On-Time Comment Index

On-Time Comment Index

On-Time Comment Index

On-Time Comment Index

PC1

Alaska Board of Fisheries

Marit Carlson-Van Dort, Chair

Submitted via online portal & via email: dfg.bof.comments@alaska.gov

RE: Support for Proposal 33 November 13, 2022

Dear Chair Carlson-Van Dort and Alaska Board of Fisheries Members:

We are writing to you on behalf of the Ugashik Village Setnetters. We currently take part in the fishery and have for the 42 past seasons. (Lisa Albecker 35yrs. Set & William Albecker 36 yrs. Drift & 6yrs. Set as a permit holder + crewed previously) We are in strong support of this proposal and feel that if passed it would be in the best interests of the fishery, its participants, and the State of Alaska.

Background: During the last four+ seasons an extensive mudbank has developed along the inshore end of our area in which we fish our set gillnets. This hinders us from fishing as effectively as we have in the past (decrease in functional fishing time). The current offshore distance limitation of 600 feet from the 18-foot-high tide mark precludes us from fishing the full extent of our allowable gear and denies us the best use of the fishing time allowed. We have lost an estimated 20% of our opportunity due to fewer hours of available fishing time because our nets are not in the water.

In 2016 the BOF adopted the "Criteria for Board Deliberations on Commercial Set Gillnet Proposals Impacted by Coastal Erosion" (2016-238-FB) which outlines the criteria that the board will consider and weigh when deliberating on a proposal related to set gillnet sites impacted by coastal erosion. We feel that our situation in Ugashik Village clearly fits Criteria #1 which states that "*issues that arise from land that has either eroded or accreted through natural or artificial causes contiguous to the leasehold*" need to be taken into consideration when the Board deliberates on these types of situations.

Proposal 33: To remedy the issue we propose that the maximum offshore distance be increased from 600 feet from the 18-foot high tide mark to 800 feet from the 18-foot high tide mark. Increasing the offshore distance allowed will enable the set gillnets in Ugashik Village to effectively fish their historic fishing time as determined by the tides of the day. The eleven sites currently fishing in this area would

all have the ability to fish farther offshore negating any allocative effects potentially arising from this solution. This is an area that is only open to set gillnets, drift gillnets are not allowed in this area. At the time of the submittal of this proposal ten out of the eleven sites concur that the maximum offshore distance should be amended by the board to 800 feet from the 18-foot-high tide mark.

Regards,

Lisa Albecker, Set netter

William Albecker, Set netter

PC2

Name: Stosh Anderson

Community of Residence: Kodiak AK

Comment:

In the East side drift fishery after 17 July (end of EO) a general district is appropriate. Proposal 52 is the proposal that encompasses the concept best. The 3 mile West boundary needs to be defined with a series of Lat Log points. All up river boundaries remain the same.

Thank you

PC3

November 13, 2022

Alaska Board of Fisheries
PO Box 115526
Juneau, AK. 99811-5526

Dear Members:

Thank you so much for this opportunity to comment on the 2022 round of Bristol Bay Finfish proposals.

I have a 45+ year history in the Bristol Bay salmon fishery. I raised my children on the beach at Pederson Point in the Naknek-Kvichak district. Both grew up setnetting with me. My daughter took over management of our setnet operation over a decade ago. I love that she's now the skipper and I am the "crew". Please see my comments below on the following proposals.

I SUPPORT the intent of Proposals 31 and 32 for king salmon tally sheets for all sport and commercial fishery removals of king salmon in Bristol Bay. Commercial fishermen are currently required to report on fish tickets all king (and coho) salmon taken, but not sold. It only makes sense that king salmon sold also be tracked in order for the department to know total removals in the commercial fishery. Likewise, to enable managers to have a complete picture of king salmon resources, sport fishermen must be required to do the same. I don't know when logbooks stopped being required in the Bristol Bay sport fishery, but it is impossible for managers to actively manage without good information.

I SUPPORT Proposal 35 to increase the minimum distance between gear. Depending upon where fish are running, drift boat interactions with setnet gear occur far too frequently and usually to the detriment of setnetters. As the proposer mentions, it is frequently the case that if setnet anchors are pulled and/or running lines cut, replacement gear can only be redeployed on specifically low tides and the operation is dead in the water until that time occurs. The advent of D boats and additional gear, there is usually additional distance between the end of the drift net and the drift boat operator such that he/she has even greater difficulty seeing how the end of the drift net may be interacting with a setnet. Operating in this manner has created really unsafe situations for setnetters whose skiff is under the gear that's been entangled. For the safety of all involved and maintaining the integrity of setnetters' operations, increasing the buffer from setnets by 200' is an idea whose time has come.

For the same reasons—and more—that I support Proposal 35, I also SUPPORT Proposals 36 and 37 to shorten drift vessel towlines. Vessels using absurdly long tow lines in order to have the vessel sitting in deeper water while the net lies in the shallows precludes active engagement in safely maneuvering said net. Not only is the operator violating the definition of drift fishing when utilizing a lengthy towline as just described, 1) the operator simply cannot see how his/her net is acting from that far away and may 1) thereby potentially creating an unsafe situation should the gear snag on a setnet, 2) compromise the integrity of the setnet operation

should gear become moved and/or cut, and finally, 3) on an ebb tide the quality of fish will be compromised by dragging them across sandbars in order to retrieve them.

I strongly SUPPORT Proposal 58 to open the NRSHA when the Naknek River has achieved the mid-point of its escapement goal range. There is no justification for allowing for the kind of overescapement in the Naknek River that has been seen in recent years when it is possible to allow additional fishing effort to crop off overescapement in the circumstances described in the proposal. Openings can be tailored to minimize gillnet harvest of king salmon in order to address the concerns of upriver sport fishermen.

I OPPOSE Proposal 57 to repeal the allocation plan in the Naknek-Kvichak District. The concern raised by the proponent is nonsensical during years of high abundance. Managers need as much gear in the water as possible, particularly when larger runs on other districts have drawn drift effort away from the Naknek-Kvichak District. The allocation plan is moot at such times. But, I know that as a setnetter, we absolutely need the allocation plan in years of lower abundance and/or when the Naknek-Kvichak has a large run and all other districts have low runs, thus drawing a huge drift fleet to the Naknek-Kvichak. I fail to see how the proponent would have any more fishing time during runs such as the large runs of recent years had the department closed the setnets to balance allocation. The only result, besides hurting setnetters, would be even more overescapement up the rivers.

Having been intimately involved in the board process for nearly 35 years, you have my heartfelt gratitude. I know well the hours you invest in trying to make the best decisions possible for all stakeholders and the resource. Thank you!

Sincerely,

Sue Aspelund
1517 W 14th Street
Port Angeles, WA 98363

PC4

November 14, 2022

Alaska Board of Fisheries
PO Box 115526
Juneau, AK 99811-5526

Dear Members of the Board of Fisheries:

Thank you for the opportunity to comment on proposals for the 2022 Bristol Bay Finfish meetings. I have been a commercial fisherman in Bristol Bay since 1996 and am thankful to have had the opportunity to participate in both the set and drift gillnet fisheries. I currently fish in the Naknek District as a setnetter, and in the past I crewed on a drift gillnetter in the Naknek/Kvichak District and Naknek River Special Harvest Area (NRSHA) during the 2000s. As such, I'll begin my comments on the proposals directly pertaining to the East Side management area.

I am writing to OPPOSE the intent of Proposal 57, regarding repealing set and drift gillnet allocations in the Naknek-Kvichak District. Recent years have seen large salmon runs across the district, and across the Bay as a whole. With the largest runs in recent years going to the Nushagak District, the number of drift gillnet vessels in that district was larger than the number of drift gillnet vessels in the Naknek-Kvichak District. This, combined with larger run sizes, led to the setnet fleet catching more than the originally intended 16% allocation. During these larger runs where overescapement is a threat, it doesn't make scientific sense to shut down one gear type to keep the allocation in check as this could lead to even more overescapement. However, during smaller run sizes where the Naknek-Kvichak District is seeing a larger return than other districts, therefore ending up with a larger number of drift gillnet vessels, the allocation is of the utmost importance to setnetters to allow fairness to both gear types in the fishery. If a drift gillnet vessel does not like the allocation plan numbers in the Naknek-Kvichak District, it can move to a district that doesn't have the allocation plan or where the fishing is better. Setnetters do not have that option.

I support Proposal 58 to open the NRSHA when the Naknek River escapement exceeds the mid-point of the escapement goal range and is projected to exceed the upper end of the escapement goal range. I agree with the idea to provide increased fishing opportunity to reduce escapement in the Naknek River system. I particularly found it thoughtful of the proposer to add in a schedule for the in-river fishery to close one hour prior to high tide in consideration of tugs, barges, and tenders moving through the river system. In previous years of fishing in the NRSHA it was very difficult for larger vessels to navigate through the fishing activity. I also support the idea that fish harvested in the NRSHA shall be delivered prior to fishing the Naknek Section or Naknek-Kvichak District, as this reporting will help tally the specific pushes of fish up the Naknek River and perhaps help with emergency order in-season management decisions.

In regards to proposals for the Bay as a whole, I support Proposals 31 and 32 which cover reporting requirements for king salmon harvesting. As a commercial permit holder, I'm required to report any king salmon landings occurring in my operation, whether for personal use or for sale to a

processor. I was shocked to read that currently the sport fishing industry no longer requires logbooks to be on hand. I feel self-reporting from any gear type and both commercial and sport fishing industries is necessary for understanding the impacts of how fishing efforts or under-reporting are contributing to our declining king salmon runs.

I <u>support Proposal 35</u> to increase minimum distance between set and drift gillnet gear. The current regulation allowing drift gillnet gear to be operated within 100 feet of the offshore end of a set gillnet is not sufficient, especially with an increase in dual-permit operations on drift boats, the use of longer tow lines, and the increase in jet-drive boats which allow fishing in shallower water. I agree that increasing the distance to 300 feet is more appropriate. As a setnetter I've had multiple encounters with drift boats having the end of their nets tangled up on the outside end of my setnet gear and have also had close encounters with drift gillnet vessels themselves coming into contact with my skiff because they were operating too close to my buoys. This is unacceptable from a safety standpoint. Additionally, it can create undue financial burdens on setnetters due to lost fishing time and damaged equipment, as these incidents can destroy buoys and running lines, and tension during an entanglement can dislodge a screw anchor. In many places, screw anchors can only be reset during a minus tide, which only occur once or twice a season.

I also <u>support Proposals 36 and 37</u> which aim to limit the length of a drift gillnet towline to 100 feet. In many instances, longer tow lines allow drift gillnet vessels to fish in shallow water, become grounded and act more like setnets. I've witnessed vessels using long tow lines to effectively set their net across a river channel during low tide by letting the end of their net go dry, especially later in the season where fishing has been extended and there's no enforcement patrolling the fishery. This is not the intent of drift gillnetting. Long tow lines also create a visibility barrier for the vessel operator to effectively be able to monitor the end of their net, which can increase opportunity for contact with set net sites.

Thank you to the board for your time and consideration.

Respectfully,

Lindsey Aspelund
3819 S Bean Rd
Port Angeles, WA 98363

PC5

Name: Fred Ball

Community of Residence: College Place Washington

Comment:

Re: Proposal 41

I feel that a solid GPS line for the drifters will aid law enforcement and give Drifters a line to keep them from inadvertently destroying set net gear or their own. I disagree that the outer boundary for set netters be contingent on the mean high tide level on the beach. Many of the outer boundary permanent pegs/screw anchors. were installed before the bluff eroded back to its present position. Because of the erosion of the bluff, some setnets are now illegal. Historic outer ends are still in the same location. If some set netters are required to adhere to the mean high tide position, it would be a serious snagging issue to the drift fleet. The unremovable pegs installed decades ago would now be outside any future adjusted outer locations that would require moving more shoreward. The minus 3 foot level has not changed as far as I can tell since 1955 when I first fished on the Ekuk beach. I feel that the 500 foot from mean high tide regulation needs to be removed.

I have fished one site on Ekuk beach that made it impossible to reach 500 feet. I was only able to get my outer pegs/screw anchors installed 300 feet out. My request would be to be able to use historic outer ends that initially met the 500 foot requirement or were still accessible when experiencing a minus 3 foot low tide. There should also be a stipulation that no anchors could be dropped in deeper water outside of historic outer ends or the minus 3 foot level be allowed. Historic site outer ends should be the criteria. These suggestions only apply to permanent sites located between the Ekuk processing plant and 1st creek.

Thank you for your consideration

Fred Ball

Summery:

1. A GPS line would be good for both law enforcement and the drift fleet. (Some in the drift fleet may not be happy with this because they tend to drag nets inside the set nets and often will cut set nets, ropes or buoy lines inadvertently)

2. Historic outer ends should not be changeable due to the bank moving back or the depth of the gravel at the time on the upper end. The 500 foot from mean high water restrictive regulation to 1st creek should be removed.

3. No anchors allowed outside of historic outer end permanent attach points. (sometimes an outer end is pulled or rope through the pulley is lost so an anchor could be used to replace the outer end until the tide was low enough to reinstall the historic outer end.}

PROPOSAL # 28 PUBLIC COMMENT – OPPOSITION

To Whom it May Concern:

Today I am writing to express my opposition to Proposal # 28, which regards the year-round closing of king salmon fishing in the Mulchatna river system and the Nuyakuk and upper Nushagak rivers.

Hopefully a short summary of my personal experience fishing on the Mulchatna River will add some credibility to my opposition to this proposal. Back in 1994, my father, who is one of the founding members of the 130,000-member conservation group, Pheasants Forever, brought me and two of my brothers to the Alaska Trophy Fishing Safaris camp on the Mulchatna for the first time. Since that first trip - for the past 28 years- I along with various groups of friends, brothers, uncles, cousins, nephews, sons-in-law, have returned nearly every other year to spend a week on the Mulchatna at the Alaska Trophy Fishing Safaris camp owned by John and Melissa Carlin. I now have a two-year-old grandson, who I am certainly hoping to bring to the Mulchatna someday in the future.

Needless to say, the Mulchatna River holds a very special place in my heart and I am certainly very concerned about maintaining the world class salmon fishery in that river system. To that end, my dad and brothers and friends and I were all involved in trying to protect the Mulchatna from the possible damages caused by the Pebble Mine. We care very much about the health of that river and the fishery there.

There are a couple reasons we are in opposition to Proposal # 28:

First, there are already mechanisms in place, through the Alaska Department of Fish and Game Executive Orders or Emergency Changes to protect the fishery if that is deemed necessary at specific times in specific years. I have experienced those Orders/Changes during a number of my trips to the Mulchatna. Changes have been routinely made to fish limits and bait usage. In some years “catch and release only” rules have been in place. In light of this flexibility that Alaska Fish and Game has, it appears that these are much more effective and flexible tools to use than a a year-round closure of King fishing, which seems to be a drastic and unnecessary step.

Here is the second reason for my opposition to Proposal # 28: Because of the timing of the King salmon run and the location along the Mulchatna of the Alaska Trophy Fishing Safaris camp, I believe it is very safe to say that the anglers in that camp – or any camp along the Mulchatna within many miles of that camp- will **NOT** be fishing in waters that are king salmon spawning areas. In the nearly 30 years that I have been fishing on the Mulchatna, I have seen hundreds of Calico salmon that have spawned and are swimming past like white ghosts in the water with half of their heads missing. I know what fish look like after they have spawned and in those same 30 years, I have never seen a King salmon at this stage of its life. Consequently, I’m led to

believe that no angling pressure near that general location in the river, at that time of the year, will have any interference with king salmon spawning.

Third. It is my belief that more and better stewardship of all of our natural resources is necessary in order to protect those resources. In the 50 years that I have been hunting and fishing, it has been my experience that the people who care the MOST about fish and wildlife and water quality, and air quality are the anglers and hunters and sportspeople who spend so much of their lives enjoying those resources. And it is the responsible outfitters, and camp owners (Like John and Melissa Carlin at Alaska Trophy Fishing Safaris on the Mulchatna), whose livelihoods depend on the health of our natural resources – those are the people who are most interested in protecting our natural resources. Certainly, having the opportunity to catch (and release) a big king salmon is a huge draw for anglers. And, it seems to me, that if you close down a fishery completely, then the anglers will leave to find another place to fish. And the responsible camp owners will close their camps and go somewhere else, or fold up entirely. And then the river will lose its greatest allies, the people who care about it the most. And that seems like it will do more damage than good.

As an example of this stewardship, I should note here that for many years the owners of the Alaska Trophy Fishing Safaris camp on the Mulchatna have been dedicated preachers and practitioners of catch and release with many fish species in the Mulchatna system – especially the big king salmon. Certainly, in the groups that I have fished with, it is a very rare occasion that a king salmon is kept in the bag, and if that does occur, it is always a smaller male that is kept. We want the big fish- and certainly those big females- to survive and make it up river to their spawning grounds. John also encourages all of the anglers in his camp to spend some time during their trip targeting other species of fish (most on a catch and release basis) to broaden their Alaska fishing experience. Obviously one beneficial byproduct of this is less pressure on the king salmon. This is the type of stewardship these rivers need.

Thank you for giving me the opportunity to make my comments public. I strongly urge you to reject Proposal # 28.

Please feel free to contact me if you have any questions or would like more input.

Regards,

Mitchell Berg
W2331 Haider Road
Sarona, WI 54870

PROPOSAL # 28 PUBLIC COMMENT – OPPOSITION

My name is Kevin Berg. I have been fishing on the Mulchatna River for king salmon and other species on eight occasions over the past 23 years. I oppose the proposal to close the Mulchatna to chinook fishing. I believe the proposal lacks any foundation in what actually happens with sportfishing at the two small camps that share a vast expanse of the river. It is based on a gross exaggeration of the impact from the fishing that occurs at those two camps - at least the camp I have fished with several times. And it overlooks several very significant negative impacts from what happens elsewhere in the Bristol Bay system.

Each time I have fished the Mulchatna I have been the guest of Alaska Trophy Fishing Safaris, under the leadership first of Dennis Harms, then John Carlin. Over the course of those many trips to the Mulchatna my brothers, my father and I have probably introduced 60 or more friends and family members to salmon fishing on the Mulchatna - both of my sons and my son in law included.

What I and all these folks cherish and remember about these trips is not the number of kings we get to keep and take home with us - although we do enjoy the very limited number of kings we get to keep - anywhere from 0 to 3 per trip, as I recall, depending on regs determined annually based on the size and health of the run. We are so much more focused on the thrill of hooking and landing a king salmon, handling it with care, and returning it to the water in good shape. We have learned these skills from Dennis, John, and their guides. We have also learned from these men about the critical role the chinook plays in the river's ecosystem and the respect that these magnificent animals deserve. It is part of the ethos of ATFS, and a big reason I keep returning. The vast, vast majority of kings we have caught in my years on the river have been carefully returned to the water, able to travel several more miles upriver to complete their breeding mission. If I were a meat fisherman, I would be fishing elsewhere. To me, the benefit to the chinook of teaching and spreading this ethos to the many people our group has introduced to the Mulchatna over the years far outweighs the impact to the resource from the very small number of kings taken out of the river by that same group.

So I do not understand why a camp that takes the right approach to caring for and respecting this precious resource would be shut down while the meat fisheries of various kinds elsewhere in the same ecosystem are allowed to continue practices that put fish meat and profit ahead of the long term health of the chinook. Makes no sense to me. Regulatory resources are so limited. Please direct them where they can help the chinook the most. This stretch of river that is lightly and carefully fished is not your best bet. I actually believe that closing down this part of the river would hurt the chinook in the long run by disengaging some very good caretakers of the resource. I think if you look hard at the actual facts you will agree.

Respectfully submitted.

Kevin Berg

PC8

Aiden Brehan
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ADF&G
Boards Support Section
Regarding Proposal 40

My name is Aiden Brehan and I have been a Naknek/Kvichak set netter since 2011. In these years I have fished in all areas of the Kvichak section, notably the various areas of the Eastside and the Westside up and down both banks from the south boundaries to the north. I have "set my anchor" on the southern boundary of the area defined in 5 AAC 06.331. section (m)(5) on the Westside bank. I plan on fishing this location for years to come.

In regard to Proposal 40, I wish to oppose it.

Some background for clarification:

Per the recollections of my predecessors, at the time of its formation the site I lease (ADL 231008) (from now on referred to as "my site") was at the location of the "Unnamed Creek" mentioned in 5 AAC 06.331. section (m)(5). (From now on Section (m)(5)) Said location was the "mouth" of said "Unnamed Creek" when the water receded to the "time of the opening" tide height near Mean Low Water (MLW). It puts the location of the my site a good distance from the 18' tide mark, separated by a long mud flat. The "mouth" of the creek in question at the "time of the opening" tide mark has migrated south some distance in years since. My site has remained in place.

My site and the sites around it exist based on the language in Section (m)(5). The location of my site and the other three sites nearby show that contrary to as stated in Proposal 40, this mud flat did not form in years since the language of Section (m)(5) was written and my site was created. It has existed so similarly to as it was then, in 1989 I believe. At such time, Section (m)(5) was written under an accord between drifters and set netters over prime fishing territory with the assistance of Alaska State Troopers. The area south of this site is still a viable fishing location at high water and within 1000 ft of the 18ft mark, although not as viable as the "cut bank" near mean low water. (See Figure 1)

These fisherman making proposal 40 did not indeed lose any fishing opportunity from the formation of a mud flat in the area described. It is a land grab. They seek to legally access the "cut bank" existing here when there are plenty of good fishing opportunities to the north of our sites! **OR** to the south further up on this bank if fished within those regulations! **OR** on their own sites existing on the Eastside. They seek *alternate* fishing opportunity that would be **detrimental** to our established and leased fishing sites. Those that do not possess any Eastside sites already in fact seek ***NEW*** fishing opportunity or to justify the areas they may have been fishing illegally already. **There is nowhere else *I* can go for additional opportunity!**

In the following passages, arguments to ***clarify the current regulation for enforceability and oppose Proposal 40*** will be discussed along with the suggestion of new language for Section (m)(5).

1. No Visual Landmarks at the Proposed Location with a Consideration for Enforceability.

My site is a "low water site" made fishable at low water by a cut bank on the edge of the mud flat in combination with the operational regulations for the area of the Kvijack district defined in Section (m)(5). South of this location, and historically the site located there, the regulations defer back to 5 AAC 06.331. section (m) in which "*no part of a set gillnet may be more than 1,000 feet from the 18-foot high tide mark*"

Over the years when fishing slows down, other set netters in the district descend upon us from their traditional Eastside of the Kvichak sites in search of more fish. Some fisherman set up north of our site in the unclaimed area between us and the northern boundary of the district, nearly two and quarter miles of shoreline. They are well within their rights. ***Some*** set up south of us, and do so much further than *1000 ft from the 18-foot high tide mark*. We have approached these individuals to inform them of their transgression and some are grateful we may be saving them a ticket! *OTHERS KNOW* the regulations and simply do not change course. **I hypothesize most are confused by vagueness in the language of the regulation, *including me* and furthermore… *law enforcement*.**

In an attempt to hold fisherman accountable, we approached David Bump of Alaska State Troopers about enforcement. Subsequently we were told enforcement would be difficult due to the vagueness of the regulation. This leaves us watching fisherman get away with **Illegal harvest across the line** with nothing we can do about it. The trooper then advised us to propose a housekeeping measure in order to clarify the boundary.

Proposal 40 seeks to set the line "about a mile" south of its current location in a no mans land with no physical landmarks to combine with a GPS point. This would do nothing but **increase the ambiguity surrounding the boundary and make this regulation even more difficult to enforce.**

Alternatively, I would propose a line from the unnamed creek on the northwest shore of Kvichak Bay at 58° 52.25' N. lat., 157° 06.75' W. long. to the Libbyville Dock at 58° 46.58' N. Lat., 157° 3.41' W. long. to make a clear and enforceable delineation in combination with physical landmarks fishermen and enforcement officers can use to discern the boundary. This new area would be enclosed by the points mentioned and so be clearly defined. (See Figure 2)

Example language. Alternate text italicized and underlined:

(5) in the Kvichak Section of the Naknek-Kvichak District from Libbyville Dock to a point near Graveyard Point at 58° 52.07' N. lat., 157° 00.80' W. long. and from the unnamed creek on the northwest shore of Kvichak Bay at 58° 52.25' N. lat., 157° 06.75' W. long. north to a point on the northwest shore of Kvichak Bay at 58° 53.37' N. lat., 157° 04.26' W. long. *and north of a line from the unnamed creek on the northwest shore of Kvichak Bay at 58° 52.25' N. lat., 157° 06.75' W. long. to the Libbyville Dock at 58° 46.58' N. Lat., 157° 3.41' W. long.,* the maximum distance that a set gillnet may be operated offshore is as follows:

2. Allocation, Escapement and Management with Consideration of Unencumbered Permits Moving into District.

The addition of a near mile of territory south makes room for additional fisherman to enter the district with unencumbered permits from other districts. This is definitely a trend. Additional permits puts a strain on an already over capacity tender fleet.

Fishing on the Westside of the Kvichak in years past had indeed been a lonely prospect. In more recent years however, we have seen new boats and new ADF&G numbers surrounding us on both the north *and* south. With all the territory on the Eastside taken up, these fisherman have nowhere to go and look to the Westside. Theoretically, **in the two and quarter miles unclaimed north of us, 39 sites could theoretically be utilized.**

In regard to our markets, we are already finding ourselves at capacity and on limits regularly despite the promises and efforts of our canneries! One would think any fisherman in the district would be against more fisherman entering the district not only based on allocation but also the sheer capacity of our canneries! **Adding a mile of territory would theoretically add 17 more available sites!** To other fishermen in the district: **Plan on being limited in what you can catch by your markets or regulated by allocation!**

Apologies for the conjecture on consequences, but these fears are based in facts from experience: ***The Westside of the Kvichak is a different fishery than that of the Eastside.*** It often catches fish when the Eastside does not and vice versa! If not properly managed as so, it could detriment the catch of the whole district and possibly weaken the management tools already in place and obviously working well!

In addition, these *ALTERNATIVE* fishing sites would most assuredly diminish ***our*** catch during the time we need it the most. Often our catch is slow when the Eastside is good and vice versa but we do not have the privilege to move from one side to the other. Many of these fishermen seek to utilize this, likely not thinking it could harm us so. Just as some years are good for us, bad years are dismal. **In 1989 the language of Section (m)(5) was written to accommodate completely displaced fishermen, not accommodate additional opportunity.**

It seems unfair to me that fishermen who have utilized illegal harvest south of us, and thus diminishing our catch in doing so, should be able to change the rules based on wanting alternatives!

It also seems unfair to me that new fisherman to the district should be able utilize a change in the rules in their favor. In doing so they diminish our catch and the catch limits of the whole fleet, our fellow veteran Kvichak set netters.

3. Allocation, Escapement and Management with Consideration of Drifters.

The area proposed to be annexed is fished and lucrative for drifters. It goes against my natural set netter instincts to say I support their reasons to want to keep this area. When the existing boundary was formed it is my understanding it was a compromise between drifters and set netters for rights to fish the cut bank and along the mudflats where we ALL know the fish are. I would rather not poke this bear.

Our set buoys make it nay but impossible to drift along this bank where the best fishing is. Numerous times we have had whole sets ripped out by drifts that unfortunately go awry. Although it does affect our catch, **when the escapement needs to slow down, drifters are the best tool**. You cannot expect set netters in any force to make consistent effort in this cause. Especially when it is "alternative fishing" for most fishermen. **I would rather promote healthy runs long term** than worry about the drifters.

Compared to drifters we are no match for filtering fish out of the water. With this in mind, when it comes time to slow the run down and meet our district escapement goals, drifters are an excellent tool. ***Adding near one mile of un-driftable shoreline south of the established boundary could make this tool less effective and lead to unsatisfactory escapement.***

In Conclusion:

The sands (or rather mud) of time has had its toll on the shoreline since the inscription of 5 AAC 06.331. section (m)(5). It seems appropriate to amend this language to contain both current physical landmarks and GPS points as to appropriately define these boundaries and thus make an **enforceable delineation** so I can stop getting "corked" illegally without a means of recourse.

It should be known to the board that my site is the location I fish. When fishing is better on the Eastside I do not and **can not** change sides. In recent years my site's catch has been ample, but from experience, I know it is only luck that has made it so. The time will surely come when the Eastside benefits and us Westsiders struggle. To have a fleet flung upon us when Westside fishing is good would dilute our catch and more importantly the catch of whole fleet of Eastsiders holding on to their legal limit of sites and/or not geared to change everything at the drop of a hat. There **will** be limits and/or there **will** be closures based on cannery capacity or allocation thus leaving our fellow Eastside fisherman with a weaker hand.

- **Adding additional (or *alternative*) fishing grounds would undoubtedly and indefinitely harm my catch numbers and also worth mentioning, the value of my site.**
- **Adding additional (or *alternative*) fishing grounds would also undoubtedly and indefinitely harm the ability of the Drift fleet to fish this area.**
- **Prop. 40 authors' claim the development of a mud flat, however the topography has been relatively unchanged since 1989. They seek *ALTERNATIVE* fishing grounds that would harm my site when alternatives already exist to the north. They stand to gain and we stand to lose.**
- **Keeping the existing boundaries, with clarification, would harm NO ONE and make enforcement of said boundary FINALLY POSSIBLE.**

Respectfully,

-Aiden Brehan

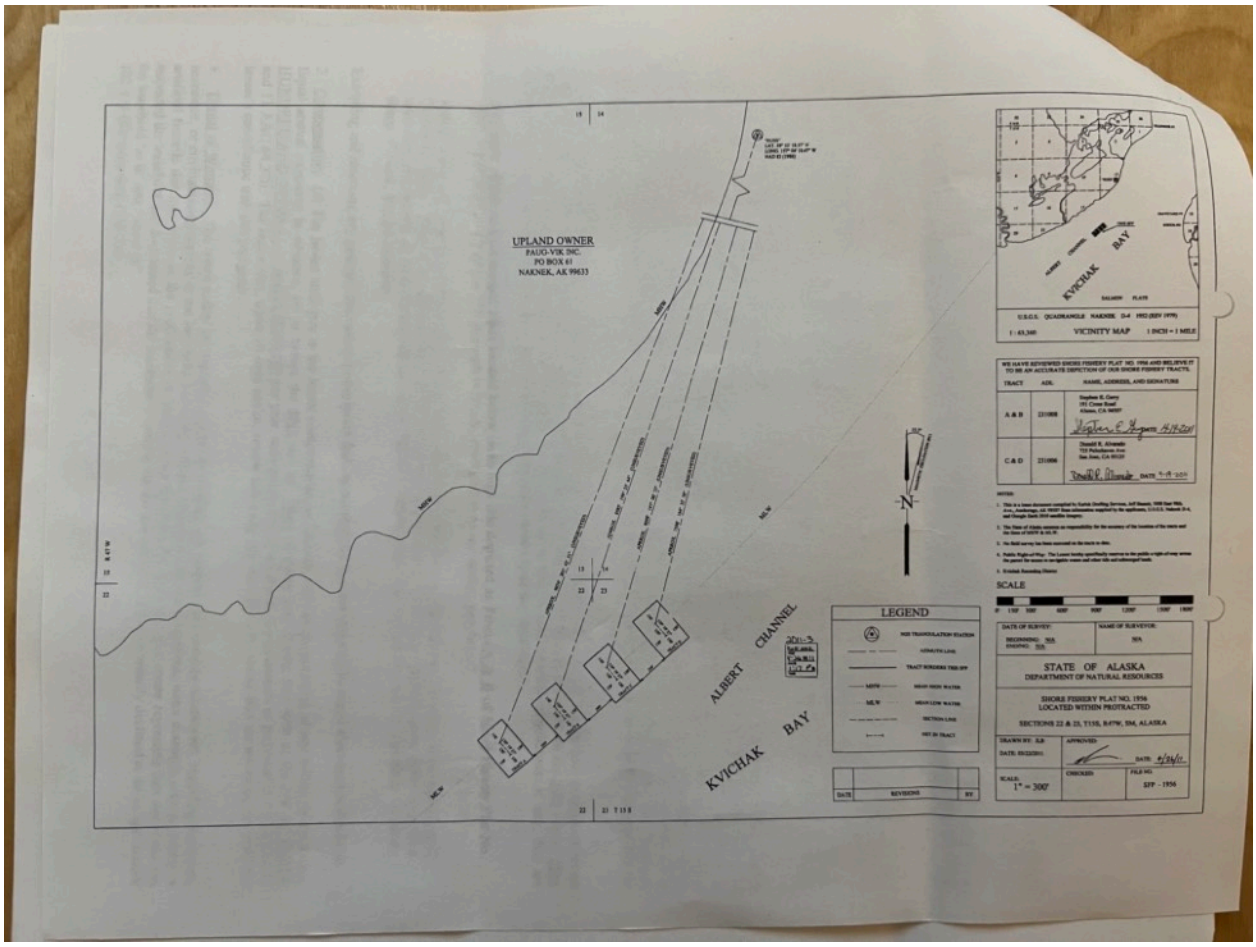


Figure 1: Shore fishery plat no. 1956 showing the location of the ADL 231008 and ADL 231006 when formed. The mouth of the "unnamed creek" in question was located at the south western most site in 2011. Notice the MLW (Mean Low Water) mark and its relative location to the tracts.

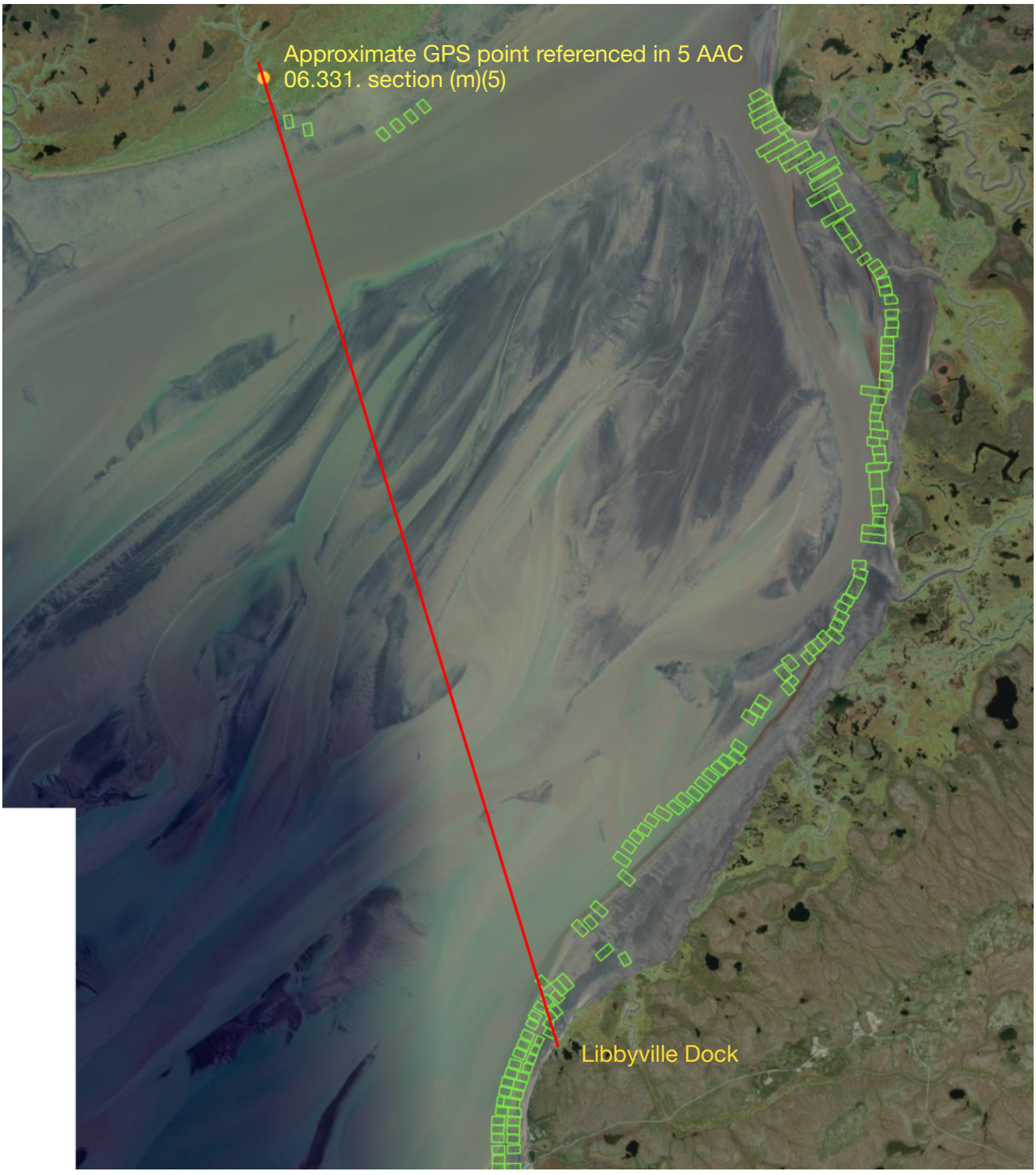


Figure 2: The red line would extend from the existing gps point of the "unnamed creek and extend to the Libbyville dock, enclosing an area defined by 5 AAC 06.331. section (m)(5).

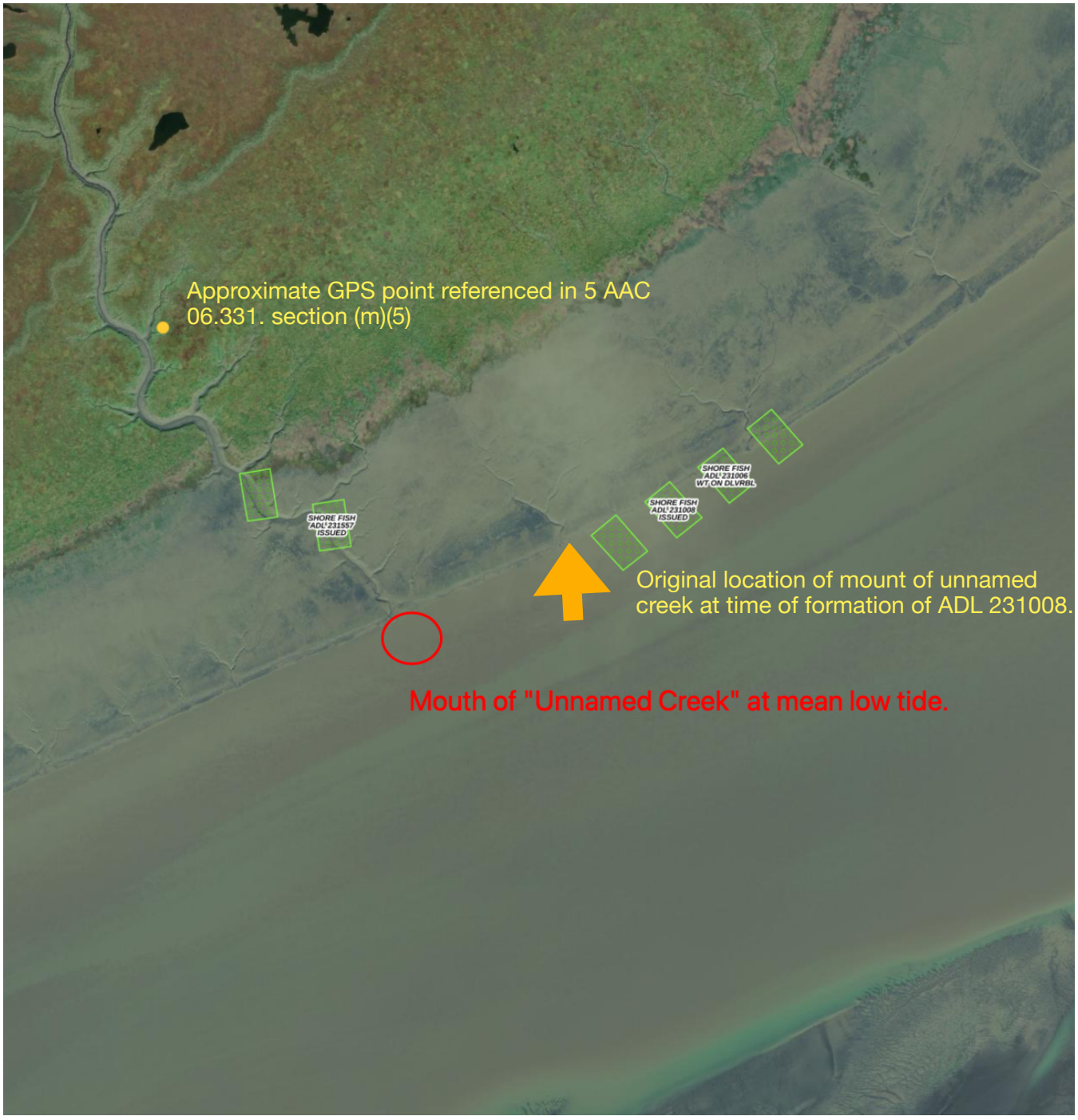


Figure 3: Alternative to the above suggestion, the point could be made to be at the mouth of the creek at mean low tide or otherwise similar time of the tide. This way there would be no question of the boundary line and it would evolve with the shoreline.

