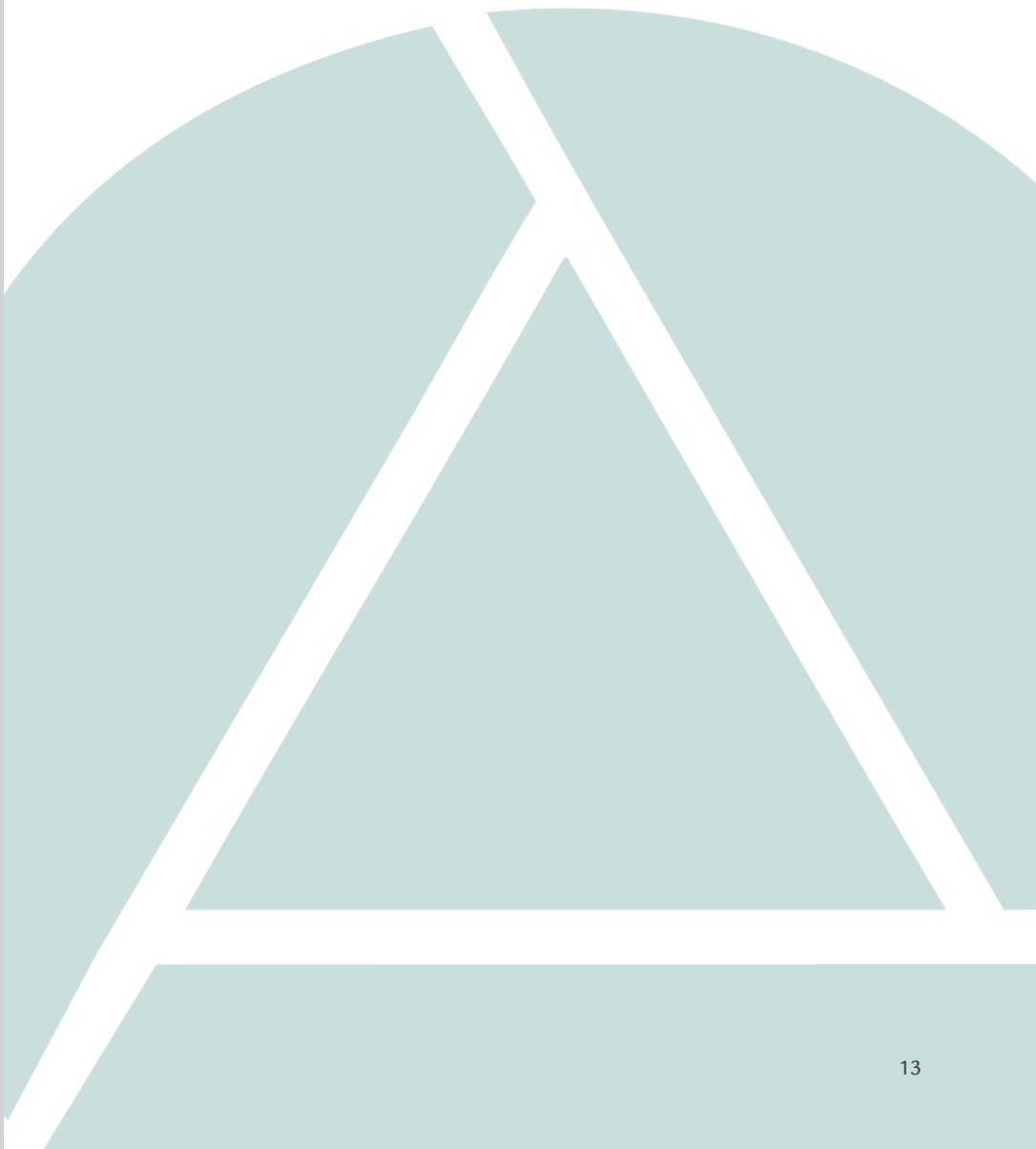


# Detailed Report





# Background

## Audit Purpose and Scope

The purpose of this audit was to assess whether the provincial government has effective programs in place to ensure the sustainability of wild salmon in British Columbia. We examined its programs for protecting and restoring salmon habitat, as well as those for preventing and mitigating the potential impacts of salmon aquaculture on wild salmon stocks.

