

ALBERTA WATERSHED PLANNING AND ADVISORY
COUNCIL SUMMIT
PEACE RIVER, ALBERTA – JUNE 2018

PARTNERSHIPS AND PATHWAYS

WORKING TOGETHER TOWARDS WATER SUSTAINABILITY IN THE
COWICHAN WATERSHED



THE NEXT 40 MINUTES

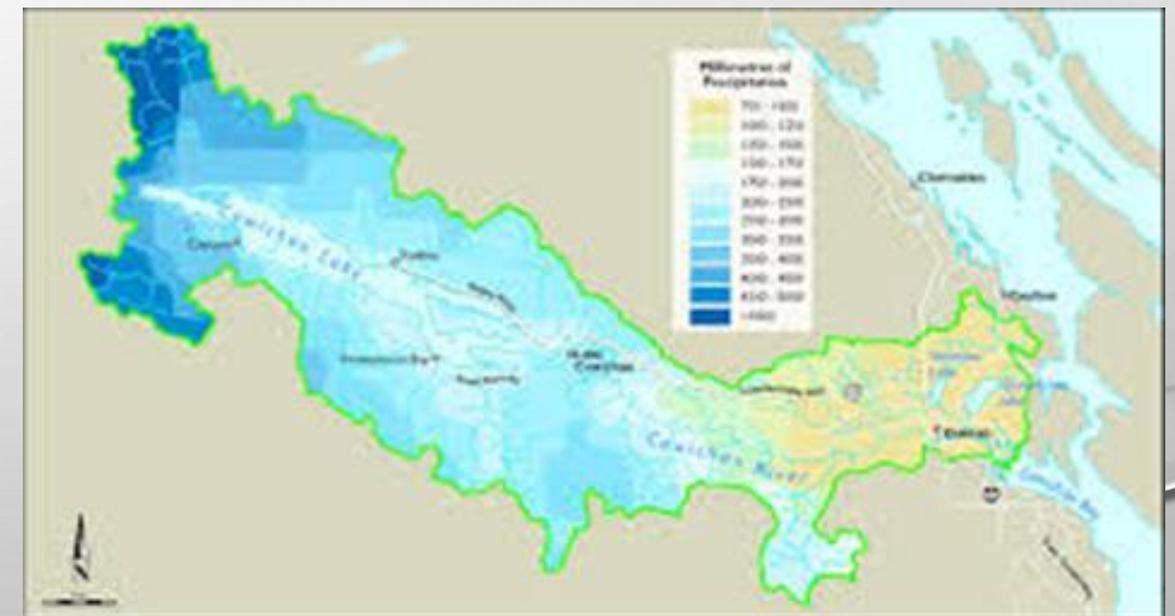
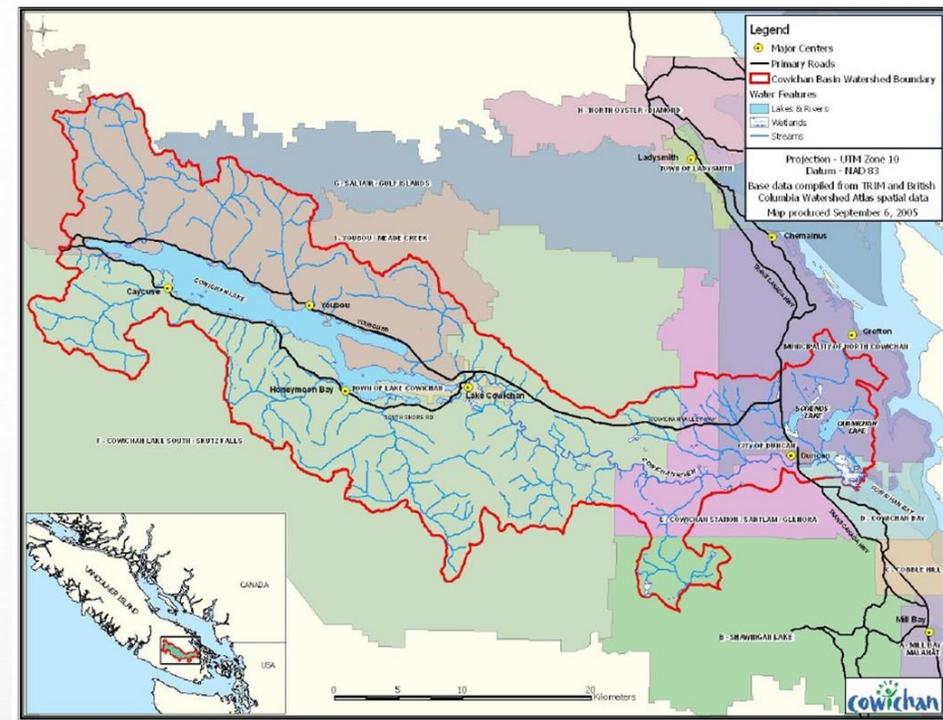
- THE COWICHAN STORY...
- ABOUT US - THE PLACE, THE PEOPLE AND THE WATER...
- THE ISSUES AND THE APPROACH
- THE WORK
- CHALLENGES, SUCCESSES AND FAILURES
- THE BOTTOM LINE.....



THE PLACE...

