

The background is a light blue gradient with several realistic water droplets of various sizes scattered across the surface. The droplets have highlights and shadows, giving them a three-dimensional appearance.

# ~~WATERSHED IQ~~ WATERSHED CONNECTIONS

# WATERSHED CONNECTIONS TARGET

**ORIGINAL:** WE WANT COWICHAN WATERSHED RESIDENTS TO INCREASINGLY KNOW AND VALUE THEIR WATERSHED. WE CAN'T FULLY VALUE WHAT WE DON'T UNDERSTAND.

**NEW:** THE PEOPLE OF THE COWICHAN VALLEY UNDERSTAND AND VALUE THAT THEIR WELL-BEING IS INTERCONNECTED WITH THE WELL-BEING OF THEIR WATERSHED. MUKW' STEM 'O' SLHILHUKW'TUL, EVERYTHING IS INTERCONNECTED.

# INDICATOR #1

**ORIGINAL:** ALL GRADE 4/5 STUDENTS ARE PROVIDED WITH A HANDS-ON WATERSHED EXPERIENCE.

**NEW:** ALL STUDENTS IN **GRADE 2** PARTICIPATE IN AT LEAST **ONE PLACE-BASED** LEARNING EXPERIENCE **TO FORM A CONNECTION** TO THEIR WATERSHED.

**AND:** ALL STUDENTS IN **GRADE 9** PARTICIPATE IN AN **OUTDOOR PLACE-BASED** EXPERIENCE TO HELP THEM UNDERSTAND **HOW THEIR WELL-BEING IS INTERCONNECTED** WITH THEIR WATERSHED.

## INDICATOR #2

**ORIGINAL:** COWICHAN RESIDENTS INCREASINGLY KNOW AND VALUE THEIR WATERSHED.

**NEW:** AN ANNUAL TALLY IS KEPT TO TRACK THE OVERALL EDUCATIONAL AND STEWARDSHIP OPPORTUNITIES OFFERED TO HELP RESIDENTS OF ALL AGES UNDERSTAND AND VALUE THEIR WATERSHED.

(This will be used to assist the group to assess progress, and to identify gaps and opportunities for improvement.)



# Connecting the Drops in the Cowichan and Koksilah Watersheds

## What is a Watershed?

A watershed is an area of land where all the surface water drains into the same place.

A watershed can be any shape or size, and can drain any combination of wild, rural or urban lands. The boundaries of a watershed are the ridgetops, where the headwaters, fed by rain and melting snow, flow downward forming streams, ponds, lakes, wetlands and rivers. When the waters finally reach the river's mouth or estuary they mix with the salty sea. The Cowichan and Koksilah Rivers join together and flow into the Cowichan Estuary here in Cowichan Bay.

## Everything is Connected...

### Protecting Flows for a Healthy Watershed

Changes in the upper parts of our watersheds affect the lower watersheds and everything that lives there. A healthy watershed protects groundwater, ensures safe drinking water and supports healthy soil. The water cools the air, moderating our local climate in the summer's heat. Adequate seasonal flows sustain habitats for diverse plant and animal life. In a healthy watershed people work with nature to conserve water.

The Cowichan Valley has very wet winters and dry summers. Water from winter rain and snow melt held behind the water in Cowichan Lake can be released over the dry summer as there's enough water for fish and other aquatic life and for human use.

### Pacific Salmon

Salmon are important in the diet, economy and ceremonies of the Qw'w'uts'm (Cowichan) people. They also support the local recreational and commercial fisheries and provide food for humans and wildlife. Nutrients from dead spawned salmon fertilize the forests.

The water in rivers and streams has to be clean and cool enough for the salmon eggs and young fry to survive. Overhanging plants provide insects for food and cover from predators. Returning adult salmon need enough water in the rivers to swim upstream to their spawning grounds in the late summer and fall.

### The Water Cycle

All living things need water to survive. Water evaporates from the surface of everything that contains it, from massive oceans to tiny puddles, from blades of grass to perching animals. Evaporated water rises through the atmosphere, condenses as clouds, and falls down as rain or snow. Melting snow and ice feed cool water into streams and lakes.

