2. Establishing Conditions for Success in the Cowichan

Successful implementation of the *Cowichan Initiative* will depend on the alignment of several 'winning' conditions. These conditions provide context and guidance to support the successful implementation of this plan.

Within the Cowichan watershed there are underlying Aboriginal rights and title, different jurisdictional authorities, various statutes, legislation and policy that currently govern watershed uses. In addition there are many stakeholder groups who have an interest in the fish and watershed health, and the watershed is home to over 70 thousand people. For the Cowichan River to adequately serve the many interests given its current impacted state, a mechanism to affect change at all levels and with all river interests in the watershed is warranted.

POLIS (2014) describes a *Blueprint* model that outlines and describes a set of "winning conditions" designed to assist stakeholders with facilitating success in planning processes and in prioritizing process actions related to watershed governance. In our case, we use their model to map out and describe processes required to support re-building Chinook stocks at the local level. We have adapted the POLIS framework to focus in on watershed health and the health of key indicator species with collaborative watershed governance as one of the key winning conditions (Figure 2). We use the winning conditions to assess the opportunities and identify the gaps to fill to support re-building Cowichan Chinook stocks at the local level (Figure 2). There is a good chance of success in Cowichan because most of the criteria in each condition can be met.

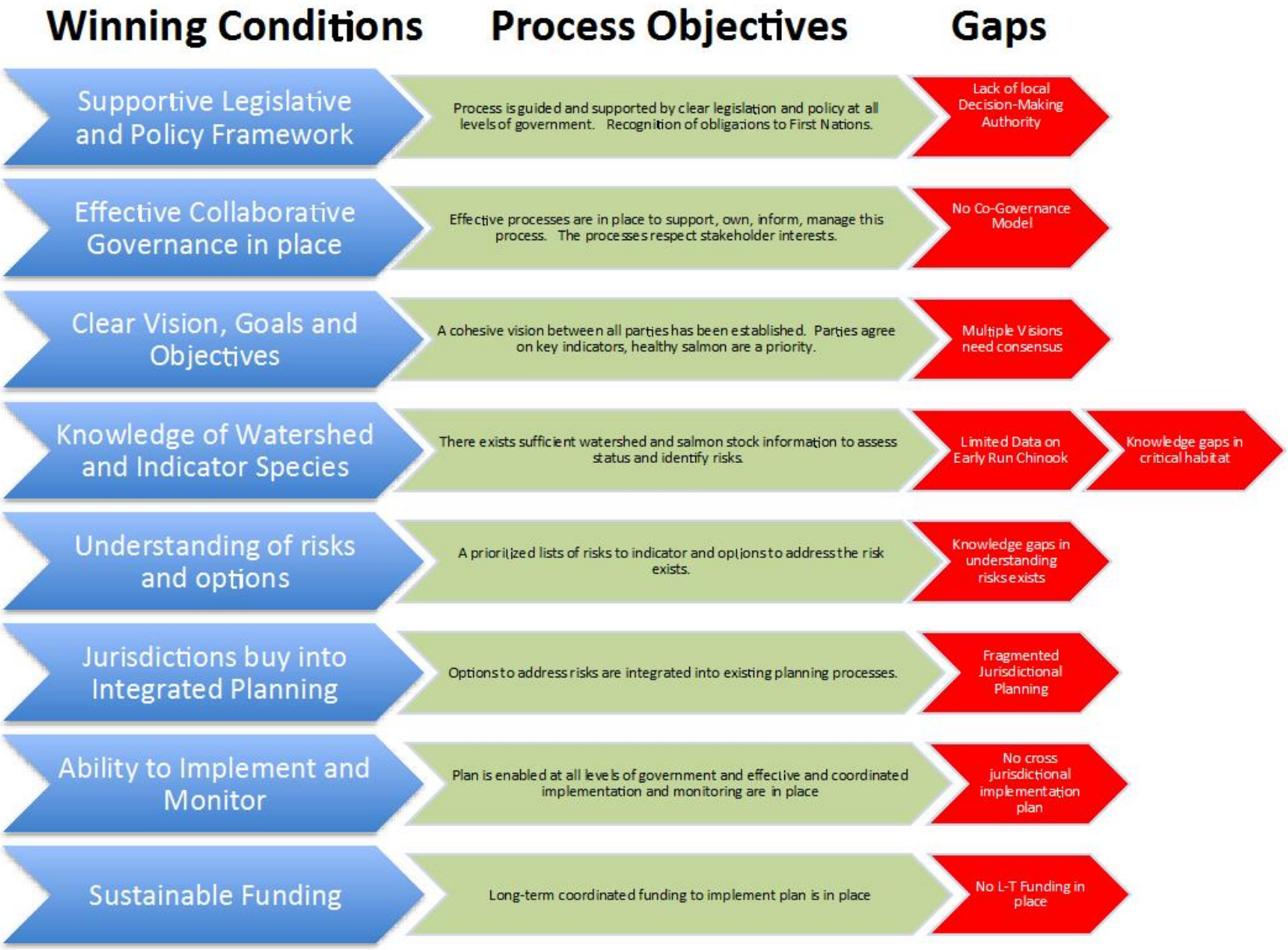


Figure 4: Winning Conditions and Gap Analysis in the Cowichan Watershed

1.1 Legislation and Policy Framework

Currently, there are 3 levels of government that have legislation, policy, or Rights and Title that provide jurisdiction in the Cowichan watershed. These include the Cowichan Tribes (and other First Nations with traditional territory in the Cowichan Watershed), the Federal Government and the Provincial Government with local government having delegated Provincial authority over land-use planning within their boundaries.