We concentrated our examination on the four core ministries and two agencies responsible for habitat and fish protection, as well as for land and resource management responsibilities that impact wild salmon. Within each organization, we interviewed those individuals dealing with habitat protection and fish management issues. We reviewed and analysed documents obtained from the ministries and agencies, such as legislation, regulations, government policies and procedures, agreements and reports. As well, we interviewed or corresponded with industry stakeholders, First Nations, non-governmental organizations, academics and others to obtain their input and perspective. Our fieldwork was conducted between May and December 2003.

In this audit, our focus is the five main species of wild salmon. We did not examine the government's role in managing other anadromous fish stocks such as steelhead or sea-run cutthroat. Neither did we examine inland fresh-water fishery issues related to non-anadromous fish or issues surrounding fish hatcheries.

We performed this audit in accordance with assurance standards recommended by the Canadian Institute of Chartered Accountants, and accordingly included such tests and other procedures we considered necessary to obtain sufficient evidence to support our conclusions.

The audit was done in conjunction with similar audits carried out by the Auditor General of Canada and the Auditor General of New Brunswick. Both the Auditor General of British Columbia and the federal Auditor General examined issues surrounding wild salmon habitat, sustainability and wild-farmed salmon interactions. The Auditor General of New Brunswick looked exclusively at the issue of salmon aquaculture. Combined, these three audits provide a national perspective on the status of government programs affecting wild and farmed salmon in Canada.

## Background

### Overall Conclusion

We concluded that the Province needs to be more aggressive if it is to ensure the future sustainability of wild salmon in British Columbia. Protecting wild salmon habitat and restoring past problems are essential if this goal is to be attained.

Although the Province does not have the primary legal obligation for looking after salmon habitat, its role in managing the habitat is significant. The absence of a provincial vision, however, and of a strategic plan with clear objectives has prevented establishment of a coordinated program. Provincial efforts to manage wild salmon in their freshwater environments have diminished in recent years and what activities remain are now spread over a number of agencies. Existing provincial legislation and regulations do not provide adequate protection for salmon habitat, because some key provisions are either not in force or not being acted on. Salmon conservation plans and programs have lapsed and need to be re-committed. Some strategic initiatives are underway but their progress has been slow. Meanwhile, resource constraints and changing government priorities have resulted in much-reduced direct provincial participation in habitat restoration programs.

The shared responsibility for salmon and their habitat between the federal and provincial governments has led to the creation of a mosaic of agreements and protocols. None of these has substantially clarified roles. Instead the result is awkward arrangements and working relationships between the two levels of government. Lack of agreement over basic principles and objectives has created tension at the operational level.

Concerning the impact of aquaculture operations on wild salmon, the Province does recognize there are some risks to wild salmon and has initiated a number of practices to reduce the known risks. However, additional research and studies are needed before the interactions between wild salmon stocks and aquaculture operations (particularly interactions that affect health and disease), can be better understood and managed.



## Background






### British Columbia is home to five species of wild Pacific salmon

Five species of wild salmon are found in British Columbia: chinook, chum, coho, pink and sockeye (Exhibit 1). Each species has broad distribution throughout the province. Pink, chum and sockeye are considered the most abundant species while coho and chinook are under pressure.

#### Exhibit 1

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#### The species of wild Pacific salmon found in British Columbia

Common Name	Market Name	Scientific Name
 Chinook salmon	Chinook, spring, king	Oncorhynchus tshawytscha
 Chum salmon	Chum, dog, keta, silver-bright	Oncorhynchus keta
 Coho salmon	Coho, silver	Oncorhynchus kisutch
 Pink salmon	Pink, humpbacks	Oncorhynchus gorbuscha
 Sockeye salmon	Sockeye, reds, red salmon	Oncorhynchus nerka

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Source: British Columbia Salmon Marketing Council

