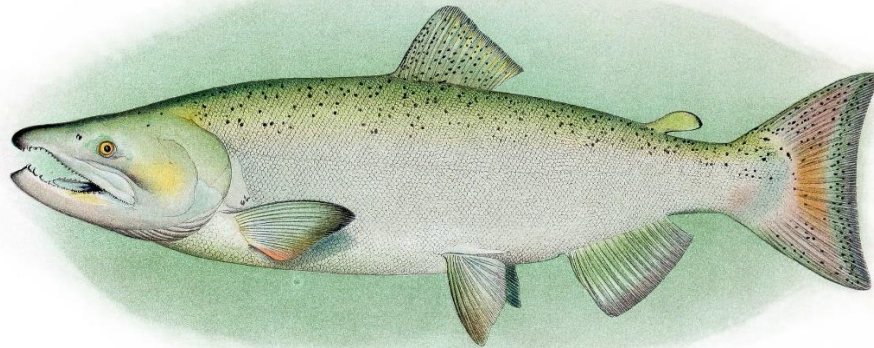


Understanding the costs and benefits of a mark-selective sport fishery for king salmon in Southeast Alaska: A feasibility study



Background

Along the west coast, some fisheries for king (Chinook) salmon are managed as mark-selective fisheries, where special regulations allow for harvest of adipose fin-clipped hatchery fish. This management tool was established to provide opportunity to harvest hatchery-produced fish when wild-origin salmon populations are at low abundance; however, implementing a selective fishery is not straightforward.

The Alaska delegation involved in the 2019 Pacific Salmon Treaty (PST) negotiations asked the Alaska Department of Fish and Game (ADF&G) to explore the possibility of using a mark-selective fishery for king salmon management in Southeast Alaska, specifically for the sport fishery. This request was made through Alaska's Commissioner to the Pacific Salmon Commission in response to reduced king salmon allocations for all Alaska gear groups under the 2009 and 2019 PST agreements.

ADF&G Division of Sport Fish received funding through a grant from the Pacific Salmon Commission to complete a feasibility study. Through a competitive process, ADF&G contracted a team of researchers from the University of Washington (UW) with experience in community engagement in Southeast Alaska to help do the work. The UW team's role is to gather and synthesize technical information, facilitate community meetings, incorporate community concerns and feedback, and write up the results in a final report that will be shared with ADF&G and the public.

Study Objectives

1. Review mark-selective fishery programs outside of Alaska to understand how mark-selective fisheries have worked in British Columbia, Washington, and Oregon. What have the challenges and benefits been, and for whom?
2. Review the king salmon sport fish program in Southeast Alaska to understand what would need to change if a mark-selective fishery was implemented.
3. Engage Southeast Alaska fishing community members to gather local perspectives on mark-selective fisheries.
4. Evaluate potential costs and benefits of mark-selective fisheries in the Southeast Alaska king salmon sport fishery, incorporating community perspectives.

Community Engagement

In summer and fall of 2023, the project team held four meetings in Southeast Alaska communities and one online meeting. Information about the meetings was shared through email lists provided by ADF&G staff, public radio, posted flyers, and social media. During the meetings, the project team presented the goals of the feasibility study and results from the first phase of the project—a review of mark-selective fisheries (MSFs) in British Columbia, Washington, and Oregon, highlighting their benefits and challenges. Attendees provided feedback, questions, and concerns about MSFs. A goal of these conversations was to better understand community perspectives about potential costs and benefits of MSFs. Detailed questions and feedback from community members are being incorporated into the overall feasibility study.

Meeting Locations	Participation*
Juneau July 17, 2023 (5-6:30 pm) Mendenhall Valley Public Library	18 people attended, including university and agency researchers and management staff (~50%); sport (~40%), commercial (~5%), and personal use or subsistence (~20%) fishers; and other members of the public (~5%). 5 ADF&G and 3 UW project team members were also present.
Ketchikan September 18, 2023 (7-8:30 pm) ADF&G Office	13 people attended, including charter operators (~85%) and local ADF&G staff (~15%). 1 ADF&G and 2 UW project team members were also present.
Klawock / Craig September 19, 2023 (7-8:30 pm) Prince of Wales Vocational & Technical Education Center	48 people attended, including resident sport fishers (~50%), subsistence fishers (~33%), charter operators (~12%), commercial fishers (~10%), hatchery association employees (~2%), and local ADF&G staff (~2%). 2 ADF&G and 2 UW project team members were present.
Sitka September 21, 2023 (7-8:30 pm) University of Alaska Southeast	18 people attended, including local ADF&G staff (~33%), commercial fishers (~22%), charter operators (~17%), subsistence fishers (~11%), hatchery association employees (~11%), and university researchers (~6%). 3 ADF&G and 2 UW project team members were also present.
Online October 4, 2023 (7-9 pm) Zoom link provided	38 people attended, including subsistence or personal use fishers, resident sport fishers, charter operators, commercial fishers, hatchery association employees, and local ADF&G staff. 3 ADF&G and 5 UW project team members (incl. note takers) were also present.