PC9

Bristol Bay Fishermen's Association
P.O. Box 60131
Seattle, WA 98160
Phone/Fax (206) 542-3930

Date: November 14, 2022

ATTN: BOF COMMENTS
Alaska Department of Fish and Game
Boards Support Section
PO Box 25526
Juneau, Alaska 99802-5526

The **Bristol Bay Fishermen's Association** (BBFA) submits the following positions and comments on proposals for the Bristol Bay Finfish Board of Fisheries Meeting.

BBFA represents permitholders who fish for salmon in Bristol Bay. Our mission is to protect the renewable salmon resource and promote economic sustainability for commercial salmon permit holders in Bristol Bay.

Thank you for the opportunity to provide comments on these proposals.

Sincerely,

Luke Peterson
President

BBFA's Bristol Bay Board of Fisheries Proposals Positions/Comments

Nushagak-Mulchatna King Salmon Management Plan

Proposal 11: Neutral

Proposal 12: Oppose

Proposal 13: Oppose

King Salmon Reporting

Proposals 31 and 32: Oppose. All Chinook that are caught are currently required to be reported on ADF&G commercial fish tickets.

Gear Specifications and Operations; Vessel Specification and Operations

Proposal 33: Neutral

Proposal 34: Oppose

Proposal 35: Oppose. This is an enforcement issue and not a regulation issue.

Proposals 36, 37 and 38: Neutral

Proposals 39, 40 and 41: Neutral

Proposals 42, 43, 44 and 45: Oppose.
The dual permit regulation should be retained. This regulation was adopted twenty seasons ago in 2003. It has stood the test of time and significantly contributes to the successes of Bristol Bay commercial salmon fishery management.

Proposal 46 and 47: Support.
BBFA supports permit stacking in Bristol Bay. Permit stacking would be the next step to further the successes of the dual permit rule.

Registration and Re-registration; Time and Area; Area and District Descriptions

Proposal 48: Neutral

Proposals 49-54: Neutral (General District)

Proposal 55: Support
BBFA supports aligning the Naknek Section southern boundary line with the Naknek-Kvichak District southern boundary line.

Proposal 56: Neutral

East Side Management

Proposal 57: Oppose
The allocation plan is long established and has proven to provide successful management for over two decades.

Proposal 58: Neutral

Proposal 59: Neutral

Proposal 60: Neutral

Proposal 61: Oppose
It is impractical to require commercial fishermen or tendermen to grade chinook salmon on the water. If data is needed on the size/grading of chinook salmon, that data is best derived at the time the fish are processed.

Herring

Proposal 62: Neutral

PC10

Name: Robert Buchmayr

Community of Residence: Shoreline, WA

Comment:

My name is Robert Buchmayr and I have fished in Bristol Bay my entire live and have not missed a season since 1985. This is my first time commenting to board of fish proposals. Thank you for your time.

Proposal 31 and 32:

I oppose both proposals, drift and set netters have to report all king salmon on the fish tickets at the time of delivery, including "home packs". I do not see where this would in any way improve the King Salmon runs. I do not know what the lodges have to report.

Proposal 35:

I strongly oppose changing the minimum distance required from 100' to 300', the arguments under the disguise of additional safety and ease of enforcement ring hollow to me. At maximum tide it only takes 30 seconds to drift 200', which renders the argument of less entanglement invalid. Drift boat skippers still need to be able to plan their drift and control their vessel and net, just like they have been doing for decades. It is really an argument for additional allocation of the available catch. There really is no additional breathing room for drifters, 300' will be much harder to judge from a drift boat then 100' and enforcement will be unchanged as well.

Proposal 38:

25 fathoms seems like a reasonable change and allow for a bit more then the 100' the two other proposal have. I strongly feel that there should be a limit to tow lines, the current situation is out of control and I agree with all the reasons stated to limit the length, the top open been that fish quality suffers greatly for boats dragging the nets out for miles in the flats.

Proposal 42:

I am a little uncertain of all the details, reading the proposal, the concerns that I have is that it would really just allow the sites on Ekuk beach to get more and more fishing area as time goes by and the bluff erodes, so in essence increase the value of the sites as the years go by. Having a straight line with GPS marking for the outer bags may be helpful, I do believe that most drifters already have the current bags marked on their GPS, what would be really helpful is if there would be night lights on all the outer markers. I am certainly no expert on moving outside anchors, but I have helped in installing new anchors and the job was done in one low tide and I do feel just because it is hard to be within the current law should not be a reason to change that law. I oppose this proposal based on my impression that it really is written to increase the amount of fishing area for the current sites.

PC11

Name: Spencer Burnfield

Community of Residence: Shelton, Wa

Comment:

I am a drift fisherman in Bristol Bay and own a permit.

Proposals 36, 37, & 38 are functionally they same. I do not know if 100 feet or 25 fathoms is an appropriate number but a limit should be put in place. Somewhere between those two numbers is probably appropriate. Anything we can do to discourage shallow water fishing by the fleet will benefit the product quality. But the competitive aspects mentioned are also very valid. Excessive amounts of tow line are also dangerous. I'm in favor of limiting tow lines. But not less than 100'

42 & 43: It's hard to put a real number on it but I would wager 50% of the D's in use are "fraudulent" as-in abusing the system and not using them as intended (people putting them in children's names for example so one "person" functionally ends up with multiple permits). It's a great system to allow a deckhand entry into a fishery, but it also increased the value of permits which makes entry harder. I would be in favor of ending the D. It's only making the rich richer and creating barriers for entry (fewer permits available, higher permit cost).

46: 100% opposed. This is pure greed. Permit prices will jump significantly if this were enacted and further exacerbate entry barriers. All this does is concentrate more wealth in the hands of those who already have it. More boats equals more crews who get paid (jobs), more airfares, more boat parts purchased, more money spread out everywhere.

47: 100% opposed. This is pure greed. Permit prices will jump significantly if this were enacted and further exacerbate entry barriers. All this does is concentrate more wealth in the hands of those who already have it. More boats equals more crews who get paid (jobs), more airfares, more boat parts purchased, more money spread out everywhere.

PC12

Comments on BOF BB Finfish Proposals for Nov 29-Dec 3 meetings, 2022.
By Catie Bursch

Proposal 34 and 35 -I SUPPORT these two proposals.

Problem: Drift boats putting their nets too close to set nets and entangling them has become a serious problem due to the following:

The drift fleet has evolved in size and horsepower much more than the set net fleet has in the last decades. These changes have created a dangerous mix of two very different fishing crafts in the same fishing grounds.

A standard drift boat in the past may have been five times the horsepower of a standard outboard. Now, the largest jet boats have two engines equaling 2,200 hp, which is fourteen times more power than even a rather large set net skiff outboard of 150 hp.

Drift boats have gotten much larger, 3-4 times larger than the average boat 20 years ago. Now they are about as wide (18 ft) as a setnet skiff is long. If you are in a set net skiff and look up at a driftnet skipper in the wheelhouse, they are 15 feet above you. If they are in an enclosed wheelhouse with engines running, they cannot hear anything you are saying to them from your set net skiff. A drift boat weighs 10 times what a setnet skiff weighs. Drift boats have strong hydraulics; the setnet fleet is sometimes relying just on the strength of the two fishermen's' arms holding onto their net that is being drug by a drift boat.

With the advent of D-permits, drift nets can be 30% longer than before. This makes it harder for drift boats to control and maneuver in wind and current. Drift D boat nets are 4 times longer than a set net.

There are now many more jet-boats than there ever were. Jets make it possible to fish these much bigger boats into very shallow water; in and amongst the set net fleet. In the past, most of the drift boats were prop boats and could not come in as close.

These changes have created a dangerous mix of two very different fishing crafts in the same small areas. When a drift net entangles a set net, the drift skipper tows hard on their net to separate. This is very dangerous to the set netter if they are working their net, and very damaging to set net gear.

What can we do to mitigate this dangerous change in our fishery?

Solution: Put more room between the gear groups!

Divide the fleets with the 1000' line from the 18 foot hightide line (prop 34)
OR change the 100' distance off the end of a setnet to 300' (prop 35).

PROPOSAL #28: PUBLIC COMMENT | OPPOSITION

My name is John Carlin, owner/operator of Alaska Trophy Fishing Safaris LLC on the Mulchatna River. We are an Alaskan family-owned and operated small sportfishing tent camp. I have lived and worked on the Mulchatna each summer since 1987.

After more than 35 seasons of witnessing the king salmon runs in the exact location of the Mulchatna River, we are **STUNNED** by Proposal #28 to totally shut down the king salmon fishery year-round in the Mulchatna river drainage, as well as the Nuyakuk and upper Nushagak rivers.

We vehemently **OPPOSE** Proposal #28 for the following reasons:

Targeting the Mulchatna, Nuyakak, and Upper Nushagak Rivers: Minimal Pressure

- The proposal speaks of the declining king salmon numbers *area wide*, but only targets the Mulchatna, Nuyakuk and upper Nushagak rivers without providing justification with quantifiable data or scientific research on the "excess amounts of pressure on the spawning areas for Chinook salmon."
    - Between Alaska Trophy Fishing Safaris camp and the new fishing lodge downriver from us, there are **virtually no other fishing operators on the entire 160-mile long stretch of the Mulchatna river**. I have fished there every summer for 35 years and can attest to *insignificant pressure* on this tributary compared to other user groups of the Nushagak king salmon populations.

Existing Management Tools in Place

- The **Alaska Department of Fish & Game Sportfishing Division already has all the management tools they need for conservation of king salmon on the Nushagak and Mulchatna rivers.**
    - Fish & Game Sportfishing Division already issues Emergency Orders to close the fishery, determine use of bait, catch/release, altering fish limits, etc.
- From our understanding, there has been no discussion over the past few years by the Nushagak/Mulchatna King Salmon Management Plan Revision Committee about going to such drastic measures as to shut down these upper fisheries.

Run Timing

- We do not typically see the king salmon come up the river in our area until the first week of July. **Our season doesn't even start, nor do our clients arrive until July 6th.**
    - The kings that are counted, via the Nushagak sonar site in June, are not present in the Mulchatna until early July, typically around July 2-3.
    - Most big pushes of kings occur down river in June, so any amended regulations take effect by early July. However, those counted fish are not even in the proposed targeted area yet. Hence, how can there be excess pressure on them?
    - By the time Fish & Game has a conservation concern, and issues modified regulations in the form of an EO, the Mulchatna river is being restricted just as the kings start to show up and nowhere near their spawning grounds.

Run Timing continued….

- **Contrary to the proposal's reasoning, and with consideration of the EO history in the area, two outfitters on the Mulchatna river drainage puts minimal pressure on the king salmon.**

- The EO's for the Nushagak/Mulchatna Drainage king salmon fishery have historically been in effect from early July to July 31 – basically during the entirety of our fishing season. Note, the king salmon season on the Mulchatna river closes on July 25, not July 31 like the lower Nushagak, further ensuring there is no pressure on the spawning fish.

2022
- Effective July 7-31, 2022: Reduced Limit
- Effective July 13-31, 2022: Catch & Release; No Bait

2021
- Effective June 27-July 31, 2021: Reduced Limit

2020
- Effective July 10-31, 2020: Reduced Limit

2019
- Effective July 3 – December 31, 2019: Reduced Limit
- Effective July 10-31, 2019: Catch & Release; No Bait

2018 – No EOs

2017
- Effective June 23 – December 31, 2017: Reduced Limit

Blanket Closure Does Not Solve Issue

- To propose a blanket closure above a certain point does not accomplish or solve the heart of the proposal's issue. Reading the proposal in this context, there is nothing to solve – if the run is good, the fishery will stay open downriver. If the run is bad, the fishery gets closed using Fish & Game's existing management tools.

In closing, I believe it must be a collective effort on all king salmon user groups to diligently manage and conserve our fisheries without discriminating and penalizing one user group to take the brunt of the consequences with a blanket closure, especially when it holds no merit.

My family and I are year-round Alaskan residents, and our fishing business is our **livelihood**. Moreover, our goal is to retain the fishery and resources for every user group, the future of Alaskans, especially our two daughters and our three grandchildren. Thank you for considering the rejection of Proposal #28.

Respectfully,

John J. Carlin
Owner/Operator
Alaska Trophy Fishing Safaris LLC

PROPOSAL #28: PUBLIC COMMENT I OPPOSITION

My name is McKenna Carlin, and I have spent every summer of my almost 16 years on the Mulchatna River. My family owns a sportfishing camp called Alaska Trophy Fishing Safaris. Both my parents have taught me to learn, cherish and respect all wildlife, fish, and culture in Alaska. In other words, our core belief is to protect and honor our resources.

I wanted to share a poem I wrote in 5th grade which reflects on my love and respect for the Mulchatna. My poem, "I Am," won 1st Place in the University of Alaska/Anchorage Daily News Creative Writing & Poetry Contest in 2019.

This is why I **OPPOSE** Proposal #28:

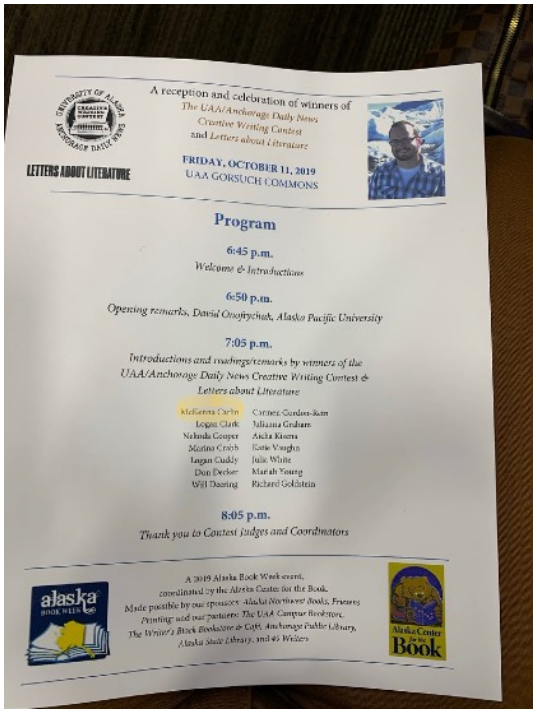
I AM
By McKenna Carlin

I am aware of my surroundings.
I wonder what is out there.
I hear the splash of the Coho,
Beautifully jumping out of the water.
I see wondrous glory of the bright light
that greets me every day.
I want to witness all the beauty.

I am aware of my surroundings.
I pretend I am flying over the river.
Just as the eagle graces me.
I feel the sky coming down when it rains
Helping Mother Nature fulfill Her duty.
I touch the cool water with the tips of my fingers.
I worry I might get lost in the dark of night.
I cry only when I leave the Mulchatna River.

I am aware of my surroundings.
I understand the beauty of this land
May not last forever.
I say, "I will meet the ancestors one day."
I dream of the next time I'll come.
I try to drive the motor as I'm forced back to reality.
I hope I will see the spawning salmon
As I leave this land.

I am aware of my surroundings.



I believe it is up to all Alaskans and people who use the rivers and oceans to be responsible for their waters. If we all work together, instead of against each other, we can accomplish greater things.

Please reconsider and reject this proposal and its impact.

Thank you,

McKenna Carlin

PC15

Name: Mike Carr

Community of Residence: Port Townsend, WA

Comment:

Proposal 11, Opposed

The official king escapement for the Nushagak in 2022 is 44,434. The king salmon harvest in 2022 is 5,325, less than 11% of the total king run. This is not a failure of fisheries management and proposal 11 is not justified.

Proposal 42/43, Opposed

These proposals if passed, would hurt every fisherman in Bristol Bay. There would be more boats fishing and more total net in the water which would make the fishery more competitive and crowded. The infrastructure needed to support the fleet would be greater and fishermen themselves would be in lower demand, both of which would lead to a lower price. Even those who can't afford to purchase a permit at the current prices do not stand to gain by this because the fishery would be less lucrative to all of those involved.

To the Alaska Board of Fisheries Members,

My name is Craig Chythlook, my folks are Joe and Molly Chythlook who still live in Dillingham. I have grown up in this fishery and continue to make it back to fish for salmon every season, in the Nushagak district. I have been an SO3T permit holder since 2004 and have been in the waters of the Nushagak river fishing with my family every season since 1987.

I would like to thank you all for reviewing our public comments and will do my best to group and be efficient with my arguments in this letter. I will start with grouped proposals I want think are most important and that I believe deserve the most attention by the board this year.

Proposals 42, 43, and separately 44. Also, separately grouped - 46, and 47. **All under 5 AAC 06.333.**

Proposals 42 – 43, I support and agree with. I have participated as a D-permit holder within own family for several years before I took over my own vessel and with family since between boats breaking down or teaching family members how to fish. These reasons were the original intent of this regulation, to allow watershed residents whose vessels were becoming inoperable in the early 2000's before major support and funding from area CDQ groups like BBEDC – To allow relatives, family, and friends the ability to work with each other while ex-vessel values were historically low and create opportunity a chance to fish their family's permit and fund improvements or repair to inoperable vessels.

Currently, this fishery has seen ex-vessel values and returns at historic highs and for several years now we have had permits north of $150 – $200k. The gillnet fishery has improved beyond the need to have two permits fishing one boat. A single dual permit vessel earns on average substantially more than non-dual permit vessels, as highlighted a 2018 public comment to the BOF, and two research papers discussing the greying of the Bristol Bay fleet and Turning The Tides report (*Alaska's Next Generation of Fishermen*, n.d.; Gho, 2020). These two reports along with a public comment from the 2018 Nushagak AC meeting highlights that the original intent of the Dual Permit system is no longer being met. From discussions with AC members and those who worked on supporting the original proposal to enact the dual permit system was at times of low returns in both ex-vessel values and returns, the intent was to allow fisherman with boats that were not fishable to hop on another boat, the original intent was to get more gear out of the water, and above all it was to empower local Alaskan and most specifically watershed residents the opportunity to participate in the fishery without a boat. This is no longer the reality and the fishery has moved past the intended use of the regulation and as the author of prop's 42 and 43 stated, and supported by literature, the dual permit system has disenfranchised local fisherman, it has overcapitalized out of state and non-watershed resident fisherman, and in time of regular over-escapement – has allowed only those with the biggest, most powerful, and most aggressive (non-local and generally western or non-Indigenous) residents an unfair advantage (Gho, 2020). Most of the money made in the fishery leave the state and the greatest disparity is between those with and those without a dual permit (*Alaska's Next Generation of Fishermen*, n.d.). This is a huge barrier to the majority of local and Alaskan fisherman who live in the region that has less economic opportunity to supplement the offset cost needed to purchase bigger boats, additional permits, and upgraded capital cost expenses needed to be ultra-competitive in the current fishery. The Nushagak AC chose to shot down both 42 and 43 for many reasons, it was good discussion – however, I think one of the biggest reasons were the lack in forward thinking about how an sudden change in regulation would impact the fleet, and most importantly the local Nushagak and Bristol Bay residential fisherman – This would likely make those roughly 13% of watershed residents that utilize the dual permit system no way out because

to go from being a regular deckhand on an operational vessel to suddenly needing to buy a operational boat with RSW and all the gear required is too much, all this has done is created opportunity for out of region and out of state fisherman to buy more permits and make more money(The Nature Conservancy, 2021), as permit outmigration only got greater when Alaskans owned 63% of permits to 44% as of 2020(The Nature Conservancy, 2021).

The purpose of the board is to ensure equal opportunity and equity in the fishery, as a local fisherman of Bristol Bay as nearly two decades of anecdotal evidence and more statistical data than you all will have time for – **you need to take into serious consideration proposal 44 and support the sunsetting of the dual permit system**. We are currently in a time of relative abundance for sockeye, most fisherman who take advantage of the dual permit system are from outside the region, in some districts we are needing more gear in the water to deal with over-escapement issues, and most importantly – the continued support of a dual permit regulation is widening the economic/capital (investments like boats and better gear) gap between a local smaller propellor boat fleet and an outside watershed overcapitalized and **over-incentivized** fleet of fisherman willing to continually ask for permit stacking.

Proposals – 46/47

I won't discuss too much on this, the Nushagak AC and most likely most others will unanimously shoot down these proposals. However, my previous statements and the four reports/papers I mention in this paper have much more data about the many **perverse incentives** that have resulted because of the dual permit system. Money and greed are powerful incentives, and as a fisherman who prides myself with knowing many relatives in the Bristol Bay region and live, hunt, and subsist along side so many local watershed residents – I do not share the enthusiasm of greed that is the catalyst for many proposals that you will be deliberating over.

PROPOSAL 38 - 5 AAC 06.331. Gillnet specifications and operations

I will align my comments with the Nushagak AC and focus on why they and I support this proposal. I have been fishing a 32x14' wide twin propellor boat that draws 36"-39" of water depending on how much RSW water I am carrying aboard. It is very difficult for me to turn my boat against tide, wind, and waves – it is very dangerous to put my crew at risk with short tow lines (25 fathom or 150') when we are against the elements like heavy seas or happen to drift over a sandbar or are getting blown onshore into shallow water. I am young and I am aggressive, and I push my crew and boat to its capacity at times – like so many others – I have roughly 300' to 350' of rope on my reel and standard practice for my vessel and many others is to point our bow into the waves (as a stern picking vessel) when it is rough. This maneuver requires me to pull out 50' to 100' of tow line so my crew can safely bring my tow line to the bow so my vessel can safely fish rough seas. At times of severe sleep deprivation, hunger, and fatigue we have miscommunications or simply at times cannot hear each other – Many times, I would suggest on a daily basis when it is windy, I need almost all of my 300' to competitively and safely fish. The issue these proposals are looking to address will not be solved by a board decision of an arbitrary number. There are new 32x17' wide vessels that draw 18" or less water depending on how much fish and water they have on board, these boats will always be in the shallows up next to set-net sites competitively fishing those area, because that's where a majority of the salmon run is happening during some of the heaviest and busiest times of the season – the fish run shallow and especially with an on shore wind. These big vessels will be there at 100' or 1200' – the number you choose will not change that. The decision you need to make is about safety, I agree that 1000' – 1500' feet is excessive and quite often

because my boat is less competitive and has a deeper draft I am fishing just outside of ultra-competitive jet boats and multiple times a season I will be drifting at a much faster rate than these vessels – their ability to have 1000' or greater line out impedes my vessel or nets safe passage because they are so far away from their net they make it impossible to fish near them. This is unequitable, the fish these fisherman pull off the beach is of poorer quality than deeper caught salmon not being dragged in mud or very shallow water and because of the massive mechanical advantage of the jetboat fleet – the rest of the drift fleet have to maneuver around guys who are willing to subject their boats and catch to ultra-competitive conditions, like catching big numbers of salmon in very shallow water utilizing 1200' of tow line.

The board needs to come up with a fair compromise that does not impede the safety of an aggressive style of fishing by utilizing different attachment points of net to our boats in rough weather but also not be so long to allow guys who don't care, will never care, and will do what they can to get an advantage regardless of regulation – I would support a compromise of 300' to 400' as being fair while ensuring safety.

PROPOSAL 35 - 5 AAC 06.335 - Minimum distance between units of gear.

This is an enforcement issue. The ultra-competitive fisherman will be a quarter of a mile or more over a line fishery, will be on the beach in-between setnet sites as is, and will likely completely disregard any new regulation with any new number you have on board. To me this is also an allocative issue, there is a reason that a lot of us lawfully fish at or outside the 100' off set-net sites – there's a ton of fish there! The setnet fleet already running 24/7 in the Nushagak district cannot keep up with their allocation, allowing more fish to run into plugged nets on the beach or not along for lawful catch of fish near shore will have long-term impacts to the catching power of lawfully abiding fisherman. None of us want to catch setnet sites and very few regularly fish in the manner as described in this proposal. It's a regular and returning group of fishermen who know they will not get in trouble fishing close to or in-between sites. Changing the distance by 50' or 200' is not going to achieve any of the issues requested by this proposal.

PROPOSAL 11 - 5 AAC 06.361. Nushagak-Mulchatna River King Salmon Management Plan and 5 AAC 67.022. Special provisions for season, bag, possession, and size limits, and methods and means in the Bristol Bay Area.

This is really the most important, but I am waiting to see what the department recommends and will make public comments at the BOF meeting based on their suggestions.

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The Nature Conservancy. (2021). *Righting the ship: restoring local fishing access and opportunity in Bristol Bay salmon fisheries*. 48. https://www.nature.org/content/dam/tnc/nature/en/documents/RightingTheShip_elec_2021.pdf

PC17

Name: Dennis Courtney

Community of Residence: Ugashik, Alaska

Comment:

I oppose proposal #33 to Increase maximun offshore operation distance for set gillnets in Ugashik Village to 800 feet.

Reasons: Possible navigational hazards and safety to set netters traveling to deliver to the tenders in bad weather. Our family has fished Bristol Bay 46 years, as drift gillnet and set netting, fishing is a dangerous job why make it worse. We have two set net sites and a home in the village.

Thank You

Dennis Courtney

Elizabeth Courtney

Mariena Courtney

Marshall Courtney

Byron Cullenberg, Fisherman

Proposal 35
I oppose this proposal. 100' is more than enough distance between the ends of set gillnets and a drift gillnet.

Proposal 36 - 38
I oppose this proposal. There should be NO maximum length of towline regulation. Choosing the length of towline that you so desire should not be regulated. It is a safety issue. The tide drops extremely quick and to avoid going dry, getting stuck and damaging your vessel it is crucial to be able to let out as much line as you need to get to deeper water so you can tow your net to safer deeper waters.

Proposal 42- 44
I oppose this proposal. There shall be no reversal of allowing Dual permits in Bristol Bay. Every fisherman has the choice to Dual permit their boat. Not only does it keep the number of vessels at bay, but it also allows the people that want to invest more into the fishery the opportunity to create more wealth due to their investment.

Proposal 45
I oppose this proposal. A person willing to invest enormous amounts of money to be a dual permit should not be subject to lesser fishing opportunities because those that choose to remain a single permit are complaining about catching less when the opportunity exists for them to also become a dual. There should be no special treatment for those who choose not to partake in the opportunities available. Likewise those who do partake in the opportunity should not be punished for doing so.

Proposal 46-47
I support these proposals. It is more economical as a business owner to be able to own and fish two permits rather than leasing one every year for absurd amounts of money.

Proposal 49- 54
I STRONGLY support these proposals. Dissolving outer district lines on the east side districts once escapement goals have been met is an incredibly reasonable & necessary proposal. Six separate proposals were presented all for this same issue because it has been a growing problem every year.
Specifically prop 53-
Once law enforcement is no longer present at the end of the season, the lines become lawless. As it currently stands, any fisherman with integrity does not have an equal opportunity to catch fish for the remainder of the season as those who break the law year after year. We should not be at a disadvantage for fishing legally.

PC19

Name: Thomas DEPauw

Community of Residence: St. Paul, MN

Comment:

This makes no sense. 2 camps on that much water can't make a material difference on the fisheries. Is there any science back up to support this proposal.

PC20

Support for Proposal 33 November 14, 2022

Dear Alaska Board of Fisheries Members:

I am writing to you on behalf of the Ugashik Village Setnetters. I participate in the fishery and have for the past 20 seasons. I am in strong support of this proposal and feel that if passed it would be in the best interests of the fishery, its participants, and the State of Alaska.

Background: During the last four seasons an extensive mudbank has developed along the inshore end of our area in which we fish our set gillnets. This impedes us from fishing as effectively as we have in the past (decrease in functional fishing time). The current offshore distance limitation of 600 feet from the 18-foot high tide mark precludes us from fishing the full extent of our allowable gear and denies us the efficient use of the fishing time allowed. We have lost an estimated 20% of our opportunity due to fewer hours of available fishing time because our nets are not in the water.

In 2016 the BOF adopted the "Criteria for Board Deliberations on Commercial Set Gillnet Proposals Impacted by Coastal Erosion" (2016-238-FB) which outlines the criteria that the board will consider and weigh when deliberating on a proposal related to set gillnet sites impacted by coastal erosion. We feel that our situation in Ugashik Village clearly fits Criteria #1 which states that "*issues that arise from land that has either eroded or accreted through natural or artificial causes contiguous to the leasehold*" need to be taken into consideration when the Board deliberates on these types of situations.

Proposal 33: To remedy the issue we propose that the maximum offshore distance be increased from 600 feet from the 18-foot high tide mark to 800 feet from the 18-foot high tide mark. Increasing the offshore distance allowed will enable the set gillnets in Ugashik Village to effectively fish their historic fishing time as determined by the tides of the day. The eleven sites currently fishing in this area would all have the ability to fish farther offshore negating any allocative effects potentially arising from this solution. This is an area that is only open to set gillnets, drift gillnets are not a legal type of gear. At the time of the submittal of this proposal ten out of the eleven sites concur that the maximum offshore distance should be amended by the board to 800 feet from the 18-foot high tide mark.

Regards,

Brandon Digsby, Ugashik Setnetter

PC21

November 14, 2022

Alaska Board of Fisheries

Bristol Bay Finfish – November 29–December 3, 2022

RE: Proposal 36

My name is Shawn Dochtermann and I will be supporting Proposal 36. I'm a 37 year veteran fisherman in Bristol Bay, 20 of those years operating the F/V Isanotski. Since I started the fishery in 1985 in Egegik we have witnessed many changes, the addition of reels, level winds, high powered hydraulic motor, wider more powerful vessels, and dual permits. The newest tool are jet boats that can fish in illegal waters where the net does not float.

The primary reason I support this proposal is it will prevent jet boats and possibly other shallow draft Bristol Bay drift gillnetters from prosecuting the drift gillnet fishery in an illegal manner. Jet boats are known to run their vessels at a high rate of speed into very shallow water as low as six inches and lay their nets out. Then they use a very long towline (possibly up to 1200 feet or more) made of spectra line to winch their net out of the shallow. This is illegal as the net is never drifting. The best way to stop this illegal fishing is to limit the length of the towline. A reasonable length for a towline is 100 feet which is approximately 3 lengths of a Bristol Bay vessel which would be easier to enforce by the AK State Troopers/Public Safety.

These long towlines are also a safety issue as well as if a person is trying to fish in the vicinity of the vessel with a very long towline that is not in shallow waters pulled tight it may be dangerous to a vessel that is drifting down into the towline. If the towline was in the water and towed tight it might catch a person or equipment on the vessel.

I would also like to make an amendment to this proposal. I proposal that we put a limited length on the buoy end of the net as well, at 12 feet. Many vessels in Bristol Bay put extremely long end lines on their buoys. Some do it to help get the net out faster. Others use the long length to inhibit other vessels from going near their net to set, which becomes a safety issue. At night or during stormy conditions one can't see these long lengths of line attached to the end of the and the buoy. Some vessels use the long length of their line on the buoy to help the swell push that end of the net into the shallows to where the net is not floating. So for all these reasons I find it necessary to cap the length of the buoy line at 12 feet. Personally my lines to my buoys are six feet, so by doubling that I believe it to be a fair length for all vessels to get hooked up to each end.

Shawn C Dochtermann
F/V Isanotski
PO Box 866
Kodiak, AK 99615
425-367-8777

PC21

November 14, 2022

Alaska Board of Fisheries

Bristol Bay Finfish – November 29–December 3, 2022

RE: Proposal 46

Madam Chair and Alaska Board of Fisheries Members,

I'm Shawn Dochtermann a Kodiak resident and a Bristol Bay Driftnet permitholder. I've been fishing in the Bristol Bay salmon fishery since 1985, and as a vessel and permitholder since 2003. I want to state that I adamantly opposed to Proposal 46 as it will adversely affect any new entrants into the Bristol Bay Driftnet fishery. This is a very dangerous slippery slope that will only benefit a few but impact future generations in the Bristol Bay water shed as well as other state residence.

There are quite a few Bristol Bay fisherman that control two Bristol permits but have the second permit parked in a crewman or family members name and now they want some type of relief even though Limited Entry Law was very clear when written into law, "one permit one person". Yes, the AK BOF has tested co-oping permits in Chignik that was dismantled and thrown out. Then you've allowed Kodiak set net permits to be stacked, but with a sunset provision that now only allows one permit to be owned and fished. If permit stacking is allowed it would take the lower rungs off the ladder for future entrants into the Bristol Bay Drift fishery. We've already witnessed the destruction of entry into the halibut and sablefish with privatization as the bar to enter those fisheries are so high you almost have to be a millionaire to buy in.

There are 1,862 S03T driftpermits available to be fished. There were approximately 405 dual permit (810 permits) vessels fished in 2022. So there were about 1,052 single vessel permits. If this proposal were to pass and in one year 400 single permit were purchased and made into dual permits, there would be approximately 800 dual permits and 200 single permits. This would drive the price of permits up as well as make them so exclusive that almost all dualpermit holders would possible never sell them and then only pass them on to their family instead of sell them in the future.

Yes, the dual permits were created to get vessels off the water and create more space to fish. But it was a tool created so two separate people could fish together in a venture so that a new permit recipient could learn more skills to run a vessel while get a share of the catch for the permit and his work. There are some who enjoy being the second permit holder and want to stay a dual permit vessel and that is not a problem.

If a proposal doesn't benefit the watershed and all of the fishermen that fish the Bristol Bay area then it will only benefit a faction and therefore it should be opposed! The system is working just fine right now, so why try to fix something that is not broken?

Shawn C Dochtermann
F/V Isanotski
Kodiak, Alaska

PC21

Alaska Board of Fisheries

Bristol Bay Finfish – November 29–December 3, 2022

Madam Chair and Alaska Board of Fisheries Members,

RE:Proposal 52

My name is Shawn Dochtermann and I support proposal 52 as well as 49,50, 51 & 53. It's high time that the General District be reestablished. We've seen to many forgone fish escape up the rivers while they could have been caught and provide feeding the world. I would say one of the most important reasons to put a General District back on the books is to deter illegal fishing and allow all fisherman to have a fair chance to catch the overabundance of fish once all of the East Side Districts and the Nushgak have achieved their midlevel escapement goals. As it is now, only a certain group of fisherman are willing to go over the line every period. We've seen this illegal fishing push out to 1/4 mile, then a half mile and even futher when the AK State Troopers are not there to give tickets. The only way to stop the thieving is to create an even playing field with the General District. This proposal if passed would allow all Bristol Bay fishermen to benefit and may even allow for the setnet fishermen to have more fish hit their nets.

Shawn C Dochtermann
F/V Isanotski

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425-367-8777
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PC22

Nicholas Dowie
nicholasjdowie@gmail.com

Madame Chair and Members of the Board,

I was born and raised in Kodiak, Alaska and am a life-long fourth generation set net fisherman of Bristol Bay, Nushagak District. I hold a doctorate degree in science and have been part of larger discussions concerning chinook management. I co-authored proposals 12 (withdrew support), 41, and 61 (withdrew support). My comments are as follows:

Proposal 11:

Support.

Proposal 11 captures many important aspects for addressing chinook salmon management, however this management plan requires a much larger discussion and should consider other avenues and ideas. This discussion should include:

1. End date to chinook conservation management plan. Any effective plan for reducing chinook catch while optimizing sockeye harvest should consider historical timing data for daily chinook escapement levels.
2. Total prevention of chinook harvest is not possible, but more optimal chinook:sockeye catch ratios should be highlighted, such as a reduction of mesh size to 4.75” or less when chinook projections fall below the escapement curve. This small mesh size also favors smaller size chinooks during harvest, as most are the same size as sockeye, and smaller chinook have a lower spawning importance.
3. For 3. Change “…the department in an attempt to conserve king salmon shall conduct a drift gillnet test fishery…” This should be changed to “…gillnet test fishery…” or to “…drift and set net test fishery…”. Set nets are stationary and in many cases, they could be a more standard metric for sockeye abundance estimates.

Proposal 12:

We would like to withdraw our support for proposal 12 and recommend the Board take no action.

We recognize the broader perspective of proposal 11 and understand that a much more comprehensive discussion will be had by the Board concerning chinook management. We would like to support the broader discussion for proposal 11, while still considering a specific end-date for chinook management and a maximum mesh size restriction for sockeye during chinook management periods, and are supportive of a higher level for optimization of the chinook:sockeye catch ratio. These comments will be added to proposal 11 during the comment period.

Proposal 31 and 32:

Support with amendments.

Fishermen in the Nushagak already record chinook salmon commercially sold or kept for personal use on their ADF&G fish ticket. These sections regarding commercial requirements should be removed.

I also believe the Board should consider a requirement to log specific or estimated daily landings of chinook salmon. Catch-and-release mortality data and studies exist for Bristol Bay. This data supported estimate would be insightful for future biological understanding of spawning to return ratios under changing ecological conditions.

Alaska residents with a valid subsistence permit should report any chinook salmon retained for personal use from a commercial opening on their subsistence license only. All commercially sold chinook would still be recorded on the ADF&G fish ticket. Currently, chinook salmon kept can be double reported on both a subsistence permit and an ADF&G fish ticket.

Proposal 61:

We would like to withdraw our support for proposal 61 and recommend the Board to take no action.

There are more pressing concerns with chinook management than this proposal. We recognize some of the inconsistencies with data collection in Bristol Bay, but that this data is considered with historical apportionment. Processors do record number of chinook and total pounds harvested, so extrapolated data does exist. This data also becomes additionally murky with any chinook kept for personal use.

PC23

Name: Nick Downs

Community of Residence: Bellingham

Comment:

I am writing these comments after reading the proposals for the Bristol Bay salmon fishery. I have been involved in the fishery for 25 years.

I have strong feeling about several of the proposals.

Proposals 36, 37, & 38 are all very similar and they would all accomplish roughly the same goal. I support them but with a slight modification on the length of the tow line. I have always had around 60 fathoms of tow line stored on the bottom of my net reel. In my years of fishing, I have used it on multiple occasions to avoid grounding my boat while being able to maintain connection to my net. This amount of line seems sufficient to help avoid certain situations while not creating a hazard to another fisherman in the area. In an attempt at simplicity, I would suggest a limit of 50 fathoms or 300 feet.

In recent years we have seen fisherman deploying longer and longer tow lines in order to gain a completive advantage over others in shallow waters. I have seen fellow fisherman with towlines to the extent of thousands of feet, often Spectra line. There are two main issues with this that I have experienced. The first being with that much line out the fisherman's net is not within sight of their vessel and you wouldn't even know they are connected to a net. Their towline is often just under the surface of the water and not visible. In this situation, it would be easy to get their towline tangled in your propellor. The second is that this extreme extended towline can block multiple sets outside of the fisherman's net from being able to be made and creates a disadvantage to others in the area.

I am in opposition to proposal 42 suggesting to repeal the permit stacking "D" permit operation of 200 fathoms of gear. With the recent large runs and catches I can see the merit in suggesting this but it was not that many years ago that the fleet was looking closely at a permit buyback system. The permit stacking is a very good solution to accomplish a fleet reduction without making it mandatory for all permit holder to participate and pay for it. Permit buybacks in other areas have created inflated permit values that were not linked directly to increased revenue from the fishery causing problems for new entrants. When the cycle goes back to smaller runs the reduced fleet made possible by permit stacking will be essential to keep fisherman in business.

Proposals 46 & 47 are essentially the same as I read them and I am in support of them. I do see the need to limit the number of permits an individual can buy and use in order to keep the permits from being owner by a select few wealthy individuals. I do think that if two permits can be fished on one boat than that the boat owner should be allowed to legally own and register the two permits. I would not support any one person from being able to register and fish more than the two that can be fished on that individual's vessel.

There are several proposals regarding the reestablishment of a general district after escapement goals for all areas are met, generally I would support this. I have seen firsthand how late in the season after enforcement is gone the fishery is dominated by those with the willingness to go further and further into closed waters. Those who are trying to abide by the boundaries are at and extreme disadvantage at this point in the season.

I can see the idea of proposal 56 but it would create a nearly impossible situation for tracking catches and enforcement of regulations. It also would create a lot more opportunity for those who are purposely not following the rules of the fishery. I oppose this.

PC24

Name: Eric Fjelstad

Community of Residence: Anchorage

Comment:

I support proposal 30 for the establishment of a limited youth fishery on the Naknek River.

1. Need - there is a pressing need to create opportunities for youth fishing on the Naknek. History has show that abundance and access drive participation in hunting and fishing. I've been sport fishing the Naknek 2x/year for the past 8 years. Outside of Ship Creek, the Naknek is by far the most intense sport fishing fishery I've seen in Alaska. I see virtually no unguided locals fishing on the Naknek, and I never see kids. The river is super competitive, and my sense is locals have concluded it's not worth their while to try compete for limited fishing spots with the highly motivated and effective guide fleet. It's a sad situation, and it's concerning. The Naknek is potentially a river in trouble, and it needs local eyes on the water. This is a good step to build local support for long-term stewardship.

2. Precedent - the State has a history of establishing youth only fishing and hunting opportunities (e.g., Campbell Creek/kings, Hatcher Pass/ptarmigan, Skilak Lake Road/small game). These regulatory programs quickly become baked-in with the regulated community - accepted as part of the overall management scheme. I've never heard anyone complain about youth fishing and hunting days. To the contrary, my experience anecdotally is that regulatory initiatives favoring kids are widely popular. Everyone recognizes that we need a strong pipeline of young fishermen to protect the resources we all love.