### Forests

The dense forests of British Columbia's coast shade the ground and slow the evaporation of surface water. Root trees hold the soil together, helping to keep it from washing into streams and rivers during heavy rains.

### The People of the Watershed

The Qw'w'uts'm people, BC's largest First Nation, give their name, now translated as "Cowichan", to this river valley, part of their extended territory. It means "land warmed by the sun". The Qw'w'uts'm's rich culture stretches back thousands of years and is connected to the salmon, shellfish and other wildlife and plants of the Cowichan River basin.

Non-native settlers arrived in the mid-1900s and built communities based on forestry, fishing and agriculture. Now a popular recreational destination for hiking, swimming, hiking, fishing and wildlife viewing, the Cowichan was designated a Provincial Heritage River in 1996 and a Canadian Heritage River in 2005.

## Changes and Challenges in Our Watersheds

Everyday human activities affect the health of our watersheds. There are many things we can do to protect our watersheds, both as individuals and as a community.

### Pollution

Pollution upstream affects both water quality and water supply downstream. Runoff from the land can bring agricultural fertilizers or the soap from washing your car into rivers, lakes and the ocean. Polluted surface water can also seep into groundwaters.

Years of industrial, agricultural and other pollution led to a long-term ban on harvesting shellfish in Cowichan Bay. Cowichan Tribes, local governments and volunteers are working to restore the health of the bay.

### Water Withdrawal

Removing water for crop irrigation, industrial applications and other uses decreases the river flow. This can shrink fish habitat and prevent salmon migration. It can also concentrate pollution and increase the likelihood of algae blooms in ponds and lakes.

### Land-Based Disturbances

A healthy watershed needs healthy vegetation along its banks and channels. Clearcutting, urban development and other human disturbances affect the whole watershed. Erosion and loss of plant life can cause landslides and add silt and gravel to river channels. This chips salmon spawning beds and makes water channels bend their banks while others can dry. Disturbances on land can change the river in ways that affect fish, our ability to grow food and human health.

### Carbon Pollution and Climate Change

Increased carbon dioxide and other greenhouse gases in the atmosphere are raising global temperatures and changing the Earth's climate. The Cowichan region can expect an increase of two degrees Celsius in average temperature by 2050. Sea level is expected to rise by a meter or more by 2100, when high tide and storm surges are included the impact of this rise will double. As Cowichan Bay's waters already experience warmer they become more acidic and shellfish and other marine life become more difficult to farm.

The warming climate will cause drought, reduce river flows, dry out salmon and other wildlife, more water vapor and the two cycle changes. Summer and fall increasing the risk of forest fires, more rain, with less water available will be more extreme rain events.

### The Salmon Cycle

Pacific salmon rely on our watersheds. The Cowichan and Koksilah Rivers support chinook, coho, chum and pink salmon, as well as steelhead trout.



Alumnus: Cowichan Lake fishing inside Cowichan Watershed. Photo by Barry Hinchey.

Pacific Coast Blue Herons are common in a variety of habitats. They may fish to feed their young. Of young herons, they may also be seen in the water. Their other habitats are wetlands, marshes and riparian areas. Photo by Barry Hinchey.

The water cycle is a continuous process. Water evaporates from the surface of the earth, rises into the atmosphere, cools and condenses into clouds. Rain or snow falls to the ground, and flows into streams and lakes. Photo by Barry Hinchey.

Members of Cowichan Tribes are shown here for their traditional fishing. Photo by Barry Hinchey.

Alumnus: Cowichan River fishing. Photo by Barry Hinchey.

Alumnus: Cowichan Estuary. Photo by Barry Hinchey.

Osprey nest near water. Fish in their nest. Photo by Barry Hinchey.





















**SPEAKERS SERIES**

## TONIGHT: "The Warmer Land"

Local youth, science, and indigenous perspectives on climate projections for the Cowichan valley and what it means for us all.









