



CATALYST

CROFTON

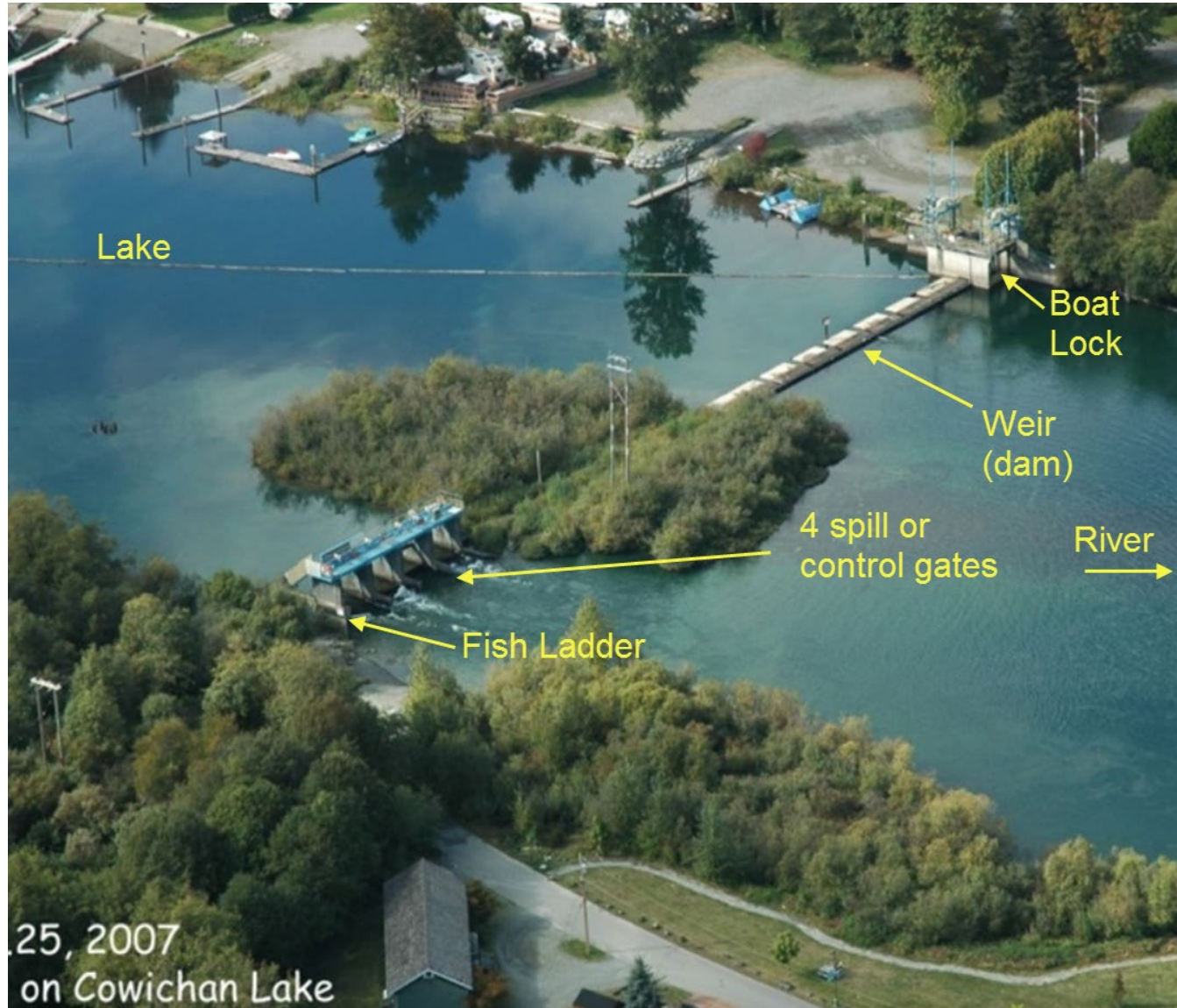
A PAPER EXCELLENCE COMPANY

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Review of 2022 Weir Operations