This should not be a hard decision for the board. Please support proposal 30.

Eric Fjelstad

See attached

PC24

Eric B. Fjelstad
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Overview

My name is Eric Fjelstad. I live in Anchorage and am an avid sportfishing angler. I have been fishing trout, steelhead, and salmon for 40+ years - first in the tributaries of the Great Lakes, later in the Pacific Northwest, and in Alaska for the last 28 years. I lived for 5+ years in Ketchikan and the last 23 years in Anchorage. If I am not working, I am fishing. I've been fortunate to experience some of the best sportfishing that Alaska has to offer. Most of my major life decisions have been driven by a passion for freshwater fishing, centered around steelhead, big trout, and kings.

I have been fishing the Naknek River for rainbow trout generally 2x/year (mid-September and mid-October) for about 8 years. I know the river well and have witnessed a very significant increase in angling pressure over this relatively short period. Most concerningly, it appears that Naknek rainbow trout are being impacted by super intense sportfishing pressure.

I support Proposal 17 as an essential step to protect the Naknek River rainbow fishery with two caveats: (i) the timeframe should be shortened to a limited 45-day window from September 1 - October 15 to ensure the measure is targeting rainbow trout only and not impacting access to salmon fishing, and (ii) the effective date should be delayed until September 1, 2024.

Naknek Rainbow Trout - Best in Class

The Naknek River rainbow trout are recognized by hardcore trout fishermen as the very best on the planet. If Naknek rainbows were a place, they would be mentioned in the same breath as Denali, Yellowstone, and Yosemite. Three rivers in Alaska are known to have the largest rainbows - the Naknek, Kvichak, and Kenai - and the Naknek is the gem amongst them. Why? Naknek rainbows are bigger than those found in the other rivers. And the Naknek has a greater abundance of these bigger fish. Beyond that, the Naknek River itself is unique - it is big, technical water tailor made for fly fishermen favoring long casts with the "spey" style of casting. This is big game hunting for megafauna - people come from all over the world to do battle with huge Naknek rainbows. These rainbow trout are unicorns - exceedingly rare, unique, and special. They have no equal anywhere on the planet.

Health of the Naknek River Rainbow Fishery - Storm Clouds on the Horizon

Where are the Small Trout? There appear to be very few small trout in the Naknek River during the September 15 - October 15 period when trout of all sizes fatten up on salmon eggs and carcasses. By "small fish" I mean those ranging from 6" to 22". I often fish for days on end at the Naknek and do not catch a single fish in this size range. Where are they?

I am aware of a recent study suggesting that the Naknek River rainbow trout are doing fine. The study was apparently based on an assessment of 153 trout captured in 2019 and 2020. I question whether critical management decisions should be premised on such a limited data set. I can only offer my personal observation, which is that over the past 8 years, I've noticed a marked decrease in the number of smaller trout in the Naknek River.

I caught *far* more fish in this size range - without question - 8 years ago than I do today. A working hypothesis is that intense bead fishing could be disproportionately impacting smaller fish. I am not a biologist, but I've spent a lifetime on the water. I pay attention and am observant to trends, particularly when things are going up or down. I see a discernible downward trend in small fish numbers. This trend is concerning since it begs the question: where will the next generation of big trout come from?

The Huge Naknek Trout - Shiny Objects. It may be easy to miss what could be a very significant underlying problem - disappearing small fish - because of the consistent reports of an abundance of very large trout. When staring at a picture of a Naknek River rainbow upwards of 3 feet long, who wouldn't conclude that the fishery must be healthy? These very large trout are shiny objects and get a disproportionate share of the attention. It is no surprise that the very largest trout are doing well. First, the record runs of reds into the Naknek River creates a food source that is exploited by the largest fish. Second, the largest Naknek trout are tanks. They are tough and built for battle - intense bead fishing pressure may injure or kill some of them, but most will survive. But small fish - unlike the largest tanks - are vulnerable to injury and mortality from bead fishing.

In short, the Naknek has very, very large trout. The numbers of the very largest of these trout may, in fact, be increasing. But that is not a surprise given the records runs of food for these large fish. It is hard to not stare at a shiny object, but the key point is the health of these very large fish should not be used as a convenient proxy for judging the population-level health of smaller fish.

Comparisons to the Kenai River Trout Fishery

There is a tendency to look at another busy river - the Kenai River - and draw comparisons to the Naknek. The Kenai receives significant fishing pressure, yet the trout fishery appears to be doing great. It would be easy to look at the Kenai and conclude

"…the Kenai has an intense rainbow fishery, but the fishery is doing great. Therefore, we have good data that an intense trout fishery will not impact the underlying resource. All should be good on the Naknek." I believe a conclusion along these lines would be seriously flawed.

As background, I fish for rainbow trout on the Kenai River nearly year-round. It is my home river, and I am a keen student of its trends and subtleties.

Kenai Trout Have Sanctuaries. Naknek Trout Do Not. The Kenai is a very different river than the Naknek. Trout fishing on the Kenai River primarily occurs in two areas: (i) the so-called Upper River area (from the outlet of Kenai Lake downstream to the inlet of Skilak Lake), and (ii) the upper part of the Middle River (above Bing's Landing upstream to the outlet of Skilak Lake). These two stretches receive a lot of pressure from trout fishermen. But the Kenai differs from the Naknek in that rainbow trout go to many other places in the Kenai watershed where the trout fishing pressure is light to nearly non-existent.

Many trout migrate below Bing's Landing and thrive in the water downstream from Bing's to Soldotna, and even in the Lower River below Soldotna. Fishermen in these areas are primarily focused on catching salmon. Rainbow fishing in these areas is an afterthought for most fishermen, including guides, and the fishing pressure on trout is light. Many trout also follow salmon up various Kenai tributaries in July and August. These include the Upper and Lower Killey forks, the Funny River, the Moose River, etc. Trout are effectively unfished in these waters. In short, trout in the Kenai watershed have many defacto "sanctuary" areas where they feed, grow and thrive with little or no angling pressure.

The Naknek River is different - virtually all the trout (during fall feeding) exist in the relatively limited stretch of water from the outlet of Naknek Lake to Rapids Camp. This is where the food - salmon eggs and carcasses - collects, and every inch of this water is fished intensely. There are no sanctuary areas for Naknek River trout.

Naknek Guides are Very Good at Catching Fish (Much Better than Kenai Weekend Warriors). The Naknek trout fishery is nearly 100% a guided fishery. The Naknek guides are good at their job, which is catching fish. They fish the same stretch of water every day and are remarkably efficient at finding and catching fish. The Kenai River is a very different fishery. The Kenai River draws a crowd from nearby urban areas (Soldotna/Kenai/Sterling, Anchorage, MatSu Valley). It has guided fishing trout, but most of the Kenai trout fishermen are locals. They are unguided, weekend warriors. These people are out having fun. Some of them are effective at catching fish, but many are not. Whatever their level of proficiency, there is no doubt they are not nearly as effective at catching trout as the guides.

The broader point is all pressure is not equal. 10 boats on the Naknek have a very different impact on a trout fishery than 10 boats on the Middle Kenai. 10 guide boats on the Naknek touch many, many fish. On the Kenai, if there are 10 boats, 6 or 7 of them would likely be unguided. Many of these unguided fishermen are simply out to enjoy the river experience, and they have nominal impact on the trout fishery.

Naknek and Kenai are Fundamentally Different Fisheries. Kenai trout appear to be doing well. Like the Naknek, there seem to be more of the very biggest trout in the Kenai in recent years. But notably, I'm also seeing more smaller trout than I've ever seen. The full age spectrum of rainbow trout appears to be healthy - even thriving- in the Kenai River. The Kenai benefits from the same dynamic as the Naknek - the red salmon runs are strong. There is lots of food in the system. The Kenai differs from the Naknek in that (i) the pressure is less intense (and less effective), and (ii) the trout have sanctuaries where they are only lightly fished or not fished at all.

The key point to be made is it would be misguided to conclude (i) the Kenai River is a busy, intense rainbow fishery and doing fine, and (ii) therefore another intense busy fishery - the Naknek - should similarly be doing fine. I - and others who fish both systems - believe this conclusion would be misplaced. We see storm clouds on the horizon with the Naknek.

Management Policy for the Naknek Rainbow Catch & Release Fishery Should Account for Quality of Experience

The Board manages *salmon* sportfishing based largely, if not entirely, on "health of fishery" considerations. This is absolutely right as a policy prescription because salmon are viewed by most Alaskans as a source of food. The management regime should - appropriately - prioritize access to the fishery over other considerations. Alaskans "get this" and accept that the standard approach for salmon is to catch your fish, then step back and make room for others to do so. It will likely be crowded, but that is the Alaska way. "Quality of experience" considerations have little to no place in a salmon fishery. But a trout fishery on the Naknek River is different.

The nature of a catch and release *trout* fishery is fundamentally different than a salmon fishery. With catch and release fishing for trout, there is no reason to be on the water other than enjoyment. The fish are not food. The goal is to catch them in a way, and under circumstances, that is fun and enjoyable. Unharmed. When considering the value of a catch and release fishery, the qualitative side of the experience should, appropriately, be squarely on the table as a management consideration. It should not be an afterthought. In rare cases - like a catch and release fishery on a crown jewel river like the Naknek - "quality of experience" considerations should be on equal footing with "health of the fishery" considerations as the foundation for management policy.

The Naknek rainbow fishery is like a house with a stunning view of a mountain. The house has value by itself, but its true value is the incremental value afforded by the view. The two are inextricably linked, and the sum is greater than the individual parts. When viewing how the Naknek rainbow fishery should be managed, the Board should absolutely view "health of the fishery" as the most critical issue. But, if the Board is to maximize the true value of this rare rainbow trout fishery for Alaskans (and others), it must prioritize the enjoyment of the fishermen as a major consideration. The Naknek rainbow fishery is catch and release fishing. If the enjoyment factor is being significantly degraded, then a central component of the fisheries' value proposition has been lost.

Degradation of the Naknek Trout Fishing Experience

Nobody who regularly fishes the Naknek would dispute the point that the intensity of the trout fishing has increased and, correspondingly, the quality of the angling experience has been degraded. There are a number of structural reasons that may explain why this is happening. It almost certainly will get worse over time.

Naknek has Limited Places to Wade Fish. The portion of the Naknek River from Rapids Camp to the outlet of Naknek Lake is a relatively short river, a few miles long. But only a portion of this span of the river is suitable for wade fishing. There are approximately 20 places to wade fish on the Naknek. Why so few? The water is limited primarily because the Naknek is a deep, fast river with many large, slippery boulders. It is a difficult, dangerous river to wade, particularly when the water is high. If you are wade fishing, you are fishing in one of these 20 spots. Or you are not fishing.

This stretch of the river is fished intensely for trout from early September into mid-October. The guided operations are very good at what they do. They primarily target trout in this area by fishing beads from boats. They do their job well. Every inch of this section of the river is intensely targeted by guide boats. By mid to late September, many of these operations transition to wade fishing, and that is the point at which the overcrowding becomes acute. Simply stated, there are not enough places to fish. At peak season (late September/early October), there are at least 40 boats competing for roughly 20 places to fish. The math doesn't work. The overcrowding with guide boats leads to an intense completion for these coveted spots. It also leads to an increasing amount of bad conduct on the river. The Naknek trout fishery is catch and release fishing. It is supposed to be fun. People come to the Naknek from all over the globe for the "trip of a lifetime." But instead of showing these fishermen the best of Alaska, we are showing them the worst of Alaskans.

The Investment Barrier for Naknek Commercial is Low. Degradation of Naknek Trout Fishing Experience Will Worsen. The Naknek is being loved to death because it is relatively easy to exploit. There are number of structural reasons for this.

- King Salmon is accessible by Alaska Airlines. It is relatively easy and cheap to reach the Naknek via a short flight from Anchorage.

- Land is relatively abundant and affordable in the King Salmon area. It does not take a small fortune to get a lodge going in King Salmon. Facilities are easier and cheaper to build and maintain on a road system with ready access to stores, shipping/USPS, and people.

- A good road system provides access to the entirety of the river. There are multiple boat launches.

Together, this means it is easier and cheaper, on a relative basis, to establish or expand a guided fishing operation on the Naknek than on other Bristol Bay streams. The experience of fishing the Naknek rainbow fishery will continue to degrade because the barrier for entry to add new capacity is low. And because the demand for fishing on the Naknek is nearly unlimited, people will continue to arrive and fill up the expanding fleet of guided boats. Market forces have not - and will not - address this problem. It is a classic tragedy of the commons - a race to the bottom as operators add capacity to grow their businesses.

The Board Already Manages Sport Fisheries Based on Quality of Experience Considerations

There is no question the Naknek fishing experience is being significantly degraded. The policy question is what significance, if any, should be accorded "quality of experience" as a consideration in the Board's management prescriptions. The Board could choose to let the commercial market manage itself on the Naknek River. That is the status quo today. We know exactly where that path leads. We will see the very best trout fishery on the globe reduced to the fishery equivalent of a Walmart or McDonalds - maximizing access with no regard for the quality of the experience. It does not have to be this way. This should not be a hard call. The Board has faced these issues to varying degrees on other rivers and has taken appropriate action.

Relevant Kenai Peninsula Precedents. The Kenai Peninsula is crowded. Locals and tourists are vying for water and, as a consequence, the regulatory regime governing the Kenai and Kasilof Rivers reflects strong "quality of experience" considerations. A few examples follow:

> **Kenai "Float Only" Mondays.** The Kenai has "float only" Mondays running from May 1st to July 31st. This rule takes power boaters and their potential clients off the river one day a week. Notably, it applies to guides and non-guided power boats. This prescription may have a modest conservation objective, but its primary purpose is undoubtedly to create one day a week where the river is less

frenetic. This is a significant management prescription based on "quality of experience" considerations.

Kenai Special Rules for Guides. The Kenai has additional, wide-ranging "quality of experience" regulations governing guided sport fishing operations. Most of these regulations are "time and manner" focused. The net effect is they reduce congestion on the river and materially contribute to a better quality of experience for fishermen. Highlights include:

- Guides cannot sport fish with clients.
- The Middle is closed May 1st through July 31st to all guided sport fishing on Sundays and Mondays from Skilak Lake downstream to Bings Landing.
- Guides can only fish this stretch of the Middle on Tuesday through Saturday and only during the hours of 6 a.m. to 6 p.m.
- Guides cannot fish this stretch of the Middle for silvers on Mondays from August 1st through November 30th.
- Guides cannot fish in the lower Middle (below Moose River) for any species on Mondays from August 1st through November 30th.

Kasilof Special Rules for Guides. Guides cannot fish on any Sunday in July downstream of the Sterling Highway bridge.

What drives these policy prescriptions on the Kenai Peninsula? It is clear that these regulations are driven by a mix of "health of fisheries" considerations *and* "quality of experience" considerations. There is a decided thumb on the scale for "quality of experience" on the Kenai River. This is a good thing, and these measures are widely appreciated. The rules are part of the regulatory infrastructure. Nobody talks about these measures anymore. They are accepted - and appreciated - as "the way it is."

The Naknek River rainbow fishery needs better management - modest regulatory changes, tailored to the particular challenges facing that river. Proposal 17 is not precedent-setting policy. Similar management prescriptions have already been successfully implemented on other rivers. These types of measures are popular and have the effect of increasing - not decreasing - the availability of the river resources to ordinary people.

Other Factors: Impacts on Locals, The Relevance of Existing Investments, and Slippery Slopes

Proposal 17 Would Benefit Locals. I rarely see "locals" fishing on the Naknek River. I almost never see locals fishing with kids on the Naknek River. Why? The Naknek trout fishery is so intense that locals simply stay home. They are voting with their feet, and the absence of locals on the water is the ultimate indictment of the status quo. Management policy should be centered on the ideal that a parent should be able to take a kid out on a weekend day and find a place to fish for a few hours. It should be fun. It should be enjoyable. That is not the Naknek. To start, they would be lucky to find a place to fish. With 40+ boats vying for approximately 20 places to fish, the chance that locals find a place to fish is very low. Everything about the status quo and direction of the Naknek trout fishery is antithetical to the interests of the local residents.

Local access should be a priority for the Board. Proposal 17 will create *more* space on the river for locals and Alaskans who want to fish, unguided, with people they know in King Salmon. The biggest beneficiary of Proposal 17 will be locals who will have a chance to get on the river, find a place to fish, and enjoy the experience. To be clear, Proposal 17 should not be seen as *limiting access*. It would *enhance* access for Alaskans.

Existing Naknek Investments Should Not Impede the Establishment of Sustainable Fisheries Policy. Existing investments by commercial operators in a fishery are a factor that should be *considered* by the Board in management decisions, but the existence of investments should not *drive* overall fisheries policy. The Board and other regulatory bodies frequently make policy decisions that impact existing investments in fisheries. The crab fishermen in the Bering Sea are facing this right now - their huge investments in boats and processing capacity are in peril due to crashing crab populations. The Cook Inlet East Side set net fishermen appreciate this dynamic as well. Sport fishing guides in the MatSu Valley have undoubtedly lost business - if not the entirety of their investments - due to the policy measures instituted to protect depressed runs of kings. At the end of the day, the management of a fishery must be focused on the health and value of the fishery rather than protecting an incumbent's mortgage.

With an iconic species - such as the Naknek River rainbows - adherence to the precautionary principle of management should be the driving consideration. Currently, the Naknek is, in effect, managed by the market - commercial operators - rather than through policy established by this Board. This is not a criticism of the Board or of the commercial operators. Circumstances on the Naknek have changed markedly over the past 10 years. Regulatory policy has not caught up - yet - with the rapidly changing situation on the Naknek. The operators are simply doing what they do best which is to invest in a fishery, market the resources to grow their businesses and, from there, deploying remarkable efficiency to the process of putting people on the water to catch

fish. But the process playing out on the Naknek today is no better regulated than a Walmart parking lot on a Saturday afternoon. It is a mess and getting worse.

Certain operators may face headwinds arising from the adoption of Proposal 17. But the history of sport fishing operators is they figure things out. They are hardworking, entrepreneurial, and they find and exploit new fisheries. Overall, this has been a very good thing for most fisheries and Alaskans, making remote, inaccessible places available for enjoyment of the public and providing critical economic activity in rural Alaska. But the Naknek has reached - and exceeded - a breaking point. Proposal 17 would effect change on the Naknek, and although it may create some headwinds, the operators will undoubtedly figure it out.

Slippery Slope Considerations: Some may argue that Proposal 17 would establish a "slippery slope" precedent and lead to similar management prescriptions on other river systems in Bristol Bay. These concerns are unfounded - a strawman argument premised on a regulatory solution in search of a problem. Nobody is seeking to institute similar management regimes for other Bristol Bay rivers. Other Bristol Bay rivers no doubt have occasional crowding but nothing approaching the problems seen on the Naknek. There are structural reasons, discussed above, that make the Naknek uniquely vulnerable to exploitation.

Conclusion

There is a compelling need for a change in the regulatory approach governing guided fishing in the rainbow trout fishery on the Naknek River. There is Board precedent for an approach centered around Proposal 17 based on decisions the Board has already made on other rivers. Proposal 17 recognizes the true value of Naknek rainbows, which is fundamentally tied to the health of these iconic fish *and* the experience of catching them in the unique fishing conditions that exist on the Naknek River. These iconic fish and the fishery that is focused on them should be managed sustainably to ensure that catch and release remains an enjoyable endeavor rather than a frenetic, stressful race to the bottom. There should be a grander vision for the Naknek than having it become a Walmart-style parking lot for sport fishermen.

For these reasons, I strongly support Proposal 17. But the Board should make two changes to Proposal 17 before adopting it:

Limit the Regulatory Prescription to a Limited 45-Day Period. The regulatory scheme in Proposal 17 should apply only to a limited 45-day period where the rainbow trout fishing pressure is most intense on the Naknek River. It should start September 1st and run through October 15th. The proposed start date of June 8th is too early - it would subject salmon fishing, which is largely done by September 1st, to a regulatory regime that is not warranted or appropriate for salmon fishing.

Delay the Effective Date to 2024. Commercial operators should be given time to plan. The Board should adopt Proposal 17 with the change above (September 1st start date) but delay the effective day of the regulation to **September 1, 2024**. This will give commercial operators additional time to plan. They have invested in businesses and efforts should be made to minimize impacts on their operations.

PC25

Name: Krystal Foote

Community of Residence: Beaverton, Oregon

Comment:

As a permit holder, I SUPPORT proposals 35, 36, 37, 38 and 40.

Rationale:

#35: The 100 foot mandatory distance between drift gillnets and set gillnets is an insufficient distance to ensure productive, fair and safe practices for all parties. Increasing the distance to a minimum of 300 feet is a more realistic regulation for the drift fleet to adhere to and more realistic for enforcement to gain the documentation they need and for attaining the goal of keeping nets and gear from colliding.

#36-38: Long tow lines (in excess of 100 feet) allow drift gillnet fishermen to anchor their nets in shallow water, retreat (with their vessel) into deeper water while still maintaining control of the net. This practice of towing nets in strong currents and along mudflats has a massively negative impact on the quality of the fish, and it is technically not drift gillnetting, by definition. Allowing practices that produce a high volume of low-quality, unmarketable fish negatively impacts fishermen Bay-wide. This is incredibly demoralizing to fishermen who, for the betterment of all, prioritize quality over quantity. Limiting the length of tow lines is likely to have a positive impact on the quality of fish.

#40: I can confirm that this section of the district has developed a massive mudflat extending from the 18-foot high water-mark out to about the 12' water-mark of over 1,000 feet, which makes this area virtually unfishable. Changing this arbitrary reference point would enable fishing opportunities for fishermen looking for alternate fishing grounds when the fish are running on the west side channel.

COMMENTS TO BRISTOL BAY FINFISH BOARD OF FISH PROPOSALS 2022 - Shannon Ford Ward, Set netter, South Naknek

PROPOSAL 12

I support the concept of testing a mesh restriction and other ideas in order to give chinook a chance to get through prior to July 1st. We are not doing well by the kings. It's time to try some concepts, and this one seems to have the least impact on continuing other fisheries, such as sockeye. Sunsetting any laws would give a chance to observe the results, and either keep the regulation or try something else.

PROPOSAL 14

I support the ADF&Gs proposal to clarify the law by specifying that set net only may conduct subsistence fishing in the special harvest areas.

PROPOSALS 31 & 32

I support increased reporting of retained kings by both sport and commercial fishery. I report every single king that we keep, even if its a 4 lb jack. We need every single bit of data we can to solve the disappearing chinook problem.

PROPOSALS 33 & 41

I am in support of the proposals calling for a revamp of the boundaries for set net sites due to erosion. We have seen an unprecedented increase in beach erosion over recent years. Setnetters should be allowed the opportunity to fish their sites with the water access originally intended.

PROPOSALS 34 & 35

- I am in the highest support and most concerned about the continuing impact to set net fishers by drifters operating their gear and boats directly over set net buoys, anchors, lines, and nets.

As drift boats get bigger and faster with an increasing number featuring jet drives (as well as new captains buying into the industry and / or fishing new districts with which they are unfamiliar), we have seen a massive movement towards drift fishers operating in the shallows. What used to be an isolated occurrence has become every tide. The intent of separate gear groups and allocation was to divide the waters into distinct fisheries; one on the shore and anchored, and the other to drift freely in the bay. Both have their advantages and disadvantages. In the case of set net fishers, however, we pay for the privilege of fishing a specific site. We can't just pick up and go elsewhere. It's our allotted space. In my case, I'm the 4th generation to fish my site, with my daughter being the 5th. I will outline some direct results of these incursions below.

1. BLOCKED ACCESS TO SET NET SITE
   On our beach (Nak / Kvi district), we have observed a number of drift boats laying out

mere feet from an outer buoy, blocking access for set net fishers to drive along the seaward boundary of the set net sites. Think of it as a marine road; this is where skiffs go back and forth to deliver and return to clear or pull their nets. When they can't even get into the site, that's a problem.

2. DAMAGE TO SET NET BUOYS, ANCHORS, & LINES
   Worse, drift gear routinely wraps the outer buoys, putting strain on the anchors and gear, often pulling them up entirely. It's very common to come back and find masses of cut web and line left as the drifter simply cuts off the tangled part and leaves. For many of us, we have pulleys. Mesh and detritus in the works make our site impossible to operate since it won't go through the pulley - possibly causing unintentional closure violations or quality issues if the set net fisher is unable to pull their net into shore and pick / pull it. If my running line is cut, I can't simply tie the pieces back together; they won't go through the pulleys with a knot in the line.

3. LOST FISHING TIME
   Due to the extreme tidal movement, a lot of set net sites are unable to access their outer anchors except for very low tides, and sometimes not for very long before the water comes back. Putting in anchors and lines in the outer mud is something we dread each spring. It's a huge and unpleasant job! Even if someone had stocked a bunch of replacement anchors and buoys, it might not be possible to set up the site again for several tides. Damage to skiffs and certain gear could end the season.

4. QUALITY ISSUES
   In addition to impacting how efficiently a set net fisher is able to access their net and fish, leaving chunks of drift nets with rotten fish tangled in set net gear creates another navigational hazard plus quality problems and waste. I have seen multiple drifters cut an entire shackle of gear loose to drift or tangle indefinitely, even while full of decomposing salmon.

5. THREAT TO LIFE AND PROPERTY
   By far the worst, however, is when drift boat fishers drive over set net sites while the set net fishers are in the act of working their nets. I have filmed drift boats driving at full speed on the plane, right down the beach over every single set net, and travelling on the SHOREWARD side of set net skiffs that they nearly swamp. This is even more egregious than a boat which may come close to the outer buoy and claim they didn't realize the distance. These boats are actually on the other side of the skiffs, running right on the shoreline so that any cuts or pulls on the line would release the skiff, net, and running line out into the bay (an even harder problem to fix when trying to repair a messed up site!). Skiffs are routinely rammed as they are left tied onto their running line at a site; boat paint and dents tell the story, as do chunks of line or mesh. These are expensive and life-threatening violations. I have been on my skiff in the darkness, tied onto the inshore side of my net during a fog, and had a drift boat come at full speed straight for the shore at high tide. A crewman yelled and waved a flashlight, and the

boat veered at the last second. However, he caught our line and yanked the whole thing up, where it then drifted upstream to tangle around my neighbor. We ended up having to cut our entire net and line up to remove it from my neighbor's line, and it cost us several tides plus the gear loss. Obviously, the real tragedy would have been if the boat hit us (I'm sure we would all have died). But it illustrates the common trend for drift boats to operate anywhere they can get their boat, including what is clearly a set net area.

The problem is that laws already exist to prevent drift boat gear from coming within a certain distance of a set net site. There is little to no enforcement. I have called to report a violation in progress, filming the action which clearly depicts the boat name and number, time, and relation to set net gear. There is no response. I have yet to see a trooper arrive or any investigation generated by submitted pictures, video, and other documentation. There is a regular flyover of set net gear at low tide, presumably to check for any violations regarding gear distance, unpicked fish, or similar. We are easy to observe and therefore ticket. But there doesn't seem to be any interest in monitoring the set net beach region during the higher portion of the tide when drift boats decide to take up set netting.

I urge the Board of Fish to consider the negative impact and threats being perpetrated on set netters if these situations are allowed to continue and grow in frequency and acceptance. Drift boats are getting bigger and faster, and there are always calls for increasing the size, permit numbers allowed, and similar. Our smaller fishery composed mainly of families (and a larger proportion of locals / watershed residents than the drift fleet) deserves to have their leased and licensed areas kept protected for their intended use.

PROPOSALS 36, 37, & 38

I support the idea of setting restrictions on tow line lengths, especially in connection with the above outlined issues and ongoing conflicts.

PROPOSAL 58

I am in great support of opening the NRSHA when escapement has reached a certain number upriver. For years, we have called for a set net fishery inriver, citing quality, safety, and efficiency as major results should this be allowed. Allowing the drift and set net fleet to fish in the NRSHA would conserve resources while allowing a greater harvest at reduced usage of fuel and similar. Recent seasons have seen an increase in bad weather as well. Fishing in more sheltered waters protects fishers, their gear, and their fish quality. This could also benefit local and watershed residents who may not own the larger, fast, and expensive boats.

PROPOSAL 59

I am in favor of repealing the line item preventing the continuous fishery of set net gear in Egegik. It makes no sense to require a set net fisher to pull and reset the gear every tide when they are just going to be catching fish again when the water returns. Increased wear and tear on machinery, and eliminating the short period setnetters have to return to camp and warm up / dry out / maybe eat something = higher risk of injury and accident. Drift boats can spell off and

carry their supplies with them. Set netters do not. There is no reason to pull and reset gear at low tide when the water is out anyway.

PROPOSAL 61

I am in favor of requiring more reporting on chinook size class on fish tickets. We need all the information we can get in trying to solve the riddle of what's happening to the kings!

PC27

Name: Robert Fuentes

Community of Residence: Dillingham, AK

Comment:

PROPOSAL 18 5 AAC 67.020 - I oppose this proposal. For our camp, and we have many hours on the water with a large number of fishermen we fish annually, we rarely catch an incidental trout or grayling while using spawn. In regard to kings, with the setup we use to target kings using spawn, we rarely catch a king deep in the mouth or in the gills. Many may not be aware of the different options out there on how to use a rig that spaces the bait from the hook which significantly reduces the chances of hooking a king salmon deep in the mouth to wound or kill it.

PROPOSAL 20 5 AAC 67.022 - I am in favor of this proposal. Currently, I don't think we can use bait but barbed hooks are allowed. I agree that barbless hooks are much easier on the fish.

PROPOSAL 28 5 AAC 67.022 - I oppose this proposal. There are several businesses in that area that this would affect significantly. Very few local fisherman fish this area. It would be best for guides/lodges to adopt a self-implemented policy to either not fish the area or just simply use artificial only or catch and release only.

PROPOSAL 29 5 AAC 67.022-I oppose this proposal. The problem is that there are not enough fish in-river. It makes no sense to allow commercial fishing to catch fish first and then let what possibly remains to enter the river. What makes more sense is to allow enough fish in-river first then allow commercial fishing to take place.

PC28

Name: Kimberly Fundeen

Community of Residence: King Salmon, AK

Comment:

I am commenting in support of Proposal 30. I believe that it is important for the kids in this District to able to experience the joy of fishing and family bonding out on the river without being crowded by guides and their clients. I have lived my entire life in King Salmon Alaska. Some of my greatest memories are when I was a child and my grandfather would take me out fishing all year. The river wasn't crowded with guide boats then and the Chinook salmon were plentiful during the Summer months. We would take the whole family and go up Big Creek or out to a swimming spot where we could play, fishing or swim without fear of being run over by anyone. It isn't like that today because it's no longer fun to take the kids out fishing. I feel it's overrun with guide boats that crowd everyone out.

I believe that if Proposal 30 passed it would give the youth a chance to experience what it should be like to fish on our majestic river. To have fun without feeling like they didn't belong. The Naknek River should be enjoy by everyone. Giving the youth one Sunday a month doesn't seem like a lot to ask. They are after our future and should be able to experience this area like it used to be and I wish it still was.

PC29

Name: Julie Gaumond

Community of Residence: Corona del Mar, CA

Comment:

I am in SUPPORT for Proposal 33

I am a member of the Ugashik Village Set Netters

My name is Julie Gaumond

I have been set netting in Ugashik for 20 years and the last few years the mud in increasingly getting worse. The past 2 years we were not able to fish our entire net during the fishing period because we could not walk through the mud. We have to set the outside, wait until the tide turns so there is more water and then we tie the inside of our net up. But then we have to baby sit the net and when the tide goes out, we have to pull the net early so that we don't get caught in the mud.

I know we have lost many pounds because of this. If we were able to extend the offshore limitation from 600 feet to 800 feet from the 18-foot high tide mark, this would help tremendously and would allow us to fish our entire net for the entire opening.

I have attached a PDF document with photos where you can see a huge area of erosion and the mud is so thick.....it is very dangerous and if you get stuck, the tide comes in, you will drown.

PC29

PC29

PC30

Steven Gerry

ADF&G Board of Fish
Boards support section

I oppose Proposal 40.

My name is Steven Gerry and I have been fishing on the westside of Kvichack district since the early 80s. I am the last of the westside fishermen originally involved with changing the rules.

The silting in happened in the 1980's and many fishermen up the whole westside bank were displaced. This bank has changed relatively little in recent years and caused no displacement of fishermen.

This change was implemented to give those westside fishermen a place to fish after being displaced by the silting in. Over the years many of those fishermen exited the fishery or moved to the Eastside to more consistent sites closer to the tenders.

There is lots of room on the westside for a fisherman to put a net and catch fish. More than ever in fact. This issue was dealt with in 1985 when the rule change allowed us to fish with the top part of our net dry at the time of the opening.

Opening up more space south of the line seems unnecessary considering how much is available to the north already. More space than there ever has been. Sites south of mine would affect my catch negatively and on top of that devalue my site as I start to eye retirement.

Doing nothing would cause no harm since no one has been displaced.

Thank you,

Steven Gerry

PC31

Name: Anders Gustafson

Community of Residence: Homer, AK

Comment:

Greetings,

I am writing to OPPOSE proposal #28 suggesting the closure of sport fishing of king salmon on the upper Nushagak, the Nuyakuk and Mulchatna river.

I have fished the Mulchatna River for kings since 1996, for many of those years I guided fisherman from around the world and shared this amazing resource with them.

Currently I serve on the board of the Bristol Bay Heritage Land Trust and we work to protect this watershed and all of it's inhabitants.

I was also the Executive Director of the Renewable Resources Coalition that worked tirelessly to fight off the the development of the Pebble Mine.

My experiences have taught me that the constant vigilance is necessary to safeguard our incredible salmon resource. That said, we must also be vigilant to support our businesses and fisherman that patronize those businesses. Without their support and interest in our fishery we would not be able to fight the big fights like Pebble Mine and Land Conservation projects.

I am OPPOSED to Proposal #28 for the following reasons.

-I feel that the proposal unfairly affects a few small businesses while not affecting the business of proposer. How can one business tell the other they shouldn't be able to fish but they can? Is this even legal or constitutional?

-The cumulative impact of a few guides and small operations on the the entirety of the suggested closure is minuscule when compared to the impact from the Trawl Fleet, Commercial Fleet, and lower river fishery. The guides in this area are to a person conservationist who follow the best practices of catch and release possible. This has been documented in scientific surveys that I have help organize and participate in on those systems.

-ADFG tools for managing the fishery should be exploited to their full potential before a proposal like this are supported. Furthermore ADFG is still crunching numbers and research from this season and needs more time to make a reasonable assessment and recommendations.

This includes moving the North Line, fishing more in the wood river, changing mesh size, etc. King Salmon in the Nushagak System have just recently been deemed a "Stock of Concern" this will trigger a process based on the best science available.

Proposal #28 is NOT based on science and should be discarded.

Thanks you for your consideration,

Regards,
Anders Gustafson

Guide, Advocate, Executive Director, Board Member

PROPOSAL #28: PUBLIC COMMENT by HADLEY| OPPOSITION

Our names are Wayne and Kathleen Hadley. We are a Montana family who have visited the Mulchatna River a number of times with our kids and grandkids and have always stayed at the Alaska Trophy Fishing Safaris camp operated by a family-owned sportfishing Alaskan business. We were surprised and distressed by Proposal #28 which would totally shut down the king salmon fishery year-round in the Mulchatna river drainage, as well as the Nuyakuk and upper Nushagak rivers. We strongly oppose Proposition #28 for a number of reasons as follows:

1. The proposal speaks of the declining king salmon numbers area wide, but only targets the Mulchatna, Nuyakuk and upper Nushagak rivers without providing any justification with scientific data or research on the amounts of pressure on the spawning areas for Chinook salmon. Up until this year there has been only one sportfishing camp on the entire 160-mile-long stretch of the Mulchatna river. The camp has a very short season of 4 or 5 weeks only. The fishing pressure is minimal at best and can no way be responsible for the declines in the king salmon fishery.

2. The Alaska Department of Fish & Game Sportfishing Division already has all the management tools they need for conservation of king salmon on the Nushagak and Mulchatna rivers. We know and have experienced Emergency Changes to the regulations when we were in camp. We have seen the Fish & Game Sportfishing Division issuing Emergency Orders to close the fishery, stopped the use of bait, required catch/release and changed catch limits. These tools should be used as circumstances require before any closure is mandated.

3. We enjoy watching the fish counts via the Nushagak sonar site in June when we are anxiously waiting for our trip to the Mulchatna. From watching those counts year after year, we know that the king salmon arrive around the first week of July which is before there is any fishing pressure at all. It's clear the outfitters on the Mulchatna river drainage put minimal pressure on the king salmon. Also, the Mulchatna River closes to kings on July 25, unlike the lower Nushagak, further ensuring there is no pressure on the spawning fish.

4. We believe it must be a collective effort on all king salmon user groups to help to diligently manage and conserve the fisheries without discriminating and penalizing one user group to take the brunt of the consequences with a blanket closure, especially when it holds no merit. Singling out a family-

owned Alaska sportfishing businesses which is the livelihood of this family is hardly fair. In addition, the folks at Alaska Trophy Fishing Safaris have always run their camp with the fisheries in mind, which is why we continue to go back to this particular camp. John Carlin promotes catch and release, urges camp members to eat and keep only the healthy stocks of fish and release all other species. He encourages sustainability of the fishery and river so that future generations have access to the same incredible resources. He is a true steward of the river and the wild fishery resources and should be the kind of sport fishery business Alaska encourages.

Thank you for giving us an opportunity to comment and we urge you to reject Proposal #28.

Sincerely,

Wayne and Kathleen Hadley
Deer Lodge, MT

Hello Fisheries Board members, Alaska Department of Fish & Game and the public.

My name is Dennis Harms. I Have spent 54 years on the water in the Mulchatna river drainage.

I can see that there are system wide problems with the King Salmon stocks that enter the Nushagak system.

My input is on Proposal #28:

Proposal #28 is one of the most self-serving proposals I have ever seen; shutting down the other guy, but not oneself. I don't believe it's even legal under the Alaska Constitution.

The proposal would statistically do virtually nothing to help the King Salmon stocks. The mostly catch and release mortality of fish caught in the Mulchatna by the couple of guides is statistically very insignificant compared to the other user groups of the Nushagak King salmon populations.

Whether a king salmon is killed in a Pollock trawl net, a by catch king in the commercial salmon fishery, or by a guide in the lower Nushagak, or by catch and release mortality -- it doesn't make any difference; it's one fish that will not spawn.

Through my decades of experience, I have observed many things:

1. The decline of the king salmon runs in central and western Alaska has mirrored the massive growth of the pollock trawl industry. Slow progress is being made to study just how many immature king salmon are killed in the trawl fishery, but some estimates put the number a 1.5 million king salmon killed that will not return to spawn. It is imperative that observers be put on every trawl boat and that methods must be developed to reduce the king salmon by catch.
2. Sockeye salmon are the life blood of the fishing industry and southwest Alaska communities. More king salmon are killed in an hour of commercial sockeye salmon by catch then the entire season than on the Mulchatna. This is where it gets tricky. If the king salmon stocks get too low, they will become a stock of concern by the Federal government. I don't think any commercial fisherman or subsistence fisherman wants that. It's in the commercial fishermen's long term interest to try not to catch incidental king salmon.
3. When the king salmon return is low or projected to be low, fewer than say 50,000 sportfishing should go to catch and release throughout the entire Nushagak system. Running the couple of guides out of business on the middle Mulchatna will do absolutely nothing statistically to protect king salmon.
4. Under current regulations that have been in effect for decades, spawning king salmon have been protected by the July 25 closure.
5. Most king salmon spawn far above the stake holder guides in the lower and middle Mulchatna. I do not know of any guides who fish in the spawning grounds of the Koktuli above the Swan rivers, or on the Chilikadrotna or and of the upper reaches of the Mulchatna river.
6. One of the greatest threats to part of the Nushagak king salmon runs are the mining operations at the head waters of the Koktuli river. Is it just coincidence that the king salmon returns have greatly diminished on the Koktuli river since the exploratory drilling by pebble mine?

The king salmon runs on the Nushagak river are truly one of the greatest wonders of the area, and even the world. People have subsisted on them for thousands of years. It's paramount of importance to

protect this resource. Commercial fishing of sockeye is currently how many people make a living. They must look at the long term and help king salmon stocks to not become a stock of concern and invite Federal management. In closing, targeting a couple of guides on the middle Mulchatna will statistically do nothing to help restore the great king salmon runs of the Nushagak river.

I ask you to reject proposal #28 and to look forward to system wide solutions to keeping the Nushagak king salmon stocks strong.

Sincerely,

Dennis Harms

Fished and lived on Mulchatna summers 1968-2002, and visit area regularly 2003-2021.

PC34

Name: Brad Heil

Community of Residence: Homer Alaska

Comment:

I oppose Proposal 35 attempting to change 5 aac06.335 . Proposal seeks to increase the min distance from 100 ft to 300 ft min set net separation from driftnets.

