

PROPOSAL 104

5 AAC 67.022. Special provisions for seasons, bag, possession, and size limits, and methods and means in the Bristol Bay Area.

Modify gear to barbless hooks in Morine, Kulik, American, and Brooks drainages, as follows:

Create seasonal barbless fishing requirements for Moraine creek, Kulik River, American Creek, and Brooks River.

Barbless can be defined as “Hook with no pointed barb at end through manufacture or the crushing of manufactured barbed hook so that point is no longer present or bent closed.”

- Moraine Creek (all flowing waters):
 - June 8-October 31: Only unbaited, **barbless**, single-hook, artificial flies may be used.
- Kulik River (all flowing waters):
 - June 8-October 31: Only unbaited, **barbless**, single-hook, artificial lures or flies may be used
- American Creek (all flowing waters):
 - June 8-October 31: Only unbaited, **barbless**, single-hook, artificial flies may be used
- Brooks River (all flowing waters):
 - June 8-October 31: Only unbaited, **barbless**, single-hook, artificial flies may be used

The potential alternative considered was to make barbless requirement year round. However, it was felt that it was unnecessary due to potential winter subsistence fishing needs with barbed hooks in some locations as well as lack of overall winter sportfishing presence in these locations.

What is the issue you would like the board to address and why? The issue we would like to address is the poor care and treatment of fish in seasonally intensified catch and release fisheries in Bristol Bay from the use of barbed hooks. Research suggests the use of barbed hooks amplifies a variety of causes of fish mortality and decreased health.

Primary rivers of note would be Moraine Creek, Kulik River, American Creek, and Brooks River. These rivers see high levels of summer seasonal catch-and-release angler pressure which causes fish to be caught multiple times over the course of the season. With elevated pressure on these rivers for catch and release purposes, it is important that fish are treated in the best possible manner to ensure continued fishery success and visitor satisfaction.

In contrast to many other rivers in the Bristol Bay region, these rivers are not customarily catch-and-keep fisheries during the summer season. Thus, as a predominantly catch and release fishery, the ability to consistently catch healthy fish with as little impact as possible should be expected.

ADFG switching to a barbless regulation might be considered insignificant by some, but it would be very simple to implement and enforce as a regulation.

It is understood that there are many variables that may have an impact on fish mortality and health. It is also understood that some of these variables may have a greater impact on fish mortality than the use of barbed hooks. However, all variables that negatively affect healthy fish populations are additive. Thus, we feel each should be given attention, especially as fish are targeted and caught multiple times.

The objective of this regulation change is not only to solve for the portion of fish mortality directly related to the use of barbed hooks, but to extend to other factors of mortality that can be amplified by barbed hooks. The term “death by a thousand cuts” illustrates what we are hoping to solve with this regulation change via a clear and actionable topic that will positively affect multiple sources of mortality.

Justification and Details:

Fish Mortality:

- A study reported that barbed hooks related to 7% of fish mortality over 2% de-barbed hooks when hooked superficially. Additionally, 29% fish mortality when fish were deeply hooked with barbed hooks over 6% mortality when fish were deeply hooked without barbed hooks.
 - *Robert B. DuBois, Kurt E. Kuklinski, Effect of Hook Type on Mortality, Trauma, and Capture Efficiency of Wild, Stream-Resident Trout Caught by Active Baitfishing, North American Journal of Fisheries Management, Volume 24, Issue 2, May 2004, Pages 617–623, <https://doi.org/10.1577/M02-172.1>*
- Another study, though not determined statistically significant (>5%), showed every sample where barbed hooks were used resulted in greater catch and release mortality.
 - *Ian I. Courter, Thomas Buehrens, Mark Roes, Tara E. Blackman, Benjamin Briscoe, Sean Gibbs, Influence of angling methods and terminal tackle on survival of salmon and steelhead caught and released in the Cowlitz River, Washington, Fisheries Research, Volume 268, 2023, 106848, ISSN 0165-7836, <https://doi.org/10.1016/j.fishres.2023.106848>.*

Increased Fish Handling Time:

- Study Reported barbed hooks were associated with a three second median increase in fish handling time.
 - *Ian I. Courter, Thomas Buehrens, Mark Roes, Tara E. Blackman, Benjamin Briscoe, Sean Gibbs, Influence of angling methods and terminal tackle on survival of salmon and steelhead caught and released in the Cowlitz River, Washington, Fisheries Research, Volume 268, 2023, 106848, ISSN 0165-7836, <https://doi.org/10.1016/j.fishres.2023.106848>.*
- According to another study, beyond superficially hooked fish, deeply hooked fish take significantly more effort to unhook safely. With that, deeply hooked fish with barbed

hooks required extended time with the fish's mouth out of the water. Study found that extended air exposure after fish exhaustion resulted in a survival rate as low as 28%.

- *Fergusson, R. A., and B. b. Tufts. 1992. Physiological effects of brief air exposure in exhaustively exercised rainbow trout (Oncorhynchus mykiss): implications for "catch and release" fisheries. Can. J. Fish. Aquat. Sci. 49: 11 57-1 162.*

Bear and Wildlife Safety:

- In addition to fish mortality, these rivers play host to some of the highest density of Brown Bears in Alaska. When dealing with safety around bears, three seconds can mean a lot of time to avoid a potential negative situation or a bear taking a fish from an Angler. Using barbless hooks for the purpose of quicker fish releases can greatly aid in overall safety and experience around bears.

Did you develop your proposal in coordination with others, or with your local Fish and Game Advisory Committee? Explain. No

PROPOSED BY: Bristol Adventures, Operator of Brooks, Grosvenor, Kulik, and Mission Lodges (EF-F26-126)