THE COWICHAN VALLEY

- 1,000 SQ. KM IN SIZE
- HEADWATERS COASTAL HEMLOCK BIO GEOCLIMATIC ZONE, LOWER REACHES COASTAL DOUGLAS FIR BIO GEOCLIMATIC ZONE
- SIGNIFICANT CLIMATIC VARIABILITY IN WATERSHED
- PACIFIC SALMON KEYSTONE SPECIES...



THE PEOPLE...

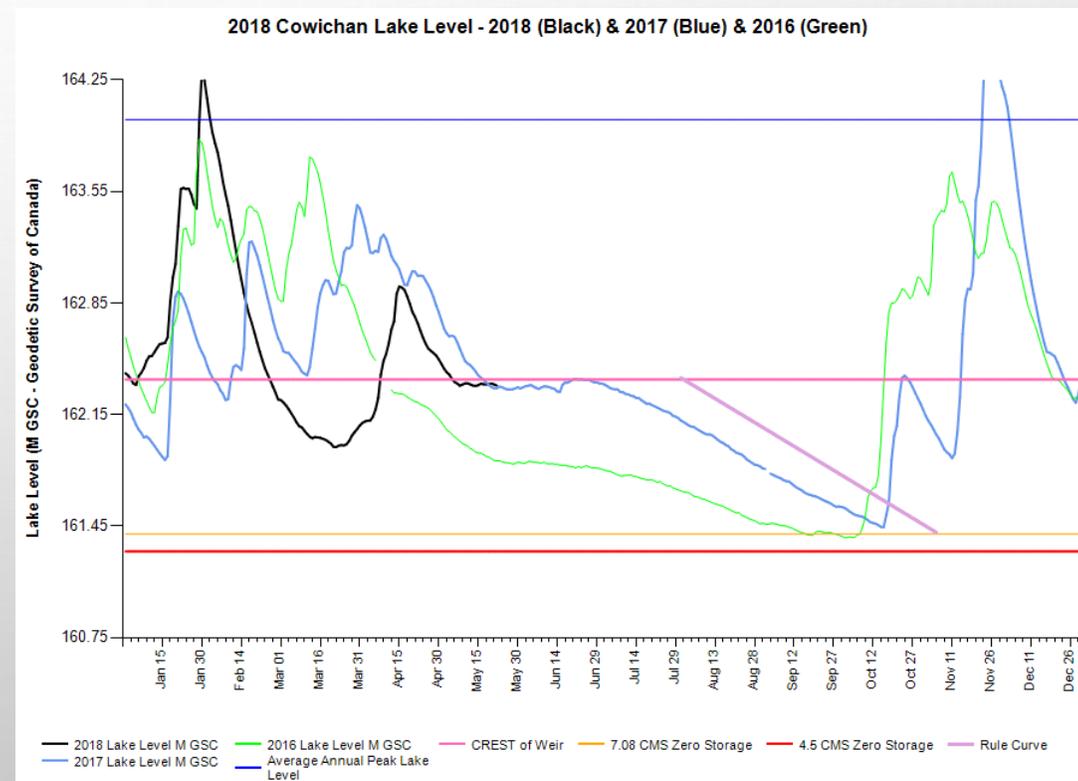
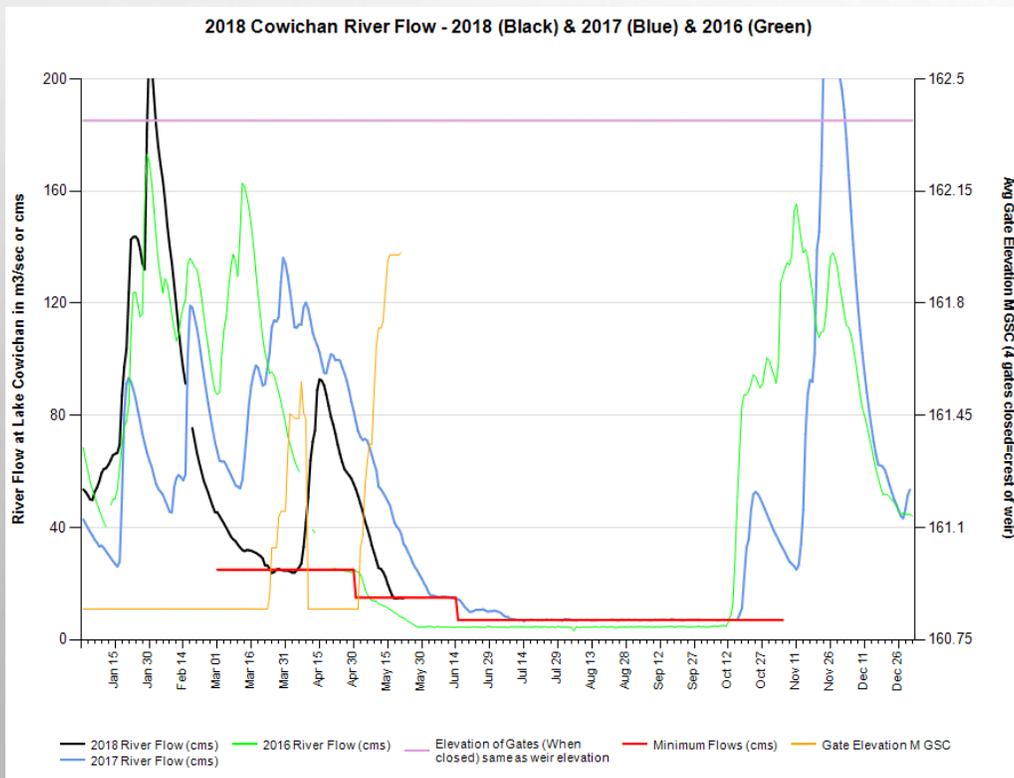
- HOME TO COWICHAN TRIBES – LARGEST FIRST NATION IN BC
- ECONOMY IN TRANSITION
- INCREASED DEMAND FOR FINITE RESOURCES...