The original intent of this regulation serves its purpose creating a safety margin and separation of 100 ft of enforceable corridor separating gear types. The horsepower increase in drift boats actually increases safety factor by ensuring drift boats have more maneuverability to manage gear in water and avoid any contact/conflict between gear types. Actual citations are few and far between and would be best served by actual data from Alaska state Trooper citation Data available.

There does exist tension between,Setnetter and drift fisherman, reflecting Setnetter belief that drift fisherman unfairly catch fish destined for the beach. The original regulation of one 50 fathom net for set nesters opposed to 3 or 4 nets per drifter reflects the high catching efficiency of set nets near the beach. Allocations are easily managed to disperse the majority of fish to the beach prior to catching by drift fleet.

If drift fleet posed a genuine safety hazard we surely would have record of hazard to human life or equipment as these 2 gear types have managed to work together for many years at this point.

Thanks for your time and expertise on these matters,

Brad Heil, 62 yrs old, commercial fisherman 40 yrs.

PC35

Name: Tanner Heil

Community of Residence: Homer, Alaska

Comment:

I oppose Proposal 35 attempting to change 5 aac06.335 . Proposal seeks to increase the min distance from 100 ft to 300 ft min set net separation from driftnets. The original intent of this regulation serves its purpose creating a safety margin and separation of 100 ft of enforceable corridor separating gear types. The horsepower increase in drift boats actually increases safety factor by ensuring drift boats have more maneuverability to manage gear in water and avoid any contact/conflict between gear types. Actual citations are few and far between and would be best served by actual data from Alaska state Trooper citation Data available. There does exist tension between, Setnetter and drift fisherman, reflecting Setnetter belief that drift fisherman unfairly catch fish destined for the beach. The original regulation of

one 50 fathom net for set nesters opposed to 3 or 4 nets per drifter reflects the high catching efficiency of set nets near the beach. Allocations are easily managed to disperse the majority of fish to the beach prior to catching by drift fleet. If drift fleet posed a genuine safety hazard we surely would have record of hazard to human life or equipment as these 2 gear types have managed to work together for many years at this point.

Tanner Heil, 27, Bristol Bay fisherman 15 yrs.

PC36

Name: MICHAEL JACKSON

Community of Residence: Bellingham

Comment:

Proposal 12:

We would like to withdraw our support for proposal 12 and recommend the Board take no action.

We recognize the broader perspective of proposal 11 and understand that a much more comprehensive discussion will be had by the Board concerning chinook management. We would like to support the broader discussion for proposal 11, while still considering a specific end-date for chinook management and a maximum mesh size restriction for sockeye during chinook management periods, and are supportive of a higher level for optimization of the chinook:sockeye catch ratio. These comments will be added to proposal 11 during the comment period.

Proposal 61:

We would like to withdraw our support for proposal 61 and recommend the Board to take no action.

We recognize some of the inconsistencies with data collection in Bristol Bay, but that this data is considered with historical apportionment. Processors do record number of chinook and total pounds harvested, so extrapolated data does exist. This data also becomes additionally murky with any chinook kept for personal use. We also acknowledge that current regulations do only allow for 5 chinook under 20” a day for sport fishing. We apologize for that oversight.

PC37

Name: Ace Keim

Community of Residence: Anchorage, AK

Comment:

proposals 34 and 35 are similar in nature. I am opposed to both of them. It is not necessary to Increase the operational distance from one another between the gear types. Actual snag ups between gear types are rare. Fish run near shore very often. Set nets already have the immediate beach location where the density of fish is often highest. The current rules regarding the outer limits between gear types is adequate.

Proposals 35-37

I oppose these proposals.

The use of extended amounts of tow line in some situations are a matter of safety. It allows boats to fish in areas that would be other wise impossible to fish without going dry. This has benefits to management on these large runs as it can allow fish that might other wise get past the fleet to be caught further increasing over escapement. It also spreads out the fleet which is likely and indirect benefit to the people who are proposing this change.

In certain locations the use of additional running line can allow a boat to keep the vessel in enough water to operate without going dry which would be a violation. There are already rules in place not allowing you to "anchor" your net. For instance you are not allowed to let your net go dry on land. I feel that as long as you are keeping your net in the water it isn't anchored, it is simply not drifting due to the lack of current in shallow water. The safety of navigation concern cited is unwarranted. The boats that are in and around places where this may be in play are well aware of what is going on as it is primarily shallow draft jet boats in the area. High Traffic line fishing which takes place all over in Bristol Bay creates far more potential for vessel accidents.

There are also situations where the use of additional tow line can allow a fisherman to get out of a dangerous situation when drifting over across sand bars in high current/ weather situations. I have been able to avoid potential danger in the Nushagak district where currents were trying to pull my net across the top of a sandbar. I was able to avoid going dry by letting sufficient line out to remain in navigable waters to regain control of my net and prevent my boat from grounding and being pounded by surf on a bar.

There is no need to reduce the length of tow lines. There are real world situations where long tow line can be used for safety and the instances where they are being used as a fishing tactic are a miniscule make up of the fishing operations taking place. If a fisherman using additional tow line lets their net or vessel go dry there are already rules in place where that is a violation. If you can keep your net and vessel in the water and afloat I think it is a fair tactic.

Proposals 42-44

I oppose these proposals.

The fleet is primarily a tool for manage management of the run. In recent years many fishermen have invested heavily in modern highly efficient equipment to be able to handle high volumes of fish with a reduced boat count and less gear in the water. So there is no problem there.

I believe around 450-500 boats operate as a dual permit currently. That means those 450-500 permit owners would need to have access to a vessel to utilize there permit. Given the amount of time the dual permit regulations have been in play I highly doubt there are 450-500 suitable/ seaworthy vessels available to fulfill that requirement if permit stacking was dissallowed.

I know many permit owners who have entered the fishery with the expectation of utilizing it to leverage a job on a quality operation. Allowing dual permit stacking is good for the dual permit holders (easier access to the fishery, potential to learn), it is good for the operation hiring the dual permit holder, and it is even good for the operations that are single permits and oppose permit stacking because it removes 1 boat and 100 fathoms of gear from the water for every boat utilizing a dual permit.

Proposal 45

I oppose this proposal.

This one is so ludicrous I don't even know what to say.

Clearly penalizing people who have invested more into their operations should not be penalized. The opportunity to operate as a dual permit exists for any Bristol Bay drift fisherman. Choosing to take the additional financial risk to get an extra 50 fathoms of gear or not is personal choice available to everyone. You can't penalize those willing to invest more and reward those unwilling to.

Furthermore every dual permit boat is helping the fleet as a whole because now there is one less boat and 100 fathoms less gear in the water for everyone to compete with. This is a benefit for both single and dual permit operations

Proposals 46-47

I support these proposals.

To me, allowing a permit holder to own two permit make sense at this point in time. It would probably result in a reduction in over all number of boats somewhat, but there has been a large addition of boats that are newer, faster, larger, safer, more efficient at harvesting salmon. With the more modern fleet in play there will still be plenty of capability to manage runs effectively.

I personally fish with a 10 person group of other fishermen in Bristol Bay. Half of my group each year "leases" a "D" permit each year via medical transfer. There is always a large amount of permits on the market available each year for such "leases". The intent of limited entry is to have the permits in the hands of people who are actually going to fish use them for access to the fishery as opposed to a vehicle for passive income through such leases. With the number of leases available each year, it seems as if the medical loop hole is being exploited past what it is intended for. Obviously there are situations where the medical transfer is necessary.

Allowing a permit holders to own both permits themselves would disincentivize these sort of leases and allow the person who is actually seeking access to the fishery to utilize the permit in the manner intended by limited entry.

Proposal 48

I support this proposal.

I think it would be a good thing to help support the small primarily local fleet that participates in the Togiak district.

Proposals 49-54

I support these proposals.

These proposals are all addressing a singular issue. There may be some variance in the details in each proposal, but the intent is the same in each.

Each year later in the season there are line fisheries where there is still as steady flow of fish and the remaining boats congregate there to catch them. Inevitable the presence of enforcement more or less disappears creating a situation where the district lines in these places become more of a rough guide line at best.

Strategy is very simple. If you are in the front of the line you are almost certainly going to be catching the most fish. With the threat of enforcement gone people begin leapfrogging further and further past the established boundaries. This forces you to have to choose between fishing illegally if you wish to be successful or catching substantially less. Now we have a situation created where those taking the biggest risk or showing least regard for the rules are the ones who are being rewarded the most.

I believe a large percentage of fisherman on both sides of the line in these scenarios would prefer to not have to fish in this way.

Fortunately there is a simple solution that most seasons (particularly as of lately with large returns and plenty of escapement) can fix this issue. If all Eastside rivers have reached escapement goals, there really becomes no need for the arbitrary north and south lines as defined by current district boundaries. Remove south line from Naknek/Kvichak, north and south line from Egegik, a north line from and Ugashik. How we deal with an offshore boundary doesn't matter to me much as there are a couple of suggestions and the real problem areas are generally focussed near shore on the various North and South lines. With an East Side general district open fisherman won't have to deal with the stress of choosing to fish illegally or not, and those who simply disregard the rules those most will no longer be rewarded for it in the absence of enforcement. There are some good suggestions regarding how to handle landings in proposal 53.

Proposal 55

I support this proposal.

it just makes sense to simplify things and reduces opportunity for confusion.

Proposal 56

I support this proposal. I doubt I personally would use it, but I can see why some would. Also it could be a source of revenue for ADFG. I see no problems with it.

Proposal 58

I support this proposal. If escapement goals are in good standing I see no reason why not to allow harvest in the in river fishery.

PC38

Name: Chris Klosterman

Community of Residence: King Salmon

Comment:

Proposal 30

In the interest of our future fisheries and future generations of fisherman. Guided sport fishing pressure continues to increase every year on the Naknek. Guides are becoming increasingly competitive over fishing areas and fishing times. This proposal would have limited impact on guided operations and allow for community members with children to share the resource without having to compete with professional fisherman and promote the resource with future generations.

Proposal 25,26,27

It's no secret that our King Salmon populations are in severe decline. The demand for guided sport fishing of King Salmon has exceeded the opportunity of the waters. As long as current regulation allows unrestricted opportunity professional guides will be able to fill boats. People want to catch Kings. I want to catch a King. I haven't caught a king on the Naknek in 2 years. Guides are getting more technical as the fishing gets tougher each year. Restrictions need to be made in an attempt to allow the Kings a chance. The tributaries draining in the Naknek need to be closed. I have been flying out of King Salmon for 20 years and have always seen spawning kings in the upper waters of Big Creek and flown surveys with ADFG. Recent years they are far apart and few between. Somebody do something for gods sake. Change is hard and necessary.

Proposal 18

With the Naknek becoming increasingly competitive primarily due to guided operators more and more guides are using beads as a primary method. 10 -15 years ago it was maybe 1/4 of the pressure was from bead fishing from my own observations. Beads are effective to a fault and require less input skill and mobility for an angler to fish. Fish are hooked in eyes and many areas outside of the mouth as a result of bead being pegged above the hook and as a result there must be increased mortality. In addition to the increased mortality the quality of fish are more and more frequently missing maxillary and other pieces of fill plate etc. This in my opinion does not reflect on a world class fishery. It's more reflective of factory lodge fishing. God forbid anglers would have to stand on the bank and cast a fly rod under their own power to catch a rainbow on the Naknek.

Proposal 20

Bait. If you need bait to catch rainbows, char or any other sport fish the fishing must be pretty poor. Barbless and artificial lures will help preserve fisheries from future generations to experience.

PC39

To: Alaska Board of Fish

P.O. Box 115526

Juneau Alaska 99811-5526

From: Joe Klutsch

P.O. Box 313

King Salmon

Alaska 99613

RE: Proposals 17,18,19,21,22,24,25,26,30

Preface: These proposals represent the culmination of years of experience of many people who have for several generations fished on the Naknek both as guides and general residents, the vast majority of which support these changes in an effort to stem the drastic decline of king stocks and the unsustainable pressure on rainbow stocks. They also address the ever-increasing issues of overcrowding and loss of quality of experience.

Proposal 17

I authored this proposal which is much less restrictive than the one which the Naknek/ Kirchick AC submitted during the last cycle. Please consider it a "compromise" from the proposal which was noted in the section "what is the issue you would like the board to address and why." I did this with intent of showing how the new proposal is indeed a "compromise" by being much less restrictive while accomplishing the goals of controlling combat fishing and improving quality of experience.

Proposal 18

This proposal is well written. The justification is succinctly and accurately stated. I recommend the proposal be adopted.

Proposal 19

This proposal was crafted by my son. I had no hand in its making and was extremely pleased with rationale he offers. He has spent most of 35 years in the area affected, personal fishing,

guiding with me and on his own. His rationale is based on firsthand knowledge and experience with regards to declining stocks and overcrowding. The proposal should be adopted.

Proposal 21

Another proposal crafted by my son goes straight to the issue of excessive level of effort for rainbow trout particularly by nonresident both guided and non-guided, [conclusion: include changes are not arbitrary bottom page 16] I request the proposal be adopted.

Proposal 22

This is a very important proposal which was in the making for several years. It is written in a way which concisely explains the conservation issues over nearly 20 years of ever declining king runs. Commercial sport operators are targeting kings in shallow water "holding holes" every day once these fish are running. There is inevitable hook mortality, and I am personally confident there are some large kings being retained. It is in the interest of true conservation and fishing opportunities for future fishermen. Recommend the proposal be adopted.

Proposal 24

This is another "true conservation" proposal which reduces the bag and possession limit for kings and stipulates that only male king salmon may be retained. Allowing females to escape and spawn is critical for this dangerously depleted population.

Some will argue you can't tell a male from a female; this is dubious argument at best. In the world of hunting, we are expected to tell the difference between a hen and a drake flying at 30+ miles an hour; a nanny from a Billy at up to 600 yards; a mature full curl ram from a Uewe at the same 600 yards and I could go on but you get the point. If you're not sure, don't shoot, if you can't tell if it's a female, release the fish.

Proposal 25

This proposal is the same as #24, it appears there was some confusion when the proposal book was printed. However, #25 goes into greater detail about his perspective of the situation as it has evolved over his lifetime. Like all the proposals I am commenting on, there are genuine biological problems that cannot be simply dismissed as just "social issues." [conclusion: Local knowledge matters] Please read somewhat lengthy rationale carefully as they are truly meaningful. Recommend that the board adopt proposal 24 or 25.

Proposal 26

PC39

This proposal has a great deal of merit. It is authored by a young man [now 37years old who has lived on the Naknek River his entire life]. His arguments are accurate, and heart felt.

If the board chooses to adopt proposal 24 or 25, the reduction in bag and possession along with requiring females may not be retained, a closure from painter bobs cabin up to Trefons cabin at the lake would not be necessary. You could begin the closure from the existing ADF+G marker at rapids camp up to Trefons cabin. Which is the critical mainstem spawning zone on the river. Local residents like fishing the painter bobs stretch and it is deep water.

All the creek closure components of this proposal are well founded and should be adopted.

Recommend the board adopt with suggested boundary changes as an amendment.

Proposal 30

This is an excellent proposal which will afford great opportunity for kids to participate and learn without the hoards of aggressive guided fisherman occupying the river in the described area. The proposal regulation asks for only 4 Sundays over a 4-month period. It is not too much to ask, recommend the board adopt.

Conclusion

The level of effort on the Naknek River by guides and transporters supported by large scale lodges primarily owned and staffed by people who are not Alaskans has grown to a completely unsustainable level.

You may hear from some people who will suggest that there is no "evidence" of problems with rainbow stocks particularly middle age class fish. Nearly 50 years living on this River has shown myself and most other residents of the area that this is not an accurate assessment.

After over 10 years of public discussion, many Advisory Committee meetings, these proposals reflect the support of the vast majority of true area residents. Local knowledge matters. We are past the point of inaction or more surveys. [paralysis by over analysis].

The credibility of the board process, public confidence in ADF+G combined with genuine public fears about the biological future of this fishery are REAL and require regulatory action now.

My time to testify is extremely short.

Please ask me all the questions you think may be helpful.

Respectfully, Joe Klutsch

PC40

Name: Ryan Kocherhans

Community of Residence: St. George

Comment:

I think that the ENTIRE river system should go to catch and release, as opposed to certain areas being closed outright for targeting King Salmon. There are numerous lodges down river from us that are meat packing (we encourage all our guests to release King salmon). If we are closed, then so should lodges downriver. I propose catch and release regulations for the ENTIRE river system, not just those high on the river system. We do not target salmon on their spawning beds, much like the meat packers down river from us. We keep far less King salmon than any other lodge on the river. As stated, once in the freshwater system, ALL of these salmon are headed for spawning grounds, not just the fish near us. Please see my recent media on Instagram/Facebook regarding the preservation of the area. Thank you

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I founded Alaskan Remote Adventures 3 years ago, based upon principles of preserving the sport and protecting our King Salmon run. If the river is closed to King Salmon fishing, then the ENTIRE river should be closed. I propose that it goes to a catch and release regulation (which I already enforce with my guests) as opposed to closing the upper river and not the lower river. Once the King Salmon have entered the freshwater, they are ALL spawning, not just the fish we catch up river. If King Salmon regulations are passed, it should apply to the ENTIRE river system, not just the upper river locations. I encourage catch and release with ALL of my guests, please see my recent lodge media regarding this topic. We primarily fly fish, which is a catch and release sport naturally…I fear that the other lodges down river from us do not practice this, as I know they bring guests to catch and keep king salmon, which we are morally opposed to.

Ryan Kocherhans

Alaskan Remote Adventures

(801)725-1025

Boards Support Section
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, AK 99811

PC41

November 14, 2022

Subject: BOF Record Comments - **Kvichak Setnetters' Association**

Dear Board of Fish Member,

The Kvichak Setnetters' Association (KSA) is an organization that was developed to represent set net fishermen of the Kvichak section of the Naknek/Kvichak district. Our mission is to present a unified voice for our members, especially at Board of Fisheries meetings. We work to ensure that set net fishers in the Kvichak section are given fair access to sockeye bound for the Kvichak River. Due to the nature of our district and our location at the end of Bristol Bay, we have unique needs and perspectives on the effective management of our salmon.

Our specific comments on the proposals before you are listed in the table below for your convenience. Please consider our opinions as you consider making regulatory changes that govern our fishery.

Proposal	KSA Opinion	Comments/Notes
33	Support	While this proposal does not specifically impact our members in the Kvichak River, we share common issues with bank erosion and giant mudflats that would inhibit set net fishing in areas where set net fishing is limited to within 600-1000 feet from the 18ft. high water mark. We support consideration to extend setnet fishing boundaries that are impacted by erosion and fill-in mud.
34	Support	We share the concern of our Ugashik set net colleagues, and will address the issue in the similar proposal 35 (below) which directly concerns the Naknek-Kvichak District.
35	Support	The KSA Board supports this proposal mainly for safety and to prevent economic loss. Set nets often have screw anchors in deep water outside that are difficult to adjust except during a handful of minus tides every two weeks. This means if a large drift boat with 200 fathoms of net drags into an outside set net buoy with power it will either break or pull the anchor. This can render an outside set for a set net site unfishable for weeks (up to 25 tides). One incident could do tens of thousands of dollars of economic loss not to mention the immediate safety concerns an incident of this nature poses. It's true that with more powerful shallow draft jet boats these encounters will become more frequent unless the buffer between said gear types is increased.

36-38	Support	We support these three proposals which attempt to limit towlines to a reasonable maximum length. Excessively long towlines pose navigational safety hazards, increased likelihood of drift gear becoming entangled in setnet gear, and primarily are used to allow driftnets to fish with one net dry on the mud which is in violation of current regulations.
39	Comment Only	Setnetters with shore leases that have no buffer between their neighbor's site (300 feet apart) can far too easily be in conflict with their neighbors if their anchors are aligned at a different azimuth. Following the exact azimuth as provided by the Department of Natural Resources and directly in the center of the leased tract is the best way to avoid this all too common conflict.
40	Support	The KSA board supports this proposal for increased opportunity for set netters due to bank erosion, mud filling in and flattening out of our near shore fishing territory. Particularly on the West side of the Kvichak district, the main channel has been moving further and further offshore, creating thousands of feet of nearly unfishable mudflat between the shore and the prime fishing channel. We believe that the regulation 5 AAC 06.331(m)(5) of 1000' from the 18ft high water mark OR cork dry at time of opener should be extended to all the Kvichak district for ease and consistency of enforcement.
44	Oppose	We strongly oppose a single drift permit holder increase of net from 150 to 200 fathoms. An increase of gear in the water would negatively impact set net catches in all districts.
45	Oppose	This proposal is too complicated to enforce and does not have a clear benefit.
49-53	Oppose	Any proposal attempting to establish a general district is strongly opposed by the KSA board. A general district is an intercept fishery that does not support ADF&G's intent to have terminal fishery districts within Bristol Bay. The district lines are drawn as is to provide the salmon the opportunity to be harvested in the district of which those salmon are returning and equal opportunity for all gear types to harvest those salmon. A general district would significantly impact the setnet fleet of the Naknek-Kvichak which is reliant on fish passing around the Ugashik and Egegik districts to reach our sites near the mouth of the Kvichak river.
57	Oppose	KSA asks the Board to investigate the claims of this proposal, especially the false claim that the set net harvest has been as high as 47% in the Naknek-Kvichak district. The allocation program was established as a management tool for fisheries biologists to provide equal opportunity between set and drift fishermen. The current allocation was created based on historical data and deliberated upon extensively when this regulation was created. Fisheries biologists use this tool to balance harvest through alternated openings and ensure an equitable season for all gear types. The last several years

		have not been as close as previous years due to abnormally high returns in the Nushagak district which has skewed the drift fishing effort in the Naknek-Kvichak District. The historical data used in establishing the allocation is based on a substantial number of the fleet fishing this district. If the modern mobile drift fleet is fishing in other districts, the fisheries biologist must make necessary adjustments to the allocation to prevent over-escapement. Our current biologist Travis Ellison has done a fantastic job of maintaining a sustainable fishery while creating equal fishing opportunity for both gear types in the district using this management tool. It should absolutely not be repealed.
58	**Oppose**	The Naknek River Special Harvest Area is exactly that, a special harvest area intended for special situations. Its creation was based on preventing interception of Kvichak fish during years of low return. The reason there has been over escapement in the Naknek River is closely associated with the reduced fishing effort in the Naknek Kvichak District by the drift fleet due to abnormally large returns in the Nushagak District. Fish are not "sneaking" into the Naknek River, there just aren't as many nets as usual to stop the large pushes of escapement. With a more normal projection for 2023, a more spread out fleet Bay wide should return that balance. A Special Harvest Area should not be opened concurrently in the district at any time.

Thank you for your time and consideration of our comments.

Corey Arnold

President
Kvichak Setnetters Association
Kvichaksetnetters@gmail.com
503-853-2050

PC42

Name: Alexus Kwachka

Community of Residence: Kodiak, Alaska

Comment:

Proposal 46-47

I oppose both of these proposals with all of me. If the Board of Fish wants to consolidate and drive up permit value and decrease entry opportunity then these are the proposals to do it.

Permit stacking will lead to more consolidation and out migration of permits to the lower 48. These proposals are not in the best interest of the State of Alaska and it's residents.

Fishing is volatile and one persons failure is another persons gain. I bought my permit when the market was down and built a business plan based on 40 cents a pound. The fishery has come a long way since then. We are at another peak and value is sky high. Despite the cost to entry I have seen a wave of young people buying permits and jumping on as a D permit. Two of my crew members have done this and made the transition the boat ownership. The D option provide opportunity for someone to enter and not have to buy a boat straight away. This lessons the financial burden while building equity to allow financing of a boat.

Permit stacking will lead to other fisheries being stacked. This will allow for large fishing families to stack in multiple areas and fisheries hypothetically and receive benefit while not participating in the fishery. This is my fear. This scenario goes 100% against the thoughts and practice of limited entry.

Please appose these two proposals

Proposal 36

Tow lines have become more of an issue in the last few years and I think it's time to put something in regulation. I came up with 100 feet by measuring all the towline I have on my boat and this was the max I had onboard.

The main. Issue I have with 1000 foot plus tow lines is the preemption of fishing grounds and quality.

We have seen a huge increase in jet boats over the last five years. The practice I'm seeing is running in on step setting the net and running out to deep water where they don't get stuck. The net may or may not be drifting at this point but the boat can hold position. The distance between the net and boat by these long towlines is basically cut off from other boats fishing. If someone is running fast they may or may not see the tow line. Safety issue.

Final insult to injury is the boats are dragging the nets and fish out of the shallows. Quality goes down by all the tension on the net and dragging them through the mud.

I personally do not have a problem with people fishing shallow and catching fish, but if that's your preferred fishing style don't preempt me from drifting by and get in there and personal with your own net.

I support limiting tow line to 100 feet

Proposal 52

I support the concept of a general district after escapement is met on the Eastside. When enforcement starts winding down at the end of the season. We are seeing a fair amount of over the line fishing going on. The vast majority of BB fishermen play by the rules. If escapement is not an issue I'm not really sure the need for lines?

If I have one concern, it would be to get input from setnetters on this concept. We do not want to exacerbate inequity between the two user groups. I do not know if it would be an issue, but should be discussed and thought about.

I support the concept and think it has merit.

Thank you for your time and consideration,

Alexus Kwachka

PC43

Name: Chase LaMorena

Community of Residence: Stanwood, WA

Comment:

Prop 43 and 44 strongly oppose,

Stacking removes 50 fathoms per permit.

Lowers carbon foot print in the fishery.

Improves revenues of all vessels bolstering crew shares for the dual holder as well as the deckhands.

Prop 47, 48,49, 51,52 ,53, 54, and 55 stongly approve

PC44

Togiak River Lodge

River Mile 6

Togiak AK, 99678

Comment for PROPOSAL 29 5 AAC 67.022

Dear Alaska Board of Fisheries Members,

We strongly disagree with proposed rule changes outlined in proposal 29 5 AAC 67.022. As the primary user group of sport anglers on the Togiak River, and also the only permanent structure camp on the whole drainage, this proposal, if accepted, would greatly hinder our ability to target other species of salmon in the Togiak River, without accomplishing the stated goals in the proposal. We feel that the state currently has adequate tools at its disposal, and clear communication with user groups such as ourselves, to effectively manage Togiak King Salmon for selective, and most importantly, sustainable harvest in river.

Beyond King Salmon, the anglers that visit our lodge spend a great deal of time targeting other species of salmon, trout and char, with and without the use of bait. Sockeye Salmon in particular, are a favorite target species amongst our guests, and rightfully so as they are nothing short of delicious and also return in abundance. Recent record runs to Bristol Bay as a whole support this. We target sockeye salmon in a variety of ways including, but not limited to, twitching small 1/8oz marabou Jigs tipped with salted prawn, backtrolling small plugs also wrapped with prawn or roe, and finally, fishing the same small Jigs tipped with roe or salted prawn under a float. All three of these methods, allow our guests a good level of success, while also allowing for very selective harvest, and successful release of fish that are not desired for harvest. The same holds true from Chum and Pink Salmon with similar methods and bait.
A total bait ban on the Togiak would completely impede our ability to target these species without providing any increased survivability for King Salmon.

In an effort to maintain the viability of the King Salmon run in the Togiak River, in light of region wide king Salmon declines, we have already implemented a number of house rules/policies to protect adult king Salmon that have made it past the commercial nets and into the river. These rules/policies are as follows;

- No retention of female King Salmon

- No retention of King Salmon over 20 lbs
- Use of cured roe is limited to an attractant used in conjunction with a wrapped lure such as a Kwikfish, Flatfish, or other large "plug" where the roe is wrapped to the belly of the lure, or to the back of a large "spinner" that impedes the fish's ability to take the hook deeper than the lips/gum line.
- When roe is used on its own as a bait, it is only used in this manner when "side drifting" or "bobber dogging", methods that move the boat and the anglers with the current, and prevent the bait from being taken deeply.
- "Backbouncing" roe on its own is prohibited per lodge policy, so as to avoid hooking fish deep in the gills or throat.

If any limitations on the use of bait should be considered, we feel that it would be most sensible to prohibit the use of cured roe on its own as a singular attractant, and allow its use in conjunction with other lures, including but not limited to, diving lures (plugs, kwikfish, flatfish, etc) spinners, spoons, Jigs, and Spin-N-Glo's (winged bobbers) large beads (16mm and above). All of these methods allow for great success in targeting King Salmon, while impeding the fish from being hooked deep, and also allow for successful healthy release of fish that have been caught using these methods.

If any changes should be made to the current daily/possession limits for King Salmon within the Togiak Drainage we feel that it would be most sensible to;

- Change the definition of a "Jack" to include any King Salmon under 24" of length which would be consistent with the definitions in Washington and Oregon.
- Prohibit the retention of female King Salmon
- Prohibit the retention of King Salmon over 30"
- Allow the retention of 3 "Jacks" (24" and under) per day
- Allow the retention of 1 adult King Salmon (between 24" & 30") per day up to an annual limit of 4 adult King Salmon

Thank you for your consideration.

Regards,

Zackery Larsen
C.O.O.

Jordan Larsen
C.E.O.
Togiak River Lodge

PC45

Name: Ryan Leonhardt

Community of Residence: Edgewood WA

Comment:

Prop 15: Subsistence fish wheel shall be allowed in Ugashik District. I Support this proposal.

Prop 34: Drifters not allowed within 1000' of the 18' hightide line from Smokey Point to Muddy Pt. in the Ugashik District. I Support this Ugashik is a big district with plenty of fishable and productive waters other than between setnet operation's that have been established for years.

Prop 35: Increase the distance of 100' to 300' that drifters have to stay off the end of setnet gear. I support this proposal 100' becomes zero feet and gear entanglement is an all too often occurrence from Smokey Point to Dago Creek. Multiple times a year especially with the influx of new skippers with shallow drive boats that don't know and understand the currents in the area.

PC46

Name: Joel Ludwig

Community of Residence: Arlington

Comment:

Support proposal 49. Due to lack of Enforcement. General district should be implemented when escapement goals have been achieved, in the Eastside Districts. This will increase opportunity to Fishing fleet, Processors, Local and State Tax Jurisdictions.

Proposal 55

I am the proposal author, providing more information.

I offer for consideration some mathematical facts, sourced online through Wikipedia, as follows:

A postulate is a statement that is assumed true without proof. A theorem is a true statement that can be proven.

- *Postulate 1:* A line contains at least two points.
- *Postulate 3:* Through any two points, there is exactly one line.
- *Theorem 1:* If two lines intersect, then they intersect in exactly one point.

Proposal 55 suggests defining the Naknek Section by INTERSECTING the existing line defined by the Naknek-Kvichak southern boundary, with the existing line defined by the Naknek Sideline, which goes from the Libbyville beach waypoint to the "Naknek Section waypoint," defined by where two Loran-C lines used to cross.

Please consider:

1. ADF&G regulations currently utilize postulate 3, but insist on stopping at a defined waypoint. Even though the ADF&G line "stops" at the waypoint, the geometrical fact is that the line continues beyond the waypoint.
2. Since the line continues beyond the waypoint, if the defined Naknek Section sideline were extended beyond the Naknek Section waypoint, it would intersect the N/K southern boundary line in approximately 250+ feet.
3. Where those two lines intersect, a point is created.
4. The technological limitation of GPS plotters cannot sufficiently define this point, although mathematically the point is absolutely defined.
5. Proposal 55 suggests defining the Naknek Section of the N/K district as the existing ADF&G southern boundary, and the all waters east of the Naknek Section line up to where it intersects the southern boundary.
    a. The area east of the line defined by the ADF&G Naknek Section boundary (extended beyond the Naknek Section waypoint) defines the westernmost legal fishing area that a fisherman can fish when fishing in the Naknek Section of the N/K fishing district.
    b. The area north of the N/K southern boundary defines the southernmost legal fishing area, as is already established.

Please further consider that by practical usage of these boundary lines as have been used for years in this fishery, the following is also true:

1. When a fisherman is fishing in the Naknek Section, they utilize a GPS plotter to indicate their position, and need to stay east of the line created when they punch in the Naknek Section sideline, and north of a line created when they punch in the ADF&G defined Naknek Section southern line.
2. Fishermen (and ADF&G Enforcement) are currently utilizing this exact technology, which will be used if this proposal is enacted.
3. If ADF&G regulation-writers tried to pinpoint the existing Naknek Section waypoint:
    a. They would use the exact same procedure as outlined above.

b. They would never be able to pinpoint the waypoint accurately enough to define it in the regulation books, due to GPS accuracy limitations.

4. Because of 3a and b above, ADF&G is currently utilizing a waypoint that cannot be defined, so why not approve Proposal 55, and utilize a regulatory definition that can actually be defined?

Proposal 54

I am the proposal author, providing more information.

My proposal creates two new lines to allow for specific and selective enhanced harvest opportunities. The key points that set Proposal 54 apart from others are as follows:

- **Proposal 54 does not open the General District**
- Effects only East Side fishing districts, creating two new lines:
  - Egegik north line offshore waypoint to Naknek-Kvichak southern boundary west beach line.
  - Ugashik north line offshore waypoint to egegik south line offshore waypoint.
- Will allow expanded area at times when some rivers have not reached their escapement goal, at no consequence to run conservation.
- Requires agreement between East Side district run managers, and is a management tool to be used at their discretion.

I am offering an attached boundary drawing to be included in considering the proposal.
Thank you.

Proposals 42-44, regarding eliminating D permits:

I am AGAINST these proposals.

The D permit is a great way for new fishermen to enter the fishery.

- Being a D permit holder on another fisherman's boat is great way to own and pay for a permit, while gaining first-hand fishing and business experience, since they are actually invested in the fishery.
- Lenders are more likely to loan money on a boat purchase for a new skipper if they own their permit when looking to purchase their boat.
- Insurance companies are more ameniable to new skippers running their first boat if they have more experience, as would happen through the years of fishing their D permit.

D permits create more room for everybody:
For every D permit fishing, there is one less 150 fathom net competing for fish. The extra 50 fathoms tacked on to the end of D vessel's net does not have the competitive impact that a whole net operated by another fisherman would have—The D permit allows more room in congested fishing areas and is a good thing.

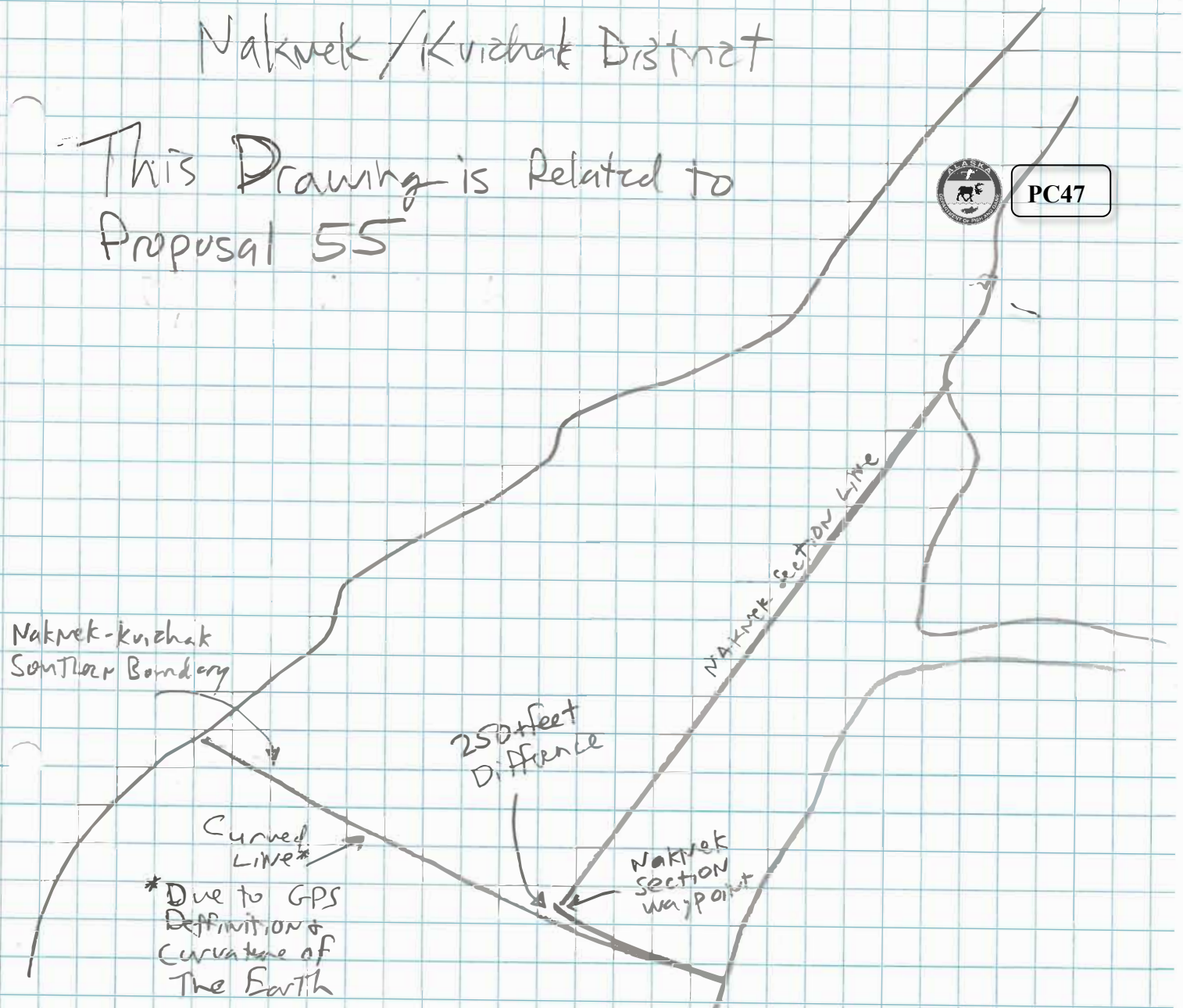
POINT OF CLARIFICATION:
A D-permit does not guarantee more fish on the boat:

I attest that single permit holders can catch as much fish as a D permit holder, and have more time to sleep due to less gear work, can make more sets in a day, and have less expense and overhead in gear expenses. **I fished a D permit for six years**, then switched back to single permit for the last six years, and I will never go back to a D permit for reasons as stated, and more. But I'm glad there are other D permits, because it creates more room on the fishing grounds.

Naknek / Kvichak District

This Drawing is Related to Proposal 55

PC47



Proposal 55 asks to extend the line through the existing ADF&G Naknek section waypoint to where it intersects the existing Nak/Kvi Southern Boundary

No New waypoint will be Created.

Then There will No Longer be a Discrepancy between The South line of the Naknek Section and the entire Nak/Kvi Southern line

Late Season

Bristol Bay [redacted] Salmon District Boundaries

Alaska Department of Fish and Game
Division of Commercial Fisheries
(For Illustration Purposes Only)

Proposed By:
Matt Marinkovich
360 472 0392
mattsfreshfish@gmail.com

58° 43.73 N
157° 42.71 W

158° W. Long.

Nushagak District

Etolin Point

Naknek-Kvichak District

EGE-N-K
Late-Season Line

Cape Constantine

58° 19.10 N
157° 36.65 W

Cape Chichagof
(58° 20' N. Lat.)

58° 11.00 N
157 58.10 W

Egegik District

State 3-Mile Jurisdictional Limit

58° N. Lat.

UGA-EGE
Late-Season line

57.43.54 N
157.43.80 W

Ugashik District

Cape Menshikof

0 30
Kilometers

Proposal 12 Oppose

Fish size is variable from year to year and there is no reason to restrict out catch abilities.

Proposal 13 Oppose

F&G Management already has the ability to adjust open and close times.

Proposal 34/35 Oppose

The existing 100’ buffer outside set nets is an adequate distance and allows the drift fishermen to catch fish close to the beach.

Proposal 42/43/44/45 Oppose

Every D boat takes 100 fathoms of gear out of the water and removes one boat from the fishery. This is a win for all participants.

Proposal 46/47 Support

The dual permit rule should be amended so that either two persons with one permit each on the same vessel or one person with two permits are allowed the extra 50 fathoms of net. This will make it easier to rotate crew throughout the season and also allow someone fishing by his or her self the opportunity to fish 200 fathoms of net. The entire fleet benefits from the dual permit rule as more boats and gear are removed from the fishery. Having the captain as the dual permit holder by himself allows crew to rotate throughout the season as a second permit holder is not required to be onboard throughout the season. I often start and end the season with only one deckhand and some years that is not the same person. I also occasionally fish by myself and would like the ability to use 200 fathoms of net. I am also good with the idea of making a permanent D permit such that if one person fishes two permits they cannot be split up in the future. Two permit holders should still be allowed to combine on one boat. The Cook Inlet fishery allows ones person dual permit fishing rights and I think Bristol Bay should also.

Proposal 49/50/51/52/53/54 Support

Any version of these proposals would be a great addition to the late season fishery. There is no reason to keep the fleet in a bottleneck area once all eastside escapement has been met. The 3

mile boundary line as used in the 2004 early season fishery worked great. Specific points could be designated between Naknek/Egegik and Egegik/Ugashik for tax allocation purposes.

