Cooper Landing AC – UCI Report and Comments

The Canadian Stock Assessment Secretariat –
A Review of hooking mortality rates for marine recreational coho and chinook salmon fisheries in British Columbia. (S. Cox-Rogers, T Gjernes, & E Fast

"Fish dying from stress do so as a result of physiological imbalances caused by exertion **(*Parker and Black 1959).*** Chronically stressed fish can be more susceptible to disease as a result of weakened immune system, and sub-lethal stress can be manifested in growth retardation and reproductive impairment ***(Muoneke and Childress 1994)***. Stressed fish can also exhibit altered behavior, which can make them more susceptible to predation upon release ***(Muoneke and Childress 1994).*** In British Colombia, coho and chinook salmon are often taken by seals during the process of being played, and its likely that released salmon exhibiting stress are more vulnerable to predation ***(Terry Gjernes, Fisheries and Oceans Canada, personal communication)***. With the large population of seals in the Kenai River, Coho and Resident Species alike are often caught and consumed by theses predators while on a hook and line, or shortly after the fish's release.

Effects of stress on the reproductive performance of rainbow trout (Oncorhynchus mykiss). Biology of Reproduction 58, 439–447. Contreras-Sanchez W.M., Schreck C.B., Fitzpatrick M.S. & Pereira C.B. (1998)

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Hooking mortality rates for sport caught chinook and coho salmon. PSARC working paper S90-35. Fisheries and Oceans Canada, Nanaimo, B.C.

In addition to the aforementioned studies there are multiple studies confirming the negative impacts on Rainbow Trout reproduction success as a direct result of stresses related to catch and release.

- **Effects of stress on the reproductive performance of rainbow trout (Oncorhynchus mykiss). Biology of Reproduction 58, 439–447. Contreras-Sanchez W.M., Schreck C.B., Fitzpatrick M.S. & Pereira C.B. (1998)**
- **Stress reduces the quality of gametes produced by rainbow trout. Biology of Reproduction 47, 1140–1150. Campbell P.M., Pottinger T.G. & Sumpter J.P. (1992)**

Campbell P.M., Pottinger T.G. & Sumpter J.P. (1992) found gonadal growth (i.e. sperm count and egg size) was reduced for stressed rainbow trout, resulting in delayed ovulation and reduced survival of progeny. Similarly, Contreras-Sanchez, Schreck, Fitzpatrick & Pereira (1998) found a reduction in progeny size of rainbow trout that were stressed prior to spawning during late ovarian development.

As an AC we feel that added protection for the fish in this relatively small area of the Kenai River due to an increase in unforeseen impacts caused by human interaction in this fishery is advisable.

No Bait Restriction – In Staging Coho areas – Proposal 167

Proposal 167:

Requests to amend;

Under Section 5 AAC 57.121
…
(K) From January 1 – December 31 in the Kenai River from an ADF&G Regulatory Marker 100 yards below the Moose River confluence, Upstream to ADF&G Regulatory Markers at the outlet of Skilak Lake, only one unbaited, single-hook, artificial lure may be used.

This proposal does not tread into uncharted waters but simply asks that the Board take an existing regulation and increase the breadth of coverage in both time and area. At the heart of this proposal is the catch and release mortality rates of staging Coho Salmon, and Resident species, due to the increase in passive bait fishing methods - the techniques associated with bobbers and salmon eggs. The concern lies with the practice of high-grading or sorting Coho based on their color, or table fare quality, via catch and release utilizing passive bait fishing methods (bobbers and eggs). I will not read Proposal 167 in its entirety as you have it in front of you for your own study. As an AC we would like to add supporting comments based on the following;

The area targeted in Proposal 167 is of concern for the Cooper Landing AC for a myriad of reasons. The two major issues of concern being;

A) This area is a major staging area for Coho Salmon. These are Coho that have escaped the latter periods of commercial fishing in Cook Inlet as well as the many hooks and lures of sport anglers of the lower Kenai River. Their end goal being the many Kenai watershed tributaries as well as Middle Kenai River and Upper Kenai River reaches of spawning gravel. The staging time for Coho in this area varies depending on the fish's natal stream - but is a lengthy process for local tributary bound fish as well as those that are predisposed to Kenai River main stem spawning.