THE WATER

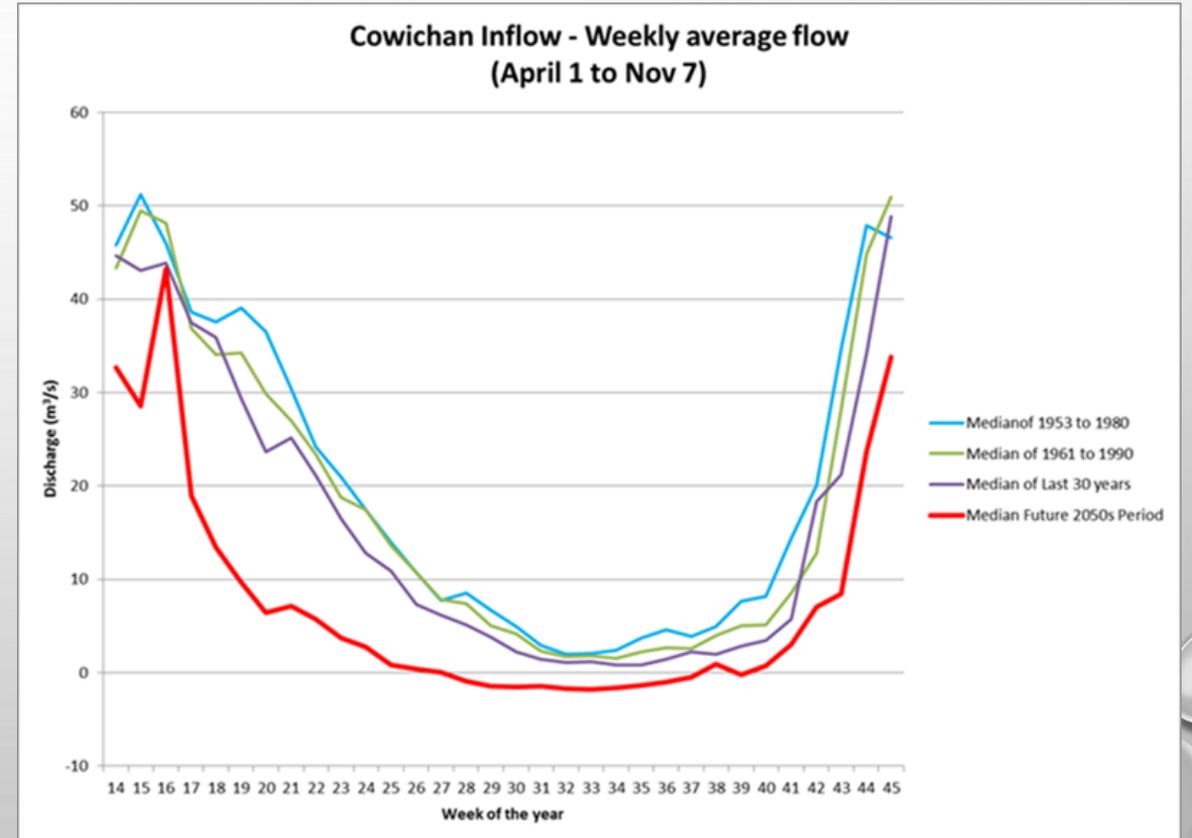
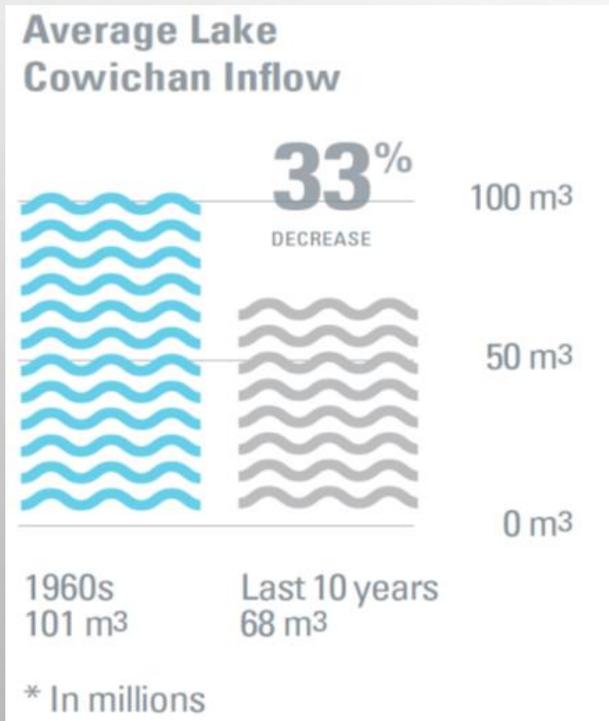
SURFACE WATER

- LAKE COWICHAN WEIR
- WATER SUPPLY CHALLENGES & CLIMATE CHANGE IMPACTS...



