

The background of the entire slide is a close-up, underwater-style photograph of water. It is filled with numerous bubbles of various sizes, some large and clear, others smaller and more numerous. The lighting is bright, creating a shimmering effect on the water's surface and highlighting the individual bubbles. The overall color palette is a range of blues, from light cyan to deep navy.

Cowichan River Water Storage Draft Work Plan 2016-2017

CWB Flows and Fish Working Group

Flows and Fish Sub-Committee Workplan

- Work-plan addresses CWB Highest Priority – to increase water storage in Cowichan Lake by raising the weir
- Issues around managing low flows with the current weir are not addressed in this workplan

Summary of the KWL Storage Assessment Report

- Commissioned by Cowichan Tribes in 2015
- Report updated the Cowichan Lake Storage model (BCCF, 2010) to include changes in available storage based on historic and forecasted future inflows with increased weir heights
- Developed a series of Optimum Conservation Flow release schedules
- Model assesses reliability of water storage as a result of new weir heights in Cowichan Lk. at maintaining conservation flow releases in the Cowichan River

Model Outputs

- Various model runs - storage assessment using historical inflow conditions and future 2050s climate conditions

TABLE 2 - Reliability of increased storage volumes - Existing Outflow Schedule - Current Climate Conditions (1984 to 2014)

Raise weir by (m):	Approx. increased storage volume (million m ³)	Number of Years WL below ZSL (out of 30 years)	Fish Pulse Does not Occur at least once (out of 30 years)	Number of years minimum flow release shown below is not maintained (out of 30 years)		
				25 m ³ /s	15 m ³ /s	7 m ³ /s
0.9	55	<1	3	<1	<1	<1
0.75	47	<1	3	<1	<1	<1
0.6	37	<1	4	<1	<1	<1
0.45	28	<1	5	<1	<1	<1
0.3	19	7	8	<1	<1	7
0	0	9	13	<1	<1	9

Existing Outflow Schedule - Future 2050s Climate Conditions (2041 to 2070)

Raise weir by (m):	Approx. increased storage volume (million m ³)	Number of Years WL below ZSL (out of 30 years)	Fish Pulse Does not Occur at least once (out of 30 years)	Number of years minimum flow release shown below is not maintained (out of 30 years)		
				25 m ³ /s	15 m ³ /s	7 m ³ /s
0.9	55	<1	5	<1	<1	<1
0.75	47	<1	5	<1	<1	<1
0.6	37	<1	8	<1	<1	<1
0.45	28	4	10	<1	<1	4
0.3	19	9	10	<1	<1	9
0	0	11	17	<1	<1	11

Optimum 1 Outflow Schedule with 10 m³/s baseflow - Current Climate Conditions (1984 to 2014)

Raise weir by (m):	Approx. increased storage volume (million m ³)	Number of Years WL below ZSL (out of 30 years)	Fish Pulse Does not Occur at least once (out of 30 years)	Number of years minimum flow release shown below is not maintained (out of 30 years)			
				30 m ³ /s	20 m ³ /s	15 m ³ /s	10 m ³ /s
0.9	55	7	8	<1	<1	<1	7
0.75	47	8	12	<1	<1	<1	8
0.6	37	12	15	<1	<1	<1	12
0.45	28	16	17	<1	<1	<1	16
0.3	19	17	22	<1	<1	<1	17

Optimum 1 Outflow Schedule with 10 m³/s baseflow - Future 2050s Climate Conditions (2041 to 2070)

Raise weir by (m):	Approx. increased storage volume (million m ³)	Number of Years WL below ZSL (out of 30 years)	Fish Pulse Does not Occur at least once (out of 30 years)	Number of years minimum flow release shown below is not maintained (out of 30 years)			
				30 m ³ /s	20 m ³ /s	15 m ³ /s	10 m ³ /s
0.9	55.8	6	13	<1	<1	<1	6
0.75	46.5	8	15	<1	<1	<1	8
0.6	37.2	13	18	<1	<1	<1	13
0.45	27.9	16	21	<1	<1	<1	16
0.3	18.6	16	23	<1	<1	2	16

Optimum 2 Outflow Schedule with 8.5 m³/s baseflow - Current Climate Conditions (1984 to 2014)

Raise weir by (m):	Approx. increased storage volume (million m ³)	Number of Years WL below ZSL (out of 30 years)	Fish Pulse Does not Occur at least once (out of 30 years)	Number of years minimum flow release shown below is not maintained (out of 30 years)			
				30 m ³ /s	20 m ³ /s	15 m ³ /s	8.5 m ³ /s
0.9	55	5	6	<1	<1	<1	5
0.75	47	6	7	<1	<1	<1	7
0.6	37	8	9	<1	<1	<1	8
0.45	28	9	11	<1	<1	<1	9
0.3	19	14	14	<1	<1	<1	14

Optimum 2 Outflow Schedule with 8.5 m³/s baseflow - Future 2050s Climate Conditions (2041 to 2070)

Raise weir by (m):	Approx. increased storage volume (million m ³)	Number of Years WL below ZSL (out of 30 years)	Fish Pulse Does not Occur at least once (out of 30 years)	Number of years minimum flow release shown below is not maintained (out of 30 years)			
				30 m ³ /s	20 m ³ /s	15 m ³ /s	8.5 m ³ /s
0.9	55.8	5	7	<1	<1	<1	5
0.75	46.5	5	9	<1	<1	<1	5
0.6	37.2	7	13	<1	<1	<1	7
0.45	27.9	11	14	<1	<1	<1	11
0.3	18.6	12	16	<1	<1	2	12

Tasks Flows and Fish Committee will support

- Joint work with CWB Communications Group on consultation, education and outreach
- Partners finalize weir crest elevation with support from committee
- Apply for water storage licence
- Storage licence approval
- Funding applications
- Building of new weir
- Operation of new weir

June 2016-June 2017 Work Plan Tasks

- 1. Why we are doing this** - Develop principles and vision statement
- 2. What we want** - Optimal Flows workshop and determine release schedule
- 3. What will this mean** - Water level regime assessment (fraction of time water levels are above given elev.)
- 4. What will it cost** - Review effects/impacts/benefits of change in water level regime
- 5. What it is** - Propose weir crest elevation and operating procedures