



OFFICE OF THE
Auditor General
of British Columbia

**Salmon Forever:
An Assessment
of the Provincial Role
in Sustaining Wild Salmon**

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Salmon Forever: An Assessment of the Provincial Role in Sustaining Wild Salmon

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The Honourable Claude Richmond
Speaker of the Legislative Assembly
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Dear Sir:

I have the honour to transmit herewith to the Legislative Assembly of British Columbia my 2004/2005 Report 5: Salmon Forever: An Assessment of the Provincial Role in Sustaining Wild Salmon.

Wayne Strelieff

Wayne Strelieff, FCA
Auditor General

Victoria, British Columbia
October 2004

copy: Mr. E. George MacMinn, Q.C.
Clerk of the Legislative Assembly

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Foreword

To Canadians, salmon represents strong and deep ties to our heritage. Salmon has sustained families and communities for generations and has contributed significantly to the economies of British Columbia and the Maritime provinces. Salmon is also a key part of the recreational sports fishing industry on both coasts. Canada is the fourth largest farmed salmon producer in the world; salmon aquaculture provides substantial economic benefits for coastal and rural communities.

In recent years, however, salmon stocks on both the east and the west coasts have been under intense pressure, and Atlantic salmon commercial fisheries in the Maritime provinces have been closed for many years to safeguard the resource. There has been considerable discussion of the effects of salmon aquaculture on wild salmon and the marine environment, including opposition to net-pen salmon farming operations from environmental groups and negative media coverage.

The Auditors General of Canada, British Columbia and New Brunswick are tabling separate reports to their respective legislatures on salmon-related issues. Between 1997 and 2000, the Auditor General of Canada conducted three audits that focussed on Pacific salmon, and this year it completed a follow-up of these audits in collaboration with the two provincial audit offices. The Auditor General of British Columbia examined the provincial government's role in sustaining wild salmon, and the Auditor General of New Brunswick looked at salmon aquaculture in that province.

Fisheries and Oceans Canada is responsible for ensuring that salmon and their habitat are protected, and it is the lead federal agency for aquaculture development. The provincial governments in British Columbia and New Brunswick have strongly supported the development of aquaculture in their provinces. In British Columbia, various provincial departments are responsible for managing lands and natural resources in ways that sustain wild salmon.

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Our three audits were performed concurrently; our offices participated jointly in certain audit-related processes and shared information on a regular basis. As a result, we were able to accomplish more with less duplication of effort and achieve a broader view and understanding of the issues.

Wild salmon and their habitat

The purpose of policy is to provide a broad framework for a shared vision to guide decisions and activities. Canada's policy on salmon and salmon aquaculture should set clear objectives for managing both wild and farmed salmon and the interactions between them. At the federal level, Fisheries and Oceans Canada has been struggling since 2000 to finalize a wild salmon policy designed to conserve the genetic diversity of wild salmon and protect their habitat. Stakeholders have called for the policy to be finalized to clarify how conservation should be implemented and how fisheries should be managed. At the provincial level, British Columbia does not have a clear vision and an overarching strategy for wild salmon sustainability.

Two of our three audits noted gaps in policy implementation. Fisheries and Oceans Canada, for example, has never reported on the status of fish habitat conservation in Canada or assessed the effectiveness of its Habitat Policy. These continue to be significant challenges for the Department. Similarly, reporting by provincial ministries and agencies in British Columbia on performance relating to sustaining wild salmon is weak.

Salmon aquaculture

All three audits identified gaps in coordination between the federal and provincial governments. Despite numerous committees, agreements, and protocols between the two provinces and the federal government, problems still exist. For example, there are concerns about how long it takes to secure approvals for aquaculture sites, a key aspect of regulating salmon aquaculture.

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The three audits also found significant gaps in the scientific knowledge about the potential effects of salmon aquaculture. Fisheries and Oceans Canada's Aquaculture Policy Framework expresses a strong commitment to developing a sustainable aquaculture industry in Canada. But when assessing applications for aquaculture sites, the Department needs to apply more credible, science-based criteria to ensure that approved sites are properly located. It has had difficulty assessing the cumulative effects of salmon aquaculture on wild salmon stocks. And it has to determine how to control the deposit of deleterious substances by salmon aquaculture operations. Wild salmon and habitat remain susceptible to the effects of salmon aquaculture.

In New Brunswick, auditors found that stakeholders have yet to share a common vision of sustainable aquaculture. Therefore the Province lacks a comprehensive strategy for aquaculture development and the management of significant risks. In addition, there are deficiencies in both the monitoring of aquaculture activities and the enforcement of compliance. For example, the provincial government does not adequately monitor aquaculture producers' compliance with the terms of their leases and aquaculture licences. Unlike British Columbia, New Brunswick does not monitor escapes from salmon cages, nor does it require that escapes be reported.