Cowichan Tribes asserts Aboriginal rights and title to the lands within their Traditional Territories, which include the Cowichan and Koksilah watersheds (Figure 3). The Cowichan people have inhabited these areas since time immemorial and continue to depend on the salmon runs in the river for their sustenance, social and ceremonial practices. Recent court decisions, such as the Williams Case (*Tsilhqot'in Decision*), point the way to reconciliation which includes clear recognition of First Nations rights and title and suggests the development of models of co-governance for resource and land management in First Nations Traditional Territories (SCC, 2014). The underlying First Nations constitutionally protected rights to their land and resources must be respected in any land-use decision.

Figure 3: Cowichan Tribes Core Traditional Territory (www.cowichantribes.com)

The federal and provincial levels of government established and implement legislation and policy that affects the viability of fish stocks and impacts the management of wild salmon in BC. The federal government has overall responsibility to protect fish and the provincial government manages water, non-anadromous fishes, trout and steelhead and terrestrial resources. There are three main Federal statutes that provide for the protection,

management and allocation of Chinook in the Cowichan River estuary and marine environment, including the *Fisheries Act*, *Species at Risk Act* and the *Oceans Act*. Although there are several federal policies underlying these Acts and thereby governing salmon stocks, the main focus of the DFO is to address the mandate of the Wild Salmon Policy (*WSP*). Implementation of the WSP is challenging in a watershed context as the Federal Government has limited jurisdiction for issues that impact freshwater.

Provincial government responsibilities in the Cowichan Watershed include the management of water licences and flows to the Cowichan River, and with the recent addition of the *Water Sustainability Act* (WSA) (Prov. of BC, 2015) may begin to regulate groundwater use. The Province also manages public forest lands and reviews and approves Forest Stewardship Plans, although the majority of forest lands in the Cowichan are under private ownership, regulated by the Private Managed Forest Council.

> **Gap: No Local Decision-Making Authority over Water -** The Cowichan Watershed Board has been recently pursuing a WSA Pilot Project to explore a partnership between Cowichan Tribes and local government for local water governance. The proposal envisions exploring local co-management decision making models in relation to water governance including draw down of Provincial powers for a collective watershed authority.