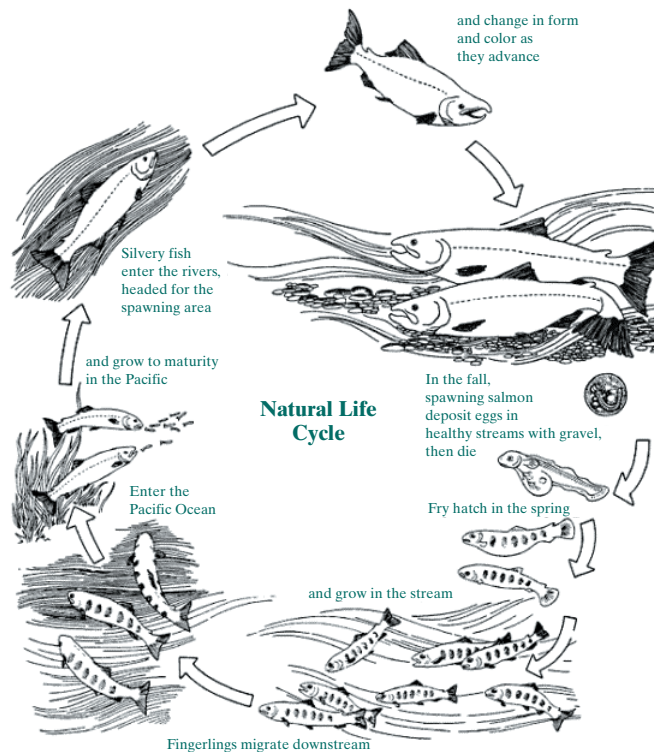
# Background

A salmon's life cycle takes it through many stages and ecosystems—from creeks and streams, to estuaries, the ocean and back again. Salmon are anadromous fish, which means they spend most of their adult lives in the ocean, but spawn, are born and reared in freshwater (Exhibit 2).

Wild salmon require a number of aquatic and biological conditions to be met for them to successfully rear, migrate and spawn. These conditions include clean and well-oxygenated freshwater at proper temperatures; high quality habitat; an adequate supply of food, shade and instream material to help salmon mature and avoid predators; and unimpeded access to and from freshwater. Sustaining wild salmon therefore requires, amongst many factors, healthy and functioning watersheds and ecosystems. Exhibit 3 highlights the biological characteristics and habitat requirements for the five species of wild salmon found in British Columbia.

## Exhibit 2

### Wild salmon life cycle and food web



Source: Department of Fish and Wildlife, Washington State, U.S.A.

## Background

### The status of wild Pacific salmon

While recent reports of improved returns of some salmon stocks are encouraging, the results are variable across the province. Optimism must also be tempered by the limited stock and assessment information for many British Columbia river and lake systems.

Our knowledge on the status of wild Pacific salmon stocks in British Columbia is incomplete. The best estimates to date (from a 1996 study conducted by four Canadian fisheries scientists for the North Pacific Chapter of the American Fisheries Society), put the number of runs throughout the province at over 9,000, with the five main species (chinook, chum, coho, pink and sockeye)

### Exhibit 3

#### Life cycle and habitat requirements of wild Pacific salmon in British Columbia

Species	Life Cycle (Years)	Size Max. (Kilos)	Life Cycle in Rearing Habitat (Months)	Life Cycle (Months)	Life Cycle (Weeks)	Types of Freshwater Habitat Requirements for Salmon Spawning/Rearing	Abundance Ranking
Chinook	3–7	45	3–24	24–60	2–20	large river systems/ streams and estuaries	4 <sup>th</sup>
Chum	3–5	21	1–6	21–55	2–12	moderate-size streams/ estuaries and rivers	2 <sup>nd</sup>
Coho	3–5	11	12–21	18	2–12	creeks and tributaries/ streams and side channels	5 <sup>th</sup>
Pink	2	5	1–4	18	4–6	short coastal streams/estuaries	1 <sup>st</sup>
Sockeye	4–5	6	4–36	12–48	4–32	lakes and river tributaries	3 <sup>rd</sup>

Source: Pacific Fisheries Resource Conservation Council (2001) and C. Groot and L. Margolis (1991)

