



# Speaking for the salmon

Salmon populations throughout BC, particularly the Interior Fraser coho salmon, are increasingly under threat from many sources...

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While salmon conservation in British Columbia is not a new topic, it is one in desperate need of action. Salmon populations throughout BC, particularly the Interior Fraser coho salmon, are increasingly under threat from many sources, including: climate change; marine and freshwater habitat alteration; increasing water resource use from agriculture, ranching, and industrial activities; urban development; impacts from forestry and the mountain pine beetle epidemic on watersheds and the hydrological cycle; and rapidly increasing run-of-river power plant developments.

These threats and other issues were all discussed at a workshop in Kamloops June 23–24, 2009, which was sponsored by the Centre for Coastal Studies, Simon Fraser University (SFU) ([www.sfu.ca/cstudies/science/coastal.htm](http://www.sfu.ca/cstudies/science/coastal.htm)); the Consortium for Genomic Research on All Salmonids Project, SFU (<http://grasp.mbb.sfu.ca/>); Fisheries and Oceans Canada; Think Salmon; and the Watershed Watch Salmon Society ([www.watershed-watch.org/](http://www.watershed-watch.org/)). Twenty-five participants representing federal agencies, academia, commercial and recreational salmon fisheries, non-government organizations, First Nations, and concerned citizens gathered to analyze and discuss what legislation and policy is doing to protect wild salmon biodiversity in BC.

During the first evening, **Bob Brown** (former Dean of Arts and Professor of Geography, SFU) welcomed all participants and introduced **Dr. Arne Mooers**

(Biological Sciences, SFU). Mooers gave a special presentation on science, policy, and species at risk that served as a great introduction to the event's theme. In his talk, he reviewed the existing regulatory framework from Canada's ratification of the 1992 Rio Convention to the *Species at Risk Act (SARA)*, which is currently under a mandatory 5-year review. Mooers also talked about how the science-based and the policy components of SARA integrate and the roles that the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has and has not played since its inception in 1977. Mooers said there are many socio-economic aspects to legally listing a particular species and that it is necessary to include a cost-benefit analysis (both monetary and non-monetary) in the Regulatory Impact Assessment Statements (RIAS). He also made reference to the interesting results of a paper entitled "Species listing under Canada's Species at Risk Act," recently published in *Conservation Biology* by Finlay et al. (<http://dx.doi.org/10.1111/j.1523-1739.2009.01255.x>)

Mooers remarked that, since its enactment in 2002, SARA has only been fully implemented for one single species (the Banff Springs snail). He discussed the complexity of defining units of biodiversity (other than for a species that might be designated at risk) for providing legal protection under SARA. Mooers elaborated on several science-policy problems, including: 1) cost-benefit analyses on listings are difficult to conduct with just the Status Report from COSEWIC; 2) different organizations have different definitions of terms like "recovery" or "survival"; and 3) critical habitat is difficult to define

continued on page 34...



Interior Fraser Coho. Photo courtesy of The Cariboo Chilcotin Conservation Society ([www.cconserv.org](http://www.cconserv.org))



# Community dialogue reviews legislation

... continued from page 33

at the recovery strategy phase. In view of these issues, Mooers recommended that:

- a full and in-depth Regulatory Impact Assessment Statement should be conducted in the case of a particular species that may be at risk of not being listed (this may require revisiting timelines for listing);
- the Council of Canadian Academies be invited to study how independent, timely science can be fed into the SARA process at and after the listing stage in a more transparent manner; and specifically,
- a committee on the recovery of endangered wildlife in Canada be created, perhaps modelled on COSEWIC.

After Mooers's presentation, a lively discussion took place among the participants about how both the SARA and COSEWIC processes are not being effective enough in achieving and implementing conservation. The issue of political influence in science-based decisions was discussed, as well as the preoccupation of scientists with transparency, peer review, and independence in the SARA process. Another topic of concern was the COSEWIC model and the fact that "water" is not recognized as "critical habitat" for fish species—such recognition is important to achieving effective conservation in the long term. For the particular case of salmon policy, participants recognized that real collaboration among the science, management, and policy interfaces is a key aspect. Participants also identified the meaningful incorporation of First Nations knowledge and values in salmon policies as an area that needs major improvement.

In the first session of the next day, **Mark Saunders** (Department of Fisheries and Oceans [DFO]) presented on COSEWIC and the SARA legislation process in terms of protecting Interior Fraser coho, and provided key insights about the Wild Salmon Policy and its background ([www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/wsp-pss/index-eng.htm](http://www.pac.dfo-mpo.gc.ca/fm-gp/species-especes/salmon-saumon/wsp-pss/index-eng.htm)). Saunders stressed the relevant role that climate change is playing in marine survival and the need to improve the work being done to conserve freshwater habitat. After this presentation, several topics were discussed. Participants identified the current over-licensing of water use and its impact on freshwater habitat as a major issue affecting the Interior Fraser coho and

other salmonids (as one of the participants pointed out, "you can't grow fish in dry streams"), and one that is not being addressed by either the federal or provincial legislation. The agriculture and ranching community are also impacting these water resources, although some in these communities are expressing concerns about decreasing freshwater resources.

