

## 1) Improving Salmon Runs

### *Discussion question:*

- *Increasing salmon available for harvest can be accomplished in at least two main ways: produce more or increase survival/reduce threats. What do you see as the best opportunities to increase salmon available for harvest?*

Increasing salmon runs must be the government's and all salmon fishermen's priority. There are all kinds of potential for the commercial salmon fleet to have a great future if everyone cooperates to increase salmon numbers.

Across the 10 breakout groups, fishermen found six areas that, if addressed, would improve the size and health of salmon runs:

### **Produce more salmon:**

- i. **Salmon Habitat** – Protection, identification, restoration and enhancement.
- ii. **Hatchery production** – Increase production from hatcheries. Especially interesting was Alaska Style Fishermen – Community Regional Salmon Development (RSD).

### **Increase survival/Reduce threats:**

- iii. **Pinniped Populations** – Reduce and ongoing control.
- iv. **Salmon Farms** – Decommissioning marine based salmon farms.
- v. **International interceptions** – US and high seas fisheries.
- vi. **Increased science** – From stock assessment through to habitat research and ocean survivals; from predators through disease and sea lice to ocean feed increased science is needed in all areas.

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### **Produce more salmon:**

- i. **Salmon habitat** – Funding for protection, identification, restoration and data collection needs to be adequate and sustained over the long term and should come from multiple sources, not just the government.

**Protection:** There is a big need to protect the quantity and quality of salmon habitat and water resources. This must apply to small streams and large rivers, wetlands, lakes and estuaries. Salmon habitat should be checked on a regular basis, a log kept and should involve First Nations and local residents as they can best monitor and observe impacts. Protection includes industrial pollution (including agriculture, forestry, mining, pipelines

and shipping), urban impacts, increased water temperature due to dams, road runoff and deforestation. Habitat that supports or could support salmon needs protection and should be first in competing uses.

**Identification:** In order to increase wild salmon populations, there was a general agreement that increased funds should be made available to study B.C. watershed for an evaluation of restoration potential and the potential of increased contribution to commercial salmon fisheries. Impacts from climate change such as altered hydrology and water quality from forest fires and drought and past impacts especially from forestry, other industries, urban development, need to be identified.

**Restoration:** After evaluation, increased and sustained funding needs to be available to restore habitat. First Nations, communities, local residents and other industry workers should be involved in restoration. However, there must be accountability and transparency by the responsible decision makers on priority, project funding, and outcomes.

If the government makes a decision to permit habitat destruction by competing uses, it must be a deliberate decision that is documented and the negative salmon impacts researched and either replaced through habitat development on the system or hatcheries and the spawning requirements adjusted accordingly.

**Enhancement:** Barriers to increased egg deposition and juvenile rearing areas need to be removed where possible to enhance spawner success and the number and health of juveniles. Habitats should be enhanced by such methods as increasing back channels, wetland areas, spawning channels, fish ladders and lake fertilization. The resulting increase in wild salmon from the enhanced habitat should be used to improve salmon fisheries. It was suggested that increases could be split between spawners and harvest, with half of the increase going to extra spawners (to see if we are yet at our optimum spawning escapement) and half to harvest.

- ii. **Hatchery production** – policies to increase salmon hatchery production for harvest by the commercial fishery are essential if the commercial fleet is to survive.

**Hatcheries:** Commercial fishermen support DFO's Salmon Enhancement Program including Community Economic Development Projects and First Nations managed hatcheries, whether rebuilding stocks with conservation concerns or producing salmon for harvest. The last hatcheries were brought on line in the 1980s and hatchery production has since decreased substantially. Commercial fishermen would like to see that trend reversed. In recent years, salmon from Kitimat, Snootli, McLaughlin Bay, Conuma, Nitinat and Barkley Sound hatcheries have provided much of the commercial salmon harvest.

Hatcheries were initially brought in to replace lost habitat and increase fishing opportunities.

**Ocean feed studies:** Hatcheries in Alaska, Russia and Japan have been so successful that some scientists believe that there are too many salmon in the ocean. Other scientists do

not believe that to be true. DFO should work with international fisheries agencies to reach a common opinion.

**Alaska-Style Community-Fishermen regional salmon development (RSD):** Increases salmon production through fishermen-community hatcheries, which produce salmon for all fisheries (FN, com, rec), reduce pressure on wild stocks, contribute financially to the hatchery program and is done in a sustainable and responsible manner.

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**Interesting item from the Alaska Department of Fish and Game:**

Alaska Private-Non Profit Regional Aquaculture Associations (such as NSSRAA, SSRAA and PWSAC) are regional non-profit fishermen-community groups (funded by a self-imposed tax and by a cost-recovery fishery) who release salmon to sea from an area where fishing can happen on returning adults with minimal impacts on wild stocks. The Alaskan government passed special legislation in the 1970s to allow the associations to operate salmon hatcheries to rehabilitate the state's depressed salmon fisheries. Around one-third of Alaska commercial salmon catch at a value of over \$120,000,000 comes from these operations. Hatchery production in Alaska is designed to supplement — not replace — wild stock production. With the introduction of the hatchery program, both wild stocks and commercial salmon harvests have increased in size.