Local government, as incorporated under the Local Government Act (RSBC 2015), have delegated authority for land-use planning within their boundaries including activities on private, rural and urban lands. A variety of goals and objectives relating to protecting ecological integrity, biodiversity, critical habitat and the integrity of the fishery exist within *Official Community Plans (OCP).* Some tools have been developed to meet these objectives, including *Development Permit Areas* within each *OCP* - as a local example, the municipal *District of North Cowichan* (DNC) has recently adopted a *Watershed Management Bylaw* that allows development of specific watershed management plans. DNC is also currently leading a watershed management planning process for Bonsall Creek near the Chemainus River and, in addition, have established 3 urban containment boundaries to manage urban growth over the next 25 years.

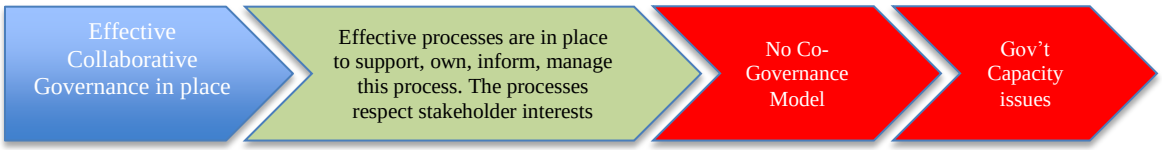
> **Gap: Regional Growth Management Plan -** Although some of the tools exist, in the Cowichan Valley Region the lack of a *Regional Growth Management Plan* (*RGMP)* hinders the ability of local governments to integrate planning processes across the various areas and jurisdictions. Other barriers include a lack of interest or political will, and funding to support the implementation of a growth strategy. Provincial and federal transfers are available in the way of grants and loan guarantees for the development of some local government services, but in general the electorate funds local government functions and activities generated through taxation and fees for service.

On *Cowichan Tribes Reserve Lands*, land-use planning and land management is complicated by *Certificate of Possession* development rights and policy incorporated into the *Indian Act*. *Aboriginal Affairs and Northern Development Canada* (*AANDC*) oversee

large-scale developments that require permits on the reserve and work closely with the Land Management Department of Cowichan Tribes. Other development, primarily housing and infrastructure, is overseen by the Cowichan Housing Department.

Currently, Cowichan Tribes has developed a Land-use Planning Framework to provide guidance to community members and staff. A *Comprehensive Community Plan* (*CCP*) is being developed for many of the communities within the reserve lands, but is focused beyond land-use and includes member services, elders, health, etc. Although no official land-use plan exists for Cowichan Tribes Reserve lands, the Land-use Planning Framework provides best practices for land development until the envisioned *Local Area Plans* are established. Cowichan Tribes is also currently perusing the development of a *Land Code* that would allow Cowichan Tribes to directly govern their Reserve lands and resources (*First Nations Land Management Act, 1999*).

1.2 Effective Collaborative Governance



There is a strong level of collaboration between governments and interest groups in the Cowichan watershed. Many successful stewardship groups exist, each working on many different facets of watershed health and collectively meeting monthly via the *Cowichan Stewardship Round Table* (*CSRT*). This 'coming together' has provided a unique opportunity for collaboration and opinion development to take to government on policy and mandate. The *CSRT* offers individual stewardship groups the ability to work with others to prioritize key projects, the chance to gather input on planned projects and a one-stop place to showcase what they have accomplished. Cowichan Tribes, the CVRD, the District of North Cowichan, DFO and BC Parks continue to participate in the monthly meetings to gather support for government direction and get feedback. BC Environment has been notably absent in the past few years from participating in this localized effort.

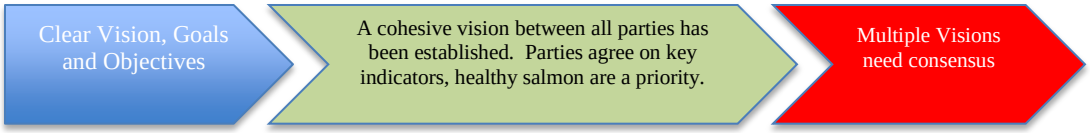
The *Cowichan Estuary Environmental Management Plan (CEEMP)* governs activities under a unique *Order in Council* for defined areas within Cowichan Bay and the estuary (*BC Environment and Parks, 1987*). BC Forest Lands and Resource Operations (FLNRO) Ministry oversees management of the *Plan* on behalf of the Minister of Environment, with input from a committee that monitors impacts to the estuary and oversees estuary management. The CVRD, District of North Cowichan and Cowichan Tribes participate at the committee level in making recommendations to the Minister on management of the Plan; although Cowichan Tribes also is due consultation on issues that may impact Aboriginal rights and title. Discussions on both updating the plan and shifting it to more local control occur from time to time.