## Background

### West Coast Vancouver Island Coho Salmon as an Indicator Stock

There are two wild coho indicator stocks on the west coast of Vancouver Island (WCVI) region: Carnation Creek near Bamfield and Kirby Creek near Sooke. There may be as many as 700 distinct coho populations in the WCVI region. Of the approximately 200 that have reported escapement, about 50% have populations averaging fewer than 85 returning fish, while the average escapement is about 200. Only the Somass and San Juan rivers have escapements exceeding 5,000 fish. Annual fry and adult salmon surveys have been conducted on 30-40 WCVI streams since 1995, to compare abundance in non-indicator systems. Conservation concerns forced the coho fishery to close in 1996. Today, openings for wild coho are rare in the southern portion of British Columbia.

totalling approximately 8,100. A comprehensive inventory has never been conducted of these runs. Many factors make doing this a challenge, including the cyclical nature of marine conditions, the remoteness of spawning areas and the use of artificial propagation and hatcheries that can mask the health of wild populations.

In the absence of comprehensive data, scientists use indicator stocks to gauge the status of individual salmon species and runs. Indicator stocks are species of fish in a given geographic region that is monitored over time to determine its stability in that region compared to the overall health of the particular species elsewhere in the province (see sidebar). Indicator stocks typically consist of large, commercially significant runs. Information on stock status in smaller watercourses is generally not readily available, particularly for those water bodies north of Vancouver Island.

Overall, from a regional perspective, stocks in northern British Columbia are generally considered to be healthy, stocks in the central coast region are experiencing some fishing and habitat pressures, and stocks in the southern region are under pressure. Salmon runs recently designated as endangered by the Committee on the Status of Endangered Wildlife in Canada include the Interior Thompson River coho, the Cultus Lake sockeye and the Sakinaw Lake sockeye. Recovery plans for these stocks are being developed by multi-stakeholder recovery teams.

## How wild pacific salmon are being impacted

Wild salmon face many types of risks. Over-fishing, degradation or loss of habitat, water withdrawals, land and marine-based development activities, and natural events all threaten stocks. Most impacts are associated with economic development activities that directly affect a wide range of land use processes and functions integral to maintaining salmon habitat – and many of these effects can be permanent.

Exhibit 4 lists the main types of land use and development activities that are having an environmental impact on salmon and their habitat.

## Background

### Successfully sustaining wild salmon requires the province's active participation

The Canada Constitution Act grants the federal government direct management responsibilities over wild salmon and the senior statutory authority for the protection of their habitat. The Department of Fisheries and Oceans Canada (DFO), under the auspices of the federal Fisheries Act, is responsible for managing all areas of wild salmon life cycle functions, including allocation,

#### Exhibit 4

#### Environmental impacts affecting wild salmon and their habitat, by type of activity

Types of Impacts	Types of Activities				
	Agriculture	Forestry	Urbanization	Water impoundments	Finfish fish aquaculture
Changes in channel morphology	✓	✓	✓	✓	
Changes in water flow, quality	✓	✓	✓	✓	✓
Channelization	✓		✓		
Flooding of watersheds				✓	
Impediments to fish migration	✓	✓	✓	✓	✓
Increased erosion processes	✓	✓	✓	✓	
Increased water torrents		✓	✓	✓	
Introduction of chemicals, waste	✓	✓	✓		✓
Loss of organic debris, food supply	✓	✓	✓	✓	✓
Loss of riparian areas	✓	✓	✓	✓	
Loss of wetland areas	✓		✓	✓	
Loss of estuarine areas	✓	✓			
Transfer of diseases					✓
Excessive withdrawal of water	✓			✓	
Reduced instream habitat availability	✓	✓	✓	✓	
Removal of forest cover	✓	✓	✓	✓	

Source: Compiled by the Office of the Auditor General of British Columbia

## Background

inventories, escapement, habitat management, protection and restoration. Enacted over 130 years ago, the Act's primary protection requirements for fish are found in sections 35 and 36, which address the prohibition against "harmful alteration, disruption or destruction to fish habitat" (commonly referred to as HADD), and against the discharge of prohibited substances into the fresh-water or marine environment.