CLIMATE CHANGE...

- LAKE INFLOWS HAVE DECREASED BY OVER 30% SINCE 1980'S
- PCIC GENERATED DOWNSCALED CLIMATE CHANGE PROJECTIONS CALL FOR
 - MORE PRECIPITATION IN WINTER, WARMER TEMPERATURES, SNOWPACK DECREASING TO NEAR 0
 - HOTTER DRIER SUMMERS
 - MORE WINTER FLOODS, MORE SUMMER DROUGHTS



THE WATER

- GROUNDWATER
 - SHALLOW UNCONFINED AQUIFER
 - CONNECTIVITY...
 - DRINKING WATER FOR DOWNSTREAM COMMUNITIES



THE TRIGGER



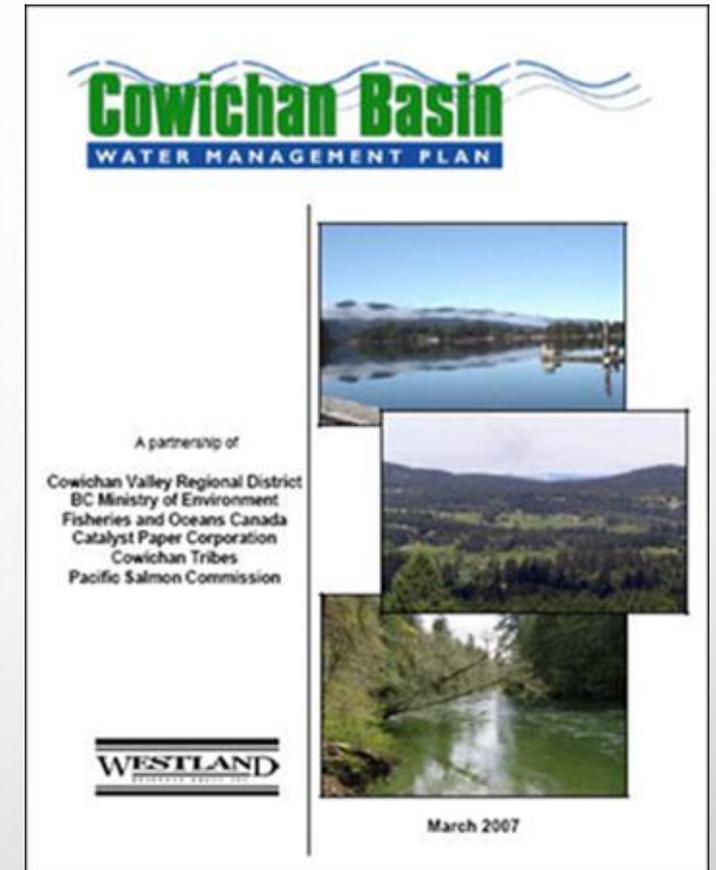
- 2003 – OUR FIRST WATER SUPPLY CRISIS
- RIVER RUNNING DRY
- TRUCKING SALMON UPSTREAM
- STRANGE TIMES MAKE FOR STRANGE PARTNERS
- DESPERATION FUELS INNOVATIVE THINKING
- WATER IS A COMMON INTEREST...



200 chinook salmon are moved by truck to suitable spawning sites upstream

THE APPROACH

- COWICHAN STEWARDSHIP ROUNDTABLE
- WE NEED A PLAN!
- WE NEED A BOARD!
 - LOOKING AFTER A WATERSHED IS EVERYBODY'S/NOBODY'S BUSINESS....
- WE NEED TO GET THINGS DONE!



THE BOARD

- LEADERS – NOT STAKEHOLDERS OR TECHNICAL EXPERTS
- CO-CHAIRER BY CHIEF, COWICHAN TRIBES AND CHAIR, COWICHAN VALLEY REGIONAL DISTRICT
- ELECTED OFFICIALS FROM COWICHAN TRIBES COUNCIL AND CVRD BOARD
- APPOINTEE'S OR REPRESENTATIVES FROM FEDS AND PROVINCE
- MEMBERS AT LARGE APPOINTED BY CO-CHAIRS



THE FOUNDATIONAL RELATIONSHIP

- INDIGENOUS AUTHORITY AND GOVERNANCE ARE EXPRESSED AS AN INHERENT RIGHT. INDIGENOUS PEOPLES ARE EXPRESSING THAT AUTHORITY THROUGH A RANGE OF OPTIONS. COLLABORATION AND PARTNERSHIP OPPORTUNITIES STRENGTHEN LOCAL RELATIONSHIP-BUILDING THROUGH INDIGENOUS RECONCILIATION APPROACHES. THE STRATEGIC PARTNERSHIP WITH LOCAL GOVERNMENT FOR THE WELL-BEING AND SUSTAINABILITY OF THE COWICHAN WATERSHED CAN PROVIDE VISIBLE SUPPORT FOR RECOGNITION AND RECONCILIATION.
- INDIGENOUS PEOPLES CAN BRING INHERENT AUTHORITY FORWARD AND LOOK TO COLLABORATE OR PARTNER WITH OTHER JURISDICTIONS. THE STRATEGIC COLLABORATION AND RECOGNITION OF COWICHAN PEOPLES AND TERRITORY AT THE CWB LEVEL DEMONSTRATES BUILDING BLOCKS FOR RECONCILIATION IN ACTION. THIS BUILDING RECONCILIATION APPROACH ADDS STRENGTH TO THE OVERALL STRATEGIC RECONCILIATION APPROACHES THAT COWICHAN TRIBES WILL CONTINUE TO DEVELOP AND APPLY.