In 2010 the CVRD and Cowichan Tribes collaborated in the formation of the *Cowichan Watershed Board* (CWB) to implement the *Cowichan Water Basin Management Plan* (Westland, 2007). The CWB has piloted a consensus model that has resulted in a renewed interest in joining together to effect change in watershed management. The CWB has developed a series of targets aimed at watershed health, which include Water Quality, Estuarine Health, Salmon Sustainability, Water Conservation, Watershed IQ, Summer Conservation Flow, and Increase Riparian Area. The CWB has recently discussed the development of additional targets, one related to Chinook (an expanded salmon sustainability target), and another related to Human Health. This body is the current mechanism where Cowichan Tribes and local governments work together to achieve watershed health. However, it does not have any formal authority and currently relies on a cooperative model and insecure funding.

Water volume and flow issues, in either flood or drought, within the Cowichan/Koksilah watershed have galvanized the levels of government and Cowichan Tribes to work together in the last few years. The CVRD (including the municipalities) in partnership with Cowichan Tribes developed a *Lower Cowichan/Koksilah Integrated Flood Management Plan* that has resulted in cooperative action between all levels of government to address on-going human safety flood risks and implement measures to address severe gravel aggradation in the lower river (a flood risk, a challenge for effluent discharges and a salmonid migration barrier) (nhc, 2009). Low flow issues have also generated localized discussion and partnerships between industry and Cowichan Tribes. The Flows and Fish sub-committee of the Cowichan Watershed Board has provided a forum for planning and reporting on flows and fish issues. The CVRD has pursued funding (unsuccessfully) to begin addressing issues of increasing storage at Cowichan Lake to mitigate low flow issues. The FLNRO staff and Catalyst Paper host a flows conference call weekly to gain support for flow regulation activities.

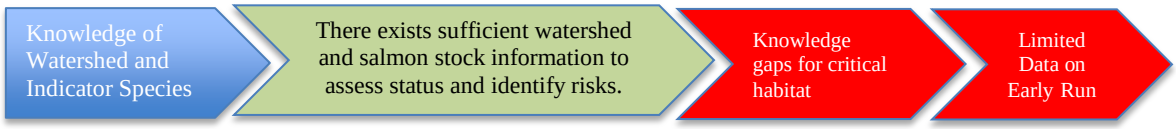
> **Gap: The need for Co-Governance with First Nations -**A key ingredient to success in watershed planning and management is in effecting a co-governance model with First Nations, with some level of decision-making authority for matters originating at a local level. The Cowichan Watershed Board has been, perhaps, the closest to a model of co-governance that has been seen in the Cowichan Valley, although this body acts in an advisory capacity only, and has no statutory or positional authority. The recent CVRD Groundwater and Surface Water Governance and Management Project introduces a vision for a co-governance body, however, the scope of the project includes the entire CVRD with all of First Nations in the Regional District.
>
> **Gap: Government Capacity Issues** - Recent cutbacks and re-structuring within the Provincial Government have resulted in staffing shortfalls, especially for participation in local initiatives. In addition, issues over water flow regulation have caused significant tension between First Nations, local and provincial authorities. Capacity gaps also exist at the First Nations level where inadequate funding or local own-source revenue limit First Nations participation.

1.3 Clear Vision, Goals and Objectives



See Vision, , in Section 1, for details on the multiple vision statements currently in play in the Cowichan and the proposed consensus vision statement. Goals and Objectives for both Watershed Health Attributes and Cowichan Chinook can also be found in Section 1.

1.4 Watershed and Species Knowledge



There is a relatively rich knowledge base around Chinook and the Cowichan Watershed. Detailed information on the character of the watershed and the current status of Chinook stocks in the Cowichan River are provided in Section 3 State of the Watershed.