For its part, the provincial government has the constitutional right of ownership for Crown lands. This authorizes it to use and manage the development of its lands and resources, as well as components of inland freshwater fish habitat. Actions the Province takes can therefore have consequences for wild salmon. The Province participates in the day-to-day management of wild salmon issues through legislation and regulations that govern land use and resources development activities. Forestry has historically had the most direct impact on salmon habitat, but other forms of land use also contribute to habitat loss. These include urbanization, water impoundments, agriculture, mining, foreshore and linear development such as roads, highways, and pipelines.

There are a number of reasons the Province needs to participate in the management of wild salmon:

**To meet its legal responsibilities:** The federal and British Columbia governments have signed many agreements with implications for wild salmon, farmed salmon, fish and fish habitat management. The Province has obligations under these agreements. Under the Accord for the Protection of Species at Risk, the Province has agreed to participate in recovery efforts. As a responsible landowner and user, the Province must exercise reasonable care to manage fish habitat and minimize potential impacts to wild salmon.

**To maintain socio-economic values:** Wild salmon have an important economic value in the British Columbia economy. In 2002, they contributed over \$607 million through recreational fishing and commercial landings. Wild salmon are highly sought-after recreational fish species in British Columbia (particularly chinook and coho) and account for approximately 3,590 person-years of employment. Commercial fishing for wild salmon accounts for approximately 950 person years of employment. Meanwhile, salmon

## Background

aquaculture generated \$289 million in sales in 2002, employing directly and indirectly approximately 4,700 people. Declining salmon stocks have affected families, coastal communities and the province as a whole. In the 1990s, the turmoil of job and income losses in 15 coastal communities has been well documented in reports written by the British Columbia Job Protection Commissioner. The potential listings of anadromous fish species under the federal Species at Risk Act is one of the more pressing issues the Province faces, particularly in heavily populated areas such as the Fraser River Basin where the Cultus Lake sockeye has been listed by COSEWIC.

**To exercise environmental stewardship:** The Province is responsible for being a good steward over all public lands, and this means effectively managing development activities that impact freshwater fish habitat. Wild salmon cannot carry out their life functions without access to freshwater habitat managed under provincial jurisdiction. In its New Era commitments, the government committed to developing a Living Rivers Act to protect and improve British Columbia's river systems, using scientifically based standards for watershed management, enhancements to fish habitat and a 10-year program to correct past damage. In its service plan, the B.C. Ministry of Water, Land and Air Protection has stated that one of its stewardship goals is to "maintain and restore the ecological diversity of fish and wildlife species and their habitats."

**To demonstrate sustainability:** Eco-labelling, or eco-certification, is gaining recognition and importance as a marketing tool for selling a variety of natural resource commodities within Canada and into foreign markets. Wild salmon is now being sold as an eco-certified product in some countries. The Province, through the B.C. Wild Salmon Marketing Council, is currently seeking certification under the Marine Stewardship Council designation to sell its product into foreign markets. Demonstrating that viable wild salmon stocks exist will be important to receiving Marine Stewardship Council certification.

**To protect the public interest:** The current government has stated that, to meet its overall vision of a prosperous and just province, it must provide citizens with a strong and vibrant provincial economy, a supportive social fabric, safe, healthy communities and a sustainable environment. Wild salmon have long been a

## Background

symbol of British Columbia's history, cultural identity and natural landscape. They are an important natural resource of high nutritional value as well as cultural and spiritual value to First Nations people. They are also vital to the sport and commercial fishing industries that support businesses, create jobs and provide recreational enjoyment for a significant number of British Columbians and visitors. The state of wild salmon is a reflection on the health of our environment in general, so sustaining them is an important demonstration that the government is delivering on its commitments to protect the public interest.





## Management of shared responsibilities for wild salmon needs to be guided by a clear vision

Managing any natural resource sustainably requires a clear vision of intended outcomes, a practical strategy for achieving that vision, and strong, effective leadership to make it all happen. This is no less the case in managing wild salmon stocks in British Columbia, but the situation is complicated by the joint responsibilities and dual efforts of the federal and provincial governments.