October 31, 2022
Brian Houle
Manager, Environment

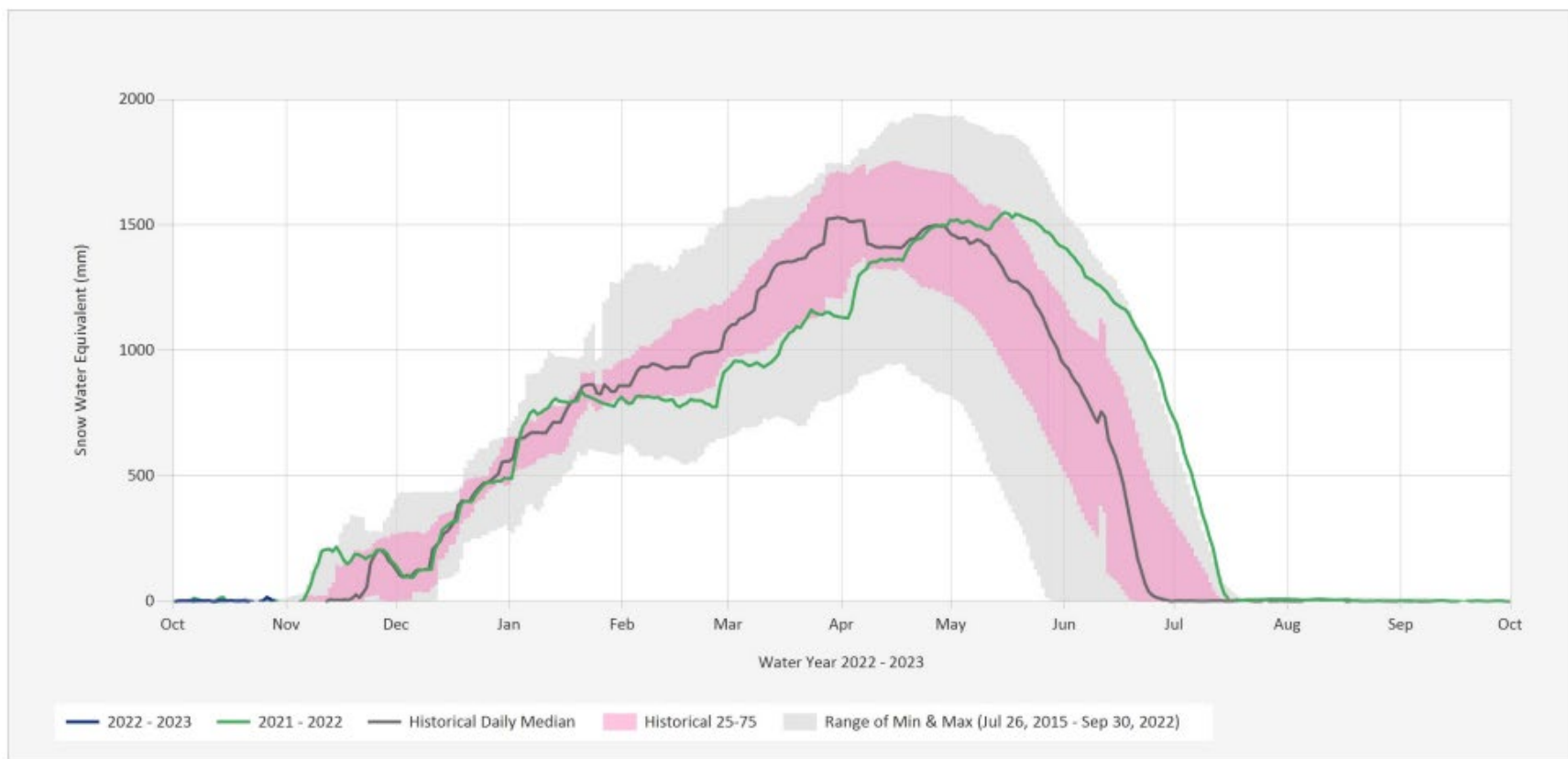
Aerial view of Lake Cowichan Weir



2022 showed how valuable cold spring / late summer can be – snowpack from low to high in April