The Wild Salmon Policy Conservation Unit (CU) that encompasses the Cowichan and Koksilah River Chinook stocks is considered to have a comprehensive body of data on species timing, life-history, size and age at maturity, abundance and productivity of fall run Chinook stocks. This level of detail is also available for Cowichan and Koksilah Chum and Coho stocks as well.

Many other initiatives in Cowichan, some already listed above, have been completed in the last 10 years that add to the information and knowledge on the watershed and help to recovery efforts. These include:

- *Cowichan Recovery Plan – Cowichan Tribes*
- *CSRT 100-Yr. Vision*
- *Lower Cowichan Integrated Flood Management Plan*
- *Cowichan Basin Water Management Plan*
- *CVRD State of Environment Plan*
- *Regional Surface and Ground Water Management and Governance Study*
- *Climate Action and Energy Plan – DNC*

First Nations Traditional Knowledge is also available and provides key insights into historic abundances and distribution of Chinook in the watershed.

> **Gap: Early-run Chinook** - The early timed spring/summer run of Chinook salmon into the Cowichan River is largely unmanaged, has limited biological data available and is thought to be in decline. This stock is thought to enter the Cowichan River in April-June, migrating up river to hold either in the upper

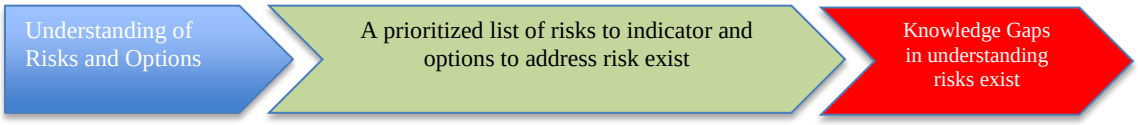
reaches or in the Lake itself. It is speculated that this run spawns in the upper watershed tributaries to the Lake such as Robertson River and Shaw Creek although there are anecdotal reports from local biologists (Ted Burns pers. comm.) of early run fish holding in the Cowichan River well into the summer. Abundance of the run is relatively unknown but thought to have declined dramatically over the past 50 years. Cowichan elders describe this run as being more abundant than the fall runs historically.

DFO's focus has been primarily on the fall run of Chinook and enumeration of incoming adults is timed to coincide with this run. It is thought that the early run of fish are the upper watershed spawners, though no enumeration of upper watershed tributary spawning has been done for many years.

Funding to conduct an enumeration project in 2015 for fry of the early run of Cowichan Chinook was obtained. DNA samples of 70 juveniles have to date been processed showing fall run genetics. In addition, DFO and Cowichan Tribes collaborated on the installation and management of a Dual Frequency Identification Sonar (DIDSON) located mid-river and at the outlet of Cowichan Lake to enumerate early run Chinook. 236 targets were observed at the mid-river DIDSON between 12-June and 31-August. The species composition of this group was not addressed; however it can be assumed that some of these targets are summer-timed Chinook. In addition, the migration of this stock starts earlier than the start date of operations so it can be assumed that not all the Chinook were enumerated by this apparatus. The weir DIDSON enumerated 191 targets between 23-June and 9-Aug. In summary, DFO is estimating the population of summer-timed Chinook at between 100 and 200 fish with a high level of uncertainty.

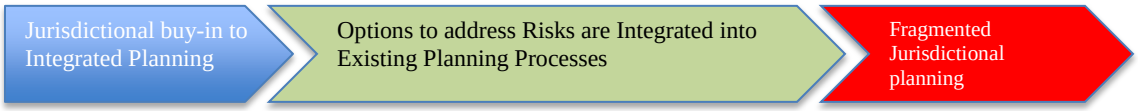
Gap: – Critical habitat can be described in three interconnected spatial dimensions: Longitudinal (or riverine); lateral (or riparian); and vertical (or hyporheic) (Portland, 2005). Critical habitat for Chinook in the Cowichan River has been generally described as main attributes rather than using the three dimensions described above, although much still remains unknown. Information needed includes data on thresholds for water temperatures for early run holding in the river and during fall-timed migration, adequate holding and refuge pools, flow barriers to migration, upper-watershed spawning and rearing habitat, predation in river and in the estuary, estuarine habitat quality and quantity. Cowichan Tribes has applied for funding for the 2016-2019 period to map and quantify critical habitat related to Chinook salmon freshwater life history phases in the Cowichan and Koksilah Rivers.