Sustaining wild salmon requires a vision be in place to reflect the Province's aspirations and intentions regarding wild salmon. Articulating and acting upon this vision requires clearly stated principles, goals and objectives around issues such as ecosystem integrity, conservation of fish stocks, government and community partnerships, and long-term monitoring and accountability.

In this audit we concluded that the Province does not have a clear vision in place to protect and/or restore salmon habitat, or to guide and support policy and program development for maintaining wild salmon and their habitat. Strong leadership is lacking and there is no central coordination body to oversee provincial activities. More importantly, at the time of our audit, there was limited active engagement with federal decision makers concerning inter-jurisdictional issues. As a result, the exchange of technical information, experiences and coordination at the federal-provincial level, is weak.

In the United States, managing wild salmon issues is a legislated requirement, complete with set timelines and funding authorizations for a range of management activities at both the federal and state levels (see sidebar). A similar long-term commitment has not been made in British Columbia. An overarching vision to guide wild salmon management activities existed throughout the 1990s and early 2000s in the province. It focussed on the principles of conservation, shared responsibility, accountability, and opportunities for economic development. These principles were developed to complement similar management activities being undertaken by the federal government.

# The Provincial Vision and Strategy for Wild Salmon

## Washington State's Salmon Recovery Office

In 1998, the Washington State legislature passed the Salmon Recovery Planning Act to meet its obligations under the federal Endangered Species Act to recover wild salmon and their habitat. Later that year, the Governor's Salmon Recovery Office was created and given the task of coordinating the publication of a biennial report on the state of salmon recovery efforts in the State. In support of the biennial report, three documents were written as a first step to better explain the status of wild stocks and to set some targets for recovery efforts. Those efforts include: a state-wide strategy to recover salmon, a state agencies action plan, and a salmon recovery performance management system scorecard.

More than 800 government jurisdictions and agencies play some part in salmon recovery efforts in Washington State. Among them are:

- 2 countries, 6 states, and 28 First Nations;
- at the federal level, 6 departments, some with more than one branch involved;
- at the state level, 14 agencies; and
- at the local level, 39 counties, 277 cities, 44 sewer districts, 125 water districts, 36 irrigation districts, 32 public utility districts, 14 port districts, 48 conservation districts, and 170 municipal water suppliers.

Approximately \$266 million was allocated for recovery efforts during the 2001–2003 period to address a variety of issues, including regulatory reform, data collection, inventory development and restoration activities. Management responsibilities for salmon inside 3 miles of the coast in the USA have been delegated to the State governments.

Given the strong federal presence in managing wild salmon issues in Canada and the Province's constitutional authority over Crown land and resources, federal-provincial cooperation is essential to ensure wild salmon stocks continue to flourish along British Columbia's Pacific coast. While the federal government is attempting to develop a policy for managing wild salmon, it has not yet clearly articulated that policy. This, together with the lack of a clear provincial vision, suggests a more formal federal-provincial arrangement is needed—one that marries both governments' efforts into one common approach. Such an arrangement needs to outline a unified vision of wild salmon management in British Columbia to provide public policy direction about acceptable risk levels to salmon habitat and loss of salmon runs. This arrangement should also spell out how both levels of government will handle issues of accountability, reducing duplication, long-term monitoring, and the benchmarking and measurement of proposed activities, successes and failures.

# The Provincial Vision and Strategy for Wild Salmon

## Recommendation

**We recommend that the Province, in conjunction with the Department of Fisheries and Oceans Canada, develop a clear vision, with goals and objectives, for sustaining wild salmon and provide public policy direction about what is an acceptable risk to salmon habitat and what is an acceptable loss of salmon runs.**

## A common strategy is needed

The federal government is seen as having the primary responsibility over wild salmon, yet co-management of the resource has occurred through several agreements with the Province. Having two levels of government involved in managing a variety of habitat protection and restoration activities has created difficulties. Despite a history of shared management, a number of barriers to performance have continued to hamper federal and provincial interactions concerning wild salmon:

1. Both governments need to service their respective interests.
2. No formal, long-term commitment has been made to resource programs to meet responsibilities or objectives. Financial resource commitments tend to ebb and flow over time. Currently the cyclical nature of resources is on the ebb.
3. The parties are often unable to address polarized views and issues surrounding habitat protection and restoration. For example, although the federal government is beginning to accept the precautionary principle and has stated a No Net Loss policy for fish habitat, the provincial government has not.
4. The scale and grouping of objectives, timelines, financial resources and ability of decision-makers to make programs effective are often impeded by changes in organizational structures.
5. Gaps in scientific knowledge and lack of control over biological variables (such as ocean conditions and ocean survival of stocks) pose constant challenges to management regimes.