Source Data: SW.Daily@3B24P

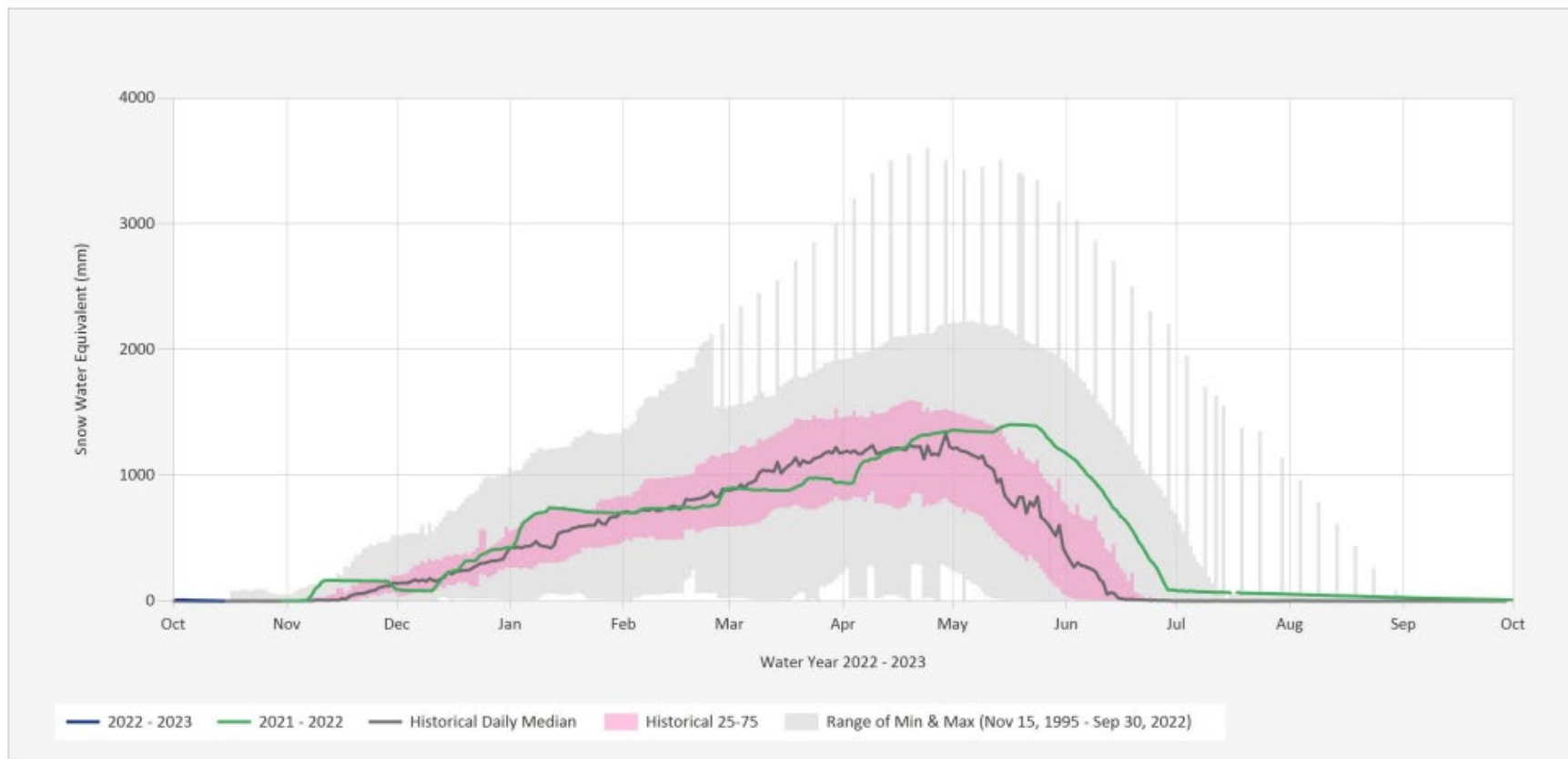
Location: Heather Mountain Upper, Latitude: 48.943875, Longitude: -124.452113, Elevation: 1190 m



Nanaimo watershed showing same situation as Cowichan watershed, lots of snow and slow release