B) Locales where the Coho stop and stage prior to continuing their journey are areas being targeted by anglers on an increasingly frequent basis, many of these anglers utilizing passive bait methods that are proven to result in critically hooked fish, and high mortality rates for salmonids. In the event every hooked and caught fish were harvested via these methods this discussion may be unnecessary, but due to the lifecycle stages of these Coho, a formidable portion of these fish often require anglers to release multiple undesirable coho prior to harvest in search of fished deemed of edible quality, a practice commonly referred to as "high-grading" or "Sorting".

Mongillo, P. E. 1984. A summary of salmonid hooking mortality. Washington Department of Fish and Game, Olympia.

SUMMARIZED THAT : "overwhelming evidence in studies of hooking mortality that salmonids caught on bait sustain a higher percentage (30-50%) of mortalities when released than those caught on flies and lures (5-10%) (Mongillo 1984)."

Mortality of Coho Salmon Caught and Released Using sport Tackle in the Little Susitna River, Alaska – Vincent-Lang, Alexandersdottir, and McBride (1992)

Data suggests a catch and release mortality rate of sport caught and released Coho at just under 12% in river, meanwhile describing an increase of mortality rate of 69% in the estuary portion of the same drainage.

C) With the lack of consistent and accurate Coho enumeration, nor a current Kenai River Coho management plan, the AC feels that at this time it is imperative the Board acts in a conservative manner in order to protect these staging Coho from potential excess depletion via catch and release mortality rates, due primarily to passive bait fishing practices including high-grading/sorting. In fact Alaska Administrative Code 5 AAC 39.222 directs the Board how to address such situations. An abbreviated section is included in Proposal 167 and I refer the Board members to examine that at their convenience. We would like to point out the following in Section 5 AAC 39.222;

D)

Section 5 AAC 39.222 – Policy for the Management of Sustainable Salmon Fisheries –

c) 5)

A) Directs the Board to take a precautionary approach and the need to take action with incomplete knowledge, should be applied to the regulation and control of harvest and other human induced sources of salmon mortality.

The statute continues on with directives as to what a precautionary approach requires.

The stretch of river covered by Proposal 167 is currently experiencing an incredibly high rate of growth in user days, use that is exponentially higher than just 8-10 years ago. This influx of angling pressure leads to increased concern from our AC as to the effects of this pressure on not just anadromous fish but also the Resident Species. There are numerous studies that exhibit the high level of mortality rates on Resident Species (Rainbow Trout) when targeted with bait, particularly when fished in a passive manner. In one, Titled…

E) A meta-analysis of hooking mortality of nonanadromous trout. North American Journal of Fisheries Management 12: 760-767. Taylor. M. J.. and K. R. White. (1992)

F) Taylor and White reported that average mortality rates for trout caught on barbed hooks with bait and then released were 33.5%.

As an AC we recognize the exponential growth in the targeting of Resident Species on the Kenai River. Due to the increased popularity Resident Species are being targeted and fished at a higher rate than all other species on the Kenai River, being currently targeted 12 months a year. As an AC we believe it is time the Board supports conservative based protections for the Resident Species of the Kenai River. Proposal 167 will provide such a protection.

ADFG's Fishery Management Report NO. 20-01 shows that the majority of Kenai River Coho are being harvested by anglers downstream of the Moose River confluence, which is below the current ADFG Regulatory Markers Proposal 167 suggests utilizing as the lower end boundary.

As an AC we feel that added protection for the fish in this area of the Kenai River is necessary due to the lack of enumeration of Coho, the exponential increase in user days & adverse angling methods, resulting in unforeseen impacts caused by human interaction.