[http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view\\_article&articles\\_id=775](http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=775)  
<http://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

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**Interesting item: Regional salmon development (RSD):**

B.C. Community-Fishermen RSD is supported by most salmon fishermen as long as it acts responsibly. Fishermen recommended that our governments follow Alaska's lead. We do not need to reinvent the wheel, Alaska has had many years to create a very successful program. Alaskan hatchery releases are located in similar places to many of our coastal hatcheries — on short streams in areas where the hatchery surpluses can be fully harvested in commercial fisheries.

Most fishermen were willing to help fund the hatcheries by supporting a policy of hatcheries taking some of the production to cover hatchery costs (cost recovery fisheries) or by direct "royalty-style" payments. Fishermen supported smaller hatcheries releasing a variety of species, spread out coast-wide in areas where mixed stock problems would not occur. Where hatchery infrastructure is not being fully used, fishermen would encourage increased hatchery production that could be released in carefully located remote release sites. Increased hatchery production and remote releases could increase employment in remote communities by contracting nearby First Nations to look after the facilities and juvenile salmon in their area. Unused salmon farm facilities could be used to increase hatchery production.

Community-based regional organizations of all user groups were preferred so that there is broad-based support and salmon are produced for all users (First Nations, sports, commercial). The fish produced would be a common-property fish — in that no one would own the fish privately. Once wild stocks increase in numbers the hatchery releases can be dialled back, if necessary, for biological reasons.

Discussions should take place with First Nations, and commercial communities and recreational fishermen to gather support and to institute a pilot project based on the Alaskan program.

### **Increase survival/Reduce threats:**

- iii. **Pinniped populations** – Science and fishermen’s observations agree that pinniped populations have exploded and seal and sea lion populations coast-wide need to be reduced if salmon, steelhead and fishermen are going to prosper.

**First Nations harvests/Pinniped IFMP:** First Nations harvests for FSC or commercial purposes and a Pinniped IFMP are supported to bring pinnipeds into historical balance. A pinniped harvest should be substantial and a 50 per cent reduction in their population would not be out of order, particularly in estuaries. Pinniped growth is a coast-wide issue, and the reduction should be done in all areas of the coast where they are identified eating juvenile salmon (especially the larger spring, coho, sockeye smolts and steelhead parr) and returning adults. This is not just a salmon predation issue; predation on herring is also an issue as herring are a salmon food source and an important fishery for many salmon fishermen. DFO needs to support both Pacific Balance Marine Management Inc.'s submission of it’s Marine Management Plan and the Pacific Balance Pinniped Society.

There is an increasing body of scientific evidence that shows that without pinniped control, salmon and steelhead will be driven down to such small numbers that they will not support any fisheries. The joint DFO/Provincial Thompson and Chilcotin Recovery Potential Report conclude that a reduction in seal population by 50 per cent is necessary for steelhead recovery.

Although politically unpopular, pinniped control is of immediate importance.

- iv. **Salmon Farms:** The Conference opened with a presentation from Bob Chamberlain about how a coalition of First Nations, commercial fishermen, communities and conservation groups were able to push to change something that almost no-one thought possible.

Fishermen at the conference applauded both the Province and the Federal governments who have now adopted policies decommissioning some marine-based salmon farms — because coalitions backed by good science demanded change. Fishermen agreed that all salmon farms need to be removed from juvenile or adult migration routes and be shore-based or closed containment, well away from any salmon migrating, feeding or rearing areas.

As the commercial salmon and other fisheries improve, processing capacity utilized for farmed fish can be shifted to processing commercially caught fish. Communities can move from relying on farmed salmon as an economic driver to commercial fisheries and hatcheries producing salmon for commercial, First Nations, and recreational fisheries.

More studies are needed to identify threats and ways to increase the salmon survival rates and returns, including ocean feed issues.

- v. **International interceptions:** U.S. and high seas fisheries are increasing their harvests of Canadian salmon.

The US harvests Canadian salmon while Canadian fisheries are closed down on the same runs and, at the same time, Canadian harvests of US-bound salmon are decreasing. A disproportion of aggregate Canadian stocks is harvested in Washington and Alaska. The Pacific Salmon Treaty should be renegotiated to reduce American fisheries on Canadian salmon and to increase Canadian catches of American salmon so that interception equity is established. DFO needs to allow fishing in areas where Canadian fleets can intercept US-bound salmon.

High seas harvests of salmon are increasing. Canada needs to work with other nations to eliminate high seas fisheries that catch salmon and to enforce any existing treaties.

- vi. **Increased Science:** All areas need increased science; it is the overarching theme in how to improve salmon runs.

There needs to be more money invested in water protection, hydrology and habitat restoration priorities and solutions. Increased and sustained funding to hire more charter patrolmen and fisheries guardians for stream walking to do habitat documentation and stock assessment — juvenile and spawner enumerations. Science needs to determine what factors produce great runs on similar water systems and the optimal spawning levels for maximum sustained harvests (maximum sustained value).

A robust system should be set up for each fishery, FSC, commercial, recreational, inland and marine to collect accurate catch data. Data on juvenile success from freshwater to estuary and inshore marine survivals needs to be increased.