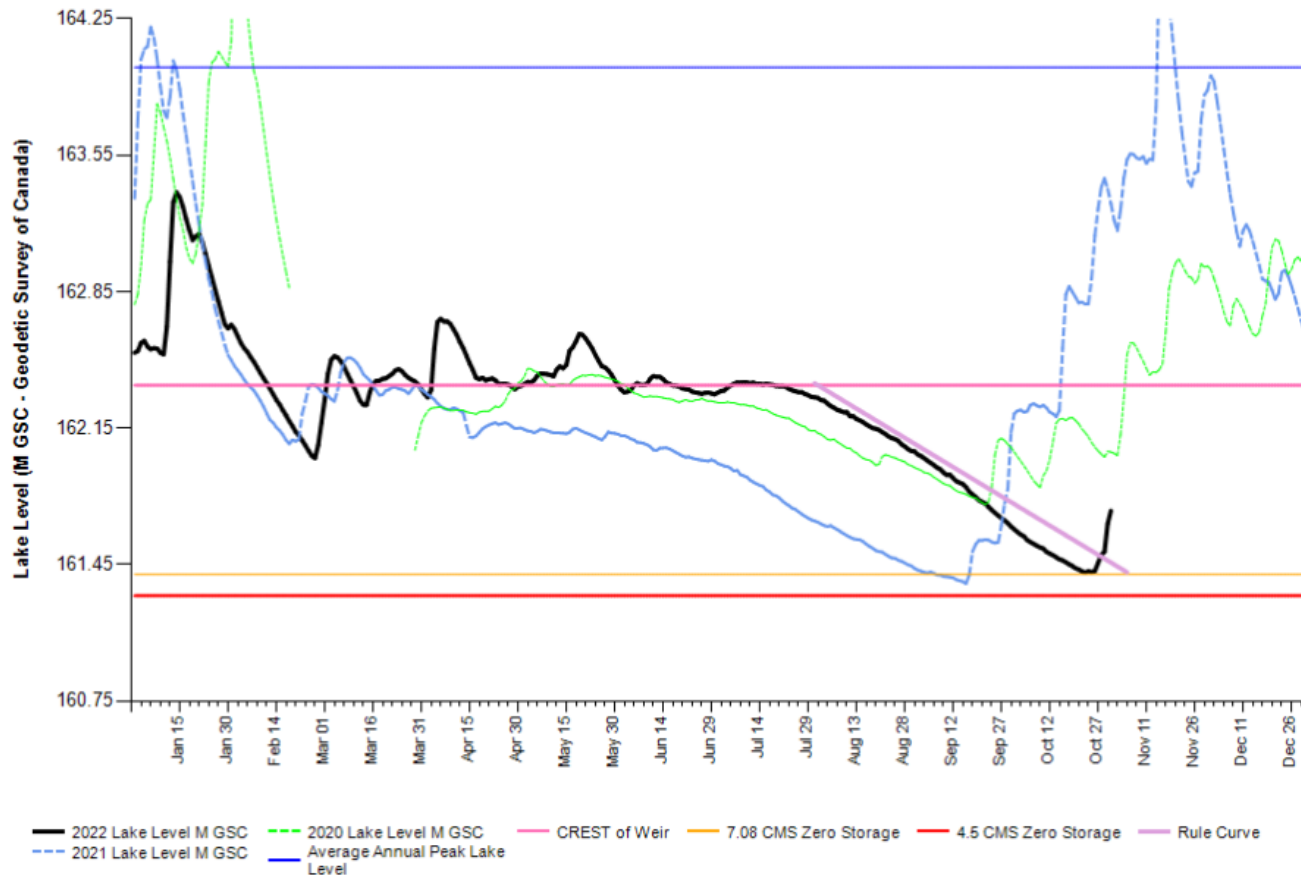
Source Data: SW.Daily@3823P

Location: Jump Creek, Latitude: 48.969505, Longitude: -124.276182, Elevation: : 1160 m