Proposal 55 Support

This seems like a no brainer book keeping adjustment and makes a common south line in the Naknek Kvichak district.

Proposal 56 Support

Some version of this proposal would be a great way for boats to do a shakedown cruise and make sure everything works correctly before leaving for a fishing area several hours away. An easy solution would allow fishing in the east side districts without dropping a blue card until June 15. To put something in place closer to this proposal I would suggest a Naknek only test fishing area drawing a southern boundary line running straight west from the Naknek river existing southern boundary point to the existing Naknek/Kvichak dividing line. Test fishing could then be allowed in the upper triangle area of the Naknek district as F&G elects to open it. The goal of this proposal is to make sure the boats and crews are ready for the season.

PC49

Name: Nathan Mathisen

Community of Residence: Seattle, Washington

Comment: Proposal 12 - Oppose

Proposal 13 -Oppose

Proposal 34 - Oppose

Proposal 35 - Oppose

Proposal 42 - Oppose

Proposal 43 - Oppose

Proposal 44 - Oppose

Proposal 45 - Oppose

Proposal 46 - Support

Proposal 47 - Support

Proposal 49 - Support

Proposal 50 - Support

Proposal 51 - Support

Proposal 52 - Support

Proposal 53 - Support

Proposal 54 - Support

Proposal 55 - Support

Proposal 56 - Support

PC50

Name: Maria Melito

Community of Residence: Port Townsend, WA

Comment:

Proposal 43, Oppose

The fleet has modernized a great deal since dual permits began, greatly contributing to quality and safety. This proposal if passed would punish those who invested the most in the fishery and stop future improvement.

PC51

Name: Gaylynn Mertz

Community of Residence: Homer

Comment:

PROPOSAL #28: PUBLIC COMMENT | OPPOSITION

To whom it will concern,

My name is Gaylynn Mertz and I am a life long Alaskan resident who not only has been a fishing guide on Mulchatna but has been an employee of ADFG for 6 years as a Tech II where I've managed multiple weir sites for Sport Fish, but also have worked for the commercial side in both Hatchery and Ground fish divisions in both the Soldotna and Homer departments. I have been front an center on the side of science, when it comes to fish management. Based on said work experiences with both departments which also included years of limited Chinook returns on the Kenai and Anchor River. I have personally counted a lot of them for years.

The proposal of shutting down the Mulchatna, Nuyakuk and upper Nushagak rivers without providing any factual justification supported by scientific data or research on the amounts of pressure on the spawning areas for Chinook salmon is not only incredibly alarming but also ridiculously ignorant.

Beings how there are over the course of hundreds of river miles, only 3 fishing camps in which only one is historically active catching multi specific fish, how is it they can in such a small window of season, impact an entire run of Chinook? They don't even have clients come out until second week of July and go for only 4-5 weeks at the most. The fact that the Mulchatna closes on the 25th makes it even more restricted! With that said, I ask… what exact pressure can one outfit really have that late in the season? I will remind you that none of these areas are on a road system… the "pressure" excuse that is being used to push this agenda is so far fetched it's truly ridiculous.

This brings me to my next thought. Why would a system that has worked so flawlessly all these years suddenly need to change? EO's are put into place and followed religiously. What would shutting down those specific areas prove when there is little to no pressure to begin with? It seems like this is not only a waste of time, money and effort(s) by reinventing a system that is already working, but more so a slap in the face to those who have successfully managed these areas up until this point.

As I'm sure you already know, this isn't about people impacting said spawning areas over the course of such a large area…this is a bigger issue at hand and the spotlight should be focused on more probable and likely issues… like the fact these fish spend 4, 5 and sometimes on a rare occurrence 6 years out in the ocean. Granted we can only speculate because we can only gather so much info on the incoming fish and of course extrapolate that to make the best guess we can

but fact remains. There is a lot more impacting Chinook returns that we don't have any control over like the rising of ocean temps which absolutely throws off plankton/krill blooms…

I don't even have to point a finger at all too used commercial fishing impact…the facts are facts. Fish numbers fluctuate year by year. Mother Nature is incredibly finicky that way. Thank goodness we have a proven, capable management system in place for those areas that are more than appropriate and proactive when it comes to conservation and sustainability.

Shutting down these areas down out of the blue, based on absolutely zero fact or scientific data to support the proposal, sends a message that you don't trust even trust your own means of management and you are willing to take assumption over research.

Thank you for giving me the opportunity to share my thoughts. I truly do hope you continue your great work by keeping what is already successfully working in place by rejecting proposal #28.

Best,

Gaylynn Mertz

PC52

Name: Christie Most

Community of Residence: Seattle, WA

Comment:

I am writing in support of proposal 59 -Repeal provisions directing the department to avoid continuous fishing with set gillnet gear in the Egegik District. Repealing this provision will provide additional flexibility for the biologist to manage the fishery.

PC53

Name: Nushagak King Salmon Committee

Community of Residence: Alaska

Comment:

Proposal 11 - Support

During the December 2018 Bristol Bay Finfish meeting, the Alaska Board of Fisheries struck a committee to review Nushagak River and District fisheries and regulations, and to provide recommendations on a comprehensive solution to Chinook salmon management. The first two report documents are two of a total of four document's that are being prepared for the BOF. The first report captures the process and outcomes from the committee, which met between February 2019 and April 2022. The second is an updated historical report on the Nushagak King salmon stock and the associated fisheries.

Proposal 11 includes the seven proposed actions agreed to be the committee:

1. Manage large sockeye runs so that escapements fall in the upper portion of the escapement goal range.

2. Use a Nushagak District Test Fishery to assess relative abundance of sockeye and king salmon.

3. Modify/Clarify the Wood River trigger and establish a Nushagak River trigger,

4. Provide a directed commercial fishery for King Salmon when surplus clearly exists

5. Modify/reduce the annual limit for king salmon.

6. Avoid complete closures of the sport fishery when possible.

7. Provide ADF&G with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios and standardize subsistence fishing schedule and area under a restricted scenario

See attached for additional information

PC53

Summary of Outcomes from the Committee to Examine the Nushagak-Mulchatna King Salmon Management Plan, 2019-2022

Prepared by:

Tom Brookover, Jeff Regnart, and Michael Link

Bristol Bay Science and Research Institute
Box 1464, Dillingham, Alaska 99576

Prepared for:

Nushagak-Mulchatna King Salmon Management Plan Committee
and
Alaska Board of Fisheries

Final DRAFT, Submitted to Alaska Board of Fisheries, Public Comment

November 14, 2022

TABLE OF CONTENTS

List of Appendices

Executive Summary

This report is one of four reports prepared by the Study Team that worked with the Alaska Board of Fisheries committee to examine options to revise the Nushagak-Mulchatna King Salmon Management Plan (NMKSMP). This report documents the process and outcomes from that committee, which met between February 2019 and April 2022.[1]

During the December 2018 Bristol Bay Finfish meeting, the Board of Fisheries (Board) struck a committee to review Nushagak River and District fisheries and regulations, and to provide recommendations on a comprehensive solution to Chinook salmon management. Three Board members were assigned to the committee (Payton, Morisky, and Ruffner) and the selection of stakeholders to serve on the committee was to be done in early 2019. In February 2019 at the Special Committee Meeting immediately following the Alaska Peninsula/Aleutian Island/Chignik Finfish meeting the Board selected 8 Committee members representing the commercial, sport, and subsistence fisheries. The inaugural committee meeting took place on October 2019 and a total of 15 committee meetings occurred between December 2019 and March 2022. A final committee meeting was to be held in November 2022 to review this report and prepare for the upcoming Board of Fisheries meeting.

As a starting point for discussions during the first year of committee meetings, members identified the current challenges to, or problems with, management of Nushagak River king salmon fisheries. The focus was on challenges or problems related directly to the NMKSMP, but the discussion was not limited to challenges pertaining narrowly or only to the Plan. After discussing the fishery challenges faced by the Nushagak River king salmon fisheries at the initial meetings, committee members were asked to discuss what constitutes success in their various fisheries? Members were then asked to identify possible management objectives that, if implemented, would ideally fulfill the measures of success as identified. Finally, the groups were asked to identify possible changes or additions to the NMKSMP "action" provisions that direct ADF&G to act and that would, in turn, lead to achieving the objectives previously developed in this process.

In January 2021, the full committee reviewed and revised the lists and descriptions of the Measures of Success, Management Objectives, and Possible Management Plan Actions that had been developed. Shortly thereafter, work focused directly on clarifying possible regulatory management actions needed to achieve the management objectives, and further discuss non-regulatory actions needed. BBSRI provided technical information on certain topics, particularly management triggers and the effects of mesh size on sockeye exploitation rates, to inform and address questions raised by the committee. By April 7, 2022, the committee had reached consensus on seven proposed actions. The committee examined five other actions in detail but failed to reach consensus on them. On behalf of the Committee, the Study Team submitted a

[1] The four reports prepared by the study team include: 1) Historical review of Nushagak River King Salmon Management, 2) this report, 3) Technical analysis of options considered by the Nushagak King Salmon committee, and 4) Recommendations for non-regulatory actions for Nushagak King salmon management.

proposal to the Board of Fisheries in April 2022 to modify the Plan by directly inserting the management objectives and regulatory actions with consensus above.

The seven proposed actions submitted to the Board of Fisheries in April 2022 included the following.

1. Manage large sockeye runs so that escapements fall in the upper portion of the escapement goal range.
2. Use a Nushagak District Test Fishery to assess relative abundance of sockeye and king salmon.
3. Modify/Clarify the Wood River trigger and establish a Nushagak River trigger,
4. Provide a directed commercial fishery for King Salmon when surplus clearly exists
5. Modify/reduce the annual limit for king salmon.
6. Avoid complete closures of the sport fishery when possible.
7. Provide ADF&G with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios and standardize subsistence fishing schedule and area under a restricted scenario.

Five actions that were considered but failed to garner committee consensus included the following.

1. Restrict mesh size in regulation to better conserve king salmon and exploit sockeye salmon.
2. Better adhere to existing regulations and/or Modify the Nushagak District Allocation Plan to make clearer a priority for escapement of sockeye and king salmon.
3. Mitigate Bay-wide Fleet Dynamics that Exacerbate early season harvest rates in the Nushagak District by modifying the Transfer Period.
4. Reduce and Mitigate Continuous Commercial Fishing in the Nushagak District where possible.
5. Keep all Non-Subsistence Fisheries closed until the king salmon escapement goals have been met.

The committee concluded there are substantial limits to what changes in the management Plan can do to improve king salmon management and the fisheries that depend on them. During deliberations of fishery challenges and subsequent topics, the committee identified numerous needed improvements that are outside the regulatory scope of the Plan. Fulfilling these information needs offers greater potential to improve the fisheries than modifications to the Plan. Some on the committee felt that these things need to *precede* any Plan changes and that if these issues remain, the Plan will remain largely ineffective at achieving success in the fishery. These needs identified by the committee are discussed briefly in this report and will be described in more detail in a separate report.

Introduction

During the December 2018 Bristol Bay Finfish meeting, the Alaska Board of Fisheries struck a committee to review Nushagak River and District fisheries and regulations, and to provide recommendations on a comprehensive solution to Chinook salmon management. This report documents the process and outcomes from that committee, which met between February 2019 and April 2022.

In 1992, the Alaska Board of Fisheries (Board) adopted the Nushagak-Mulchatna King Salmon Management Plan (Plan) to guide management of the subsistence, commercial and sport fisheries that harvest this important stock. Production of Nushagak River Chinook (king) salmon had peaked in the early 1980's and resulted in a surge of interest and record harvests in the commercial fishery and development of the then-growing sport fishery (Nelson, 1987). Fishery managers responded by enacting fishery restrictions and implementing assessment programs to ensure enough king salmon survived the fisheries to sustain the stock. However, poor runs in the late 1980's resulting from poor production from the recent large runs further heightened the need for improved escapement monitoring, a formal escapement goal, and additional fishery restrictions, all of which provided the impetus for developing the Plan.

The Nushagak River fisheries that harvest king salmon have been managed under the direction of the Plan since then. The Board modified the Plan several times but its purpose and structure, with management actions tied directly to projected inriver run abundance estimate at the Portage Creek sonar project, have remained like the original version. Salmon fishery dynamics changed notably over the life of the Plan. Sockeye runs to the Wood and Nushagak Rivers increased in magnitude in the 2010s while king salmon runs have declined to some of the lowest levels recorded. Commercial fishing directed at king salmon has remained closed since 2014, and sport fishing regulations have become increasingly conservative. At the same time, substantial uncertainties over the ability of the sonar to estimate inriver run abundance remain. These events led to two key proposals submitted to the Board at its December 2018 meeting.

Restrictions to the sport fishery due to low early season inriver passage of king salmon combined with sometimes intense fishing for sockeye in the Nushagak District in the mid-2010's led to calls to pair restrictions in the commercial and sport fishery (Proposals 41 and 42, 2018 Bristol Bay Board meeting; Appendix A). At the meeting, the Board in response to the proposals and working with affected stakeholders, removed several triggers in the Plan that affected the sport fishery (RC51; Appendix B) and tabled Proposals 41 and 42. These changes provided fishery managers greater flexibility in dealing with a complex fishery and sometimes inaccurate escapement information.

The Board also established a committee to develop a comprehensive solution to the Plan through RC 84 and the charge statement (RC86; Appendix B). The Board charged the committee with reporting back at its Statewide meeting in March 2020. The Bristol Bay Science

and Research Institute (BBSRI) committed to supporting the committee's work through a stakeholder-led technical analysis of options the committee was expected to consider (RC 80).

Committee Process

Committee Formation

The board released a request for committee nominations on January 31, 2019 (https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2018-2019/nm_committee_nominations_request.pdf). The intent of the solicitation was to have interested parties apply by sending in a letter of interest which included their background in the fishery. The applicants' letters of interest were due to the executive director of boards by February 18, 2019.

The Board received 14 letters of interest from which they chose 8 public committee members to represent the stakeholder groups involved with the Nushagak-Mulchatna King Salmon fishery.

Committee Members

Robert Heyano – Lifelong resident of the Nushagak Bay area. He started fishing in the Nushagak Bay on the family-owned set net site in the 1960s. In 1972 he started drift gillnetting as an owner operator which he still currently doing. He has been active in the Board process since 1978 and served on the Board from 2004 to 2007. He has also served on the Nushagak AC and as its chair. He was on the AC when the original NKMP was drafted in 1991.

Bud Hodson – He has been fishing King Salmon on the Nushagak River for 40+ years with 2 different camps for guided angling for Kings. He served on the Board of Fisheries from 1986 through 1990 and served as Chairman of the Board for over 2 years. He was deeply involved with the original drafting of the NKMP and the allocation considerations in the creation of the original Plan.

Brian Kraft - He was the author of Prop 41 and 42 that were before the BOF in Dillingham at the 2018 meeting. Those proposals were the catalyst for the Board to create this committee. He has owned and operated a fishing lodge in BB for more than 25 years. He has operated a fishing camp on the Nushagak for similar time.

Bob Klontz – He has been involved in the Nushagak King salmon sport fishery since 1984 and a property owner on the river since 1999. His families on-river experience of more than 30 years and networking with other camps and fisherman has given him a well-rounded perspective of the status of the inriver fishery and of the King Salmon stock.

Tom O'Connor – He is a year-round resident within the Nushagak Bay area. He has many decades of experience as a set net fisherman in the Nushagak district on Ekuk beach. He is a

long-time member of the Nushagak AC and has participated in the Board process for more than 20 years.

Nanci Lyons - She has been guiding in the Bristol Bay region since 1985 and has been a user of the Nushagak river since 1986. She was involved in the Board of Fish meetings that constructed and approved the original Nushagak King Salmon management Plan and has been actively involved in the fishery and the management Plan ever since. She is the owner/operator of a sportfishing lodge in the BB area.

Peter Christopher – He is resident of New Stuyahok which is a community on the Nushagak River. He has served on the Nushagak AC for many decades. He has subsistence fished for his entire life and commercially fished in the Nushagak district from 1965 to the present. He is an active subsistence fisher for King, Chum, and Sockeye salmon. He and his family are heavily dependent on the salmon they catch for their winter food.

George Wilson - He resides in Naknek across the Bay from the Nushagak. He has commercially fished since 1980 when he was 9 years old with his dad. He currently owns and operates his vessel and permit and has done so since 1999. His children are his crew and will be taking over the family business in due time. He also participates subsistence fishing.

Study Team Members

A three-person Study Team sponsored by BBSRI led and facilitated the committee process, prepared project analyses, and project reports.

Tom Brookover – Tom worked in various capacities with ADF&G since 1985, including as the Commercial Fisheries Assistant and Area Management Biologist for the Nushagak District from 1990-1998. He also worked as the Sport Fish Area Biologist in Sitka, Southeast Alaska Management Supervisor, Statewide Habitat Research Supervisor, and Deputy Director. Tom served as Director of Sport Fisheries Division from 2015 – 2018. Tom joined BBSRI's Nushagak Study Team shortly after retiring from ADF&G in 2018.

Michael Link – Michael has been the Executive Director of the Bristol Bay Science and Research Institute (BBSRI) since 2002. He first worked in Bristol Bay as the Research Project Leader for ADF&G's Commercial Fisheries Division in the late 1990s. Michael has led numerous research projects and policy analyses including an extensive multidisciplinary analysis of escapement goal policies for Bristol Bay sockeye salmon (2012-2015, https://www.bbsri.org/escapement-goal-analysis). Farther back, he led an analysis to examine options to restructure the Bristol Bay commercial salmon fishery (2001-2003, https://www.bbsri.org/other-project-reports).

Jeff Regnart – Jeff has held several positions within Bristol Bay. Starting in 1990 he was the commercial fishery manager for the Naknek-Kvichak district. He then moved into a variety of Bristol Bay regional positions each with a greater scope of responsibility. From 2011 to 2015, Jeff served as Director of the Commercial Fishery Division of ADF&G where he represented the

department in the Board of Fisheries process. Since retiring from ADF&G in 2015, Jeff has done fisheries certification work with the Alaska Seafood Marketing Institute (ASMI) and has worked as a technical advisor to BBSRI.

Consensus Decision Making

All committee decisions were to be made on a consensus basis, and any proposed solution(s) to emerge from the committee would need to be comprehensive in scope. The committee operated on a consensus basis over a ~3-year period and strived to find robust solutions that would eventually include regulatory changes to the Plan and non-regulatory recommendations.

Schedule

It was initially expected that work products would emerge in time for consideration at the Board's Statewide Meeting in March 2020. Concerns from the public relayed to committee members about insufficient time for public vetting of any proposals coming from the committee work ultimately led to the work schedule sliding by about one year, with work products expected to be released prior to the April 2021 proposal deadline for consideration at the in-cycle Bristol Bay meeting (December 2021). A COVID-pandemic delay to the Board meeting schedule shifted all these deadlines by one year, with a committee-supported proposal submitted in April 2022 for consideration at the Bristol Bay meeting in late November 2022.

Kick-off Meeting

The committee first met in Anchorage on October 21, 2019, to get underway and present preliminary analyses of the fishery's history and technical challenges associated with monitoring and managing the fishery (Figure 1). Committee members were provided a questionnaire about challenges and problems each saw with respect to king salmon management, what constituted success in their fishery, and what problems might be addressed by changes in the Plan and/or stock assessment programs. Meeting documents, including an agenda and meeting summary, for the kick-off meeting are available on the Board's website here.

Initial Breakout Groups of Stakeholders

Break-out groups of subsets of the full committee met with the BBSRI Study Team in December 2019 (Anchorage; sport/commercial) and February 2020 (Dillingham; commercial, subsistence, sport). These break-out meetings produced initial lists of 1) the challenges faced by the Nushagak king salmon fisheries, and 2) what defined success from each stakeholders' perspectives. The meetings also provided initial ideas for (3) possible management objectives to address challenges and meet measures of success in each fishery, and (4) possible regulatory actions and non-regulatory information or actions needed to achieve management objectives. The discussions identified much of the technical analysis for the Study Team to examine. COVID-19 precluded an in-person meeting for the entire committee scheduled for April 2020 in King Salmon.

Formal Board Committee Disbanded and Follow-on Structure

At the Upper Cook Inlet meeting in February 2020, the Board disbanded the formal committee and strongly encouraged stakeholders remaining on the committee to continue to work together in preparation for the next in-cycle Bristol Bay meeting in 2021. BBSRI reasserted its commitment to serve the committee and move toward its original mission outlined in the charge statement: a comprehensive solution to the Plan. The committee makeup remained the same as selected by the Board initially on February 19, 2020, minus the Board members Payton and Morisky (Ruffner was not to be re-appointed June 2020).

Committee Meetings

The committee and subsets of the committee met 15 times between December 2019 and April 2022 (Figure 1). Between meetings the Study Team pulled together committee work products and prepared goals, objectives, and agendas for follow-on meetings. The pandemic-related constraints on travel and in-person meetings precluded many of the committee meetings from being in person.

The committee met via video conference on December 17 and 18, 2020 to refine challenges, management objectives, measures of success, possible action item, and non-regulatory information needs. The committee met again January 14, 2021, to review an early draft of this report describing the committee's work and begin a focused review and discussion of possible regulatory changes to the Plan that would continue through March 2021. Subsequent meetings resulted in a refined list of those possible management actions with consensus by the time the committee concluded for the winter. The Study Team met with ADF&G in April 2021 to discuss those management actions with consensus from the committee at the time.

The committee reconvened in January 2022 to discuss and work toward a regulatory proposal incorporating those actions with committee consensus and identify additional information or programs needed in addition to regulation changes (i.e., non-regulatory recommendations).

From January through April 2022, the committee reviewed the 2021 fishing season, 2022 sockeye salmon forecast, updated tables from the Historical Report that included 2020-2021 data (Brookover, 2022), and ADF&G input on the possible management actions under consideration by the committee. The Study Team presented and discussed with the committee 1) impacts of different management triggers for the Wood and Nushagak river to delay the onset of the commercial fishery in the Nushagak District, and 2) the effects of mesh size on exploitation rates (Appendix D). Other discussion topics included the plans for BBSRI's 2022 test fishery in the Nushagak District and input the Study Team had received from ADF&G concerning a Nushagak sockeye salmon management trigger. With input from ADF&G and the committee, the Study Team further refined the list of management actions to put forward in the form of a proposal in April 2022.

Meeting outcomes included ideas for regulatory changes to the NMKSMP but were not limited only to regulatory changes. The committee raised issues to improve king salmon management that require action outside of the Plan, including improving inseason management and monitoring programs. Since some of the greatest fishery challenges/problems cannot be addressed by changes to the management Plan alone, the committee felt strongly that these should not be ignored in a search for comprehensive solutions. Hence, the inclusion of these non-regulatory recommendations in the committee's work products.

Year	Date	Location	Composition	# Days	Outcome
2019	October 21	Anchorage	Full	1	Initial committee kickoff meeting
	December 12	Anchorage	Partial	1	Identify Challenges, Management Objectives, Measures of Success, Possible (Regulatory) Management Actions, and Information/Non-Regulatory Needs
2020	January 14	Zoom	Full	1	Committee review of draft document describing all items above. Discuss possilbe management actions, including nine from the committee and four from BBSRI
	January 20	Phone	Partial	1	Discuss possible management actions
	January 21	Zoom	Partial	1	Discuss possible management actions
	January 27	Zoom	Partial	1	Discuss possible management actions
	February 2		Full	1	Discuss possible management actions with consensus, those needing more information, and actions with no consensus
	February 20	Dillingham	Partial	1	Identify Challenges, Management Objectives, Measures of Success, Possible (Regulatory) Management Actions, and Information/Non-Regulatory Needs
	December 17	Zoom	Full	2	Review 2020 fishing season, discuss and refine list of all items
2021	March 3	Zoom	Full	1	Review revised tables for Historical Report, discuss possible management actions in regulatory text form
	March 18	Zoom	Partial	1	Refine specific possible actions
	January 27	Zoom	Full	1	Review 2021 fishing season, review possible management actions including modifications made by the partial group at the 3-18-2021 meeting and input received from ADF&G, refine list of possible management actions with consensus
	February 21	Zoom	Full	1	Review revised tables for Historical Report, discuss and refine Wood River Trigger and Upper/Lower Escapement Goal actions, identify additional information needed
2022	March 3	Zoom	Full	1	Present mesh size analysis, discuss 2022 test fish plan; Nushagak River sockeye salmon trigger, outline of draft summary report, and plan for list of research projects needed
	April 7	Zoom	Full	1	Review analysis on usefulness of triggers, update mesh size analysis, cand onfirm action items with consensus

Figure 1.- Committee meeting dates, locations, and outcomes, 2019-2022.

Fishery Challenges

As a starting point for discussions at the early committee meetings, members were asked to identify the current challenges to, or problems with, fishery management pertaining to the Nushagak River king salmon fisheries. The focus was on challenges or problems related directly to the NMKSMP, but the discussion was not limited to challenges pertaining narrowly or only to the Plan. Ultimately, the committee identified six key challenges faced by the Nushagak River king salmon fisheries. These challenges and problems are described below and form the foundation for subsequent committee discussions of Plan changes and other possible actions.

Overlap in timing and spatial distribution of king and sockeye salmon in Nushagak Bay creates a mixed-species (Chinook, sockeye, and chum salmon) and mixed-stock fishery (Wood, Nushagak, and Igushik sockeye), which makes fishery management difficult.

The committee identified this challenge – how to best manage a mixed-stock and mixed-species fishery with stocks and species of differing productivity, in addition to overlapping timing and spatial distribution of stocks and species – as a fundamental challenge in the Nushagak District commercial fishery. It was also one of few challenges identified by both groups of committee members that met in December 2019 and February 2020. King salmon are caught incidentally during the commercial fishery for sockeye salmon. This makes it difficult to harvest available abundant sockeye salmon stocks and protect weak king salmon runs.

Factors that may affect this challenge include the when the first commercial openings for sockeye salmon are scheduled, when the fishery opens relative to the tide stage, how and when continuous[2] fishing occurs, and selectivity of gillnet mesh size. The NMKSMP, other management plans, and management practices bear on these factors. The NMKSMP directs the department to keep the commercial fishery for sockeye salmon closed until the projected escapement into the Wood River exceeds 100,000 fish. This provision received considerable discussion. The Nushagak drift and set net allocation plan (5AAC 06.368) was also brought up as it guides commercial fishing time for each gear type during the sockeye salmon fishery. This raised the question: *are separate species-specific management plans appropriate or optimal managing Nushagak King Salmon?* The committee believes there may be ways to make the sockeye fishery more selective for sockeye salmon by implementing various management measures. These might include altering the language associated with the current Wood River trigger and/or altering when the fishery operates relative to the tide stage. Continuous versus non-continuous fishing with drift and set net was discussed as a possible means to improve king salmon conservation.

[2] During committee discussion, questions arose as to what continuous fishing means. For the purposes of this document, continuous fishing means a continuous period, from a certain point in time to the end of the season, when the commercial fishery is opened to drift nets, set nets, or both gear types until further notice or for the remainder of the season. It is distinct from intensive fishing. Intensive fishing, as discussed by the committee, means fishing on an every-tide basis beginning at a certain point in time to the end of the season. Intensive fishing, unlike continuous fishing, is managed by emergency order daily and is characterized by repetitive fishery openings of a certain number of hours in duration, e.g., 10-hour periods.

There is a large level of uncertainty associated with the king salmon fishery assessment information. Particularly information from the inriver sonar program, lack of a rigorous king escapement goal, and lack of being able to develop any preseason indication of king run strength.

This challenge, like the first, was also raised as an issue at every committee meeting held. Committee members felt that uncertainty associated with the current king salmon assessment program estimates has limited the understanding of the king salmon stock, available yield, and fishery performance. The accuracy of commercial catch estimates, including age-size-sex, is limited. "Dropouts" in the commercial fishery are unaccounted for in the annual run accounting. Similarly, catch-and-release mortality in the sport fishery is not factored in to estimates of mortality associated with sport fishery. Catch and escapement age-sex-size characteristics in are not well measured or understood, and confidence in the accuracy of the inseason and post-season sonar-based estimates of inriver abundance has declined as research has examined assumptions made in the program. Without substantive improvement in these areas, and particularly with inriver abundance and escapement estimates, the development of brood tables is compromised and with it, the ability to produce robust escapement and inriver goals, pre-season forecasts and inseason inriver abundance projections.

Given the accuracy of assessment data, committee members felt the Plan remains too narrowly prescriptive. While the Board of Fisheries reduced the number of inriver abundance-based triggers in the Plan at the December 2018 meeting, some felt the ability to manage for even two triggers (55,000 and 95,000 fish) was questionable. Similarly, fishery management decisions are based on highly inaccurate inriver run estimates. Can other sources of information, such as catch rates in set, drift, sport, and/or subsistence fisheries, be used for inseason assessment of kings? In the long run, what can be done to improve estimates of the inriver run, both inseason and post-season, so that the Plan precision and management practices match our understanding of the actual inriver abundance and escapement?

Impacts from inseason restrictions are costly to the different fisheries but vary in important ways.

In the sport fishery, complete inseason closures have had very large economic impacts for what was seen by most as likely modest biological benefits. Inseason closures have entirely precluded the ability to fish, typically for the remainder of the season. Closures carry obvious impacts to anglers, but also carries high costs, i.e., cancellations, to sport fishing businesses for the season, and negatively effects bookings for following years. In turn, the number of king salmon protected from harvest or incidental mortality by closures during years of low inriver abundance is low, i.e., in the hundreds or low thousands of fish. Unlike the commercial fishery, it is not possible to close and then re-open the guided sport fishery without substantial impacts to the fishery.

In the commercial fishery, the directed fishery for king salmon has remained closed in 8 of the last 10 seasons. Closures in the sockeye fishery to conserve king salmon late in the season have disproportionately higher costs in terms of foregone sockeye harvest, with a lower gain in king salmon conservation than restrictions applied earlier in the season.

The burden of conservation for king salmon has varied among fisheries (stakeholders), years, and run sizes. The fisheries, as well as the stocks, are somewhat separated in time and along the migratory path which can lead not only to king salmon conservation issues but to unequal burdens for conservation as well.

In small king salmon runs, the sport fishery has typically borne the greater burden of conservation through inseason fishery restrictions in July while current management plans focus on prosecuting the commercial fishery. Inseason closures in particular, as implemented in the sport fishery during 1999 and 2010, represent a very large impact on the guided sport fishery operators. When management allows for pushes of sockeye to move into the escapement in June with the intention of protecting kings and there are no subsequent restrictions to the sport fishery, it could be argued the commercial fishery has borne a greater burden of conservation. In any event, the separation in space and time for when each fishery is restricted can lead to unequal sharing of the conservation burden.

The subsistence fishery has a statutory priority over other fisheries. Reducing the inriver subsistence fishery to less than 7 days per week when the projected escapement falls below 55,000 fish potentially jeopardizes the ability of the fishery to achieve amounts necessary for subsistence (ANS) of salmon.

Declines in abundance, size and returns per spawner of king salmon over the past 10 years have raised biological concerns and caused increase fishery restrictions.

King salmon runs have gotten smaller in recent years, causing an increase in the number and severity of inseason restrictions in the commercial, sport and subsistence fisheries, and resulting the escapement goal not being achieved in several years. Based on existing data, king salmon productivity (returns per spawner) appears to have decreased. King salmon have also been getting smaller in size. Committee members asked how this affects the reproductive potential of a given number of king salmon spawners in terms of egg deposition, and whether the escapement goal needs to take these runs of smaller fish into account.

Recent large sockeye salmon runs support a large Bay-wide fleet response and very high harvest rates at a time when king salmon runs are relatively low and cannot afford high harvest rates.

The recent dynamic produced by the combination of Challenges #4 and #5 together has resulted in both foregone harvest of early season sockeye salmon and has hindered achieving the king salmon escapement goal. It has also exacerbated Challenge #1 above.

In an unfortunate positive feedback effect, recent large sockeye returns to the Nushagak District, have influenced Bay-wide drift boat fleet dynamics that have created unprecedented fleet sizes (>600 drift vessels), which has further increased early season harvest rates over historical rates, and negatively affected any attempts to limit catch of king salmon in the commercial sockeye fishery. To further amplify this phenomenon, late sockeye runs in recent years to Bristol Bay's Eastside districts (e.g., Egegik and Naknek) can attract almost half the entire Bay's drift fleet to the Nushagak District.

Clarity in Plan provisions and how they are implemented.

Several points pertaining to specific provisions of the Plan arose in meeting discussions. First, some felt the basis for the inseason Nushagak River king salmon escapement and inriver abundance projections was not clear. For example, it wasn't clear whether the Plan intended to use *projected* inriver returns in some provisions and *projected* spawning escapement in others, or whether the use of the different terms was intentional. It was also not clear how inseason projections are made, i.e., what data is used in projecting inriver returns and escapement. Committee members also stated that the method for estimating the projected sockeye escapement into the Wood River under NMKSMP provision (e)(1) was not clear, as previously mentioned under Challenge #1.

What Constitutes Success, Possible Plan Objectives, and Possible Actions to Take

After discussing the fishery challenges faced by the Nushagak River king salmon fisheries at the initial meetings, committee members were asked to discuss **what constitutes success** in their various fisheries; what conditions would need to be met for them to consider the fishery successful? After considering how a successful fishery would be characterized, members were then asked to identify **possible management objectives** that, if implemented, would ideally fulfill the measures of success as identified. Such management objectives could be incorporated into the NMKSMP to help guide more specific actions/provisions that follow. Finally, the groups were asked to identify **possible changes or additions to the NMKSMP** "action" provisions that direct ADF&G to act and that would, in turn, lead to achieving the management objectives previously developed in this process.

In January 2021, the full committee reviewed and revised the lists and descriptions of the Measures of Success, Management Objectives, and Possible Management Plan Actions that had been developed. The measures of success and management objectives described below remain much as they were discussed to the committee's satisfaction at that time.

What Constitutes Success in Each Fishery

Sport Fishery

Inriver abundance and catch opportunity.

Consistent fishing opportunity for king salmon was emphasized as an important attribute of a successful fishery. Consistent inriver abundance, as a given year's run timing allows, is needed to provide the opportunity to catch (and harvest) fish. There was recognition that the pulse nature of the inriver run precludes consistent levels of abundance through all parts of each season, and that natural fluctuations in run size hamper consistent levels of abundance among years. However, abundance as the natural pulses allow are important for a successful fishery. Ideally, success would equate to a catch rate of 2 large king salmon or more per day/angler. The opportunity to catch fish, or fishing success, is just as important and goes together with the next measure toward a achieving a successful fishery.

1. *Predictably open season.*

To provide for consistent opportunity, it is important that the king salmon fishery remain open throughout the 3-4 weeks from mid-June to mid-July. The ability to "have a line in the water" during this time was more critical to success than, for example, achieving high catch rates in all weeks and all seasons. It is important that such an open fishery is predictable and consistent, or could be counted on, both within a season and from season to season. However, an open fishery doesn't, by itself, necessarily result in a successful fishery.

2. *Harvest opportunity.*

Ideally, opportunity for anglers to harvest one or more king salmon (any size) would help to fully define success in this fishery. However, this is not as important as the ability/opportunity to fish for king salmon provided by the first two measures above and is the least important of the three.

Commercial Fishery

3. *Access to a directed king salmon fishery when a harvestable surplus of king salmon exists.*

The productive capacity of the Nushagak king salmon has in the past and has the potential to support a viable commercial fishery.

4. *Access to available surplus sockeye subject to addressing other concerns, including but not limited to: sustaining the king salmon population, avoiding a line fishery, obtaining escapement throughout the season, attaining allocation goals among gear groups, and ensuring annual harvest rates do not reach excessively high rates (e.g., >85-90%).*
    a. Maximize the value of the salmon catch to harvesters and processors. This was described as taking fish quality, harvesting costs, etc. into account in managing the fishery. Providing fish throughout the district to spread use among fishermen (avoiding a line fishery) and across the season are examples of success in this regard.

5. *The fishery is kept to the traditional fishing area (Nushagak District).*

6. *Achieve sustainable escapement goals among the salmon stocks in the district.*

This will maximize long-term yield and avoid a potential "Stock of Concern" designation by ADF&G and the Board of Fisheries.

Subsistence Fishery

7. *Reasonable opportunity.*

8. *Amounts necessary for subsistence.*

9. *A subsistence priority over other users.*

Possible Management Plan Objectives

Sport Fishery

1. *Provide consistent sport fishing opportunity within and among seasons. This includes a level of inriver abundance as a given year's run timing allows, and a predictably open season.*

Commercial Fishery

2. *Provide a directed commercial king salmon fishery when surplus is available.*

This will require changes to king salmon stock assessment programs to include the production of a robust preseason forecast and inseason and post-season escapement estimates. These, in turn, will require robust estimates of age-specific returns, i.e., brood tables, and improved accounting of the inriver run.

3. *Provide for an uninterrupted commercial sockeye salmon fishery (i.e., minimize disruptions to the sockeye salmon fishery).*

Conducting the early season fishery conservatively will minimize the need for costly late-season king conservation measures. The concept of conservative early season fishing was initially suggested as a separate management objective but later combined here due to its similarity with this objective.

Subsistence Fishery

4. *The department shall manage the commercial and sport fisheries in the Nushagak District as follows: … reasonable opportunity for subsistence harvest of king salmon. Note: This is language currently included in the NMKSMP.*

5. The subsistence fishery is the last fishery to be closed.

Biological

6. Achieve escapement goals for all species in the district.

While this is a biological objective, it was raised as an important objective for both the sport and commercial fisheries. All felt it imperative to achieve goals and thereby ensure sustained salmon stocks and fisheries. In addition to providing high levels of yield, or production, achieving the inriver goals for Nushagak River king salmon was felt by sport fishery representatives to achieve the measures of success identified above. In other words, achieving the inriver goals generally provides for the consistent inriver abundance needed for a successful fishery.

7. Maintain a representation of age classes in the escapement similar to the run.

This is currently implied as an objective in the NMKSMP under subsection (b)(2). It was generally discussed to be relative to a given year's run (i.e., strive to achieve an age and size composition in the escapement that is similar to the return to the district). Committee members believed that it was not intended to be used to strive to achieve historical age class representations in a given year (i.e., differentially harvest specific ages in a given year's return to match the historical or average age compositions in the escapement).

Possible Management Plan Actions, with Consensus

By early 2021, after the lists and descriptions of fishery challenges, measures of success, and management objectives had generally been accepted by the committee, work focused directly on clarifying possible regulatory management actions needed to achieve the management objectives. At the February 2020 meeting the committee discussed 14 possible management actions that had been developed and made an initial attempt at identifying actions with (a) strong agreement with little need for additional information, (b) agreement on intent but need more information, and (c) disagreement.

Subsequent meetings continued to focus on possible management actions with an intent to achieve consensus on as many of actions as possible. BBSRI provided technical information on certain topics, particularly management triggers and mesh size effects, to inform and address questions raised by the committee (Appendix D). All action items were discussed further. Some were combined, others were revised, and levels of consent by individual members changed over time for some actions. By April, a total of 12 actions had been identified and discussed.

Below are seven regulatory action items for which there was consensus among the committee as of April 7, 2022. These actions numbered 1-7 would fall under the Nushagak River King Salmon Management Plan, except where otherwise labeled. The committee examined five other actions in detail but failed to reach consensus on them being advanced as committee recommendations. These without consensus actions are described in a later section of this report.

Commercial Fishery

1. Manage large sockeye runs so that escapements fall in the upper portion of the escapement goal range (Table 1), which would reduce incidental catch of king salmon

(X) Consistent with 5 AAC 06.367 Nushagak District Commercial Set and Drift Gillnet Sockeye Salmon Fisheries Management and Allocation Plan, the department in an attempt to conserve king salmon shall manage for sockeye escapements in the Nushagak District to fall within the

(1) lower half of the escapement goal range when the Wood River sockeye salmon run is 8 million or less and/or the Nushagak sockeye salmon run is 4 million or less, or the

(2) upper half of the escapement goal range when the Wood River sockeye salmon run is greater than 8 million and/or the Nushagak sockeye salmon run is greater than 4 million based on the preseason forecast and in-season assessment of run size.

(X) On or after June 25, the department shall consider when evaluating total run of sockeye salmon to the Nushagak District all possible data sources including but not limited to: pre-season forecast, Port Moller test fishery indices and stock and age composition, total C+E to date, age composition of C&E and district test fishing.

Table 1. Sustainable Escapement Goals (SEGs) for the Nushagak District sockeye salmon stocks, and intent of ammendments to the sockeye plan by the Board of Fisheries regulation in March 2015, in thousands of fish. The last two coloumns show the differences in the management target across small (below average) and large (above average) returns in thousands of fish. Adhering to the Board intent and regulatory change in large sockeye runs results in an 470,000 larger escapement target than using the entire SEG range (275,000 of these due to a large Wood River run alone).

