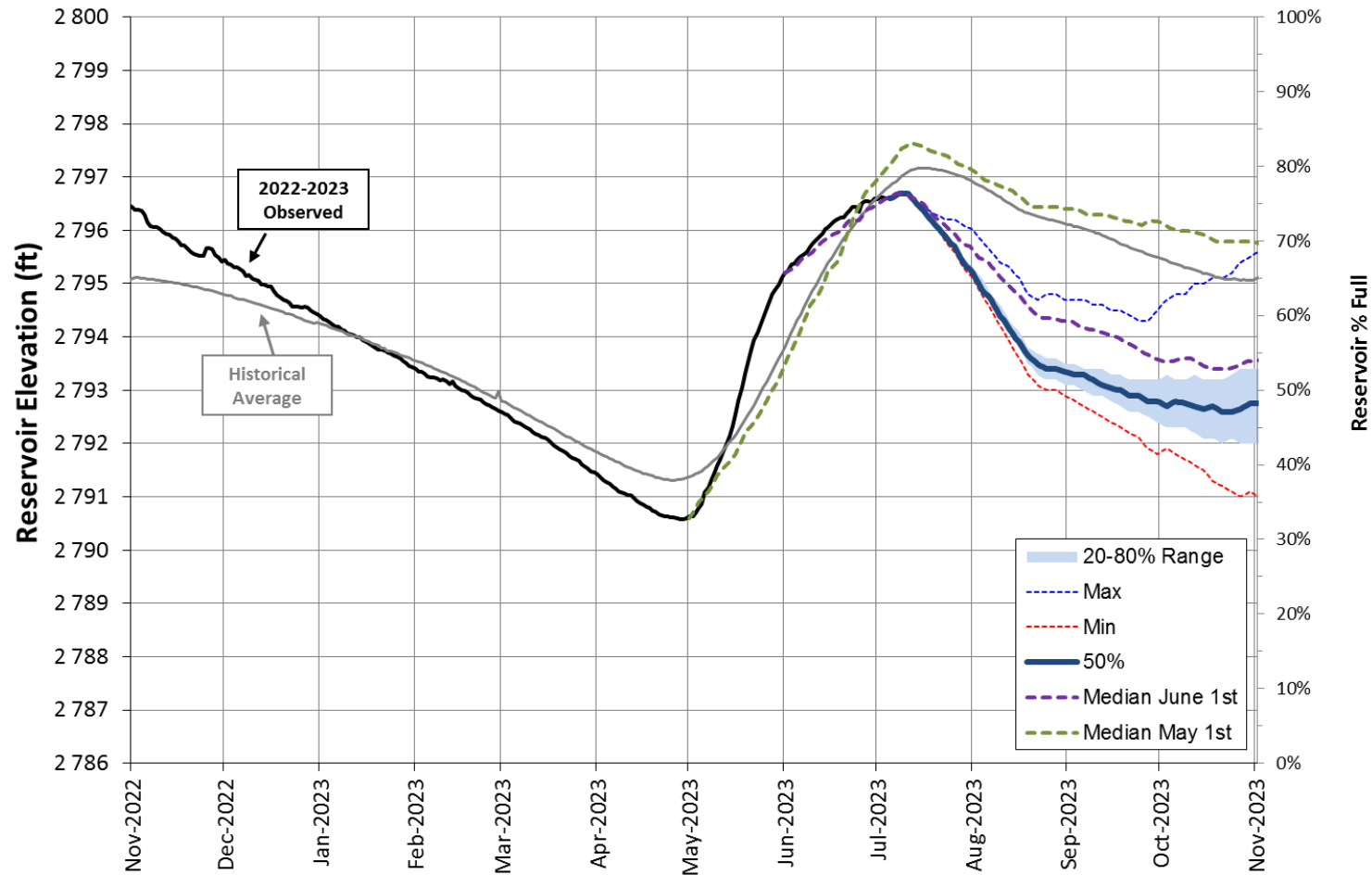
Reading at 06 AM (m³/s) Tue 2023-07-04	Forecast Daily Discharge (m³/s): AVERAGE									
	UPPER BOUND					LOWER BOUND				
	Tue 2023-07-04	Wed 2023-07-05	Thu 2023-07-06	Fri 2023-07-07	Sat 2023-07-08	Sun 2023-07-09	Mon 2023-07-10	Tue 2023-07-11	Wed 2023-07-12	Thu 2023-07-13
75.8	77.6 <b>75.4</b> 73.3	78.0 <b>74.7</b> 71.6	77.9 <b>74.3</b> 70.8	77.8 <b>74.0</b> 70.3	77.7 <b>73.7</b> 69.7	77.7 <b>73.4</b> 69.2	77.7 <b>73.1</b> 68.6	78.0 <b>72.9</b> 67.8	78.2 <b>72.6</b> 67.0	78.3 <b>72.4</b> 66.4

	RTP=1Y	RTP=2Y	RTP=5Y	RTP=10Y	RTP=20Y	RTP=50Y	RTP=100Y	2007 Peak
Color Scheme for Return Periods:	137.4	364.1	499.7	589.4	675.5	786.9	870.4	791.0
								(m³/s)

Remark: This station is labeled as "regulated", and the forecast is the sum of natural flows and extended regulated flow from 08JA017.

# Reservoir Level Projection

NECHAKO RESERVOIR  
Observed and Projection 2022-2023  
05-Jul-2023 Projection - SDP V7.13





# Updates - Next Steps – Actions



1. Model update and communications – STMP, Generation etc
2. Monitoring work in the field
3. 2023 7 Yearly Dam Safety Review underway
4. Continue to update on Smelter Re-Start currently at 90% full production
5. Confirm next meeting date & time  
– **Propose July 19<sup>th</sup>**

*Presentations are available on the Get Involved Nechako website under 'Our Operations'. Recordings can be requested up to 30 days following the meeting.*



# Feedback & Reflections