“TARGETS” AND TARGET WORKING GROUPS

- TARGETS CAPTURE KEY ACTIONS IN CBWMP IN BROADLY SCOPED AND SIMPLE TERMS
- TARGET WORKING GROUPS PLAN AND IMPLEMENT TECHNICAL WORK THAT SUPPORT TAC/CWB AT GROUND LEVEL
- CURRENTLY 8 TARGETS
- SOME EXAMPLES....



EXAMPLES OF TARGETS

- WATER QUALITY :WE WANT CLEAN WATER IN OUR WATERSHED
- ESTUARINE HEALTH: WE WANT TO BE ABLE TO EAT SHELLFISH FROM COWICHAN BAY
- PUBLIC HEALTH: “WE WANT TO BE ABLE TO SWIM SAFELY IN COWICHAN LAKE, COWICHAN RIVER, AND COWICHAN BAY...”
- SUMMER WATER FLOWS ARE CRITICAL AND HAVE BEEN DECLINING - COWICHAN RIVER SUMMER FLOWS NEED TO BE 7CMS OR HIGHER





THE WORK...

- WATER SUPPLY
- WATER QUALITY
- IMPACTS TO HABITATS AND ECOSYSTEMS
- “WATERSHED IQ” – OUTREACH AND EDUCATION
- GOVERNANCE



WATER QUALITY

- DEVELOPED WATERSHED SCALE WQ OBJECTIVES IN PARTNERSHIP WITH BC MOE
- RECRUIT 3RD PARTY FUNDING FOR REGULAR ATTAINMENT SAMPLING (OVER 1000 SAMPLES TAKEN AND ANALYSED THIS YEAR)
- IDENTIFY AREAS OF CONCERNS AND ENGAGE
- E. COLI CONCERNS ASSOCIATED WITH AGRICULTURAL NUTRIENT MANAGEMENT
- WORKSHOPS AND GROUP ENVIRONMENTAL FARM PLAN
- RESOURCES FOR INFRASTRUCTURE UPGRADES