	ADF&G Adopted Sustainable Escapement Goal (SEG), March 2015	Board of Fisheries, March 2015 - Plan Modification Intent; Goal Range for Small and Large runs		Difference in Midpoint Target between Small and Large Runs	Difference in EG Target from ***Single EG range*** vs Abundance-based EG	
Stock	**Entire SEG Range**	Lower half of EG range	Upper half of EG range		***Small Runs***	***Large Runs***
Wood River						
Lower	700	700	1,250			
Upper	1,800	1,250	1,800			
Mid-point	1,250	**975**	**1,525**	**550**	***-275***	***275***
Nushagak River						
Lower	370	370	635			
Upper	900	635	900			
Mid-point	635	**503**	**768**	**265**	***-133***	***133***
Igushik River						
Lower	150	150	275			
Upper	400	275	400			
Mid-point	275	**213**	**338**	**125**	***-63***	***63***
Sum of midpoints	2,160	1,690	2,630	**940**	**-470**	**470**

2. Use a Nushagak District Test Fishery to assess relative abundance of sockeye and king salmon

(X) From June 1 through June 30 the department in an attempt to conserve king salmon shall conduct a drift gillnet test fishery to assess the abundance of sockeye and king salmon prior to opening by emergency order a fishing period directed at sockeye salmon.

3. Modify/Clarify the Wood River trigger and establish a Nushagak River trigger

(X) close, by emergency order, the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement past the Wood River tower exceeds 100,000 within the next 12 hours if the forecasted Wood River sockeye run is 8 million or less. If the Wood River sockeye run is forecasted to be more than 8 million the fishery shall close by emergency order until the projected sockeye salmon escapement past the Wood River tower exceeds 300,000 within the next 12 hours.

(X) close, by emergency order, the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement past the Nushagak River sonar counter exceeds XXXXXX if the forecasted Nushagak River sockeye run is XXXXXXX. If the Nushagak River sockeye run is forecasted to be more than XXXXXX the fishery shall close by emergency order until the projected sockeye salmon escapement past the Nushagak River sonar counter exceeds XXXXXX.

4. Provide a directed commercial fishery for King Salmon when surplus clearly exists

(c) If the total inriver king salmon return in the Nushagak River is projected to exceed 95,000 fish, the department will consider a directed commercial king salmon fishery, and the guideline harvest level described in (b) (1) (C) of this section does not apply.

Sport Fishery

5. Modify/reduce the annual limit for king salmon.

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

(g) In the Nushagak River drainage, excluding the Wood River drainage, and unless otherwise specified in 5 AAC 06.361 or 5 AAC 06.368, the following special provisions apply:

(1) the bag and possession limit for king salmon 20 inches or greater in length is two fish, of which only one fish may be 28 inches or greater in length; the annual limit for king salmon 20 inches or greater in length is four fish, ***of which only one fish may be 28 inches or greater in length***; the bag and possession limit for king salmon less than 20 inches in length (jack salmon) is five fish; …

after taking and retaining a bag limit of king salmon 20 inches or greater in length, a person may not sport fish with bait for the remainder of that day in the Nushagak River drainage, excluding the Wood River drainage;

5 AAC06.361 Nushagak-Mulchatna King Salmon Management Plan

(c) if the inriver return of king salmon in the Nushagak River is projected to exceed 95,000 fish,

(1) the guideline harvest level described in (b)(1)(C) of this section does not apply, and

(X) ***the commissioner may increase the annual limit for king salmon to 4 king salmon 20 inches or longer (no restriction to one fish over 28 inches)***

6. Avoid complete closures of the sport fishery when possible.

(e) (2) shall: restrict to catch and release, by emergency order, the sport fishery for king salmon in the Nushagak River and prohibit the use of bait for fishing for all species of fish until the end of the king salmon season specified in 5 AAC 67.020 and 5 AAC 67.022(g)

Subsistence Fishery

7. Provide the department with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios and standardize subsistence fishing schedule and area under a restricted scenario.

(e)(3) may establish, by emergency order, fishing periods during which the subsistence fishery is restricted to 3 days per week in the Nushagak District; and the waters above the district including Dillingham beaches, Wood River up to Red Bluff, and the Nushagak River drainage.

Management Plan Actions Considered, with No Consensus

This list includes five items discussed by the committee for which consensus was not achieved.

Commercial Fishery

1. Restrict mesh size in regulation to better conserve king salmon and exploit sockeye salmon

From June 1 through July 10 in the Nushagak District gillnets may not exceed four and three-quarters inches for the protection of king salmon unless superseded by the commissioner. However, if the total inriver king salmon return in the Nushagak River is projected to exceed 75,000 fish, the mesh size restriction in (b) (5) (NEW) of this section does not apply. Such a restriction may more effectively target sockeye salmon, thereby decreasing fishing time overall with conservation benefits to king salmon. However, it may also skew the size composition of specific sockeye salmon age classes.

2. Better adhere to existing regulations and/or Modify the Nushagak District Allocation Plan to make clearer a priority for escapement of sockeye and king salmon.

Further emphasize that king salmon escapement takes priority over the Nushagak District drift and set net allocation plan, especially in June. This could be done by modifying the Nushagak-Mulchatna King Salmon Management Plan to reiterate the existing priority of managing for escapement over allocation (Sustainable Salmon Fishery Policy, SSFP, 5 AAC 39.222). This might allow the commercial fishery to target sockeye and reduce incidental catch of king salmon more effectively. However, how, specifically, such a measure would be implemented by managers

was not known and, as a result, effects to the fishery and the salmon stocks were also uncertain.

3. Mitigate Bay-wide Fleet Dynamics that Exacerbate early season harvest rates in the Nushagak District by modifying the Transfer Period.

Under #5 of the fishery challenges, it was pointed out that the recent large sockeye salmon runs attract a large drift fleet early in the season and support very high harvest rates at a time when king salmon are present, and runs are relatively low (and cannot afford a high harvest). It may be possible to mitigate the total number of registered drift boats early in the season by amending the Registration/Reregistration regulation (5AAC 06.370) to extend the waiting period to transfer into and/or out of the Nushagak District during the E.O. period beyond the current 48 hours. Lengthening the time that a vessel must wait to either enter or exit the Nushagak District might deter some in the fleet from participating in the district in June, allowing the fishery to take smaller bites out of the sockeye run and prevent unwarranted very high harvest rates. However, effects on fleet dynamics were uncertain and there was some risk the action may negatively affect king salmon by inadvertently increasing fishing effort by discouraging some vessels to leave when they might otherwise have left under the 48-hour.

4. Reduce and Mitigate Continuous Commercial Fishing in the Nushagak District where possible

Continuous commercial fishing was described as fishing from a certain point in time when the commercial fishery is opened to drift nets, set nets, or both gear types until further notice for the remainder of the season. This is often prompted in the Nushagak District on or after July 10 in recent years when the sockeye goals were either attained or about to be. Restricting the frequency and length of fishing periods through regulatory language could move kings and to some extent, sockeye into the river which could improve the quality of escapement and possibly the in-river abundance. However, how, specifically, such a measure would be implemented was not clear and, as a result, effects to the fishery and the salmon stocks were also uncertain.

<u>General</u>

5. Keep all Non-Subsistence Fisheries closed until the king salmon escapement goals have been met.

It was understood by the committee that meeting the needs (ANS) of the subsistence fishery is the priority in managing the harvest of salmon in Bristol Bay. During discussions it was proposed that to ensure a reasonable opportunity be provided to the participants in the subsistence fishery all non-subsistence fisheries should be closed until the king salmon escapement goal has been met. Such a regulation would substantially impact other user groups (commercial and sport fishing) by reducing opportunity to either participate in a fishery and/or be able derive an income. Others on the committee believed such an extreme measure was not necessary. They asserted that conservation measures and escapement can be addressed without a complete closure of the sport and commercial fisheries until, say early July in at least some years.

Proposed Regulatory Changes

On behalf of the Committee, the Study Team submitted a proposal to the Board of Fisheries in April 2022 (Appendix E) to modify the Plan by directly inserting the management objectives and regulatory actions with consensus above. The relationships among the actions, management objectives, and measures of success are presented in Figure 2.

Management Objective	Possible Action(s) that Help Achieve the Objective	Measure(s) of Success Desired for Each Management Objective
1-Provide consistent (sport) fishing opportunity within and among seasons.	6-Avoid complete closures of the sport fishery when possible. *NOTE: Actions listed under Objective 6 (Achieve escapement goals) help achieve this Management Objective).*	1-Inriver abundance and catch opportunity. 2-Predictably open season. 3-Harvest opportunity.
2-Provide a directed (commercial) king salmon fishery when surplus is available.	4-Provide a directed commercial fishery for king salmon when surplus clearly exists.	4-Access to a directed (commercial) king salmon fishery when a harvestable surplus of king salmon exists.
3-Provide for an uninterrupted (commercial) sockeye salmon fishery (i.e. minimize disruptions to the sockeye salmon fishery).	1-Manage large sockeye runs so that escapements fall within the upper half of the escapement goal range. 2-Use a Nushagak District Test Fishery to assess relative abundance of sockeye 3-Modify/clarify the Wood River trigger and establish a Nushagak River trigger.	5-(Commercial) access to all available surplus sockeye subject to addressing other concerns, including but not limited to: sustaining the king salmon population, avoiding a line fishery, obtaining escapement throughout the season, attaining allocation goals among gear groups, and ensuring annual harvest rates do not reach excessively high rates (e.g. >85-90%). 6-The (commercial) fishery is kept to the regular district, i.e. use of the WRSHA is avoided to the extent practical.
4-…manage the commercial and sport fisheries in the Nushagak District … (for) reasonable opportunity for subsistence harvest of king	7. Provide the department with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios, and standardize subsistence fishing schedule and area under a restricted scenario. *NOTE: Actions listed under Objective 6 (Achieve escapement goals) help achieve this Management Objective).*	8-Reasonable (subsistence) opportunity. 9-Amounts necessary for subsistence.
5- The subsistence fishery is the last fishery to be closed.	7. Provide the department with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios, and standardize subsistence fishing schedule and area under a restricted scenario. *NOTE: Actions listed under Objective 6 (Achieve escapement goals) help achieve this Management Objective).*	10-A subsistence priority over other users.
6-Achieve escapement goals for all species in the district.	1-Manage large sockeye runs so that escapements fall within the upper half of the escapement goal range. 2-Use a Nushagak District Test Fishery to assess relative abundance of sockeye 3-Modify/clarify the Wood River trigger and establish a Nushagak River trigger. 5-Modify/reduce the annual limit for king salmon	1-Inriver abundance and catch opportunity. 2-Predictably open season. 3-Harvest opportunity. 5-(Commercial) access to all available surplus sockeye subject to addressing other concerns, including but not limited to: sustaining the king salmon population, avoiding a line fishery, obtaining escapement throughout the season, attaining allocation goals among gear groups, and ensuring annual harvest rates do not reach excessively high rates (e.g., >85-90%). 7-Achieve sustainable escapement goals among the salmon stocks in the district. 8-Reasonable (subsistence) opportunity. 9-Amounts necessary for subsistence. 10-A subsistence priority over other users.
7-Maintain a representation of age classes in the escapement similar to the run.	1-Manage large sockeye runs so that escapements fall within the upper half of the escapement goal range. 2-Use a Nushagak District Test Fishery to assess relative abundance of sockeye	

Figure 2.- Relationships of Management Objectives, Actions that help achieve each Management Objective, and Measures of Success desired for each Management Objective.

Non-Regulatory Recommendations

There are some substantial limits to what changes in the management Plan can do to improve king salmon management and the fisheries that depend on them. During deliberations of fishery challenges and subsequent topics, the committee identified information needed to improve management of king salmon in the Nushagak District but that are outside the regulatory scope of the Plan.

In ways, fulfilling these information needs offer greater potential to improve the fisheries than modifications to the Plan. Some on the committee felt that these things need to *precede* any Plan changes and that as long as these issues remain, the Plan will remain largely ineffective at achieving success in the fishery. Early in the process the committee identified the following as tasks and information needs for improved management. These needs will be fleshed out in further detail in a separate report.

1) Robust enumeration of king salmon catch and escapement.
   a) Accurate inseason estimate of the inriver run of king salmon. Current gillnet apportioned sonar counts are thought to be an index of abundance but ground truthing efforts show that the sonar program does not consistently index the inriver run.
      i) Address shortcomings of the current sonar program design.
   b) Accurate post-season estimates of age-specific king salmon escapement.
   c) Improved catch accounting that better estimates/explicitly takes into account:
      i) the commercial home pack,
      ii) processor reporting inconsistencies,
      iii) catch and release mortality in the sport fishery,
      iv) sport fishery catch and harvest estimation considering the recently eliminated guide logbooks.
   d) Age composition estimates for harvests in each fishery.

2) Use non-sonar indices of abundance for the inriver run, such as guided sport fishing catch rates, which are not currently used or included in the Plan.

3) Robust/defensible escapement goal for Nushagak king salmon. This requires a robust assessment program to build useful brood tables (accurate age-specific catch and escapement).
   a) Preseason king salmon forecasts would help to better guide early season fishing in all fisheries.

4) Funding for the assessment program is inadequate relative to the intensity and value of management of king and sockeye salmon in the district.

5) Monitor and maintain spawning and rearing habitat.

6) A better understanding of what drives king salmon abundance, and whether escapement goals in the current regime can be improved and preseason forecasts can be made
   a) Age-specific escapement levels versus subsequent returns; the effects of changes body size of escapement and freshwater and marine survival.
      i) Smolt enumeration program
      ii) Early ocean survival monitoring (e.g., Yukon River kings).

Appendices

Appendix A. 2018 Bristol Bay Board of Fisheries Meeting Proposals

Proposal #41 - 5 AAC 06.361. Nushagak-Mulchatna King Salmon Management Plan.

Reduce fishing time in the Nushagak District commercial salmon fishery when the Nushagak River sport fishery is restricted for king salmon conservation, as follows:

Nush Chinook Option 1

When the Nushagak Chinook run is not meeting minimums and the Sport Fishing user group has in season Emergency Orders for stepping down (example: no bait, catch and release, or closures), then the Commercial fishery must also participate in the conservation effort for protecting the Chinook run. The ComFish Department shall not open the Nushagak district to more than 12 hours time total of commercial drift and set fishing in a 24 hour period when the Department has issued EO's restricting the sport fishing user group. The department can break the 12 hours up into two 6 hour openers or any other combination as long as the open commercial fishing time does not total more than 12 hours in a 24 hour period. Additionally, the Department shall not run two 12 hour openers back to back--meaning there can not be a 12 hour opener starting at 12:00 Noon and ending at Mid-night and then another opener starting at 12:00 Midnight and running to 12:00 Noon. The Drift and Set user group openings do not have to be at the same time periods. However, the total for each group cannot exceed 12 hours each when the Sport Fish EO's are in place. Thus, Drift could be open for 12 straight hours from 1:00 AM to 1:00 PM and Set could be open from 3:00 AM to 9:00 AM and again from 4:00 PM to 10:00 PM. The definition of a 24 hour period would start at 12:00 Midnight and end at 11:59 PM on that same day. Once the Sport Fish biologist removes all EO's restricting effort of the Sport Fishing user group in the district the Commercial openings can go back to as directed by the ComFish Biologist with no time restrictions.

What is the issue you would like the board to address and why? The burden of conservation of the Nushagak Chinook Salmon run is 100% on the shoulders of the Sport Fishing industry. There are efforts made by Com Fish with mesh sizing that try to eliminate the by-catch of Chinook when targeting sockeye but there is still a large enough by-catch that it has an impact on the fishery. Sport Fish is not trying to prevent the Com Fish industry from catching sockeye and making a living. The impact on the number of Chinook making it in river is immediately diminished when commercial openers happen. This is not intended by the Com Fisher, but it happens. We need help in preserving the Nushagak Chinook run. When the Chinook run falls below acceptable escapement numbers, the sport fishery is restricted or potentially closed, yet com fish openings remain aggressive. The commercial fishery in the Nushagak district, although targeting sockeye, certainly has a by-catch or interception of Chinook bound for the Nushagak. At low estimates of 3 Chinook intercepted per vessel in a 12 hour opener and 400 vessels in the district we are talking about 1,200 Chinook. Many times the district is open for 23.5 or 24 hour periods thus hitting both tides and intercepting double that amount per day--2,400 Chinook in our example. That equates to 16,800 Chinook harvested via by-catch in one 7 day period. The Board is encouraged to take preventive measures to ensure that the Nushagak Chinook run survives.

PROPOSED BY: Brian Kraft **(** EF-F18-067)

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Proposal #42 - 5 AAC 06.361. Nushagak-Mulchatna King Salmon Management Plan.

Reduce fishing time in the Nushagak District commercial salmon fishery when the Nushagak River sport fishery is restricted for king salmon conservation, as follows:

Nush Chinook Option #2

When the Sport Fishing user group has had effort reduced by in-season EO's that restrict the group (ex: no bait, catch and release, closures, etc) Com Fish Biologist shall not permit Commercial Fishing, Drift or Set, on two consecutive high tides. Once the EO's are in force and restrictions applied to the Sport Fishing user group and the Com Fishers have fished a high tide, the district shall close to all commercial fishing 4 hours prior to the next published high tide at Clark's Point. The district can reopen 4 hours after that published high tide at Clark's Point.

What is the issue you would like the board to address and why? The burden of conservation of the Nushagak Chinook Salmon run is 100% on the shoulders of the Sport Fishing industry. There are efforts made by Com Fish with mesh sizing that try to eliminate the by-catch of Chinook when targeting sockeye but there is still a large enough by-catch that it has an impact on the fishery. Sport Fish is not trying to prevent the Com Fish industry from catching sockeye and making a living. The impact on the number of Chinook making it in river is immediately diminished when commercial openers happen. This is not intended by the Com Fisher, but it happens. We need help in preserving the Nushagak Chinook run. When the Chinook run falls below acceptable escapement numbers, the sport fishery is restricted or potentially closed, yet com fish openings remain aggressive. The commercial fishery in the Nushagak district, although targeting sockeye, certainly has a by-catch or interception of Chinook bound for the Nushagak. At low estimates of 3 Chinook intercepted per vessel in a 12 hour opener and 400 vessels in the district we are talking about 1,200 Chinook. Many times the district is open for 23.5 or 24 hour periods thus hitting both tides and intercepting double that amount per day--2,400 Chinook in our example. That equates to 16,800 Chinook harvested via by-catch in one 7 day period. The Board is encouraged to take preventive measures to ensure that the Nushagak Chinook run survives.

PROPOSED BY: Brian Kraft **(** EF-F18-068)

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Appendix B. 2018 Bristol Bay Board of Fisheries Meeting Record Copies (RCs)

RC51 – Proposed language for Proposal 41 submitted by the Board at the request of Board member Payton

RC69 – Report on the "Effectiveness of Gillnet Mesh Sizes…" prepared by Raborn and Link (BBSRI)

RC80 – Recommendations regarding Proposals 41, 42 and 43 submitted by Link (BBSRI)

RC84 – Document describing concerns and outlining steps submitted by ADF&G at the request of Board member Ruffner

RC86 – Board of Fisheries charge statement for the Nushagak-Mulchatna king salmon management plan committee (2018-291-FB)

PC53

RC 51

Submitted by the Alaska Board of Fisheries at the request of Board Member Israel Payton
November 30, 2018

Proposed language for proposal 41:

5 AAC 06.361. Nushagak-Mulchatna King Salmon Management Plan.

(a) The purpose of this management plan is to ensure biological spawning escapement requirements of king salmon into the Nushagak-Mulchatna river systems. It is the intent of the Alaska Board of Fisheries (board) that Nushagak-Mulchatna king salmon be harvested in the fisheries that have historically harvested them. This management plan provides guidelines to the department in an effort to preclude allocation conflicts between the various users of this resource. The department shall manage Nushagak-Mulchatna king salmon stocks in a conservative manner consistent with sustained yield principles and the subsistence priority.

(b) The department shall manage the commercial and sport fisheries in the Nushagak District as follows:

(1) to achieve an inriver goal of 95,000 king salmon present in the Nushagak River upstream from the department sonar counter; the inriver goal provides for

(A) a biological escapement goal of 55,000 - 120,000 fish;

(B) reasonable opportunity for subsistence harvest of king salmon; and

(C) a king salmon sport fishery guideline harvest level of 5,000 fish, 20 inches or greater in length;

(2) in order to maintain a natural representation of age classes in the escapement, the department shall attempt to schedule commercial openings to provide pulses of fish into the river that have not been subject to harvest by commercial gear;

(3) the department may close the commercial drift or set gillnet fishery if the harvest in the directed commercial king salmon fishery for either gear group is more than two sockeye salmon for every one king salmon.

(c) If the total inriver king salmon return in the Nushagak River is projected to exceed 95,000 fish, the guideline harvest level described in (b)(1)(C) of this section does not apply.

(d) If the spawning escapement of king salmon in the Nushagak River is projected to be more than 55,000 fish and the projected inriver return is less than 95,000 fish, the commissioner

(1) shall close, by emergency order, the directed king salmon commercial fishery

in the Nushagak District; during a closure under this paragraph, the use of a commercial gillnet with webbing larger than five and one-half inches in another commercial salmon fishery is prohibited;

(2) [IF THE PROJECTED INRIVER RETURN OF KING SALMON IN THE NUSHAGAK RIVER IS AT LEAST 70,000, BUT LESS THAN 95,000 FISH, AND TO ENSURE THAT THE SPORT FISHERY GUIDELINE HARVEST ESTABLISHED IN (B)(2)(C) OF THIS SECTION IS NOT EXCEEDED, SHALL ESTABLISH, BY EMERGENCY ORDER, A DAILY BAG LIMIT OF ONE FISH PER DAY, ONE IN POSSESSION, FOR KING SALMON 20 INCHES OR GREATER IN LENGTH;] **Repealed.**

(3) [IF THE PROJECTED INRIVER RETURN OF KING SALMON IN THE NUSHAGAK RIVER IS LESS THAN 70,000 FISH, AND TO ENSURE THAT THE PROJECTED SPAWNING ESCAPEMENT DOES NOT FALL BELOW 55,000 FISH, SHALL ESTABLISH, BY EMERGENCY ORDER, FISHING PERIODS TO RESTRICT THE KING SALMON SPORT FISHERY IN THE NUSHAGAK RIVER DURING WHICH ANY, OR A COMBINATION OF THE FOLLOWING RESTRICTIONS MAY BE APPLIED AT THE DISCRETION OF THE COMMISSIONER:

(A) REDUCTION OF BAG AND POSSESSION LIMITS

(i) FROM TWO TO ONE FISH 20 INCHES OR GREATER IN LENGTH; AND

(ii) IF NECESSARY, FROM ONE FISH TO NONRETENTION OF KING SALMON; IF A NONRETENTION FISHERY FOR KING SALMON IS ESTABLISHED UNDER THIS PARAGRAPH, THE USE OF BAIT FOR FISHING FOR ALL SPECIES OF FISH WILL BE PROHIBITED UNTIL THE END OF THE KING SALMON SEASON SPECIFIED IN 5 AAC 67.020 AND 5 AAC 67.022(G);

(B) A SEASONAL LIMIT OF UP TO FOUR FISH 20 INCHES OR GREATER IN LENGTH;

(C) PROHIBITION OF THE USE OF BAIT;

(D) REDUCTIONS IN THE TIME OR AREA FOR FISHING;

(E) A CLOSURE OF THE KING SALMON SPORT FISHERY DURING WHICH THE USE OF BAIT FOR FISHING FOR ALL SPECIES OF FISH WILL BE PROHIBITED UNTIL THE END OF THE KING SALMON SEASON SPECIFIED IN 5 AAC 67.020 AND 5 AAC 67.022(g).] **Repealed.**

(e) If the spawning escapement of king salmon in the Nushagak River is projected to be

less than 55,000 fish, the commissioner

(1) shall close, by emergency order, the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement into the Wood River exceeds 100,000 fish;

(2) shall close, by emergency order, the sport fishery in the Nushagak River to the taking of salmon and prohibit the use of bait for fishing for all species of fish until the end of the king salmon season specified in 5 AAC 67.020 and 5 AAC 67.022(g); and

(3) shall establish, by emergency order, fishing periods during which the time or area is reduced for the inriver king salmon subsistence fishery in the Nushagak River.

(f) Notwithstanding 5 AAC 06.200, in a directed king salmon commercial fishery, the southern boundary of the Nushagak District is a line from an ADF&G regulatory marker located at Etolin Point at 58° 39.37' N. lat., 158° 19.31' W. long., to 58° 33.92' N. lat., 158° 24.94' W. long. to Protection Point at 58° 29.27' N. lat., 158° 41.78' W. long.

(g) During a directed king salmon commercial fishery in the Nushagak District, drift gillnet and set gillnet fishing periods will be of equal length, but do not have to be open concurrently.

Effectiveness of Gillnet Mesh Sizes in the Nushagak District Commercial Sockeye Fishery Based on Selectivity Curves Developed from the Port Moller Test Fishery

Prepared by

Dr. Scott Raborn and Michael Link
Bristol Bay Science and Research Institute
November 29, 2018

Conclusion

Restricting mesh size in the Nushagak District to a maximum of 4¾" when targeting Sockeye Salmon can be expected to:

- increase the average annual Sockeye catch from the Nushagak District,
- lessen the frequency and magnitudes of over-escapement events to the Wood River,
- decrease the vulnerability of King Salmon to Sockeye gear, and
- decrease the use of the WRSHA.

These benefits would be most significant in years when there is a large contrast in the age of returns to the Wood and Nushagak rivers. By increasing the harvest rate on the Wood River fish in the district, we should expect that in at least some years less fishing time would be needed for a given harvest level. Less fishing effort in the district can only decrease bycatch of non-target species. In addition, vulnerability of King Salmon in the Sockeye fishery will only fall with decreasing mesh size.

Introduction

The retention rate of salmon in gillnets is affected by the body size of the fish relative to the mesh size to which it is exposed. Mesh-specific selectivity curves quantify the retention rates (sometimes called "relative selectivity") of fish varying in body size. Beginning in 2009, the Bristol Bay Science and Research Institute (BBSRI) began conducting research on gillnet selectivity at the Port Moller Test Fishery (PMTF). Based on this research, the traditional gillnet used at Port Moller was changed in 2011 from four 50 fathom shackles of 5⅛" mesh to four shackles alternating between 4½" and 5⅛" mesh. This change was made because 5⅛" mesh selects for 3-ocean fish over 2-ocean fish at a ratio of about 1.4:1. Conversely, the smaller 4½" mesh selects 2-ocean fish over 3-ocean fish at a ratio of about 1.2:1. Aside from offsetting the age composition bias in the PMTF catches, the addition of the smaller mesh allowed for the estimation of contact selectivity curves for various mesh sizes. That is, for any given mesh size the relative selectivity across fish lengths can be estimated, and the fish length for which it is most selective can be determined (relative selectivity is then set to one for this size). Moreover, selectivity can be estimated for any age or stock for which the length frequency distribution is available. For this exercise, the average shaped selectivity curve based on PMTF data 2009-2018 was used to approximate performances of varying mesh sizes on stocks in the Nushagak District commercial fishery.

During years dominated by 2-ocean fish to the Wood River (e.g., 2018), tailoring mesh size to maximize efficiency in catching smaller fish may help to increase Sockeye Salmon catch, lessen over-escapement, reduce the amount of fishing time in the district, and reduce the frequency of being restricted to the Wood River Special Harvest Area (WRSHA). In addition, using a similar mesh size for 2-ocean fish during runs dominated by 3-ocean fish may have little risk of reducing the fleet's efficiency due to the shape of the selectivity curve (we expound on this idea below).

Objective

Assess how catches, exploitation rates, and escapements vary across mesh sizes for each stock in the Nushagak District for years contrasting in run size and age composition.

Methods

The average PMTF selectivity curve was applied to the 2011 and 2018 Nushagak runs. These two recent runs provide a strong contrast in the age- and size-composition. For each year, the most likely mesh that was used by the fleet was determined by adjusting the mesh size and exploitation rate until simulated and observed escapements matched. Subsequently, 4½", 4¾", and 5" mesh sizes were applied to estimate how fishery metrics (age-specific catch and escapement) would have changed across Nushagak District stocks for both years.

Results and Discussion

The 2011 run totaled 6.8 million and was comprised of 71% 3-ocean fish; in 2018 the run was 33.8 million with 32% being ocean age 3. In both years, Igushik and Nushagak stocks were dominated by 3-ocean fish, whereas this component was largely absent for the Wood River stock in 2018 (see Figure 1 for length distributions by stock and year overlaid with various selectivity curves). Interestingly, differences in catches across meshes were greatest for the Wood River stock in 2018.

Overall catch was estimated to have been greater for 5" versus 4½" mesh in 2011 and while this pattern reversed in 2018, the differences were not the same (Figure 2). In 2011, switching from 4½" to 5" mesh would increase catch by about 394 thousand or 9%; switching from 5" to 4½" mesh would increase catch by about 6.5 million or 32%. Mesh sizes to maximize catch were estimated to be 4¾-5" and 4½" in 2011 and 2018, respectively. Not surprisingly, the average mesh size used by the fleet was estimated to be close to 4¾" in both years. As this estimate is an average, one should not interpret this result to mean that every fisher was using this mesh size. In reality, mesh sizes likely ranged from 4½" to 5¼" (anecdotal reports indicate this to be the approximate range, but no official records were available).

Exploitation rates were more consistent across meshes within stock-year combinations more evenly split between ocean ages (Figure 3). The greatest differences occurred for the 2011 Nushagak stock (96% 3-ocean) and 2018 Wood River stock (4% 3-ocean) but were more pronounced for the latter. Exploitation changed more between 4¾" and 5" mesh than between 4¾" and 4½" mesh. This result occurred because of the shape of the selectivity curve and the differences in where small versus large fish are caught. The three modes on the selectivity curve going from right to left correspond to fish being (1) tangled around their head, (2) gilled just behind the gill plates, or (3) wedged between the gill plates and the dorsal fin (Figure 4). The curve descends faster on the left side causing small fish to be missed by larger meshes at a greater proportion than large fish are missed by smaller meshes. Consequently, a smaller mesh (say, 4½") will miss proportionately fewer fish in a 3-ocean dominated year than will a larger mesh (5" or 5⅛") in a 2-ocean dominated year.

Finally, using 4½" mesh in 2018 would have reduced over-escapement to the Wood River by about 3.5 million compared to what was observed (Figure 5).

As mentioned above, the fleet utilizes a range of mesh sizes and requiring a single mesh size would not be feasible without imposing undue economic hardship. Some fishers will inherently switch to smaller

mesh sizes given that they have the gear available and a proportionately larger 2-ocean component is anticipated. Others may stay with larger gear because smaller gear is unavailable or because they believe targeting 3-ocean fish will high-grade their catch and increase overall profit. At any rate, the average mesh size tends to be around 4¾". The results from this exercise indicate that capping mesh size at 4¾" will stop large 2-ocean Wood River runs more efficiently and pose little risk of missing 3-ocean runs. Some fishers will want to fish even smaller gear, but the idea is simply to truncate the upper end of the mesh size distribution to better prosecute the fishery.

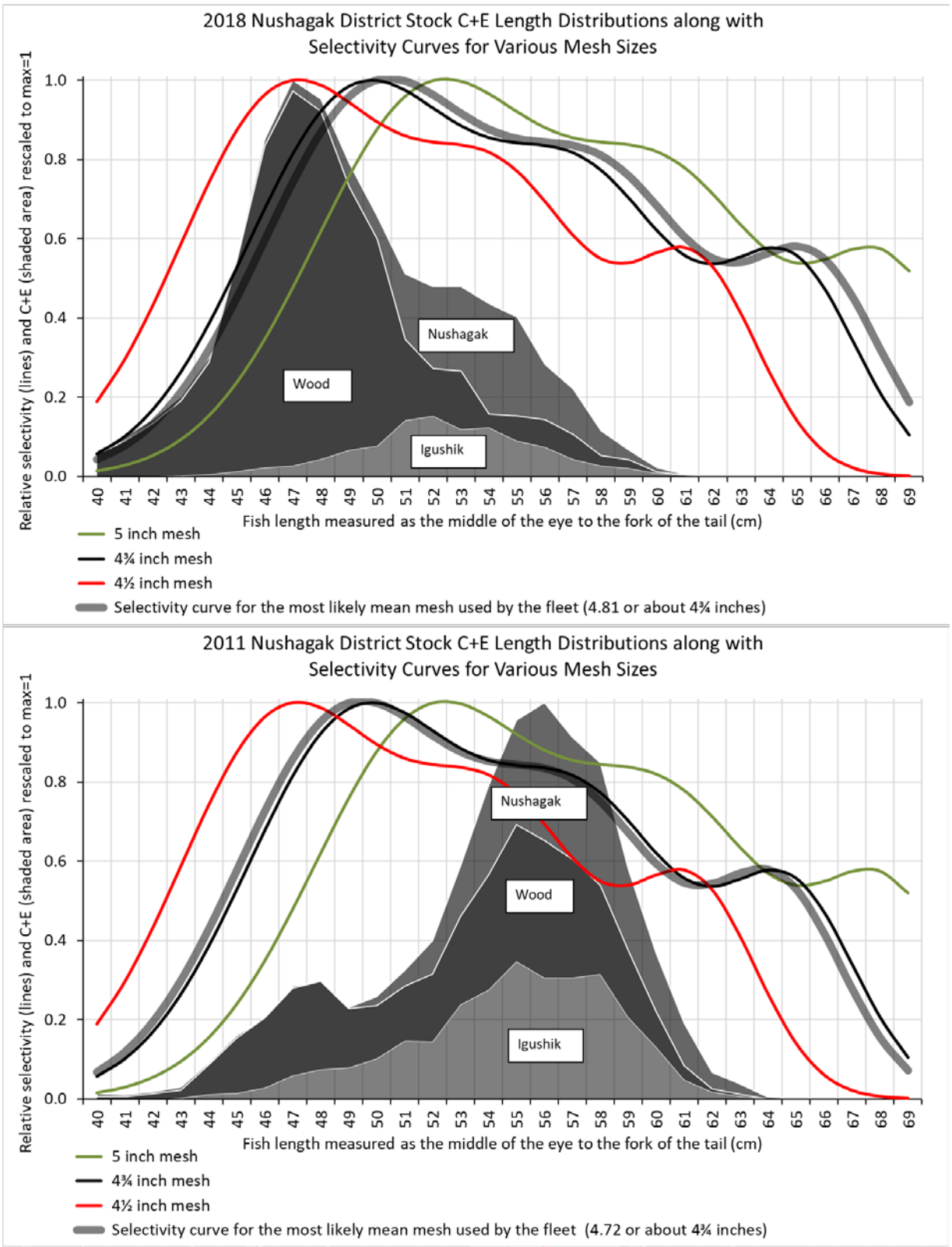
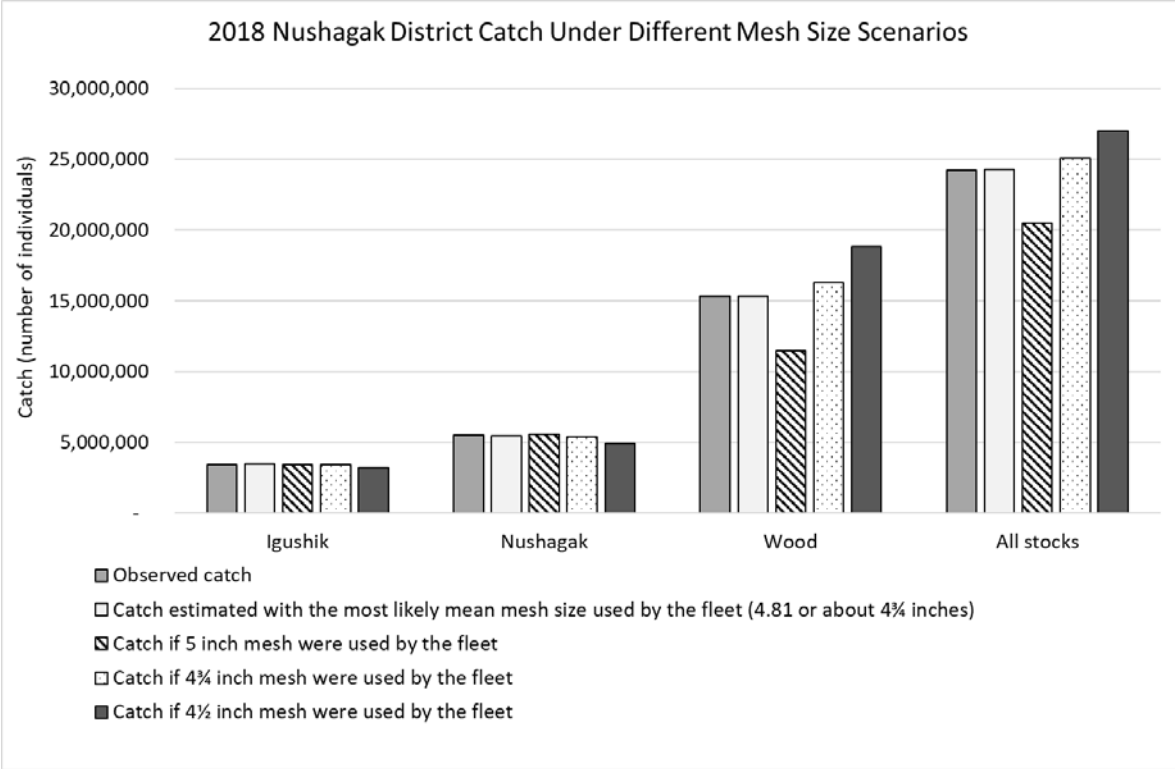


Figure 1. Length frequency distributions for stocks within the Nushagak District years 2011 and 2018 superimposed with selectivity curves for varying mesh sizes.



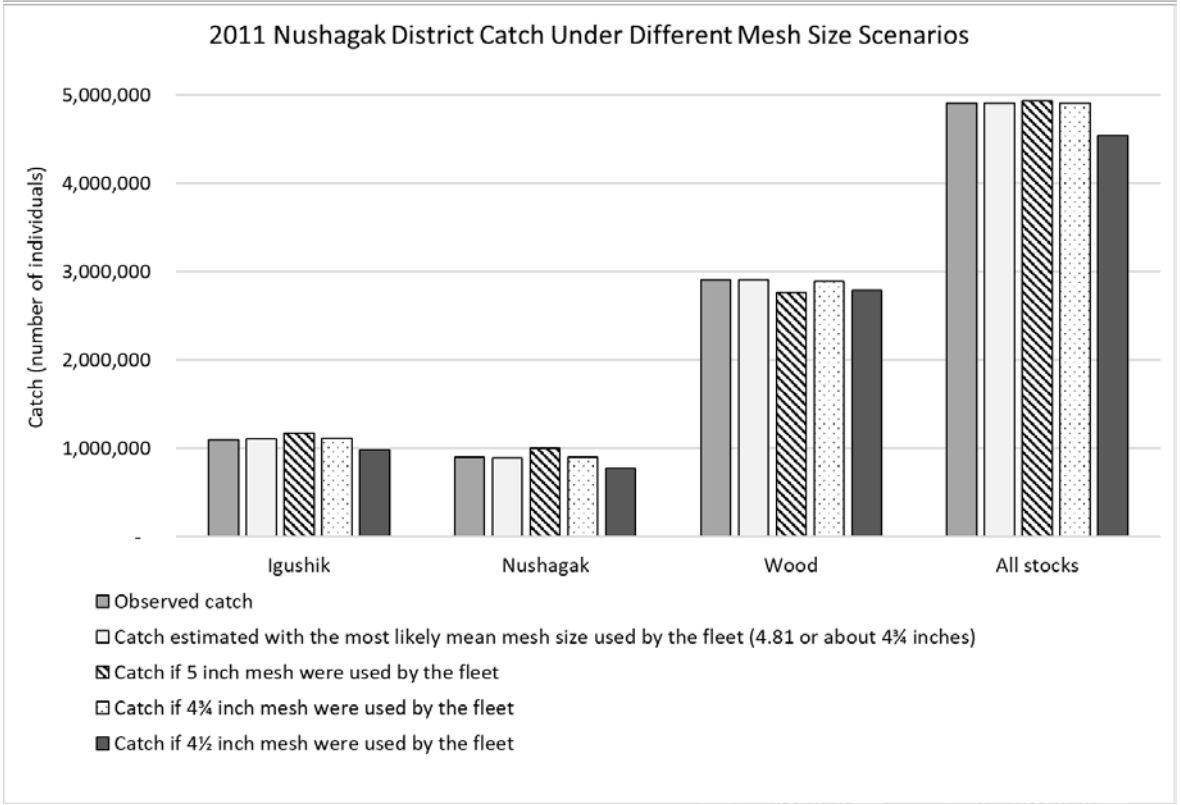


Figure 2. Catch observed and simulated with various mesh sizes for stocks within the Nushagak District years 2011 and 2018. Note: vertical axis scales are not consistent between years.