** Percentages do not always add up to 100% because people self-identified with multiple groups.*

Meeting Highlights

Meeting attendees shared a wide range of comments, concerns, and questions about MSFs. Primary themes are highlighted below and were similar across meeting locations. Overall, more opposition than support was expressed for the potential use of MSFs as a management tool for the sport fishery. The strongest concerns were voiced by Prince of Wales community members, who noted a range of potential negative impacts to the local economy, customary and traditional fishing access, and fishing experience if MSFs are implemented.

The meetings also provided an opportunity for information sharing between ADF&G staff and community members on relevant details of the current Southeast Alaska sport fish program and the potential effects of implementing MSFs. Technical information discussed included the percentage of marked fish caught by sport and commercial fisheries; mark rates and number of marked fish released coastwide; differences in feasibility of MSFs in inside waters versus outside waters of Southeast Alaska; and the current use of mass marking trailers by Southern Southeast Regional Aquaculture Association and Douglas Island Pink and Chum, Inc., including their efficiency and cost. These topics will be examined in detail during the next phase of the feasibility study (Obj. 2, above).

In addition, feedback was provided by participants to the project team about ways to improve outreach and engagement with a broader group of community members moving forward. In response to these recommendations, the team improved their outreach for the online meeting and has compiled an email distribution list of more than 400 individuals and organizations. Tlingit and Haida Central Council communications staff helped to distribute the online meeting announcement through social media and other online channels.

Key Themes from Community Discussions

Ideas about potential applications or benefits of MSFs

- ❖ MSFs could be a way to maintain or increase fishing opportunity in years with low returns of wild fish, during periods of non-retention of wild fish, or in specific areas near hatcheries
 - > May be most feasible on a small scale
- ❖ Improved data due to increased marking and tagging can help with accounting
 - > May result in Alaska fishers harvesting more hatchery fish originating in Alaska
- ❖ Alaska hatchery fish do not come out of PST allocation, so may provide a way to mitigate king salmon harvest reduction that resulted from the last treaty agreements

Concerns about release mortality

- ❖ Concerns about MSF impacts on wild fish due to increased release mortality from catch and release of unmarked fish
- ❖ Questions raised about the accuracy of release mortality rates currently used in models
 - > Mortality varies by fish size, time of year, angler experience, fish handling, where fish are caught (freshwater or saltwater), hook type (e.g., barbed vs. barbless)
 - > No information on the impacts of repeated catch and release of the same individual
 - > May necessitate new Alaska-specific studies prior to MSF implementation
- ❖ Limited information on sublethal effects of MSFs on wild-origin fish, such as impact on spawning success

Concerns about impacts of MSFs on fishing experience

- ❖ Potential for increased complexity of regulations, as in other places with MSFs (e.g., WA)
- ❖ Possible shifts in fishing locations and/or increased crowding in areas with MSFs
- ❖ Reduced efficiency, longer time, and/or higher cost to catch a harvestable fish (e.g., due to increased travel time to new fishing areas, more time until a marked fish is caught, etc.)
 - > Participants noted that most fish caught in their areas are currently unmarked
- ❖ Lower satisfaction due to above factors, as well as ethical concerns about catch and release fishing
 - > The number of unmarked fish that are caught and released can be high if mark rates are low