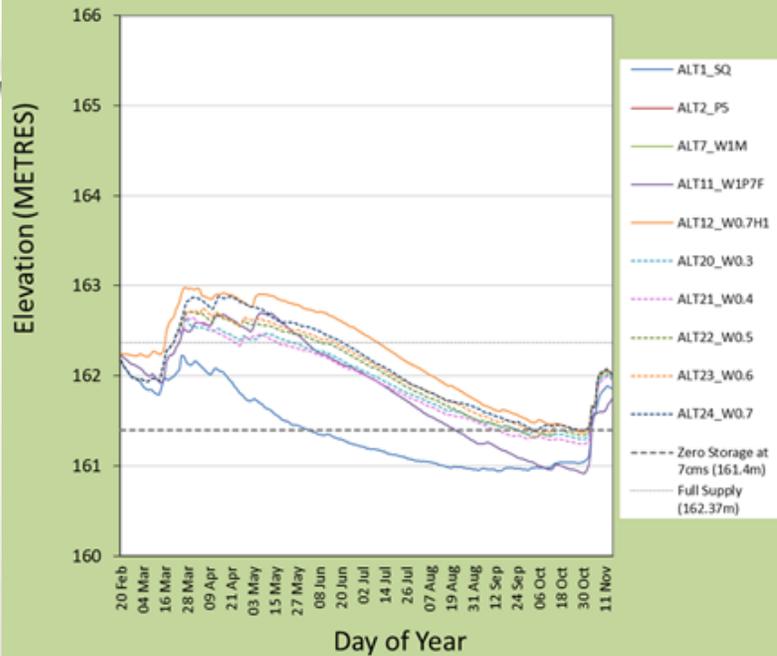


WATER SUPPLY

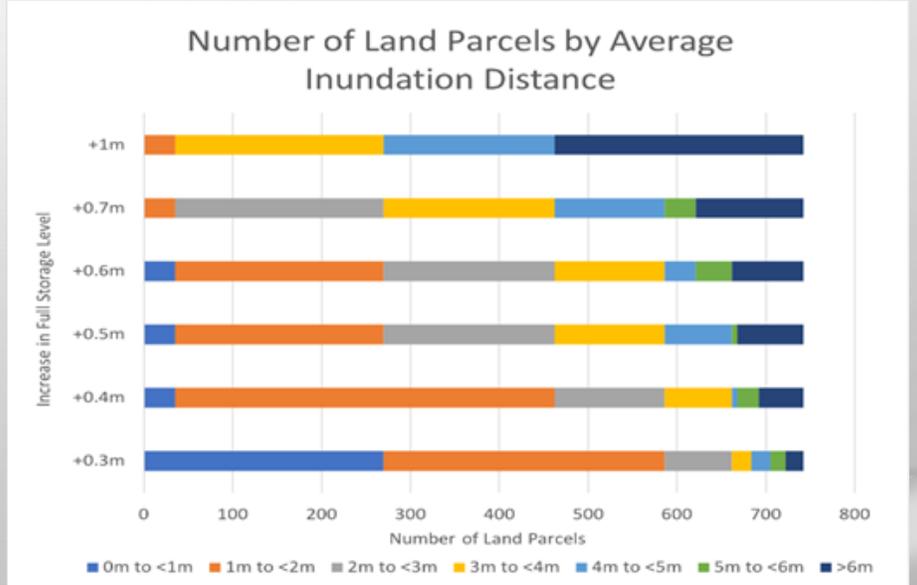
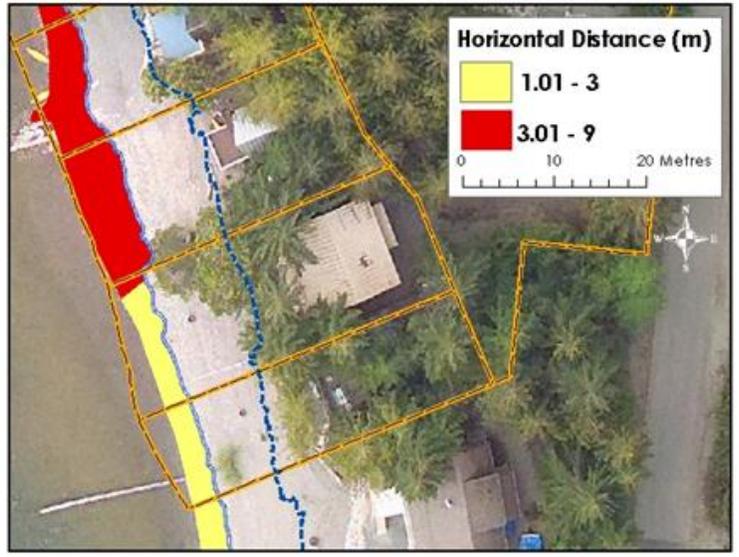
- WATER USE
PLANNING PROCESS

- **Culture and Heritage**
 - First Nations Salmon Harvesting Rights (FSC)
 - Traditional Knowledge Transfer & Generation
 - Ceremonial Bathing (Cultural Practices)
 - Archaeological Sites (Cowichan River)
- **Environment (Cowichan River)**
 - Geomorphology
 - Connectivity (lateral)
 - Water Quality
 - Fish Passage
 - Salmonid Rearing
 - Salmonid Spawning
 - Wildlife and Riparian
- **Environment (Cowichan Lake)**
 - Water Quality
 - Vancouver Lamprey
 - Lake Littoral Habitat
 - Wildlife and Riparian
- **Industry and Commercial**
 - Catalyst Paper
 - Agriculture (Irrigation / GW Wells)
 - Commercial Fisheries
- **Lakefront Properties**
 - Flooding and Inundation
 - Private Property Lakefront Areas
 - Docks / Wharves
 - Private water pump intakes
- **Municipal**
 - Waste Water
 - Water Supply - Lake
 - Water Supply - River
- **Recreation and Tourism**
 - Lake - Recreational Beach Use
 - Lake – Boat Access / Navigation
 - River – Boating and Tubing
 - Angling / Fishing
- **Water Management**
 - Infrastructure Capital and Operating Costs