Another issue of increasing importance is urban development pressures on water resources. These pressures are having significant impacts on the rearing habitat of salmonids by reducing the available fresh water and by drastically reducing survival rates through elevated water temperatures. Some participants criticized the provincial Living Water Smart BC initiative ([www.livingwatersmart.ca/](http://www.livingwatersmart.ca/)), saying there has been a lack of real implementation, and also noted the inefficiencies of the provincial *Water Act* in addressing fisheries conservation.

Regarding the current status under COSEWIC/SARA, no further action is being taken on Interior Fraser coho. However, DFO is pursuing alternative/complementary action through the Wild Salmon Policy. Participants noted that funding is lacking to address already identified information and knowledge gaps to support a second attempt to list the Interior Fraser coho through SARA. A strong linkage among academia and stakeholder groups is needed to move the agenda on Interior Fraser coho recovery forward. Another obstacle to species recovery in general is the lack of monitoring after a species has been listed under SARA (e.g., under US legislation, monitoring is mandatory after listing). The impacts of deforestation on watersheds and the hydrological cycle were also identified as major areas of concern with more information needed.

During the second session, **Mark Saunders** (DFO) presented on the efforts to conserve the Interior Fraser coho under the current Wild Salmon Policy, which was initiated in June 2005. In particular, Saunders described the seven strategies for implementing the Wild Salmon Policy and the policy's approach to describing conservation units. Saunders offered real insight on the progress to date with habitat and ecological indicators. He remarked there is a need for the DFO to improve internal co-ordination and to collaborate with other agencies to integrate the work of different teams that are all trying to meet the objectives of the Wild Salmon Policy. He also illustrated the complexity of assessing,




# and policy protecting wild salmon biodiversity

monitoring, and incorporating ecosystem indicators. Saunders said it is important to support initiatives like the Collaborative Watershed Governance ([www.waterbucket.ca/wcp/index.asp?type=single&sid=44&id=557](http://www.waterbucket.ca/wcp/index.asp?type=single&sid=44&id=557)) and the Aquatic Monitoring Partnership programs, to implement an integrated planning process, and to incorporate social science expertise in such a planning process.

Discussions on several topics followed Saunderson's presentation. While information and data on salmonid populations and freshwater habitat assessment is available, it is difficult to access this information since there is no repository to effectively pull from all these sources (federal, provincial, and academic). This issue also applies to Traditional Ecological Knowledge, which is recognized to be of major relevance. As a result, valuable existing information/knowledge is not being effectively integrated or, in some cases, integrated at all into ongoing policy processes. New independent power production plant developments are seen as an increasingly important concern that needs to be addressed and incorporated at the strategic level into the Wild Salmon Policy. The Wild Salmon Policy is expected to be fully operational in approximately 5 years, although the development of benchmarks is expected to be completed within 1 year. Funding-wise, the cost of fully launching the Wild Salmon Policy is difficult to estimate and the DFO is planning on partnering with other agencies for financial support.

One source of frustration for First Nations is that DFO and other government policies and management systems do not adequately address legal obligations to provide for First Nations' food, social, and ceremonial needs for salmon. First Nations' interests have to be reconciled with DFO policies and there is a critical need for more meaningful collaboration and integration of First Nations' values. First Nations are trying to re-establish the Inter-Tribal Fishing Treaty between Indian Nations in the Fraser Basin as a collaborative and engaging approach among their people. Another initiative of interest to First Nations is the Salmon Table, whereby recreational and commercial fisheries groups are looking at alternative ways to manage salmon and develop partnerships. The Collaborative Watershed Governance Initiative was showcased as an innovation that is looking at the cumulative impacts on water resources and how to make collaborative decisions at the watershed level. Politicians need to be involved in meetings such as this one to increase their awareness and engagement in salmon conservation issues.

The final session of this meeting focused on the recovery of Interior Fraser coho and the progress made in meeting the conservation target. Participants generally agreed there has been little improvement in the recorded numbers of this species in recent years. Finally, participants agreed that the provincial government needs to be involved in Wild Salmon Policy, and that its involvement to date has been minimal. 

## More Information

For further information on the complex and interesting discussions that took place in this event, please refer to the proceedings of this meeting (available soon at [www.sfu.ca/cstudies/science/coastal.htm](http://www.sfu.ca/cstudies/science/coastal.htm)).