1.5 Prioritized List of Risks



Using Chinook as an indicator of watershed health will provide a mechanism to start identifying risks in the river system. Risks to Chinook in the freshwater stages of their life cycle have been assessed during two comprehensive expert reviews focusing on identifying limiting factors for the species (March, 2013 and January 29th, 2016). Results of these reviews are the subject of Section 4.

1.6 Integrated Planning and Other Initiatives



Many human activities in the Cowichan River watershed are planned under the jurisdiction of the First Nations, local, regional, provincial, and federal governments. Integrated planning ensures that these planning processes meet multiple needs, including watershed health aspects related to quality, quantity and distribution, and water-dependent natural communities. The following plans and initiatives are examples of integrated planning in the Cowichan taking into account the range of critical habitat and the health of salmon.

As mentioned earlier the District of North Cowichan (DNC) is currently developing an *Integrated Watershed Management Plan* for Bonsall Creek, a tributary to the Chemainus River. The Bonsall Creek drainage supports sections of the DNC Municipal forest, productive agricultural, migratory bird and fish areas. Its estuary is also an important shellfish economic area and is connected to the Chemainus Estuary. This planning process will inform future bylaws and OCP processes and include important issues like ground-water and flooding.

The CVRD is also pursuing a *Sustainability Strategy* and a *Climate Change Action Plan*. The Sustainability Strategy will focus on establishing specific environmental principles and related regional and municipal actions (e.g. policies related to local food production, sustainability checklist for developers, policies regarding pesticide use, and incentives for using alternative transportation). The CVRD will explore the need for a *Regional Growth Strategy* after the development of the *Integrated Regional Sustainability Plan*.

There are a number of processes currently underway in the Cowichan Valley that improve the ability to implement and monitor a *Watershed Health and Chinook Initiative*. For example, the Cowichan Tribes, CVRD, DNC and City of Duncan continue to work

together to implement a *Lower Cowichan/Koksilah Integrated Flood Management Plan* (C/KIFMP) that provides protection to residents in the lower floodplain area of the Cowichan Watershed from flooding (nhc, 2009).

The C/KIFMP incorporates a sensitive ecosystem inventory and includes information of the importance of the lower Cowichan River to rearing salmonids. New flood protection projects have been approved by DFO and include significant restoration work to side-channel habitats and set-back dikes to minimize impacts on the River. However, historical diking along the river continues to channelize the river in many areas. Monitoring the success of the restoration projects is part of the current C/KIFMP process. The critical limiting factors to Chinook can be used to inform this planning process and monitoring activities undertaken as part of the mitigation works can provide information on the health of key habitat that juvenile Chinook rely upon.

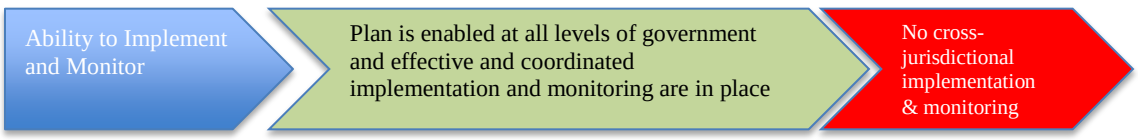
Gap: Fragmented Jurisdictional Planning - Currently, the Cowichan River Watershed is segmented between different jurisdictions with un-integrated plans to manage risks to the rivers and their environments. Each electoral area and the two different municipalities have different bylaws, policies and strategies that govern activities in the watershed and impacts to watershed health. Local Governments under the Local Government Act have delegated authority from the Province for land-use planning within the local and regional context. The CVRD and other local municipalities have a multitude of plans and bylaws that effect change in the watershed.