Cowichan, Elevation, 10th Percentile

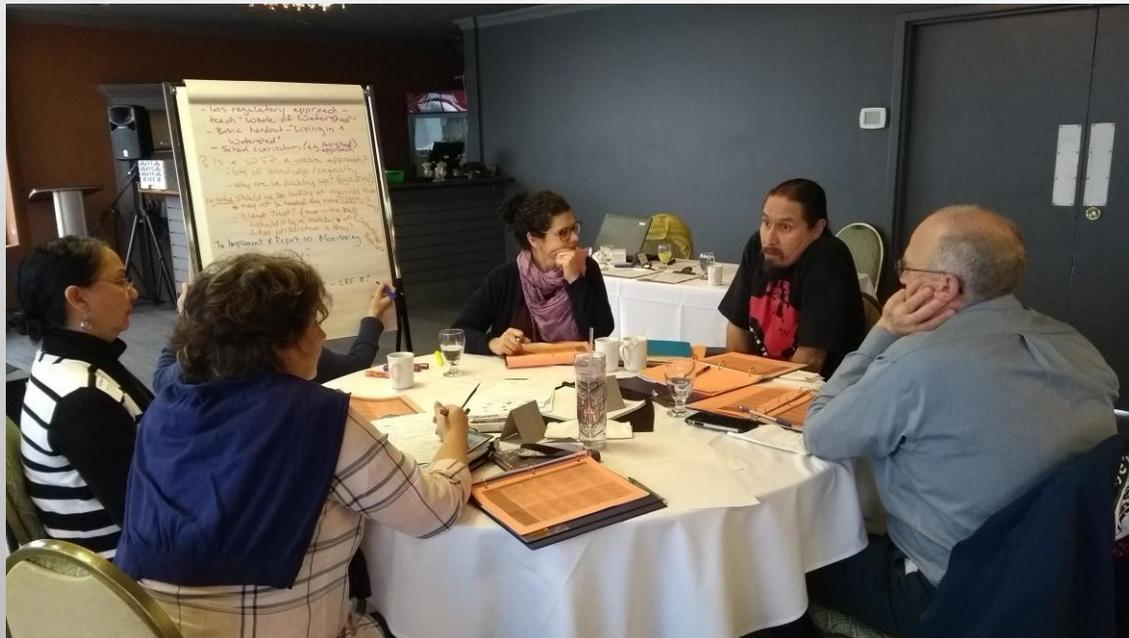


Objective	Performance Measure	Units	Dir	Alt 1	Alt 2	Alt 11	Alt 12	Alt 20	Alt 21	Alt 22	Alt 23	Alt 24
Environ - River (10%ile PMs)												
Fish Passage	10%ile - Adult summer CHK migration	HSI	H	0.00	0.00	0.09	0.09	0.00	0.00	0.08	0.00	0.08
Fish Passage	10%ile - Adult fall CHK migration	HSI	H	0.00	0.00	0.26	0.20	0.00	0.00	0.00	0.00	0.00
Lateral Connectivity	10%ile - Side channel connectivity	%	H	0.78	0.78	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Rearing	10%ile - Steelhead parr	HSI	H	0.00	0.75	0.80	0.80	0.75	0.75	0.75	0.75	0.75
Rearing	10%ile - Chinook fry	HSI	H	0.39	0.39	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Spawning	10%ile - Early Steelhead incubation	HSI	H	0.31	0.31	0.45	0.00	0.00	0.00	0.00	0.00	0.00
Environment - Lake												
Vancouver Lamprey	Lamprey rearing habitat (Scale 1-6)	#	L	7	9	8	1	6	5	4	3	2
Littoral Productivity	Littoral rearing habitat	#	H	0.45	0.10	0.44	0.78	0.72	0.68	0.73	0.72	0.78
Lakefront Properties												
Flooding and inundation	Max High Water Event - Mar 1 to Apr 30	meters	L	164.3	164.3	164.7	164.5	164.3	164.3	164.3	164.3	164.3
Private Property Lkfrnt Areas	Frontage length - un-vegetated, mod slope	meters	H	10.7	11.1	8.2	8.1	9.1	9.0	8.7	8.4	8.3
Municipal												
Community Water Supply	Intake pumping cap. - Town of Lk Cowichan	days/yr	L	45.5	59.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Community Water Supply	Intake invert El. - Town of Lk Cowichan	days/yr	L	0.0	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recreation and Tourism												
Beach Use Areas - Lake	Beach user days - un-vegetated, steep slope	wt days	H	0.0	0.0	17.6	30.0	4.8	10.0	9.0	16.9	27.3
Boat Access/Navign-Lake	Decrease in dock use days	days	L	113.0	113.0	37.5	15.5	51.5	42.5	46.0	36.0	26.0
Lake Aesthetics	Visual Quality	#	L	3	5	3	1	2	2	2	1	1
Water Management												
Capital Costs	Capital costs	M\$	L	0	0	26	18	12	13.5	15	16.5	18
Operational Costs	AVG Operational costs (over 10yrs)	M\$	L	0.0	5.0	1.0	0.0	2.5	2.0	2.5	2.5	1.0



WUP OUTCOMES

- PUBLIC ADVISORY GROUP REPORTED OUT JUNE 11, 2018
- CONSENSUS ON TWO PHASED STORAGE POSITIVE STORAGE APPROACH
- NEXT STEPS IDENTIFYING LICENSE HOLDER AND RESOURCING ENGINEERING AND DESIGN WORK.



IMPACTS TO HABITATS AND ECOSYSTEMS

- “WHOLE OF WATERSHED RESTORATION” PLAN
 - A PARTNERSHIP APPROACH - ONE PROPOSAL SUBMITTED UNDER COWICHAN TRIBES BANNER RATHER THAN A MULTITUDE OF SMALLER PROPOSALS FROM MULTIPLE STAKEHOLDERS
 - COASTAL RESTORATION FUNDING TO ADDRESS
 - ESTUARINE RESTORATION
 - RIPARIAN RESTORATION
 - SEDIMENT CONTROL
- 2.7 MILLION OVER 5 YEARS....



WATERSHED IQ

- YOU CAN'T VALUE WHAT YOU DON'T UNDERSTAND
- INSTILLING UNDERSTANDING AND APPRECIATION FOR THE FRAGILITY AND VALUE OF OUR WATER AND WATERSHED RESOURCES IS AN ESSENTIAL PIECE OF THE PUZZLE....
 - WATER SUPER HERO'S
 - PROGRAMS FOR CHILDREN AND YOUTH
 - 'SPEAKER SERIES'
 - CONSERVATION CHALLENGE
 - SAVE THE RAIN CAMPAIGN
 - ETC.....