The Salmon Aquaculture Policy Framework of the Province of British Columbia calls for relocating a number of sites that are poorly located and implementing new siting criteria, but key issues remain undecided. British Columbia's guidelines, and siting decisions made in New Brunswick, are based on scientific information that is less than complete.

Need for prompt, concerted action

Concerns about salmon and salmon aquaculture are not new, and neither are attempts to improve the state of the resource and its habitat. But progress has been slow. In the meantime, some salmon populations are in trouble, habitat loss continues to occur, and it is not known what long-term effects salmon aquaculture is likely to have on the natural resource or the environment.

Foreword

Prompt, concerted action is required if the salmon fisheries and salmon aquaculture are to be sustainable. It is also imperative that more than a single level of government be involved in the solution. The collaboration of a variety of agencies within each government and between governments is essential. We urge our respective governments to take immediate action on these important issues.



Sheila Fraser, FCA
Auditor General of Canada



Johanne Gélinas,
Commissioner of the Environment
and Sustainable Development



Wayne Strelieff, FCA
Auditor General of British Columbia



Daryl Wilson, FCA
Auditor General of New Brunswick

Foreword

The chapter “Fisheries and Oceans Canada—Salmon Stocks, Habitat, and Aquaculture” is available on the Office of the Auditor General of Canada Web site (www.oag-bvg.gc.ca). For copies, contact

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Auditor General's Comments



Wayne Strelloff, FCA
Auditor General

British Columbia is one of the few remaining locations in the world to support relatively large numbers of wild salmon stocks. Distributed along British Columbia's entire Pacific coastline, wild salmon have had a profound impact on our history, culture and economy and continue to contribute significant social, economic and cultural benefits. For our First Nations people, salmon remain a primary food source.

Over the last several decades, the long-term sustainability of wild salmon in British Columbia has come into question. Intense debate and conflict over management approaches run in tandem with fluctuations in wild salmon populations and their decline as a fisheries resource. These fluctuations are influenced by the natural variation in ocean conditions, harvesting levels and freshwater habitat quality. The health of freshwater habitat can be impacted by various human activities, such as forestry, water use, urbanization and agriculture. While some runs have increased in abundance in recent years, it is virtually certain that wild salmon will continue to be stressed in the future. Indeed, some experts suggest that the depleted state of wild salmon on the Atlantic coasts of Europe and North America stands as a warning for managers of wild Pacific salmon.

Unlike most natural resources, the management of wild salmon and their habitat is complicated by a unique shared administrative setting. Through Fisheries and Oceans Canada (DFO), federal laws and programs exist to manage issues related to harvesting, the setting of quotas, and habitat protection. At the same time, the provincial government, through a number of ministries, administers the land and resource management functions that can affect wild salmon in their freshwater environment. Sharing these responsibilities has evolved into a complex arrangement between both the two levels of government. Meanwhile, the provincial government has been adjusting its programs and business practices to reflect budget and resources constraints.

I carried out this audit to assess how effectively the Province is managing its responsibilities to sustain wild salmon in British Columbia. I had several reasons for doing this. With a number of new strategies being proposed by the Province for a variety of natural resource and environmental issues, ensuring wild salmon are properly managed is important to British Columbians.

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The Province has also wound down a number of program areas established to maintain and restore salmon habitat. The challenge for British Columbia is balancing sustainability goals with social, economic and environmental well-being. And with the recent designation of three salmon species as endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and consideration for listing under the federal Species at Risk Act, the challenge has become even greater. The increasing debate over salmon aquaculture and the interaction between farmed and wild salmon has also focussed more attention on the state of wild salmon. Finally, I carried out this audit because I think legislators and the public need to have a better understanding of how effectively the Province is managing its responsibilities to sustain wild salmon in British Columbia.

This examination was carried out in coordination with the federal Auditor General and the Auditor General of New Brunswick to provide a more complete understanding of the complexity of issues associated with the protection of wild salmon in Canada. Specifically, we examined British Columbia's programs for protecting and restoring salmon habitat, and for preventing and mitigating potential impacts of salmon aquaculture on wild salmon stocks.

The findings of the audit concern me. British Columbia's ability to ensure sustainability of wild salmon is handicapped by the lack of a clear vision. While both levels of government appreciate their shared responsibility, their efforts have been weakened by their inability to overcome differing views and come up with a common strategy for wild salmon management. Progress in mitigating the risks associated with farmed and wild salmon interaction is evident. However, uncertainty for the future has been increased as a result of delays in implementing legislation beneficial to wild salmon protection, changing government business practices related to resource management, persistent gaps in information and knowledge, and lack of public accountability reports.