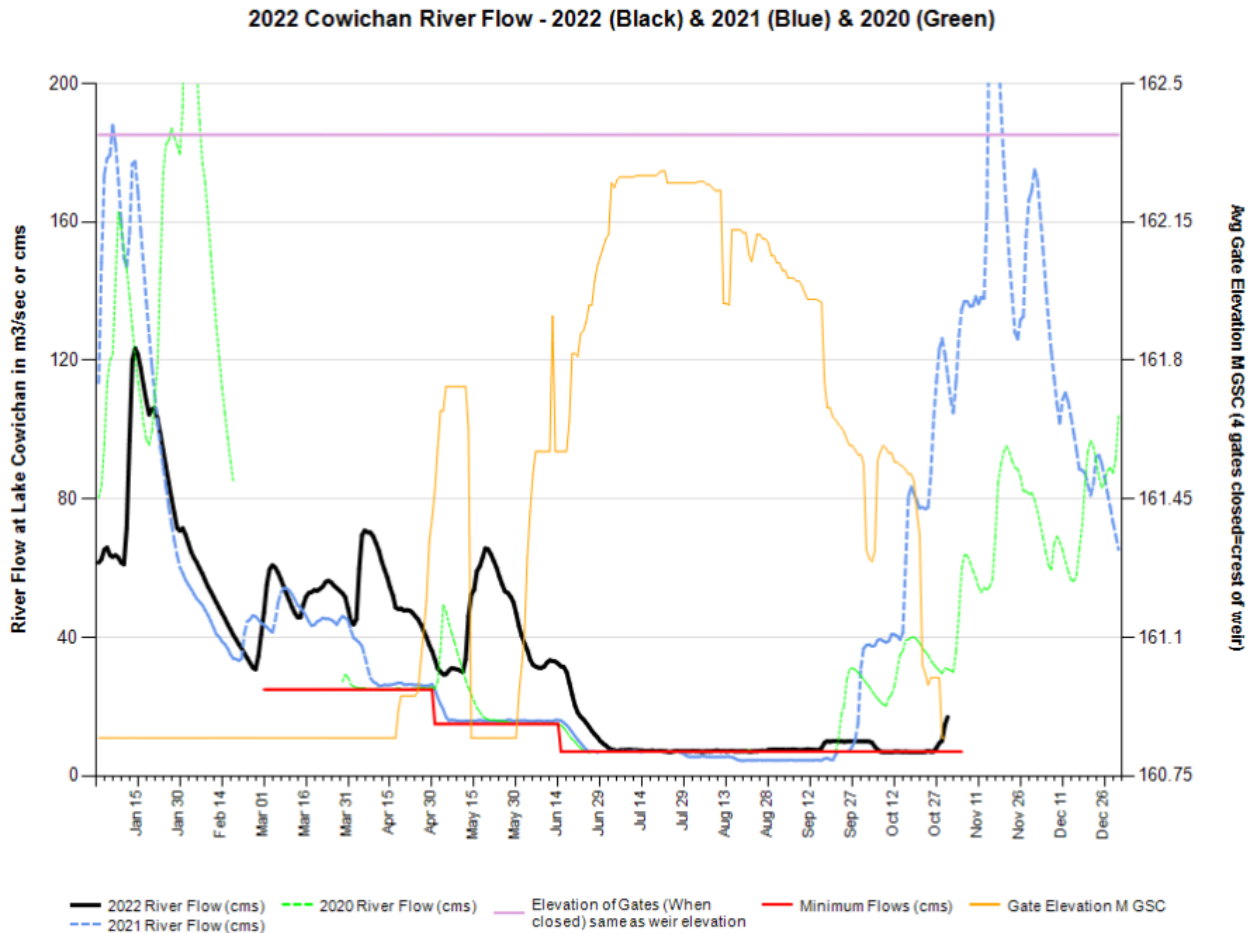
Lake level near “rule curve” until September when flow from 7 to 10 and then back to 7 cms @ drought