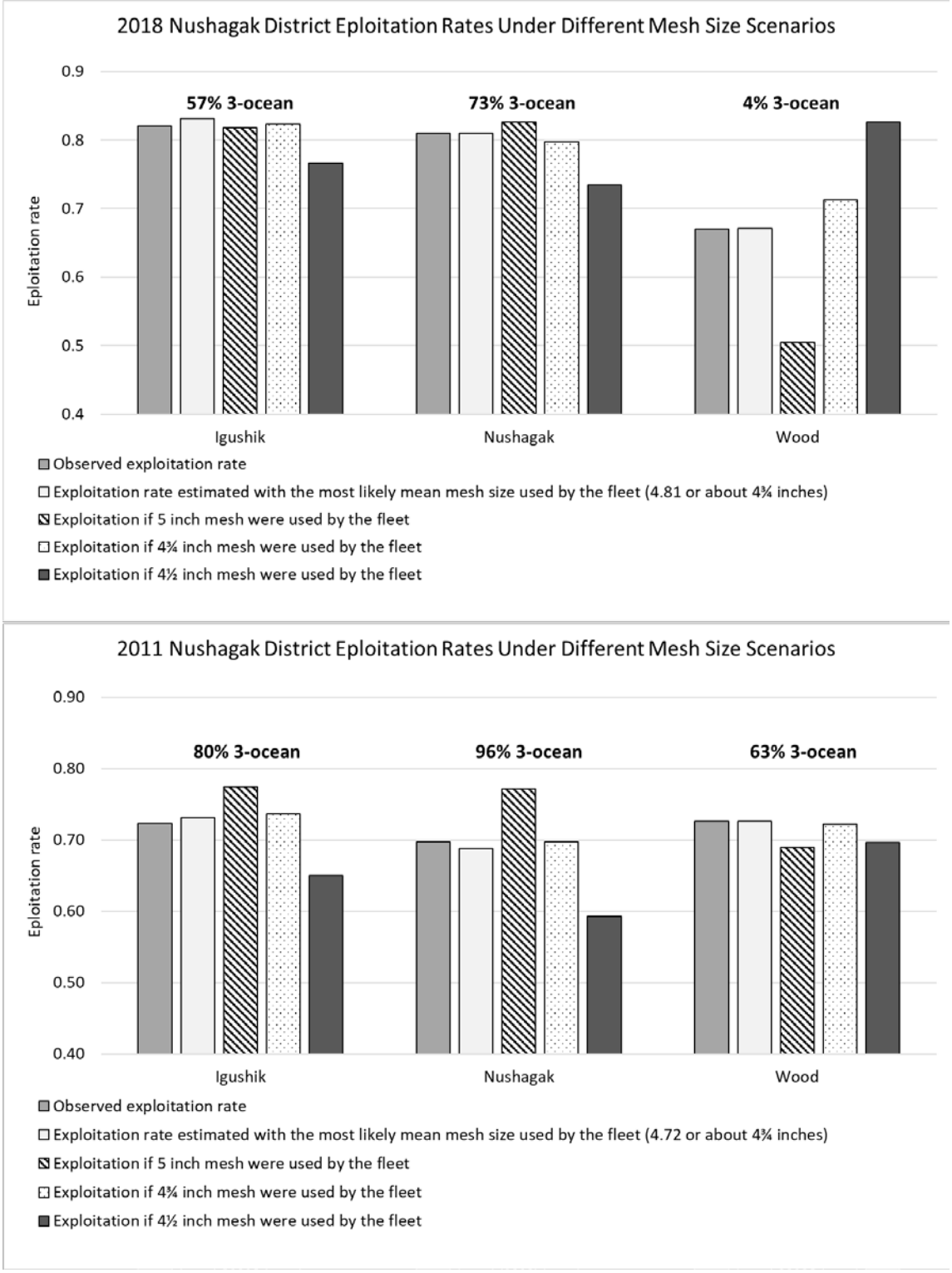


Figure 3. Exploitation rates observed and simulated with various mesh sizes for stocks within the Nushagak District years 2011 and 2018. The ocean age component is given above each stock.

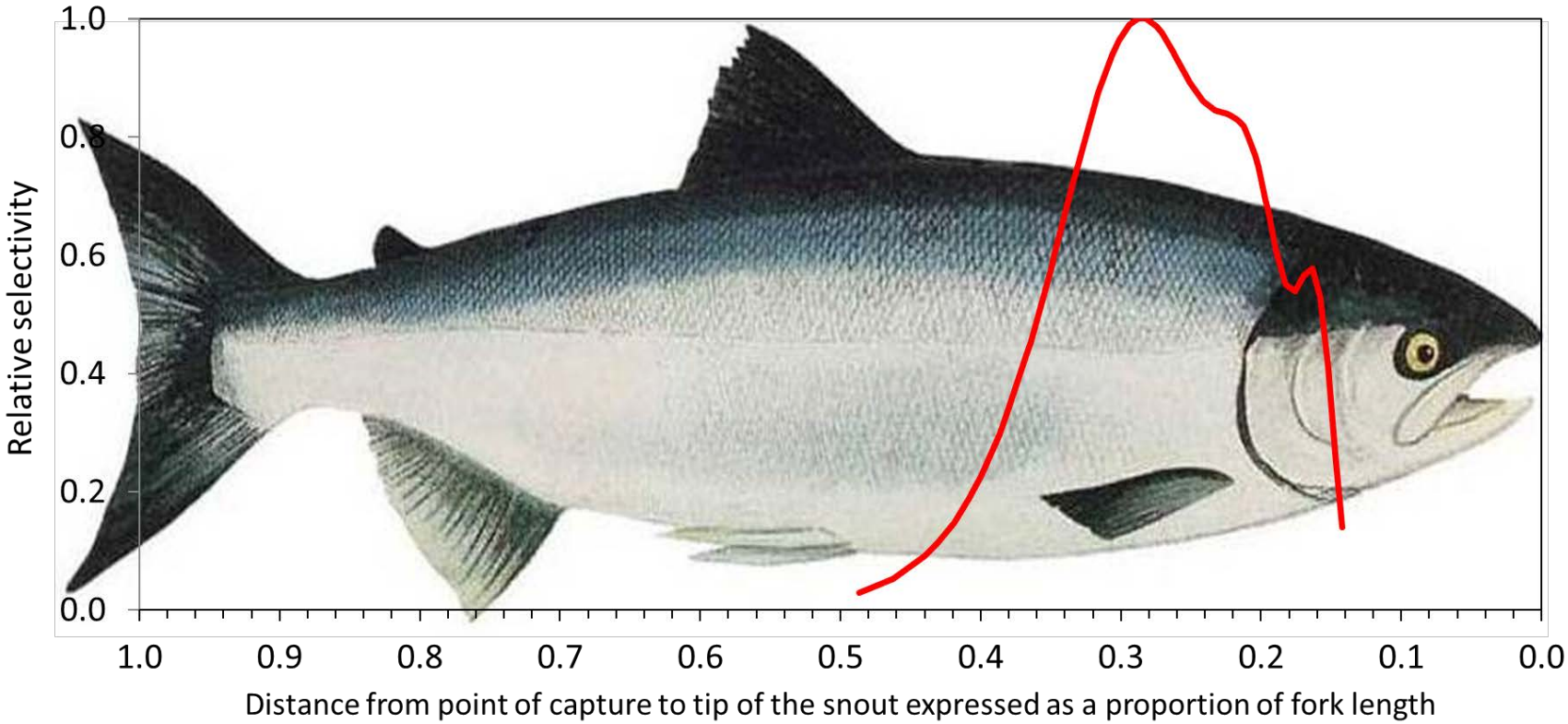
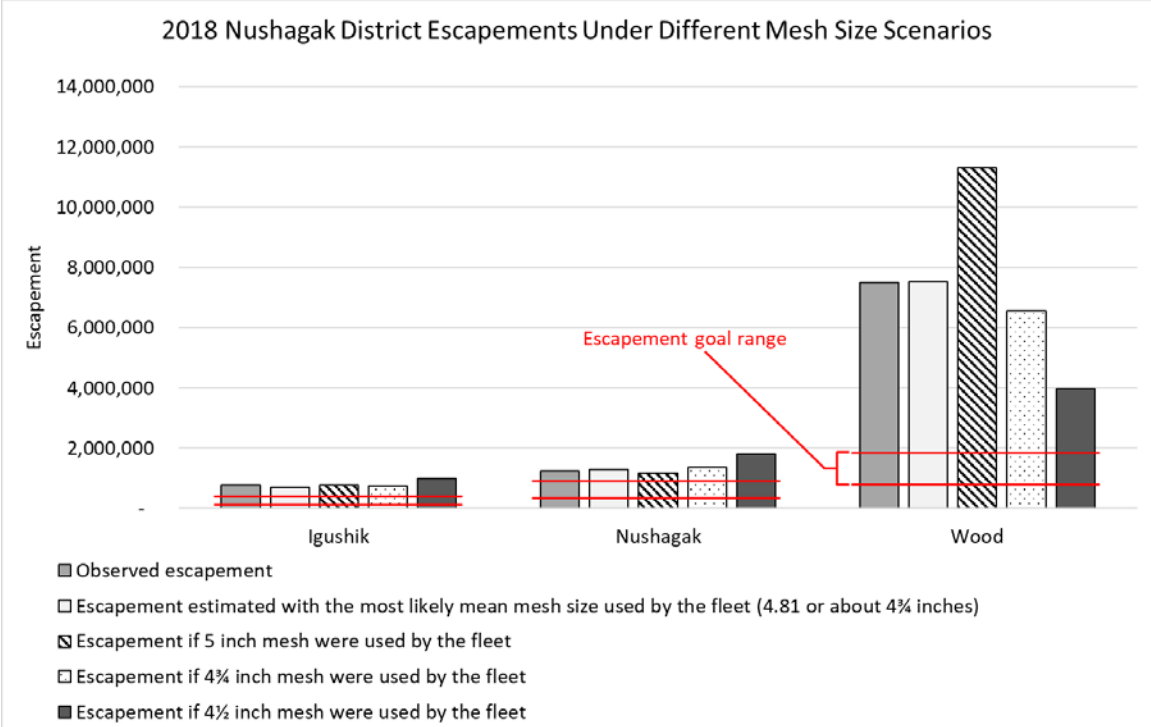


Figure 4. Estimated mean selectivity curve for years 2009-2018 superimposed onto the image of an average shaped ocean phase Sockeye. Starting from right to left three modes aligned with the following body structures: (1) the tangled mode occurred around the preoperculum; (2) the gilled mode occurred just after the gill cover; (3) the wedged mode occurred midway between the gill cover and the dorsal insertion.



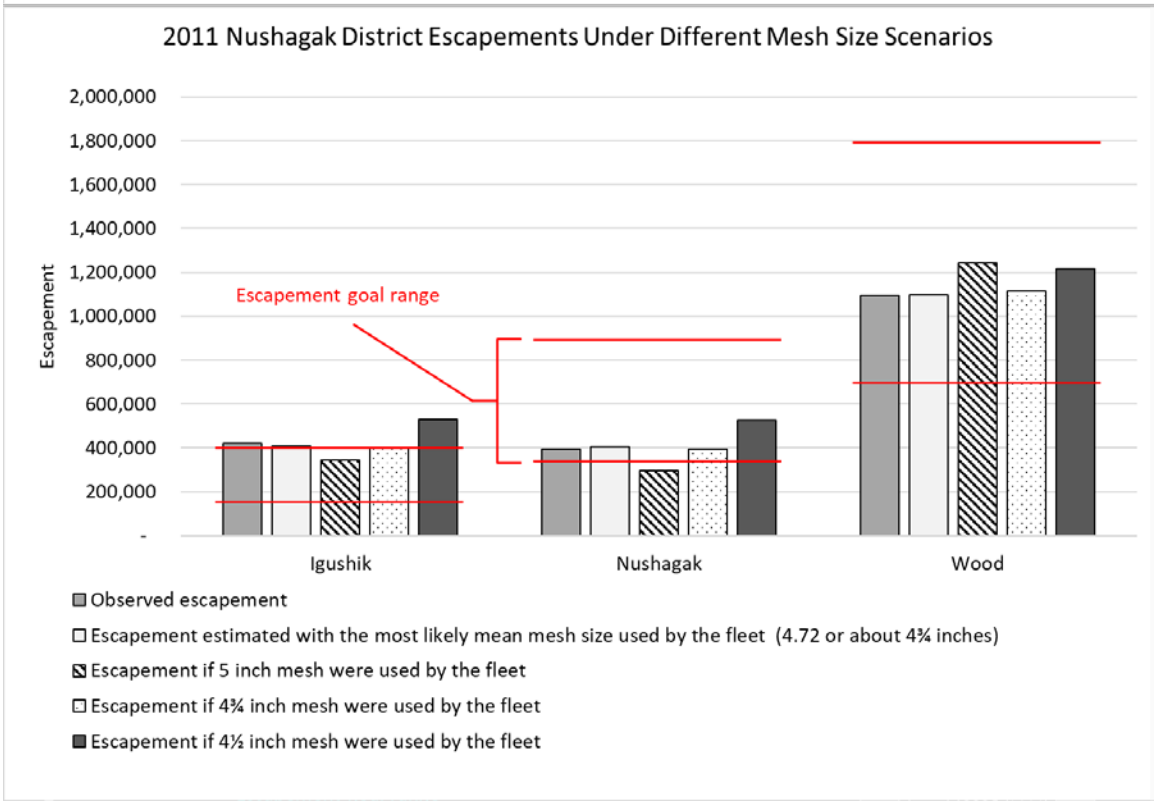


Figure 5. Escapement observed and simulated with various mesh sizes for stocks within the Nushagak District years 2011 and 2018.

Proposals 41, 42, 43 and the Nushagak-Mulchatna King Salmon Management Plan

Michael Link, Bristol Bay Science and Research Institute

***Recommendation**: 1) Adopt RC 51 (strike two provisions from the NMKSMP) to address proposal 41 and 42; 2) take "No Action" on proposal 43; 3) in conjunction with the Department, Board of Fisheries, and stakeholders, conduct an examination of the the Nushagak-Mulchatna King Plan and the information and assessment programs that it is based on; and 4) use results from this analysis to consider changes to the Plan in 15 months that will better provide for the conservation and sustainable use of Nushagak King Salmon by subsistence, sport, and commercial fisheries users.*

Rationale

The Nushagak-Mulchatna King Salmon Management Plan is a highly prescriptive plan with multiple precise management triggers for action based on the King Salmon passage estimates derived from the Nushagak River Sonar Project. Unfortunately, there is a mismatch between the precision of the Plan and the precision and accuracy of escapement information managers must use. The mismatch regularly makes it difficult for the fishery manager to simultaneously adhere to the letter of the Plan, conserve the stock, and, when warranted, provide sustainable use by subsistence, sport, and commercial users. The problem is double-edged. Most importantly, issues with the sonar can mask the need for conservation actions but they also can lead to foregone harvest by all users.

ADF&G acknowledged in its October 3, 2018 Bristol Bay Escapement Goal Memo "*… a substantial number of kings are not enumerated by the existing sonar assessment.*" and they recommend updating the Nushagak King Salmon escapement goal for the next Bristol Bay regulatory meeting in 3 years. This is progress. However, updating the escapement goal using similarly imprecise estimates of historical escapement and inserting revised numbers as new triggers in the existing Plan will not improve the plan and management of the stock. Nor will small tweaks and/or further refinements to the Plan (e.g., proposals 41, 42, 43), at least without first considering the Plan's limitations and various opportunities to augment and improve the information it is built on. With this, users can then work together to build a better Plan.

Background

The Nushagak River Sonar Project was initiated in 1980 to enumerate sockeye salmon amidst all species of salmon. Apportionment of sonar targets to each fish species, necessary to estimate the sockeye passage, eventually led to the indexing of the daily King Salmon passage. Large and small runs of this valuable King Salmon stock in the 1980s led to allocation conflicts and intensified the need for a management plan. In 1991, the Board, working closely with subsistence, sport, and commercial fisheries stakeholders over two years, created the Nushagak-Mulchatna King Salmon

Management Plan[1] (5 AAC 06.361). The Plan's triggers were added over the years and were based on the King Salmon passage estimates from the sonar project. Since it was developed, much has been learned over 27 seasons about the precision and accuracy of sonar-based Nushagak King Salmon estimates. Shifts in the run sizes of Chinook and sockeye, and changes in the sport and commercial fishery over time have also affected the utility of the Plan developed in 1991.

Comparisons between the annual sonar-based estimates and upriver post-season aerial survey counts identified issues with the sonar years ago (e.g., 1997 and 1999). More recently, acoustic tagging (2011-2014) and mark-recapture (2014-2016) studies also showed that the sonar underestimates annual King Salmon passage, and most importantly, by a variable degree. In 2017, low early-season sonar-based King Salmon passage estimates triggered restrictions on harvest opportunities; subsequent examination of all information suggested that estimates were probably about 50% lower than actual. Although the restrictions helped increase King Salmon escapement, skepticism grew among users about misplaced certainty in the assessment information. Finally, due to a lack of quality age-specific escapement information for Nushagak King Salmon, ADF&G abandoned attempts to prepare preseason forecasts and that has further hindered managers' ability to provide sustainable harvests for all users.

Suggested Actions include (but are not limited to):

Escapement monitoring

1. Fully quantify and make explicit the uncertainty in daily and annual King Salmon passage and escapement estimates for setting and/or revising triggers in the Plan, setting an escapement goal range, and making preseason forecasts.
2. Identify/develop methods to detect inseason problems with the current sonar-based estimates.
3. Examine other existing sources of information available to the fishery manager to determine whether any could be integrated into the Plan to increase managers' ability to take corrective actions inseason that would otherwise be precipitated by erroneous sonar-based estimates.
4. Explore ways to improve inseason assessments from the sonar to develop post-season, age-specific escapement estimates in the short- and long-term.

King Plan Elements

5. Explore several options to better provide for the conservation and sustainable use of Nushagak King Salmon by subsistence, sport, and commercial fisheries users.
6. Consider use of additional metrics to assess in-season abundance.
7. Consider utility of preseason forecasts to guide early season management.

[1] 91-131-FB. Nushagak Chinook Salmon Management Plan, findings of the Board of Fisheries, Jan. 1992; attached and available www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/findings/ff91131x.pdf

Based on the above analyses, develop a suite of recommendations for updating the Nushagak-Mulchatna King Salmon Management Plan, and for improving information the plan is based on.

This effort could be accomplished by a work group with technical support and completed prior to the 2020 season. Users and the Board of Fisheries should be integral to this process because they are either responsible for changes to the Plan or must be able to operate under it; stakeholders bring useful perspectives and ideas on ways to manage this valuable and fully exploited fish stock. Ideally, the work group should involve one or two Board of Fisheries members, ADF&G Commercial and Sport Fisheries Divisions staff, and stakeholders from the subsistence, sport, and commercial fisheries. The work group would be supported by technical experts. Recommendations for the Plan could be brought before the Board in time to be "noticed" and considered at the March 2020 Statewide meeting (i.e., in ~15 months).

There are precedents for similar approaches elsewhere in the State. Something similar, but not the same, was successfully applied in Bristol Bay with the sockeye escapement goal analysis initiated at the 2012 Board of Fisheries[2]. The Bristol Bay Science and Research Institute (BBSRI), which designed and led the Board-directed Bristol Bay sockeye escapement goal analysis, is willing to lead the effort proposed here.

[2] See Executive Summary, Analysis of Escapement Goals for Bristol Bay Sockeye Salmon taking into Account Biological and Economic Factors, available at: https://www.bbsri.org/escapement-goal-analysis

RC 84

Submitted by ADF&G at the request of Board Member Ruffner, December 2, 2018

Nushagak-Mulchatna King Salmon Management Plan (NMKSMP)

At the 2018 Bristol Bay meeting held in Dillingham, proposals were submitted that called for changes to the NMKSMP (5 AAC 06.361). A small group of stakeholders including the author of two relevant proposals met with three members of the Alaska Board of Fisheries (Board) and multiple Alaska Department of Fish and Game (ADF&G) staff. There was a consensus in the group to modify the NMKSMP by striking provisions (d) 2 and 3 as described in (RC51). This removes sonar triggers that auto-restrict the sport fishery. Removing these trigger provisions from NMKSMP (RC51) will allow ADF&G to consider sonar data along with other in-season information in managing fisheries to ensure the escapement goal is met.

The parties present recognized two concerns that need additional consideration:

1) Uncertainty in sonar data used to establish the king salmon escapement goal and recent in-season issues with the accuracy and precision of sonar counts may have caused unwarranted restrictive actions.

2) Restrictions in the sport fishery for king salmon without actions in the commercial sockeye fishery may or may not be achieving necessary conservation needs and should be considered in the context of sharing a conservation burden.

To address these concerns, ADF&G in collaboration with a stakeholder-led study team will review all data related to the enumeration of Nushagak River king salmon, and identify options to improve this information and management of Nushagak River king salmon. To support this effort, ADF&G would accelerate updating the Nushagak River king salmon escapement goal prior to March 2020. The study team will provide a progress report to the board at the October 2019 work session.

Concurrent with the technical enumeration study effort, the Board Chair will appoint a working committee (WC) consisting of no more than 9 members of the public and 3 members of the board for a total of 12. The WC will be supported by the technical study team and provide input to the help guide the team's work products. The WC committee will meet prior to the Oct. 2019 Board Work Session, receive a preliminary update from ADF&G on the enumeration efforts and set a schedule that includes a target of generating a proposal for any changes to NMKSMP to the Board for consideration at the Statewide Meeting in March 2020. This schedule signals the intent of this board to address the topic of the NMKSMP before the next regular Bristol Bay cycle if new information can refine the plan; however, it does not guarantee any particular outcome.

In addressing the allocative issue, the WC will acknowledge and adhere to the goals of the Sustainable Salmon Policy (5 AAC 39.222), as well as the concept of sharing the conservation burden as outlined in the Sustainable Salmon Policy. The WC will also recognize and consider that any hard trigger closures need to acknowledge tradeoffs between sockeye and king salmon. (i.e. is it in the best interest of the state to forego 100,000 sockeye salmon for 1,000 king salmon; 1,000,000 for 10?)

ALASKA BOARD OF FISHERIES

CHARGE STATEMENT FOR THE NUSHAGAK-MULCHATNA KING SALMON MANAGEMENT PLAN COMMITTEE

2018-291-FB

At its 2018 Bristol Bay Finfish meeting, the Alaska Board of Fisheries' (board) heard testimony from Nushagak sport and commercial fishing stakeholders regarding Proposals 41 and 42 seeking to create a mechanism that would pair restrictions on both the sport and commercial fishery for the purposes of king salmon conservation.

As a result of this discussion, the board is creating a temporary committee to review the fisheries and provide recommendations to the board on a comprehensive solution. The charge statement of this committee as described in detail in RC84.

The committee, with Members Payton, Morisky, and Ruffner, will provide an update and potentially a recommended proposal at the board's 2020 Statewide meeting.

Vote: 7-0
December 2, 2018
Anchorage, Alaska

Reed Morisky, Chair
Alaska Board of Fisheries

RC 84

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Concurrent with the technical enumeration study effort, the Board Chair will appoint a working committee (WC) consisting of no more than 9 members of the public and 3 members of the board for a total of 12. The WC will be supported by the technical study team and provide input to the help guide the team's work products. The WC committee will meet prior to the Oct. 2019 Board Work Session, receive a preliminary update from ADF&G on the enumeration efforts and set a schedule that includes a target of generating a proposal for any changes to NMKSMP to the Board for consideration at the Statewide Meeting in March 2020. This schedule signals the intent of this board to address the topic of the NMKSMP before the next regular Bristol Bay cycle if new information can refine the plan; however, it does not guarantee any particular outcome.

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Appendix C. 2019 Board of Fisheries Work Session Record Copies (RCs)

RC9 – Memo from BBSRI to Board members re Update on Special Committee

Bristol Bay Science And Research Institute

RC9

MEMORANDUM

Date: October 12, 2020

To: Alaska Board of Fisheries members
Glenn Haight, Executive Director, Alaska Board of Fisheries

From: Michael Link, Executive Director, BBSRI, and Project Manager, Stakeholder-led study team
Jeff Regnart, Policy Analyst and Senior Technical Advisor, BBSRI
Tom Brookover, Senior Technical Advisor, BBSRI

Re: Update on the Special Committee to Examine the Nushagak-Mulchatna King Salmon Fishery Management Plan

This letter is to update the Board on progress and schedule for the committee work to address the Nushagak-Mulchatna King Salmon Management Plan. We represent the leadership of a stakeholder-led study team committed to work with the fishery's stakeholders to identify options for a comprehensive solution to modifying the Plan.

Origins of the Committee

At the December 2018 Bristol Bay Finfish meeting the Board, in response to two proposals to modify the Nushagak-Mulchatna Chinook Salmon Management plan (5AAC 06.361), took the following actions:

- removed several triggers in the Plan that affect the sport fishery, which would provide managers greater flexibility in dealing with sometimes inaccurate escapement information,
- tabled #41 and #42 (paired closures of sport and commercial fisheries),
- created a special Board committee to develop a comprehensive solution to the Plan through RC 84 (Ruffner) and the charge statement (2018-291-FB), and
- charged the committee with reporting back to the full board at its statewide meeting in March 2020 (15 months).

Stakeholder-led Study Team

Also, at the 2018 Bristol Bay meeting the Bristol Bay Science and Research Institute (BBSRI)[1] committed to supporting the committee's work through a stakeholder-led technical analysis of options the committee was expected to consider (RC80; Link).

[1] *The Bristol Bay Science and Research Institute (BBSRI) is a regional non-profit research organization founded in 1998. Our mission is to conduct applied research and monitoring to improve the well-being of residents of Bristol Bay, Alaska with an emphasis on the Bay's fish stocks and fisheries.*

Vision for the Process and Schedule

At first, it was envisioned that a consensus-based comprehensive solution would emerge from the committee and study team in time for consideration at the Board's state-wide meeting in March 2020.

Concerns from the public relayed to committee members about insufficient time for public vetting of any proposals coming from the committee work (expected in Jan-Feb 2020) ultimately led to the work schedule and product deliverables sliding by ~1 year. The original author of proposals 41 and 42 (Dec. 2019), who is on the committee concurred with this change in schedule. With this change, the committee's work products would now be released prior to an April 2021 proposal deadline and be considered at the next in-cycle Bristol Bay meeting (Dec. 2021).

Committee Meetings

The full committee (minus departed Ruffner) met in Anchorage on October 21, 2019 (October 15-16, 2020 Work Session Board packet item #4 and 5) to get underway and present preliminary analyses of the fishery's history and technical challenges associate with monitoring and managing the fishery. Break-out groups of subsets of the full committee met with the study team in December 2019 (Anchorage; sport/commercial) and February 2020 (Dillingham; commercial, subsistence, sport). COVID-19 precluded an in-person meeting for the entire group scheduled for April 2020 (King Salmon). These committee meetings provided much for the study team to examine.

Disbanding of the Formal Committee, February 2020

At the Board's Upper Cook Inlet meeting in February 2020, the Board disbanded the formal committee and made it clear that they encouraged stakeholders on the committee to continue to work together in preparation for the next in-cycle Bristol Bay Board meeting in 2021.

In addition, BBSRI reasserted its commitment to serving the committee and moving toward its original mission outlined in the charge statement – a comprehensive solution to the Nushagak-Mulchatna King Salmon Management Plan.

Toward that end, the we refer to the committee hereafter as all those who were selected by the Board in February 2019, minus the two Board members. We have not added nor subtracted any of the public from this committee.

Committee Work Products Prior to April 2021

The study team is drafting components of a comprehensive report for the remains of the committee in draft form January 2021. Subsequently, the committee will meet one or more times in preparation of possible producing one or more proposals for the next in-cycle Bristol Bay Board meeting. Work products from this process will be available to the public prior to the April 2021 call for proposals. We are aware that the timing of the next Bristol Bay meeting could be impacted by COVID-19 and if so, we may adjust schedules accordingly.

Appendix D. Presentations provided by BBSRI to the NMKSMP Committee

October 21, 2019. Initial Meeting of a Board of Fisheries Committee: Nushagak-Mulchatna King Salmon Fishery Management Plan

March 3, 2021. Selected Technical Results to Assist with Development of Potential Nushagak Management Plan Actions

March 22, 2022. Potential for Mesh Size Regulation in the Sockeye Fishery to Increase Sockeye Harvest and Reduce Chinook Salmon Harvest

Initial Meeting of a Board of Fisheries Committee: Nushagak-Mulchatna King Salmon Fishery Management Plan

Room 104, Atwood Building
550 West 7th Avenue
Anchorage, Alaska
Monday, October 21, 2019

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Agenda

Morning

1. Call to Order
2. Introductions of Board Committee Members and other participants.
3. Defining scope of work PART A, Committee Charge
4. Review ADF&G escapement goal and implications for plan
5. Review technical analysis scope and preliminary results

Afternoon

Return to 3. Scope of work, PART B, Goals/objectives of Plan revisions

6. Project timeline and future meeting dates
7. Adjourn

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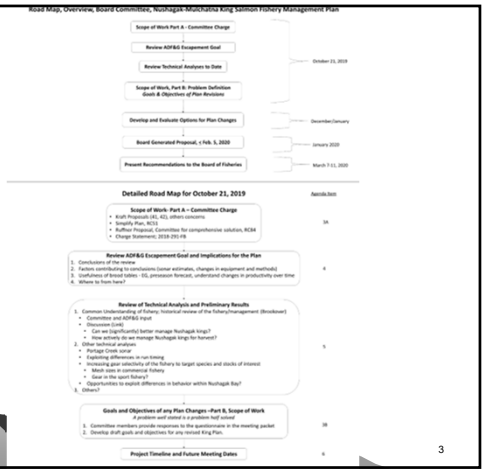
Road Map



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Background

- Proposals 41, 42 (Kraft) – sought paired restrictions when sport fishery restricted
- Kraft not alone on the inadequacy of Plan
- Board Action - simplified the Plan, removed intermediate triggers (Payton; RC51)
- Commitment to look for comprehensive solution: 2018-291-FB, RC84 (Ruffner)

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RC 84; Paraphrased

- Two areas need additional consideration
  - Uncertainty in escapement estimates have affected usefulness of the escapement goals and may have caused unwarranted restrictive actions.
  - Restricting the sport fishery without (simultaneously) restricting the commercial sockeye fishery may not achieve conservation goals and should be considered in the context of sharing a conservation burden.

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RC 84, con't

1. ADF&G to update escapement goal by October
2. Stakeholder study team to provide technical support to Committee.
3. Target any proposed changes to Plan prior to the next cycle (i.e., March 2020).
4. Adhere to Sustainable Salmon Policy
   - Share conservation burden
5. Recognize any hard-trigger closures acknowledge tradeoffs between sockeye and king salmon

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Committee Charge - Summary

- Have any management targets take into account the current uncertainty in the escapement goal and inseason assessment of inriver runs
- Better manage the fishery for conservation so sustainable escapement goals are met, and fisheries don't get restricted unnecessarily at great cost to traditional users

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A "Comprehensive Solution"

- Identify ways management and the Plan can be improved to:
  - Ensure sustainable harvests of all species by all users and equitable sharing of conservation between sport and commercial users
  - Improve upon a sustainable escapement goal (now and in the future)
    - Identify stock assessment needed to provide a robust escapement goal and inseason targets upon which to base management decisions and fishery restrictions.

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Clarify Roles of ADF&G and Stakeholder Study Team

- ADF&G staff
  - Revise the Chinook escapement goal
  - Repository of key datasets for analyses
  - Work with study team to vet research and management ideas, provide feedback on technical analyses and to the committee
- Stakeholder Study Team (BBSRI)
  - Technical analyses and meeting support for the Board Committee

9

9

Agenda

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Afternoon

Return to 3. Scope of work, PART B, Goals/objectives of Plan revisions

6. Project timeline and future meeting dates
7. Adjourn

10

10

Review Escapement Goal

- Escapement goal memo, July 11, 2019
- Jack Erickson, ADF&G Research Supervisor
- *-> break away for Jack Erickson (ADF&G) to present (a separate Powerpoint presentation)*

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Agenda

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Afternoon

Return to 3. Scope of work, PART B, Goals/objectives of Plan revisions

6. Project timeline and future meeting dates
7. Adjourn

12

12

Technical Analyses

Work toward a common understanding of the fishery

- Historical review – Brookover 2019
- Discussion, feedback from committee and ADF&G

13

13

Brookover 2019

- Historical review of the fishery

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Discussion

- Can we better manage Nushagak kings?
- How valuable might improvements to inseason and postseason estimates of escapement be? Estimates of catch?

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Are Nushagak Chinook Actively Managed for Harvest?

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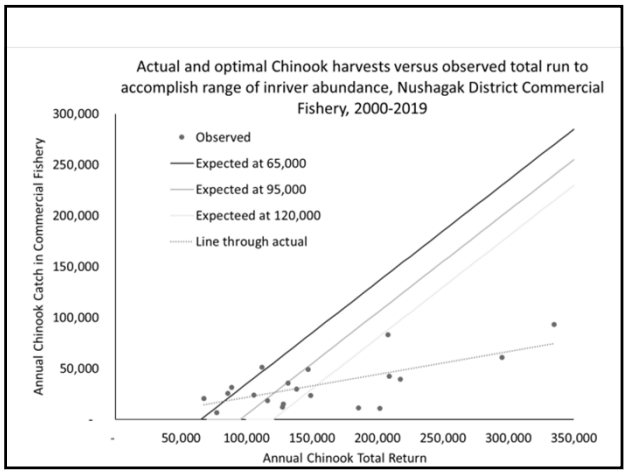

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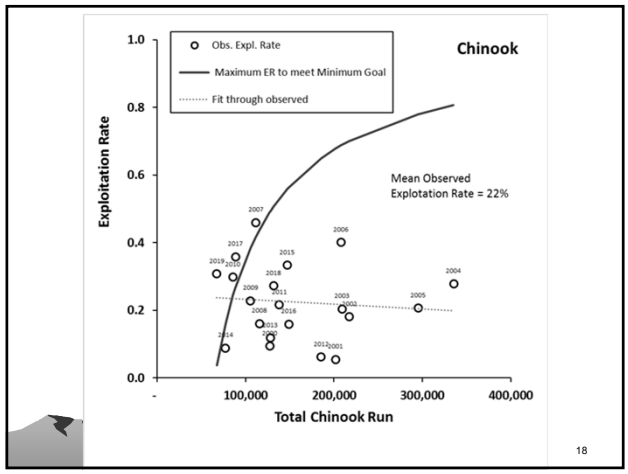

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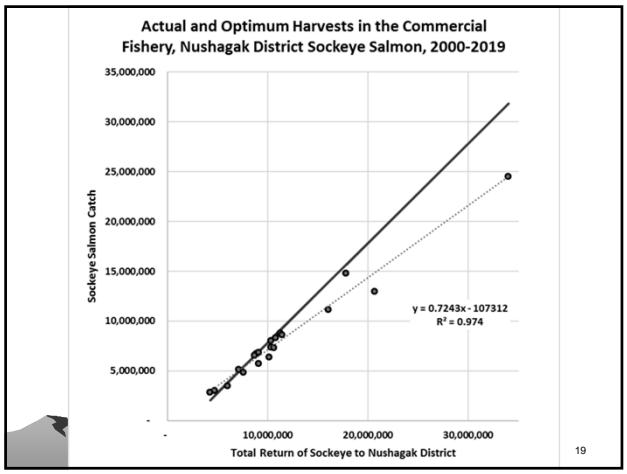

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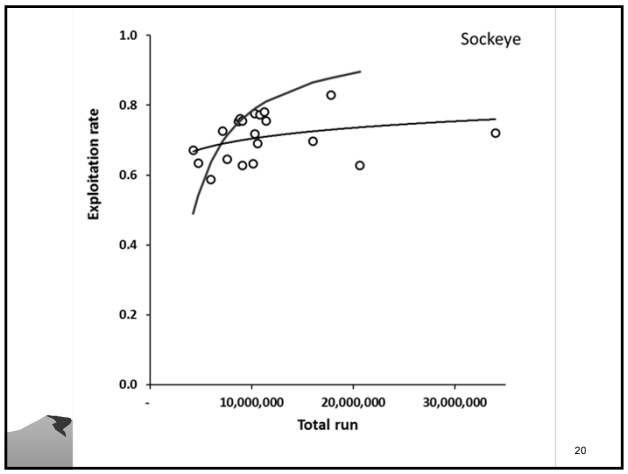

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Technical Analyses

Selected tasks to support committee deliberations

- Portage Creek sonar
- Opportunities to exploit run timing differences
- Gillnet selectivity in comm. fishery
- Effects of tide stage on Chinook catch rate

21

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Technical Analyses

- Portage Creek Sonar
  - Uncertain escapement goal
    - Conservative management in all fisheries
    - More frequent closures, foregone opportunities
    - No brood tables, no preseason forecasts, difficult to deal with small and large runs
  - Examine previous work & sampling protocols
    - Fraction outside of sonar (acoustic tagging)
    - Detectability within sonar
    - Independent estimates of escapement (M-R)
    - Species apportionment – a big issue?

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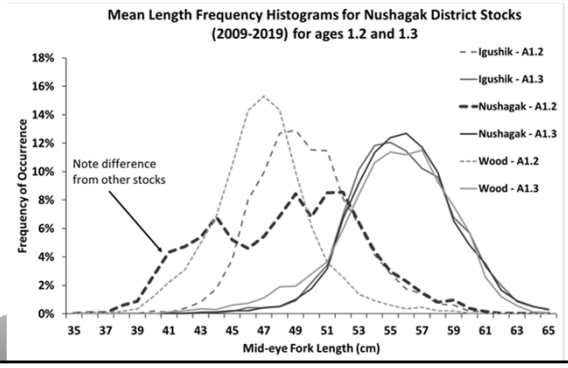
Gillnet-based Apportionment of Sonar Counts to Species



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Portage Sonar

- Species apportionment
  - Gillnet mesh to apportion to species, and age classes within the sockeye run
  - Sampling times within days
  - Detectability within and outside of sonar

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Differences in Run Timing

- Exploiting differences in run timing and fishery location to target conservation actions with the greatest benefit and least costs

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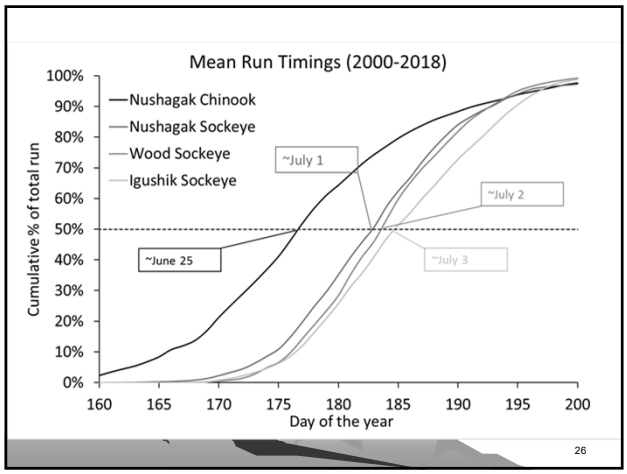

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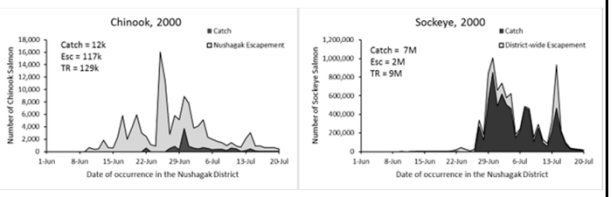
Reconstructed Chinook and Sockeye runs in District, 2000-2018



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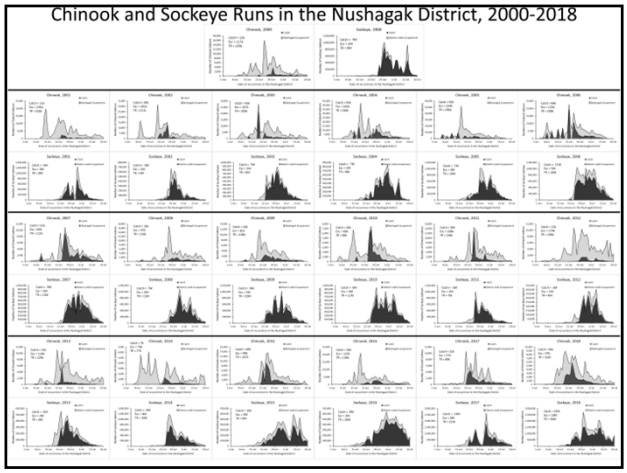

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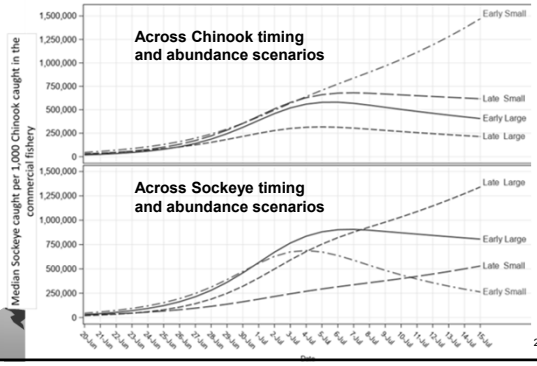
Median # Sockeye Caught per 1,000 Chinook vs Date, 2000-2018



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Selectivity Curves

- Initially developed from a decade of results from the Port Moller Test Fishery
  - Predicted effects/potential in the Nushagak to better target sockeye
- In 2019, test fished in the Nushagak District to develop district-and-commercial-fishery-specific selectivity curves, TBA.