Official Community Plans are updated and refined through a public planning process, but limited integration of watershed health goals occurs and First Nations rights and title are often compromised through largely inadequate consultation processes.

First Nations have legal authority to protect and maintain rights and title in their Traditional Territories and manage, through Federal Government legislation and policy, the majority of the lands within the lower floodplain and estuary within the Cowichan Reserve.

Private Managed Forest Lands primarily in the upper watershed are managed in part through the Managed Forests Council which is an "independent provincial agency established under the Private Managed Forest Land Act to administer the Managed Forest Program and protect key public environmental values on Private Managed Forest lands in BC" (http://mfcouncil.ca/). Each forest company also has their own set of environmental policies and guidelines.

1.7 Ability to Implement and Monitor

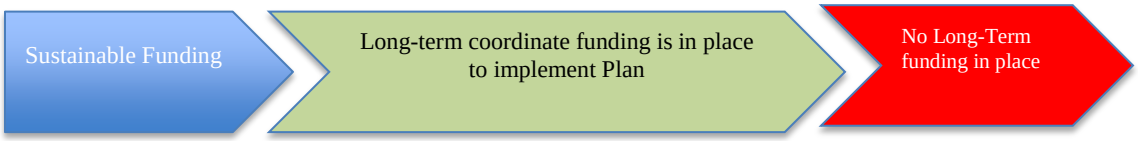


Implementing the *Cowichan Watershed Health and Chinook Initiative* will require a management model that allows water and land managers to incorporate objectives into land use decisions and address risks affecting Chinook habitat and populations. Local government planners, land developers, farmers, environmental practitioners, water managers, foresters and engineers represent the primary land managers, where each of these people make decisions based on the information they have available - plans, policies and legislation relevant to their area. And yet these same managers may find themselves limited by these tools and are often challenged in meeting their objectives.

By providing clear, concise goals, objectives, targets and action plans, land managers will increase their ability to manage impacts to watershed health and thereby Chinook production. *Section 6* is focused on Chinook as an indicator of watershed health and provides best practices and action plans to address critical limiting factors to Chinook production. In addition, an integrated implementation and monitoring plan will need to be developed to evaluate success. Monitoring watershed health indicators will be a collaborative effort. For salmon, DFO and Cowichan Tribes will monitor the status of salmon and input into processes that use this species as an indicator.

> **Gap: No Effective Cross-Jurisdictional Implementation and Monitoring Plan in Place** – An implementation and monitoring plan can be developed once a governance model is described, with focus on the Watershed Health and Chinook Initiative. DFO has offered to continue monitoring and reporting on the status of Chinook in conjunction with other review processes, such as the State of Environment review.

1.8 Coordinated and Sustainable Funding



Long-term, sustainable funding will be needed to support this initiative, either as a "stand alone" or as an integrated component of other current or future initiatives. For example, implementation may occur through existing processes and governments with watershed health and Chinook goals integrated into existing plans. Regional government can then monitor and report out via the Regional Growth Strategy and/or Regional Sustainability Plan.

> **Gap: Long-Term Funding is currently Limited and Fragmented** – Funding to undertake projects in either assessment, restoration or mitigation of risks is provided for in a semi-ad hoc manner. Agencies, local government, First Nations and stewardship groups apply for funding often independently of each other, though some partnerships have recently been seen. The *Cowichan Stewardship Round Table* (CSRT) provides a forum to discuss pending applications of funding

and garner support for each project. In the past the CSRT has written support letters for different project funding proposals.

The *Cowichan Watershed Board* is funded in part by the Cowichan Tribes, CVRD and DFO, although this funding is not secure and is currently thought to be inadequate. Local governments rely on municipal taxation to provide resources and support collaborative initiatives such as the CWB. Funding for Cowichan Tribes' participation in projects such as the *Cowichan Chinook and Watershed Health Initiative* have accessed program dollars, such as the *Pacific Integrated Commercial Fisheries Initiative* (PICFI), which are not secure and are time limited with current programs either ending or agency mandates shifting.