2022 Cowichan Lake Level - 2022 (Black) & 2021 (Blue) & 2020 (Green)

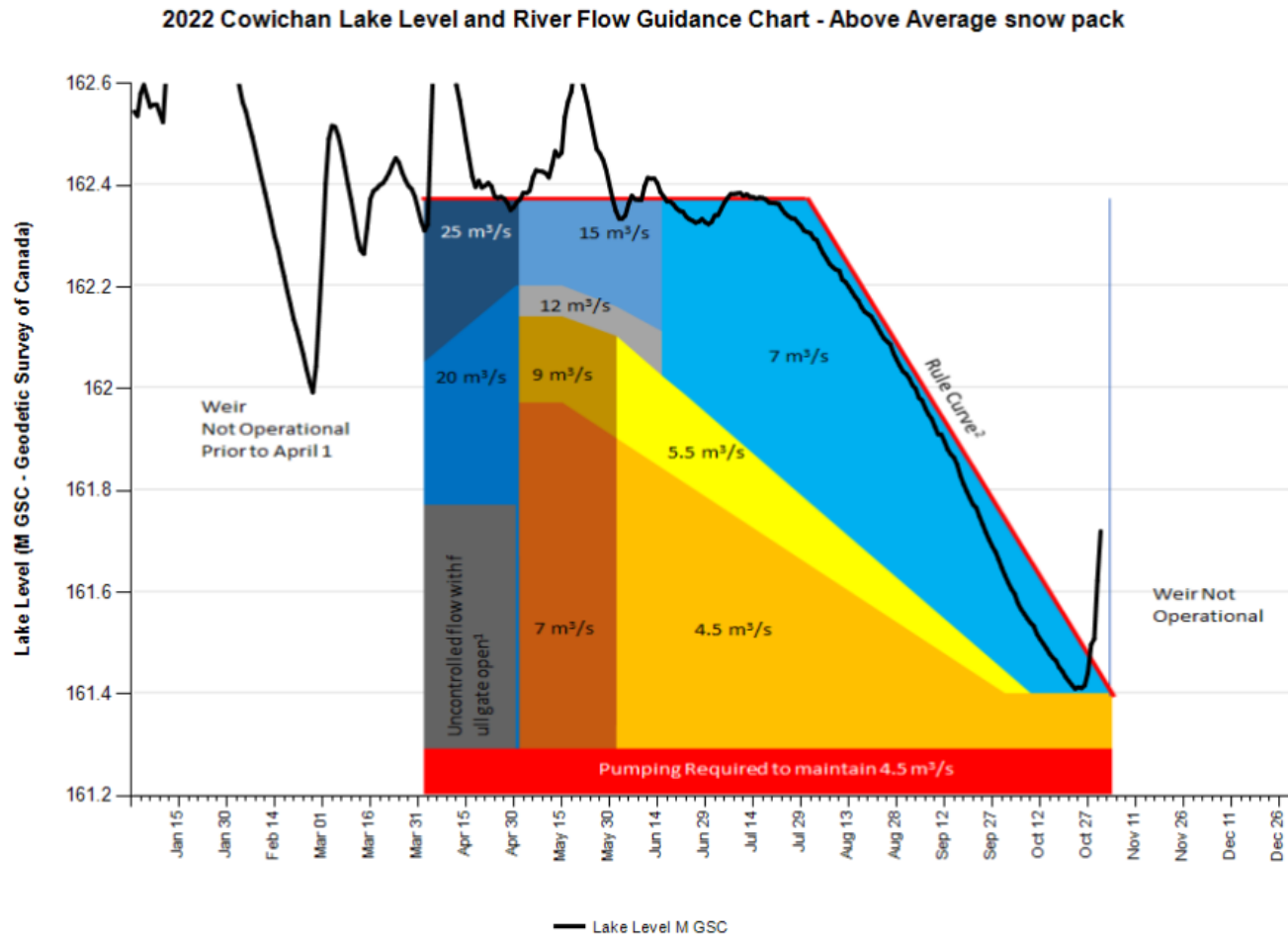


With high lake level, 2022 included new design “pulse flow” to encourage Chinook to enter river

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New flow guide which can be very helpful in spring decision making, is not formatted to be as helpful with end of season drought decisions



Rainfall predicted for this weekend was impactful and we are not in the wet season, rain most days

Next 7 Days 

	Tue 11/01	Wed 11/02	Thu 11/03	Fri 11/04	Sat 11/05	Sun 11/06	Mon 11/07
	Light rain	Mainly sunny	Light rain	Rain	A mix of sun and clouds	Mixed precipitation	Mixed precipitation
							
	7°	8°	5°	11°	5°	3°	2°
Feels like	6	8	3	9	3	2	0
Night	0°	1°	4°	2°	1°	-1°	0°
POP	70 %	20 %	80 %	90 %	30 %	90 %	70 %
Wind (km/h)	8 SE	6 NW	11 SE	17 s	11 SW	8 s	11 E
Wind gust (km/h)	12	9	17	26	17	12	17
Hrs Of Sun	2 h	8 h	0 h	1 h	3 h	1 h	1 h
24 Hr Rain	~5 mm	-	~15 mm	20 - 25 mm	~1 mm	~5 mm	~1 mm
24 Hr Snow	-	-	-	-	<1 cm	<1 cm	~1 cm



In Conclusion:

- ▶ 2022 was an unusual year with very wet spring, later start to summer and then a drought in the fall
- ▶ Snowpack was “below average” until April then continued to accumulate to “above average” before end of April, and slow release of snowpack due to colder weather helped sustain lake near full through to October – highest lake levels ever for Sept.
- ▶ In September, with substantial rainfall predicted 2nd week out, & with guidance from Cowichan Tribes and Fisheries and Oceans Canada, decision made on Sept 17th to increase flow to 10 cms to encourage Chinook to enter river. Rainfall did not arrive and was replaced with a late season drought and with lower lake level, flow reduced back down to 7 cms on Oct. 5
- ▶ Drought ending this past week and weir off control on October 28th – Friday afternoon
- ▶ End of dry season drought last experienced in 1987 when rainfall did not return until November – that was 35 years ago
- ▶ Future years now must consider end of season drought with this happening 2x’s in previous 35 years



Thank you, any questions