<ul style="list-style-type: none"> ❖ Several attendees shared personal experiences of operating charter businesses under MSF regulations in WA, and the many issues they experienced (described in the bullets above)
<p>Concerns about equitable access</p> <ul style="list-style-type: none"> ❖ Harvest of king salmon for customary and traditional use (subsistence) occurs under sport regulations, so any added challenges in accessing king salmon for subsistence is a concern ❖ Concerns that MSFs would negatively and disproportionately affect rural and Alaska Native residents <ul style="list-style-type: none"> > For example, could further complicate regulations and shift charter effort into fishing areas currently used by local residents ❖ Fears that initial increased opportunity afforded by a MSF could lead to greater restrictions in the future, such as retention of <i>only</i> marked hatchery fish <ul style="list-style-type: none"> > In WA, MSFs get shut down if rates of handling wild fish are too high ❖ Concerns that any potential benefits of MSFs would not be afforded to both sport and commercial fisheries
<p>Concerns related to implementation, feasibility, and applicability</p> <ul style="list-style-type: none"> ❖ Studies of MSFs have been done in other contexts, and these may not be applicable broadly to Southeast Alaska ❖ What has worked in WA, or other places, may not work in AK <ul style="list-style-type: none"> > Some participants shared prior experiences with MSFs in Alaska (e.g., in commercial troll fisheries) and indicated there was little support for them overall ❖ MSFs for sport fisheries would impact subsistence and commercial fisheries, which needs to be taken into account when considering overall feasibility of a MSF program <ul style="list-style-type: none"> > Concerns that new tagging trailers will lead to a “total MSF” in all sectors
<p>Broader concerns about king salmon fisheries and management</p> <ul style="list-style-type: none"> ❖ MSFs will do little to address larger scale king salmon issues, such as impacts of trawl bycatch <ul style="list-style-type: none"> > The benefits to this tool are not clear with respect to reducing mortality for wild king salmon ❖ Subsistence priorities are not adequately recognized with respect to king salmon in Southeast Alaska ❖ Importance of direct engagement with tribes and tribal organizations by ADF&G to discuss potential impacts of MSFs, along with other broader concerns <ul style="list-style-type: none"> > There is also a lack of Alaska tribal representation in the Pacific Salmon Treaty arena

<p>Emerging Questions</p> <p>Meeting attendees asked a wide range of questions about the project origin and goals, mortality rates associated with MSFs, conservation impacts of MSFs, current creel sampling rates, nonlethal/sublethal effects of MSFs on wild-origin fish, details of current king salmon allocation, and more. Categories of frequently asked questions are listed below. The project team addressed some of these questions during the meetings, particularly those related to the study itself; however, they are working to address the remaining questions during the next phase of the project.</p>
<p>Questions related to this study</p> <ul style="list-style-type: none"> ❖ What motivated the study and who is funding it? ❖ What are the goals of the funder (PSC) and ADF&G in pursuing this project? ❖ What are the project team member roles, including the role of UW? ❖ What impact will community feedback have on the end product of this study?

- ❖ Why is this feasibility study directed only at sport and not commercial fisheries?
- ❖ How will this study address potential impacts on customary and traditional use of king salmon (subsistence)?

Questions related to release mortality

- ❖ What release mortality rate is used and how was it determined? What relevant parameters were considered (e.g., fish size, hook type, etc.)?
- ❖ How would release mortality differ for guided versus unguided fishing, particularly considering the high concentration of non-resident, guided anglers in some areas?
- ❖ How would a possible change in fishing behavior related to MSF implementation affect release mortality?

Questions related to MSF implementation and feasibility

- ❖ Would an MSF actually increase opportunity in reality and not just on paper? Does Alaska release enough hatchery-produced king salmon to see a benefit from MSFs?
- ❖ Mark rates are low and some wild stocks are marked in Southeast Alaska; is an MSF really feasible in this area?
 - > Would mark rates have to be near 100% in order for this to be effective?
- ❖ What would MSF sport regulations in Southeast Alaska actually look like (e.g., area, timing, bag limits)?
 - > What is the functional difference between MSFs and additional opportunities provided in terminal harvest areas?
- ❖ How would an MSF change fishing behavior? Could this be avoided? How would it be accounted for in management?
- ❖ Most hatcheries in the Southern U.S. are federally funded, which is part of what makes MSFs possible. How would a program like this work with private non-profit hatcheries in AK? How would funding of MSFs work? Who would be responsible?
- ❖ Will there be pushback from other parties in the Pacific Salmon Treaty arena if Alaska is to propose a new MSF?
- ❖ Would allowing MSFs in Southeast Alaska open the door for them to be used extensively?

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How can you share your questions and ideas?

1. Attend future meetings—we will hold two online meetings in early 2024 to share a project update and seek additional feedback. Please contact Anne if you would like to be added to our email list.
2. Email or call Judy or Anne directly.
3. Provide anonymous feedback through [this online form](#). Only project team members will see your responses, which will be anonymous and not linked to your name *unless* you choose to provide your contact information.