Alaskan Salmon Fisheries Sustainability and Eco-certification

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Introduction

This document is intended to provide a summary of sustainability strengths and weaknesses in Alaskan salmon fisheries. We are Canadian and US charity organizations dedicated to the conservation of wild Pacific salmon. We provide this information in the context of our partial objection to the Marine Stewardship Council (MSC) certification of Alaskan salmon fisheries and the need for specific performance issues in certain portions of these fisheries to be addressed though certification conditions. In light of the controversy surrounding the robustness and transparency of alternative seafood certification or labeling systems, our objective is to ensure Alaskan salmon management is evaluated using internationally accepted standards of sustainability that identify sustainability concerns and ensure that necessary improvements are made.

Overview

Alaska is seven times larger than Great Britain with dozens of separate salmon fisheries and gear types targeting five different species of salmon, both hatchery and wild. A blanket endorsement of all Alaskan salmon fisheries is neither practical nor responsible. Some Alaskan salmon fisheries are globally recognized models of sustainable fisheries management. However, other Alaskan salmon fisheries present major sustainability challenges that must be addressed. The key concerns are:

(1) Target and non-target catch of salmon from populations that are endangered, threatened, or at-risk.

(2) Impacts from artificial production, particularly the rearing and release of juvenile salmon from hatcheries, often associated with ocean ranching operations.

Impacts to non-target salmon populations

In many cases, an individual coastal salmon fishery will intercept salmon originating from many different river systems. Such fisheries usually target abundant salmon populations, but are unable to avoid killing co-migrating salmon from less abundant populations that cannot sustain the same amount of fishing pressure.

These fisheries can impact depleted salmon populations that are genetically unique and irreplaceable as these fish make their homeward migrations through Alaskan waters to rivers in British Columbia and the Pacific Northwest region of the United States. These depleted salmon populations, when rebuilt, can once again provide important capture opportunities for commercial, recreational and indigenous food fisheries. They also form the backbone of local ecosystems important to the survival of threatened species, such as grizzly bears and killer whales.

The most severe salmon conservation and stewardship issues include:

- *Chinook salmon interceptions in Alaskan troll fisheries*. The October 2013 "Final Determination Report" accepted by MSC acknowledges that "over the period 1985 – 2010, an average of 96.2% of the Chinook taken in the Southeast region fishery originated outside of Alaska."[1] Many of these exploited Chinook populations are severely depleted relative to historic levels of abundance and are recognized as stocks of concern by U.S. and Canadian federal agencies and/or are endangered populations under the U.S. Endangered Species Act. The hook and line fisheries are particularly problematic.[2]

- *Northern British Columbia chum salmon*. Several of these populations have been designated stocks of conservation concern by Fisheries and Oceans Canada[3] and are intercepted in southeast Alaskan net fisheries.[4] However, Alaskan fishery managers have yet to conduct adequate stock identification studies to determine the scope of the problem.[5]

- *British Columbia steelhead*. Many BC steelhead (ocean-going rainbow trout) are caught as by-catch in southeast Alaskan net fisheries, but accurate catch data are unavailable because Alaskan fishermen and fishery managers are not required to record bycatch and discard numbers for these iconic and economically valuable fish.[6]

- *British Columbia sockeye*. Populations known to be depleted are subject to considerable harvest pressure in southeast Alaskan net fisheries.[7] Canadian fisheries have been severely constrained since 2009 to reduce impacts on these populations, but Alaskan fisheries have not.

Ocean ranching impacts to wild salmon populations

Alaskan hatchery facilities release around 1.5 billion juvenile salmon annually into the Pacific Ocean.[8] Most of these fish come from "ocean ranching" operations, where eggs are artificially fertilized, incubated, hatched, and fed in the hatchery (fresh water) and salt water net pens, before being released into the marine ecosystem. These fish continue to feed in the ocean until they mature after 1-5 years and then return to freshwater to spawn. While the level of risk varies greatly among facilities, species, and regions, ocean ranching at this scale produces a variety of risks for wild salmon populations:

- *Competition*. Hatchery-raised fish compete with wild salmon and other fish for finite food supplies in the ocean and there is growing scientific evidence that this competition is harming wild salmon.[9] It is hypothesized that in Prince William Sound, large-scale ocean ranching may be a factor in the lack of recovery for that region's depressed Pacific herring stocks.[10] The current trend of increasing releases of hatchery salmon is compounding the problem by increasing competition between wild and hatchery fish and thus further reducing marine survival of wild salmon. A moratorium on additional increases is needed as a precautionary management measure until these issues are resolved.

- *Reduced productivity*. Some of the adult hatchery-raised fish do not return to the hatchery but "stray" to wild salmon rivers. Up to 80% of the fish returning to some "wild" streams are from ocean ranching facilities.[11] Interbreeding between wild and hatchery fish---which have been produced from generations of hatchery brood stocks---reduces the reproductive fitness of the wild population.[12] While there is uncertainty about the extent of the impacts, there are practical measures that need to be taken to reduce straying.

- *Overfishing*. Large returns of hatchery-raised fish attract substantial fishing effort and co-migrating wild stocks can be caught as bycatch, even though they may not be able to withstand the same level of fishing pressure as hatchery fish.[13]

Supporting good fisheries and addressing problems

Despite the serious problems outlined above, Alaska still boasts some of the best-managed and most productive salmon fisheries in the world. For example, management of the Bristol Bay salmon fishery has been recognized by leading fisheries scientists for maintaining a high degree of genetic diversity and abundance in the target stocks, while providing both large catches and sufficient returns of fish to support healthy river ecosystems.[14] Other well managed fisheries include the Southeast Alaska northern

inside pink salmon, Yakutat set net sockeye and coho, Cook Inlet salmon (all species), and the Chignik salmon (all species) fisheries.

Numerous improvements have been made in stock assessment, bycatch monitoring, and risk assessment of hatchery practices over the past decade as a result of MSC certification conditions. When the Alaska salmon fishery was re-certified by MSC in 2007 there were 70 conditions placed on the various component fisheries, but during the last surveillance audit only 51 conditions had been met. Our groups support the exclusion of Prince William Sound fisheries from the current MSC certification due to poorly addressed ocean ranching impacts to wild salmon. We are asking for the same high stewardship standard to be applied to catches of endangered and at-risk salmon, particularly in Southeast Alaska.

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