GOVERNANCE

- CURRENT WATER/WATERSHED MANAGEMENT MODEL INVOLVES NUMEROUS AGENCIES MANAGING COMPONENTS OF WATERSHED HEALTH INDEPENDENTLY FROM EACH OTHER
 - WATER, CROWN LAND FORESTRY, PRIVATE LAND FORESTRY, AGRICULTURE, RESIDENTIAL DEVELOPMENT, LINEAR DEVELOPMENT, MINING, FISHERY RESOURCES ALL MANAGED WITHIN SILOS
- CWB “CRAZY IDEA”
 - THE PEOPLE WHO LIVE IN AN AREA KNOW IT BEST AND BENEFIT MOST FROM GOOD MANAGEMENT, AND THEREFORE SHOULD HAVE MORE INVOLVEMENT IN AND RESPONSIBILITY FOR WATERSHED DECISIONS.
- CWB WORKING BOTH INTERNALLY AND WITH SR. GOVERNMENT PARTNERS TO ADDRESS LOCAL GOVERNANCE AND CO-MANAGEMENT ISSUES



Cowichan Watershed Co-Governance Conversations – Workshop #2. Cowichan Bay, January 2018

GOVERNANCE WORK

- INTERNAL “CO-GOVERNANCE CONVERSATIONS” WORKSHOP SERIES
 - PARTICIPANTS INCLUDED CWB MEMBERS, ELECTED OFFICIALS AND SR. STAFF FROM BOTH COWICHAN TRIBES AND COWICHAN VALLEY REGIONAL DISTRICT, COWICHAN TRIBES ELDERS AND EXTERNAL ADVISORS
 - STRENGTHENING FOUNDATIONAL PARTNERSHIP TO INCREASE READINESS TO ASSUME GREATER RESPONSIBILITY.
 - OUTCOMES INCLUDE
 - NEW GOVERNANCE MANUAL WITH ROBUST RECOGNITION STATEMENT, ADOPTION OF PRINCIPLE OF NUTSAMAT, ENHANCED DECISION MAKING MODEL AND CLEARLY DEMONSTRATED ACCOUNTABILITY
 - IDENTIFICATION OF PATHWAYS FOR MOVING FORWARD WITH ENHANCED GOVERNANCE/MANAGEMENT ROLE
- OPPORTUNITIES UNDER BRITISH COLUMBIA’S “WATER SUSTAINABILITY ACT”
 - ENGAGED IN CONVERSATIONS WITH PROVINCIAL GOVERNMENT STAFF AND ELECTED OFFICIALS REGARDING WORKING COOPERATIVELY TO DEVELOP SOME OF THE WATERSHED GOVERNANCE TOOLS OUTLINED IN THE WSA
 - WATER SUSTAINABILITY PLANS, WATER OBJECTIVES, ENVIRONMENTAL FLOWS AND CRITICAL FLOW THRESHOLDS, SENSITIVE STREAM DESIGNATION, ADVISORY BOARD, ETC.....

CHALLENGES ...

- MAINTAINING FOUNDATIONAL PARTNERSHIP ESSENTIAL TO OUR SUCCESS
 - MAINTAINING THE STRONG AND RESPECTFUL RELATIONSHIP BETWEEN COWICHAN TRIBES AND THE CVRD IS ESSENTIAL TO THE CWB'S SUCCESS.
 - THERE WILL ALWAYS BE AREAS OF DISAGREEMENT. ESSENTIAL TO STAY STRONG ON SHARED COMMITMENT TO WATER SUSTAINABILITY
- PARTNERING WITH PROVINCE TO DEVELOP TOOLS IDENTIFIED UNDER WATER SUSTAINABILITY ACT FRAMEWORK
 - NO PROGRESS SO FAR DESPITE FAIR AMOUNT OF HORSEPOWER DEDICATED.
 - 1 PILOT IN BC TO DATE IN NICOLA VALLEY INVOLVING A G2G MOU WITH FIRST NATIONS
- EXERTING INFLUENCE OVER LAND USE DECISIONS.....
 - ALTHOUGH GOOD WORKING RELATIONSHIPS EXIST, CWB CURRENTLY HAS NO JURISDICTION AND LITTLE INFLUENCE ON LAND USE DECISIONS REGARDING FOREST HARVEST AND RESIDENTIAL DEVELOPMENT

THE BOTTOM LINE...

- LOCAL ENGAGEMENT AND EMPOWERMENT MAKES A DIFFERENCE
 - “PEAK GOVERNMENT”...
- ABILITY FOR ALL INTERESTS TO WORK TOGETHER IS IMPERATIVE
 - AVOIDING COMPETITIVE RELATIONSHIPS IS KEY
- FIRST NATIONS LEADERSHIP IS ESSENTIAL
 - IN THE COWICHAN VALLEY NO MEANINGFUL PROGRESS WILL BE MADE TOWARDS “SOURCE TO DRINKING WATER” PROTECTION WITHOUT ENGAGEMENT – AND LEADERSHIP – OF COWICHAN TRIBES.
- MAKING DECISIONS BASED ON BOTH STRONG SCIENCE AND LOCAL TRADITIONAL KNOWLEDGE IS ESSENTIAL
- PATIENCE IS A VIRTUE



QUESTIONS?



River Cleanup 2017: Cowichan Watershed Board members representing (L-R) Cowichan Valley Regional District, Director Lori Iannidinardo, Cowichan Tribes Councillors Debra Toporoski, Darrin George, Fisheries and Oceans Canada Area Director, Dr. Laura Brown.. Photo by ?