## The Provincial Vision and Strategy for Wild Salmon

The inability of the Province to overcome these obstacles has resulted in lack of both a provincial strategy for ministries and agencies to follow, and a common strategy to guide federal-provincial efforts in managing wild salmon issues at an inter-jurisdictional level. The initiatives that do exist are at a very early stage of development.

In the absence of a specific provincial strategy, we examined how government ministries and agencies were directing their efforts to manage habitat requirements for wild salmon. We expected organizations involved with freshwater fish issues to at least have clear plans in place, with policies to guide their programs.

Instead, we found that the shift to the new results-based management approach has resulted in previous policies and strategies pertaining to fish management—and especially wild salmon—are being replaced by new models intended to produce enhanced outcomes. For example, the Province is shifting its strategic approach of managing species from an individual basis to one where biodiversity is managed at a watershed or regional level. The new approach being proposed to integrate land and resource management plans does not provide specific reference to wild salmon, although some have suggested that in light of their special status in British Columbia this attention may be warranted.

Of the strategies and frameworks being developed, we found that some incorporated elements that affect wild salmon: the Living Rivers Strategy, Watershed-based Fish Sustainability Planning Framework, Biodiversity Strategy and Species at Risk Strategy. All of these were at an early stage of development. While these broad scope initiatives get started, we think the Province should consider the special status of wild salmon and articulate a formal strategy specific to their habitat requirements that complements federal initiatives.

### Recommendation

**We recommend that the Province develop, in conjunction with the Department of Fisheries and Oceans Canada, an overarching strategy to manage for wild salmon sustainability.**

## The Provincial Vision and Strategy for Wild Salmon



Courtesy of the B.C. Ministry of Forests

*Spawning sockeye being counted at a fish fence*

### Clear leadership is essential to coordinate the effective management of complex resource sustainability plans

Clear leadership needs to exist if complex resource and sustainability strategies are to be effectively coordinated and managed. However, we found that an absence of strong leadership and advocacy presents provincial decision-makers with a challenging proposition to ensure salmon stocks and their habitat do not continue to be lost in British Columbia.

Exhibit 5 shows the six provincial organizations that play a role and have responsibilities in managing fish and fish habitat programs.

The two ministries most directly involved in managing wild salmon issues are the Ministries of Agriculture, Food and Fisheries and Water, Land and Air Protection. Each is responsible for taking a lead role in heading up discussions with the federal government on particular topics. The Ministry of Agriculture, Food and Fisheries is responsible for matters of an inter-provincial and economic nature, including negotiating agreements, issuing licences for salmon aquaculture facilities, and advocating the

# The Provincial Vision and Strategy for Wild Salmon

## Exhibit 5

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### Key provincial organizations with a role in managing wild salmon issues in British Columbia