The foundation of a good wild salmon sustainability framework is a vision of sustainable development. From there, the framework must set out policies and programs having clear goals, clear leadership roles and responsibilities of provincial organizations involved, current and accurate inventory information, and a

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mechanism to coordinate and measure progress. The framework should culminate in a process for open and transparent reporting of performance to legislators and the public. Our key findings are summarized below.

Key Findings

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

The Province's participation in the management of wild salmon issues has diminished over the last few years. Commitments made through the 1997 Canada-British Columbia Agreement on the Management of Pacific Salmon Fishery Issues and the 2000 Canada-British Columbia Fish Habitat Management Agreement have received less priority. Most program personnel believe that the Province has no direct role or responsibilities to manage wild salmon and their habitat. The provincial focus has always been on freshwater fish and freshwater habitats with salmon considerations taken into account. As a result, the onus for managing wild salmon rests with the Department of Fisheries and Oceans Canada. Moreover, because of the anadromous characteristics of wild salmon, to enhance effectiveness and efficiency of government actions, a clear vision and an overarching integrated federal-provincial strategy, outlining goals, objectives and performance measures for both levels of government, is warranted to address requirements to sustain wild salmon.

The Province needs to be more active in protecting and restoring fish habitat

The government's commitment to establish a Living Rivers Act, develop a 10-year program to restore fish habitat and implement a Living Rivers Strategy has shifted. The benefits of past protection and restoration activities are not well understood because there has been only limited evaluation of their effectiveness. The government's results-based shared stewardship model is placing greater responsibility on stake-holders to prevent, mitigate and monitor impacts to fish habitat, yet there are limited resources being committed to these initiatives. Experience in other jurisdictions illustrates that proactive government participation is essential for ensuring habitat conditions are in place for wild salmon to carry out their life functions. Without an effectiveness evaluation framework in place, however, it will be difficult for

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government to establish a science-based approach to assess the outcomes, and to enable ongoing improvement conducive to an adaptive management approach. Knowledge, information and accountability reporting ought to be improved.

Potential impacts of aquaculture are being addressed, but more knowledge is required to improve management practices

The Province has made considerable progress over the last decade by putting in place the conditions necessary to foster a sustainable salmon aquaculture industry. Efforts to establish a regulatory framework with accountabilities over waste management, escape prevention, fish health and compliance and enforcement have largely been accomplished. Still, there are gaps and uncertainty in knowledge about the interactions between salmon aquaculture and wild salmon, particularly around topics such as disease transfer, the ability of farmed Pacific salmon to interbreed with wild Pacific salmon, the colonization capabilities of farmed Atlantic salmon, and the cumulative impacts of salmon aquaculture. Ongoing research is needed in these areas to ensure that salmon aquaculture does not pose an unacceptable risk to wild salmon and the environment.

My Recommendations

To effectively manage its responsibilities to sustain wild salmon, I 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**
- **develop, in conjunction with the Department of Fisheries and Oceans Canada, an overarching strategy to manage for wild salmon sustainability**
- **identify a lead provincial agency to coordinate efforts for sustaining wild salmon and rationalize the committee structures**

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- coordinate a review of how recent legislative changes have effected wild salmon and examine the outcomes of provisions not being put into force
- ensure that initiatives aimed at preventing impacts to salmon habitat incorporate best management practices with measurable indicators and results which are linked to appropriate regulations
- review its compliance and enforcement programs within various resource management agencies to ensure sufficient resources for creating deterrents are maintained, and establish a clear policy and decision framework for identifying and approving escalating compliance and enforcement actions
- ensure provincial agencies work together to develop methodology and indicators to enable periodic assessment of the effectiveness of habitat protection legislative provisions in meeting goals to sustain wild salmon
- institute a program to rank restoration priority, formulate a multi-year restoration program, and determine effectiveness of restoration programs
- through the Ministry of Sustainable Resource Management:
 - determine, in conjunction with related provincial agencies and federal partners, consistent data standards for collecting and storing information, including wild salmon data, and
 - ensure that a program is in place to attest the accuracy, completeness of data and timely accessibility of information for decision makers and users
- assess the resource requirements needed to deal with wild salmon issues
- take steps to resolve the aquaculture siting issues
- pool its research resources with those of relevant federal agencies to more efficiently and effectively address the priority knowledge gaps associated with wild and farm salmon interactions

Auditor General's Comments

- **reassess the statutory time limit and strengthen the penalty provisions in its current aquaculture policy framework**
- **develop a monitoring system and indicators to measure and report out on the overall progress for sustaining wild salmon on a timely basis**

I wish to thank everyone who cooperated with my Office to assist us in gathering the information for this audit. As well, I would like to acknowledge the hard work, professionalism and dedication of my staff in the production of this report.

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