#### Ministries

- The Ministry of Agriculture, Food and Fisheries (MAFF) issues operating licences for marine finfish aquaculture facilities under the provincial Fisheries Act. Most of the activities administered by MAFF are in place to protect against the interaction between farmed and wild fish, including management plans, escape plans and fish health plans. The ministry is the lead provincial agency on all inter-governmental wild salmon issues and also regulates fish processing facilities.
- The Ministry of Forests (MoF) is responsible for issuing logging, grazing and range use permits under the Forest Practices Code of British Columbia. Act and the new Forest and Range Practices Act. These acts identify results-based standards for environmental protection that licensees must meet, including, for example, those addressing riparian zone management, water quality, fish habitat identification, slope stabilization and road building. The ministry also provides funding for certain types of fish habitat restoration activities through the Forest Investment Account.
- The Ministry of Sustainable Resource Management (SRM) administers the Land Act, the Water Act, the Fish Protection Act (except for section 12), and is responsible for collecting data on the impacts to fish habitat. A part of its mandate over Crown land disposition and land use administration. The ministry is also responsible for developing government-wide land and water databases, data methodology standards, collection, assessment and storage related tools and activities. It prepares high-level land and resource management plans, sub-regional coastal plans and aquaculture opportunity studies to identify suitable regional aquaculture areas. As well, it has developed a set of sustainability principles for use in land and resource management decision-making.
- The Ministry of Water, Land and Air Protection (WLAP) regulates the environmental impacts of various land-based development activities that affect wild salmon. These legislative tools include the Ecological Reserve Act, Environmental Management Act, Parks Act, Water Act, Wildlife Act, Finfish Aquaculture Waste Control Regulation and Water Regulation. The ministry is also responsible for section 12 of the Fish Protection Act and the related Streamside Protection Regulation (recently amended to Riparian Areas Regulation) that authorizes the Province to establish policy directives regarding the protection and enhancement of riparian areas that may be subject to residential, commercial or industrial development. The Habitat Conservation Trust Fund also falls under WLAP's administration.

#### Agencies

- B.C. Hydro and Power Authority (B.C. Hydro) participates in managing fish and fish-habitat-related issues through its use of water to generate hydroelectricity. Under the auspices of the water use planning process and compensation programs required under their water licences, B.C. Hydro undertakes a range of activities related to instream flows, water quality, habitat integrity and habitat monitoring.
- Land and Water B.C. Inc. (LWBC) participates in managing impacts to wild salmon largely through its responsibilities for issuing tenures for water licenses and marine finfish facilities. The Land and Water Operations Division oversees water allocation licensing for industrial, commercial and residential uses, while the Aquaculture Development Branch issues tenures for aquaculture operations and acts as the information and document collection and distribution coordinator for the finfish aquaculture facilities approval process. As the operating arm of SRM, LWBC administers over 200 land use permitting functions, many which impact fish habitat.

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Source: Compiled by the Office of the Auditor General of British Columbia, 2004



## The Provincial Vision and Strategy for Wild Salmon

economic benefits of this renewable resource. The Ministry of Water, Land and Air Protection is responsible for managing freshwater fish habitat, as well as waste management issues associated with finfish aquaculture facilities that may impact wild salmon.

The Province has not given these lead organizations clear policy direction for setting provincial goals or objectives around the habitat requirements of wild salmon. Some program personnel noted that a lack of policy direction was creating additional bureaucratic layers as illustrated by the many decision-makers involved in the relocation of salmon farms.

With several organizations involved in managing issues that impact wild salmon, but no one ministry taking a lead role, there has been a proliferation of inter-agency and intra-agency memoranda and service agreements to coordinate activities or assign responsibilities and service levels. For example, the Ministry of Agriculture, Food and Fisheries maintains a database of many agreements, including those with implications for wild salmon, farmed salmon, fish and/or fish habitat.

These memoranda and service agreements specify organizational capacity, responsibilities, duties and, in some cases, dispute resolution processes as a method to coordinate issues and address concerns raised by various ministries and agencies over a wide range of topics. Informal exchange of information by staff through personal communications is also a common method of problem solving.

We found no committee, however, specifically established to deal with wild salmon issues on a regular basis or to coordinate the work of other parties in a comprehensive way. However, there are many committees dealing in some way with fish habitat, salmon aquaculture issues, and fish information management, data collection and quality assurance. Some of these committees have either been discontinued, or are not meeting due to resource constraints and other priorities.

With a framework of so many committees operating at any given time, we concluded that there is uncertainty among all the players over which agreement or committee bears what responsibility. As a result it is unlikely that the actual work

# The Provincial Vision and Strategy for Wild Salmon

commitments or goals relevant to wild salmon sustainability are being accomplished in an efficient and effective manner.

## Recommendation

**We recommend that the Province identify a lead provincial agency to coordinate efforts for sustaining wild salmon and rationalize the committee structures.**