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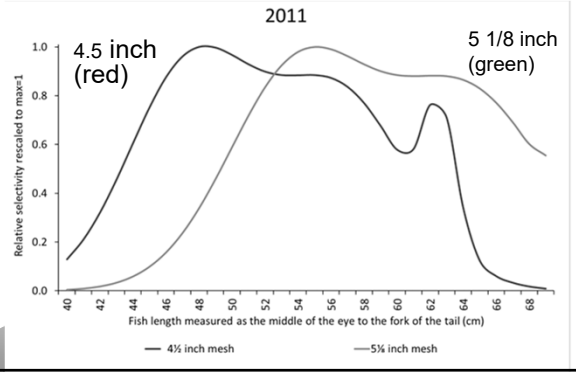
Selectivity curves, two meshes



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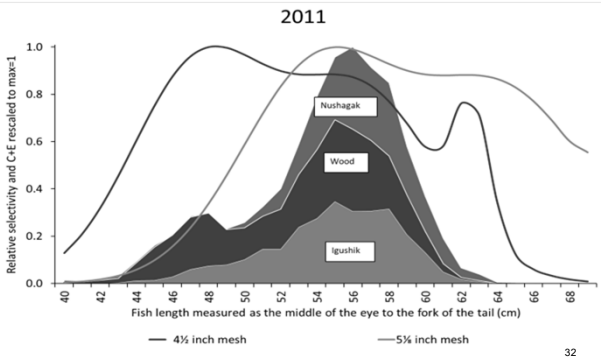
Curves overlaid on the 2011 Run



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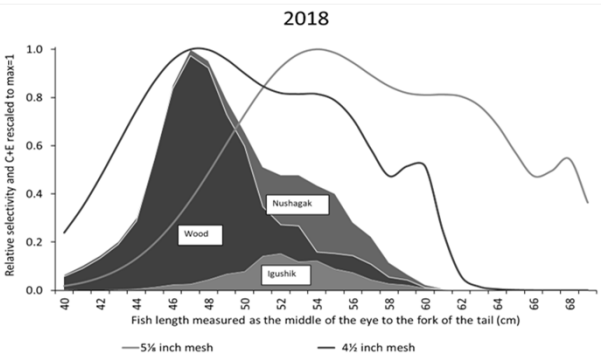
Curves overlaid on 2018 Run



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Exploit Tide stage?

- Does commercial fishing lower into the tide stage affect catch rates on Chinook salmon, which are typically deeper?

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35

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Committee Questionnaire

- What problems/challenges do you see with Nushagak king salmon management?
  - Did the changes to the Plan made in December 2018 address any of these?

…/2

36

36

Committee Questionaire

- What fraction of these issues could be addressed by:
  - Further modifications to the management plan? (altering time, area, and gear)
  - Improving assessment data? (sonar, test fishery, catch rates (CPUE) in the sport/subsistence fisheries, age-specific catch and escapement, preseason forecasts).

… /3

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Committee Questionnaire

- What characterizes a successful:
  - Subsistence fishery
    - Opportunity? High CPUE?
  - In-river sport fishery
    - Opportunity? Bag limits? Steady CPUE?
  - Commercial fishery
    - Sockeye catch? King catch? Early fishing?
-

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Committee Questionnaire

- What are the more significant changes you have seen in the following areas, and how might they have affected the perception of what users define as a successful fishery. That is, what role have these factors played creating real (or perceived) problems with King salmon management.
  - Size and composition of the commercial sport fishery (e.g., single lodges, fly in, etc.).
  - Effects of sockeye abundance on meeting king salmon objectives.
  - King salmon abundance.
  - Confidence in the Portage sonar estimates of king (and sockeye).
  - What other significant changes have occurred?

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Goals and Objectives of any Plan Revisions

- What (exactly) do we want to accomplish with Plan revisions?

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Timeline and Meeting Dates?

- Is the Feb. 5 deadline for a board-generated proposal doable?

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Wrap Up, Final Comments

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Selected Technical Results to Assist with Development of Potential Nushagak Management Plan Actions

Prepared by:
Michael Link and Dr. Scott Raborn

Prepared for:
Board of Fisheries-Developed Committee of Stakeholders
Zoom-based Video Conference
March 3, 2021

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Agenda

1. Goal of this presentation
   - Outline today's topics associated with numbered actions

Technical Analysis

2. Potential to forecast in-river king run in June
3. Effects of reduced maximum gillnet mesh-size
4. Impacts of changes to the Wood River trigger on inriver king run
5. Wrap up, Q&A

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Today's Goal

- Technical analyses to support selected proposed actions
  - Can inseason information be used forecast the current-year inriver king run (#6)
  - Effects of lower maximum mesh size in sockeye fishery (#3)
  - Effects of increasing the Wood River trigger (#1, and #10)

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Can we Forecast Inriver King Run ~ mid June?

- Might it be used to relax any Sport Fishery restrictions in a inseason and timely manner?
- Bud's suggestion
  - Can we use the cumulative escapement, catch, or catch + escapement predict total inriver run?

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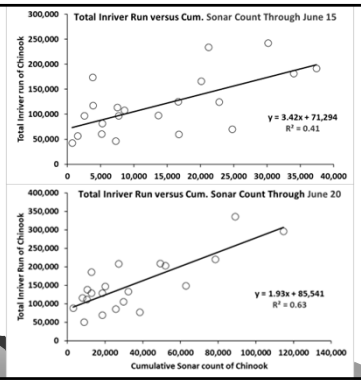

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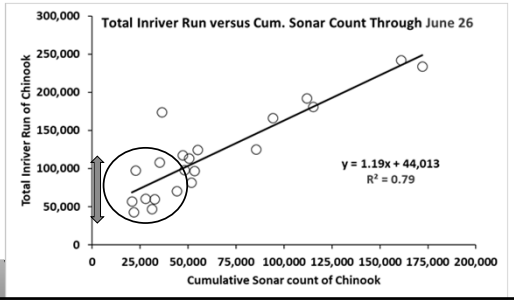
Cumulative Sonar thru June 26 vs Total Inriver Run



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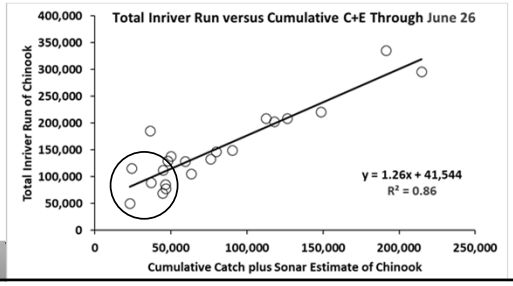
Cumulative Sonar + Catch thru June 26 vs Total Inriver Run



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Summary - Forecasting Inriver King Run

- Definitely can forecast inriver runs across the full range of observed runs (r^2 = .83)
  - Most effective for inriver runs >100,000 kings
- Considerable variation in run timing (entry patterns) among years make it more difficult to predict small king runs accurately, even with C+E through June 26

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Mesh size analysis…

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Decrease Maximum Mesh Size (#3)

- A maximum mesh size restriction of 5 ½" has exacerbated the problems of mixed-stock and mixed-species fishing in the Nushagak District for decades
  - More kings killed incidentally than necessary, especially when large and early sockeye runs. Most problematic in weak king runs
  - Foregone millions Wood R. sockeye; more fishing effort, expense
  - Nushagak River sockeye unnecessarily overexploited
  - Expanded use of the WR Special Harvest Area
  - Environmental effects on fish size are making these issues worse.

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4 ¾" Mesh Size, already in regulation

- 2012 regulation to use 4 ¾" mesh size to better target Wood River sockeye and avoid the WR Special Harvest Area
- "In theory" it would absolutely help to catch more WR fish and reduce fishing time and incidental king catch in the District
  - Is the benefit real?
  - Is the fleet's gear inappropriately selective?
  - Are there downsides?
  - What stage of the season should it be implemented?

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Mesh Size Analysis – The latest

- The latest analysis in the *Nushagak District Test Fishery Report, 2019 and 2020 (Raborn and Link 2021)*.
  - Draft is available; additional peer review and will be made available to public prior to the BoF proposal deadline.
- Short version: the **data support a 4 ¾" limit at the outset of the season** and this will help kings, increase sockeye harvests to the commercial fishermen, and decrease costs of harvest
  - How and where to mandate will be part of discussion later today.
- Review of mechanism and results below…

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Maximum Mesh Size – Methods

- Gillnet selectivity curves from >10 years at the Port Moller Test Fishery AND 2 years in the Nushagak District
- Measure, predict catch effectiveness across a range of mesh sizes:
  - Exploitation rates on 2- and 3-ocean sockeye
  - Total number of fish in catch
  - Number of pounds in catch

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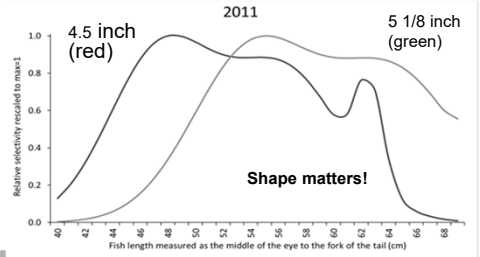
Selectivity curves, Relative Effectiveness of Meshes Across Range of Fish Length



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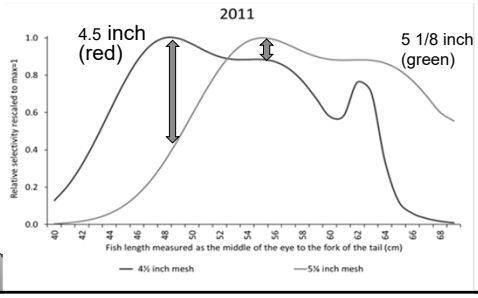
Selectivity Curves, Why Shape Matters



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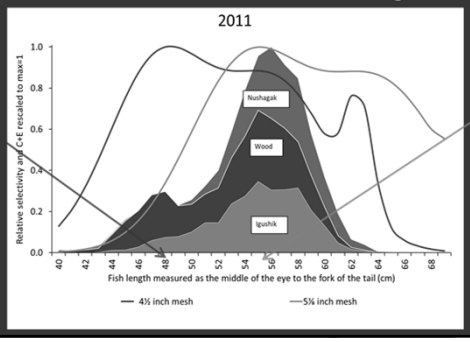
Curves overlaid on the 2011 Nushagak Run



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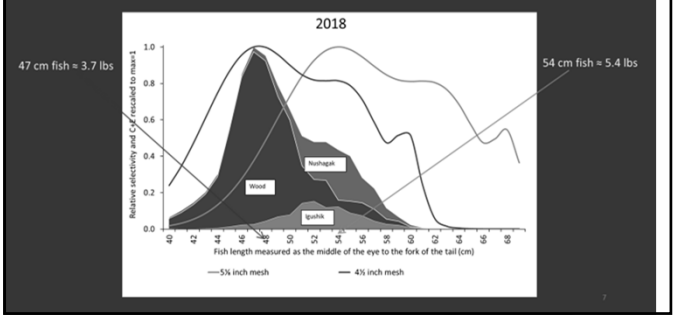
Curves overlaid on the 2018 Nushagak Run



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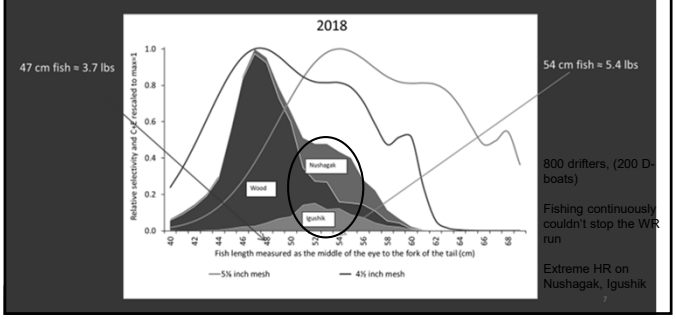
Curves overlaid on the 2018 Nushagak Run



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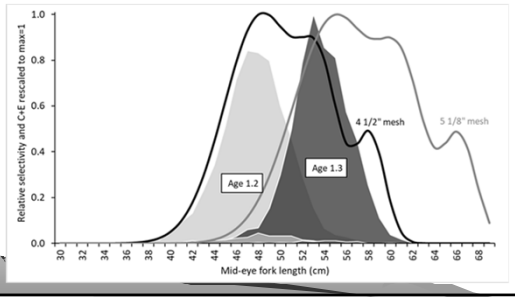
2019 – Nushagak Sockeye



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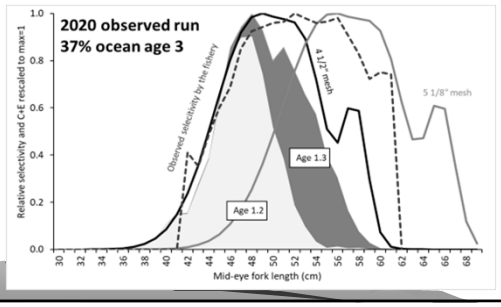
2020 – Nushagak Sockeye



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Catch, lbs, & Expl. Rate, 2019: Observed age comp. and 2 hypothetical extremes

Mesh size (inches)	Catch (individuals)	Fish wt. (lbs)	Catch (lbs)	Exploitation rate Age 1.2	Exploitation rate Age 1.3	Efficiency relative to mesh that max. lbs
Observed run with 48% ocean age 3 fish						
4 1/2	14,914,524	4.76	71,062,569	0.87	0.80	0.98
4 5/8	14,814,601	4.92	72,839,348	0.78	0.89	1.00
4 3/4	14,244,034	5.07	72,272,333	0.66	0.95	0.99
4 7/8	13,285,210	5.23	69,441,913	0.52	0.98	0.95
5	11,790,545	5.38	63,387,843	0.39	0.95	0.87
5 1/8	10,152,186	5.52	56,088,330	0.27	0.88	0.77
Hypothetical run with 70% ocean age 3 fish						
4 1/2	14,625,818	5.07	74,082,687	0.87	0.80	0.90
4 5/8	15,240,829	5.20	79,264,378	0.78	0.89	0.97
4 3/4	15,381,642	5.33	82,032,203	0.66	0.95	1.00
4 7/8	15,048,385	5.45	82,083,866	0.52	0.98	1.00
5	13,963,935	5.57	77,779,937	0.39	0.95	0.95
5 1/8	12,502,188	5.69	71,099,999	0.27	0.88	0.87
Hypothetical run with 30% ocean age 3 fish						
4 1/2	15,157,160	4.52	68,524,392	0.87	0.80	1.00
4 5/8	14,456,390	4.67	67,439,607	0.78	0.89	0.98
4 3/4	13,287,963	4.82	64,069,916	0.66	0.95	0.93
4 7/8	11,803,397	4.98	58,817,327	0.52	0.98	0.86
5	9,963,979	5.15	51,292,400	0.39	0.95	0.75
5 1/8	8,177,192	5.32	43,472,183	0.27	0.88	0.63

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Optimum mesh across metrics, 2020

Mesh size (inches)	Catch (individuals)	Fish wt. (lbs)	Catch (lbs)	Exploitation rate Age 1.2	Exploitation rate Age 1.3	Efficiency relative to mesh that max. lbs
Observed run with 37% ocean age 3 fish						
4 1/2	8,494,759	4.17	35,450,599	0.69	0.69	1.00
4 5/8	8,166,642	4.31	35,196,456	0.60	0.76	0.99
4 3/4	7,553,025	4.45	33,647,056	0.50	0.80	0.95
4 7/8	6,681,499	4.60	30,723,667	0.40	0.79	0.87
5	5,714,009	4.74	27,079,030	0.30	0.74	0.76
5 1/8	4,715,850	4.88	23,007,185	0.21	0.67	0.65

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Summary – 4 ¾" Mesh Size

- Makes the size and age composition of the catch representative of the run
  - Improves the harvest rate on 2-ocean sockeye
- Maximizes the catch of sockeye (lbs and numbers)
- Reduces commercial fishing time in the District, and therefore the king salmon catch
- Reduces or eliminate the use of the WR Special Harvest Area to control WR escapement
- Easier to window sockeye fishery in latter part of king run

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Wood River triggers…

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Adjusting the Wood River Trigger (#1)

- The onset of the sockeye fishery king run are weak is triggered by the projected escapement at WR tower.
- Exploit the fact that the cost in foregone sockeye is lowest in June
  - What is the best decision rule?
- Recall this figure from our October 2018 meeting…

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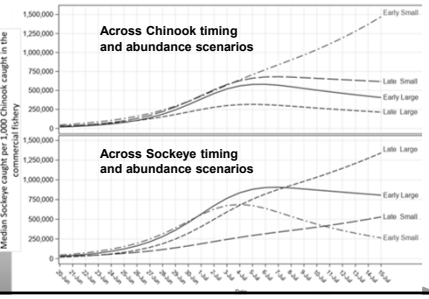
Median # Sockeye Caught per 1,000 Chinook vs Date, 2000-2018



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Adjusting Wood River Trigger

- How much might a higher trigger help to conserve kings?
  - At what cost in terms of foregoing early surplus sockeye?
- Does the effectiveness (and cost) of the triggers change across sockeye runs sizes?
  - Should any new triggers be contingent on sockeye run size?

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Wood River Trigger – Methods

- Used 2001, 2007-2020 daily sockeye & king escapement and catch to "reconstruct" each species in the Nushagak District.
  - Excluded large king runs (>200,000 total run)
- Using the remaining reconstructed runs, we altered the decision rule on when the sockeye fishery was to open.
- Modeled the fishery catches under higher WR triggers

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Chinook Savings Across Higher Triggers

Caveats!

- Some simplification, including the trigger's decision rule
- Limits to the datasets to perfectly model possible outcomes
- Characterizing benefits and costs
  - Averages used/needed as metrics, but considerable range
  - Conservative analysis
    - Possibly overestimate savings of kings *and* costs of sockeye
    - Only partially takes into account larger escapement goal in large runs
  - Does not alter the value or cost of foregone fish across run sizes

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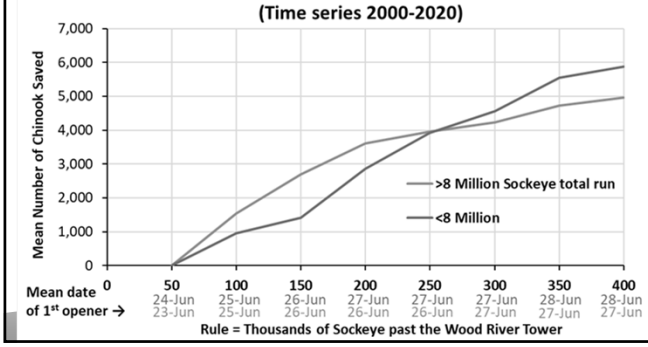
Effectiveness of Wood River Sockeye Escapement Rule (Time series 2000-2020)



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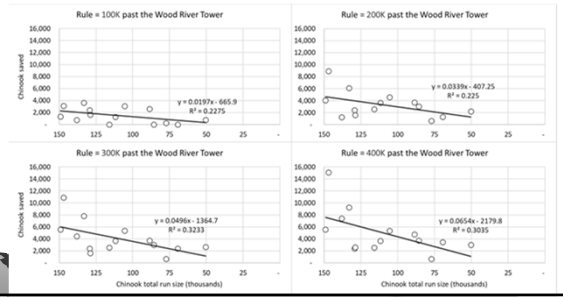
Variation – King Savings vs King Run Size



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Wood River Trigger, Savings

- Adjusting trigger moves average fishery start date 1-4 days.
- Average kings saved by increasing the trigger to 100 to 400k "at the tower" is in the range of 1,000-6,000 kings over the "50k at the tower rule" (AKA "*projected over 100k*")
  - Smaller the king runs, the less the king savings
- Biggest effects are with small sockeye runs because delay to the start date of comm. fishery is the greatest

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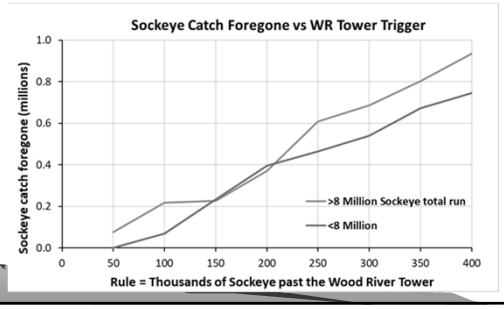
Wood River Trigger, Average Costs in Sockeye



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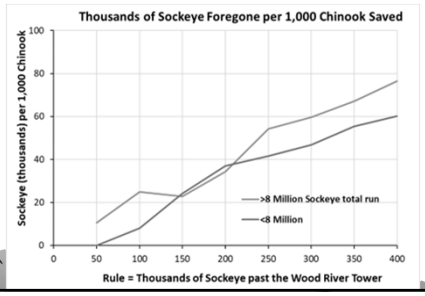
Costs, Thousands of Sockeye per 1,000 Chinook Saved



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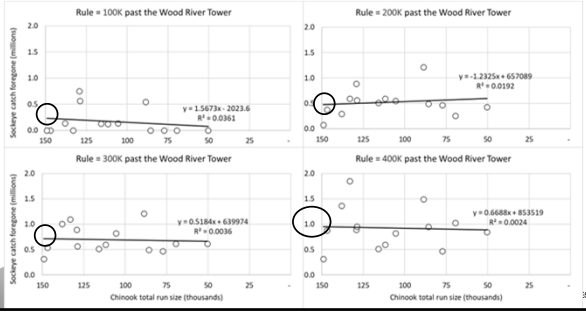
Variation – Sockeye Cost vs King Run Size



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Wood River Trigger, Summary

- A useful exercise
- Meaningfully add to king escapement when project inriver run falls below 55k
- Smaller effect than expected?
  - Sort of.
  - Natural variation in entry patterns of kings and rapid onset of sockeye run "hobbles" performance in at least some years.

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Wrap Up – Technical Analyses

- What action would have a bigger impact on king conservation? Your sense?
  - WR Trigger or 4 ¾" Mesh Size?
- Questions about technical analysis?

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The End

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Extra reference slides

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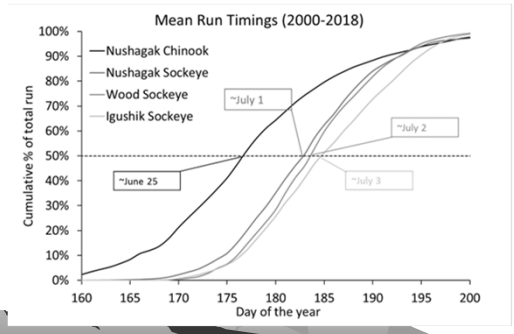

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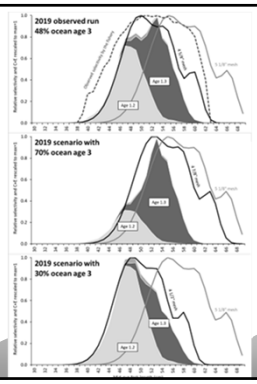

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Potential for Mesh Size Regulation in the Sockeye Fishery to Increase Sockeye Harvest and Reduce Chinook Salmon Harvest

Prepared for:
Committee to Examine Changes to the
Nushagak-Mulchatna King Salmon Management Plan

Prepared by:
Dr. Scott Raborn and Michael Link
Tuesday, March 22, 2022

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Outline

1. Review GN Selectivity
   - Vulnerability to capture varies fish body size AND gillnet mesh size
2. Observations in Nushagak District
   - See differences in exploitation of stocks and 2- and 3-ocean fish
3. How mesh size regs can reduce Chinook salmon exploitation
   - Fleet effectiveness harvesting sockeye drives overall fishing time

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Selectivity Curves

Relative effectiveness of a mesh across a range of fish sizes

- A selectivity curve is SPECIFIC to mesh size
- The shape of the curve is super important
  - Catch of smaller fish drops quickly as mesh size increases
  - Catch of larger fish drops less quickly as mesh size decreases

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Selectivity Curves

- Initially developed from a decade of results from the Port Moller Test Fishery
- In 2019-2020, Nushagak District Test Fishery was used to develop district-specific selectivity curves

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Why Selectivity Curves in BB?

- Sockeye return across wider range of sizes and age composition across years and among stocks than other salmon fisheries
- Fish size driven by years spent at sea
  – 2 or 3 years

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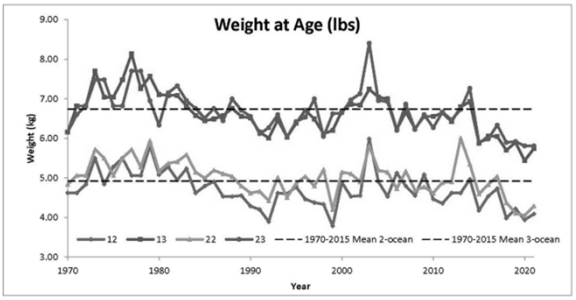
Size, Ocean Age 2 and 3



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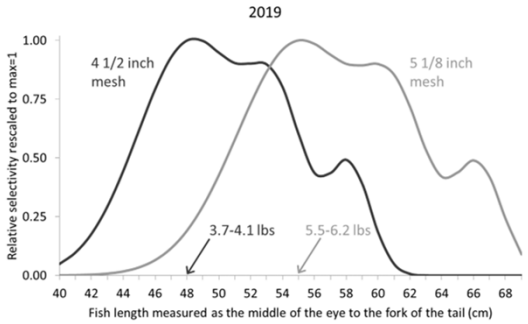
Selectivity curves, two meshes



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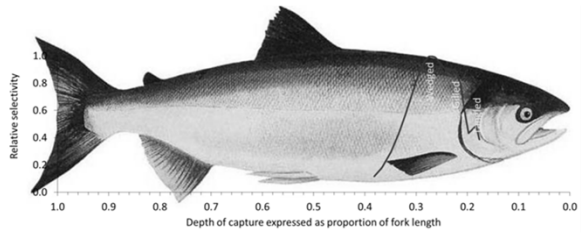
- Superimposed onto the image of an average shaped oceanic phase Sockeye allows inspection of how the estimated curve relates to capture mechanisms



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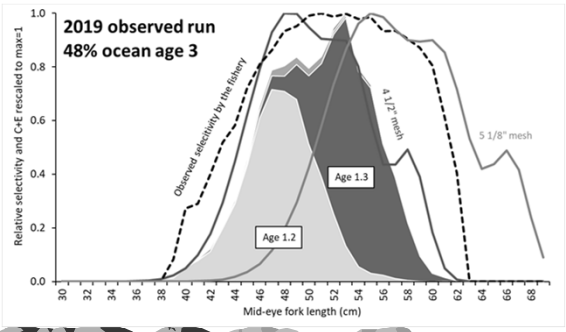
Curves overlaid on the 2019 Run



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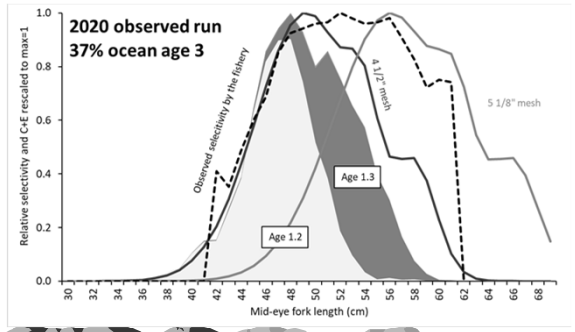

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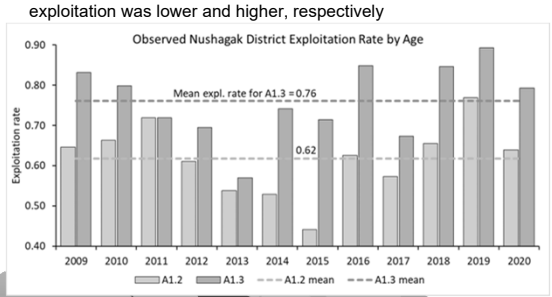
Observations in the Nushagak District

- For the years 2009-2020 the average exploitation rate of Sockeye age-1.3 was 1.25 times greater than that for age-1.2
- This is a best-case scenario because the Nushagak enumeration site undercounts age-1.2 and overcounts age-1.3; thus, actual exploitation was lower and higher, respectively



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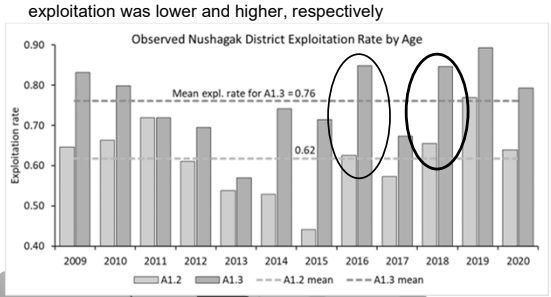

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Observations in the Nushagak District, 2018

Largest fishing fleet/most gear days ever:

- Nushagak R. Exploitation Rate = 87%
- Nushagak R. Escapement = 1.25M
- Wood R. Exploitation Rate = **67%**
- Wood R. Escapement = **7.5M**

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How might regulating mesh size be used to improve fleet effectiveness on Sockeye and conserve Chinook Salmon?

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Fewer Chinook Caught with Smaller Sockeye Mesh?

- YES, but <u>not</u> the primary motivator of a potential regulatory change
  - Quantifiable – yes, but need a selectivity curve through the larger chinook body size
- Much more important mechanism….

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Primary Mechanism

- Reduce fishing effort for sockeye
  - Provide more opportunity for unfished windows/time
  - Reduce pressure on manager to go 24/7 when sockeye escapement goals have been exceeded

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2019 Optimum Mesh Sizes

Most relevant to Sockeye fishery ↓ Most relevant to Chinook fishery ↓

Mesh size (inches)	Catch (individuals)	Fish wt. (lbs)	Catch (lbs)	Exploitation rate Age 1.2	Exploitation rate Age 1.3	Efficiency relative to mesh that max lbs	**Inefficiency** relative to mesh that max fish
Observed run with 48% ocean age 3 fish							
4 1/2	14,914,524	4.76	71,062,569	0.87	0.80	0.98	1.00
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5 1/8	10,152,186	5.52	56,088,330	0.27	0.88	0.77	1.47

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2020 Optimum Mesh Sizes

Most relevant to Sockeye fishery ↓ Most relevant to Chinook fishery ↓

Mesh size (inches)	Catch (individuals)	Fish wt. (lbs)	Catch (lbs)	Exploitation rate Age 1.2	Exploitation rate Age 1.3	Efficiency relative to mesh that max lbs	**Inefficiency** relative to mesh that max fish
Observed run with 37% ocean age 3 fish							
4 1/2	8,494,759	4.17	35,450,599	0.69	0.69	1.00	1.00
4 5/8	8,166,642	4.31	35,196,456	0.60	0.76	0.99	1.04
4 3/4	7,553,025	4.45	33,647,056	0.50	0.80	0.95	1.12
4 7/8	6,681,499	4.60	30,723,667	0.40	0.79	0.87	1.27
5	5,714,009	4.74	27,079,030	0.30	0.74	0.76	1.49
5 1/8	4,715,850	4.88	23,007,185	0.21	0.67	0.65	1.80

18

18

Conclusion

- Size selectivity by gillnets causes exploitation to vary considerably by size and age
- The fleet in the Nushagak District has historically used mesh sizes that over-exploit larger age-1.3 Sockeye and under-harvest age-1.2 Sockeye
- This inefficiency prolongs fishing time and exposes more Chinook to commercial harvest

19

19

Conclusion (cont.)

- An upper limit of 4¾" mesh would:
  - Increase annual Sockeye catch
  - Reduce chances of Sockeye overescapement
  - Render age composition of escapement more like that of the overall run (genetics, etc.)
  - Reduce commercial fishing time for Sockeye because the fleet is more efficient
  - Fewer/shorter openers translates into less Chinook bycatch

20

20

Committee Discussion

- Michael to lead a discussion about the pros and cons of regulation versus some other way to address

"*unnecessary incidental catch of Chinook*"

21

21

Regulate mesh size or modify behavior in other ways?

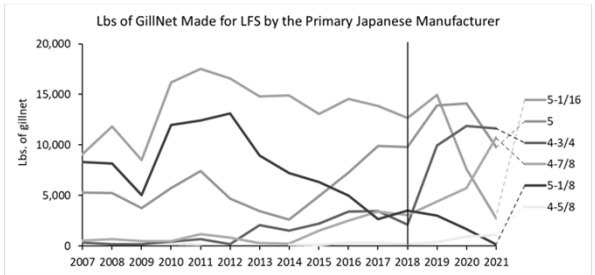
- "It's a free country; can't tell people how to fish"
  - Why regulate depth (and length) of net gear, fishing tackle, slot limits, etc.?
- Nushagak is a unique district with a big problem?

22

22

An Index of Fleet Behavior

(complements of Bert Lewis, ADFG)



23

23

Acknowledgments

- Jordan Head, ADF&G, for the size-at-age over time
- Bert Lewis, ADF&G, for pounds of net by mesh size sold by a supplier to Bristol Bay
- Test Fishing crews at Port Moller TF and Nushagak District Test

24

24

Questions?

25

25

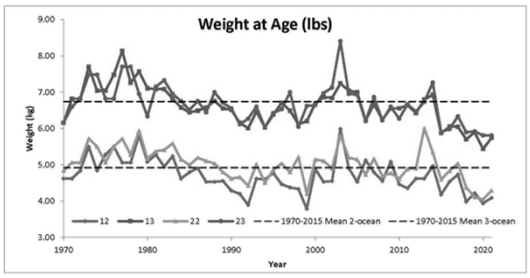
Miscellaneous Background

- Size at age variation and recent trend
- A reminder of why we probably underestimate the magnitude of the difference between exploitation on 2 and 3-ocean fish.

26

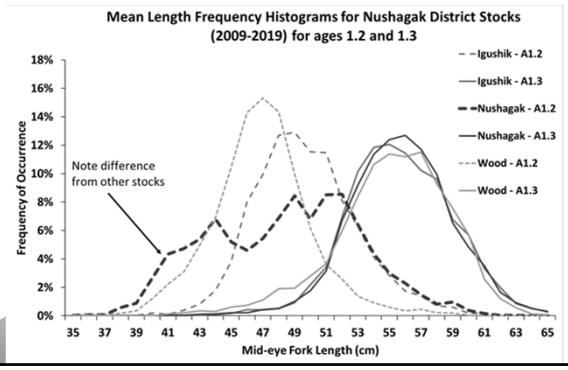
26

Average size by age changes among years, recent trend down



27

Gillnet-based Apportionment of Sonar Counts to Species



28

Appendix E. 2022 Proposal 11, as submitted by the NMKSMP Committee

Proposal 11 - 5 AAC 06.361. Nushagak-Mulchatna River King Salmon Management Plan and 5 AAC 67.022. Special provisions for season, bag, possession, and size limits, and methods and means in the Bristol Bay Area.

Make numerous amendments to the Nushagak-Mulchatna King Salmon Management Plan, as follows:

As part of a larger comprehensive solution to issues facing management of the king salmon fisheries in the Nushagak drainage, the committee recommends the following regulatory changes. The list below includes eight regulatory action items with consensus among the Nushagak King Salmon Committee, of about 15 considered. Actions listed below, in draft regulatory format, would fall under the Nushagak-Mulchatna River King Salmon Management Plan (5 AAC 06.361), except where noted under #6 which would fall under sport fishing Special Provisions (5 AAC 67.022).

1. **Define specific management objectives for the Plan by adding the language below to, or following, section (a) of the Plan:**

The department shall manage the Nushagak fisheries for the following management objectives:

1) **Provide consistent sport fishing opportunity within and among seasons. This includes a level of inriver abundance as a given year's run timing allows, and a predictably open season.**
2) **Provide a directed commercial king salmon fishery when surplus is available.**
3) **Provide for an uninterrupted commercial sockeye salmon fishery (i.e., minimize disruptions to the sockeye salmon fishery).**
4) **Provide for reasonable opportunity for subsistence harvest of king salmon.**
5) **The subsistence fishery is the last fishery to be closed.**
6) **Achieve escapement goals for all species in the district.**
7) **Maintain a representation of age classes in the escapement similar to the run.**

2. **Manage large sockeye runs so that escapements fall in the upper portion of the escapement goal range, which would reduce incidental catch of king salmon, by adding new provisions to section (b) as follows:**

(X) Consistent with 5 AAC 06.367 Nushagak District Commercial Set and Drift Gillnet Sockeye Salmon Fisheries Management and Allocation Plan, the department in an attempt to conserve king salmon shall manage for sockeye escapements in the Nushagak District to fall within the

(1) lower half of the escapement goal range when the Wood River sockeye salmon run is 8 million or less and/or the Nushagak sockeye salmon run is 4 million or less, or the

(2) upper half of the escapement goal range when the Wood River sockeye salmon run is greater than 8 million and/or the Nushagak sockeye salmon run is than 4 million based on the preseason forecast and in-season assessment of run size.

(X) On or after June 25, the department shall consider when evaluating total run of sockeye salmon to the Nushagak District all possible data sources including but not limited to: pre- season forecast, Port Moller test fishery indices and stock and age composition, total C+E to date, age composition of C&E and district test fishing.

3. Use a Nushagak District Test Fishery to assess relative abundance of sockeye and king salmon by adding the following new provision to (b):
(X) From June 1 through June 30 the department in an attempt to conserve king salmon shall conduct a drift gillnet test fishery to assess the abundance of sockeye and king salmon prior to opening by emergency order a fishing period directed at sockeye salmon.

4. Modify the Wood River trigger and establish a Nushagak River trigger by adding the following new provisions to (b) and repealing (e)(1):

(X) close, by emergency order, the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement past the Wood River tower exceeds 100,000 within the next 12 hours if the forecasted Wood River sockeye run is 8 million or less. If the Wood River sockeye run is forecasted to be more than 8 million the fishery shall close by emergency order until the projected sockeye salmon escapement past the Wood River tower exceeds 300,000 within the next 12 hours.

(X) (1) independent of whether the Wood River tower count exceeds 100,000 or 300,000, open, by emergency order, the sockeye salmon commercial fishery in the Nushagak District when the sockeye salmon escapement past the Nushagak River sonar counter exceeds XXXXXX when the forecasted Nushagak River sockeye run is XXXXXXX. If the Nushagak River sockeye run is forecasted to be more than XXXXXXX, the fishery shall open by emergency order when the projected sockeye salmon escapement past the Nushagak River sonar exceeds XXXXXX.

e) If the spawning escapement of king salmon in the Nushagak River is projected to be less than 55,000 fish, the commissioner

[(1) shall close, by emergency order, the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement into the Wood River exceeds 100,000 fish;]

5. Provide a directed commercial fishery for king salmon when surplus clearly exists by modifying section (c) as follows:

(c) If the total inriver king salmon return in the Nushagak River is projected to exceed 95,000 fish,

(1) the guideline harvest level described in (b)(1)(C) of this section does not apply[.]**, and**
(X) the department will consider a directed commercial king salmon fishery.

6. Modify the annual limit for king salmon by modifying 5 AAC 67.022 and section (c) of the Plan as follows:

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

(g) In the Nushagak River drainage, excluding the Wood River drainage, and unless otherwise specified in 5 AAC 06.361 or 5 AAC 06.368, the following special provisions apply:

(1) the bag and possession limit for king salmon 20 inches or greater in length is two fish, of which only one fish may be 28 inches or greater in length; the annual limit for king salmon 20 inches or greater in length is four fish**, of which only one fish may be 28 inches or greater in length**; the bag and possession limit for king salmon less than 20 inches in length (jack salmon) is five fish; …

5 AAC06.361 Nushagak-Mulchatna King Salmon Management Plan.

(c) If the total inriver king salmon return in the Nushagak River is projected to exceed 95,000 fish,

(1) the guideline harvest level described in (b)(1)(C) of this section does not apply[.]**, and**

(X) the commissioner may increase the annual limit for king salmon to 4 king salmon 20 inches or longer (no restriction to one fish over 28 inches).

7. Avoid complete closures of the sport fishery when possible by modifying section (e) as follows:

(2) shall [close]**restrict to catch and release**, by emergency order, the sport fishery **for king salmon** in the Nushagak River [to the taking of salmon] and prohibit the use of bait for fishing for all species of fish until the end of the king salmon season specified in 5 AAC 67.020 and 5 AAC 67.022(g); and

8. Provide the department with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios and standardize subsistence fishing schedule and area under a restricted scenario by modifying section (e) as follows:

(3) [shall]**may** establish, by emergency order, fishing periods during which [the time or area is reduced for the inriver king salmon subsistence fishery in the Nushagak River]**the subsistence fishery is restricted to 3 days per week in the Nushagak District; and the waters above the district including Dillingham beaches, Wood River up to Red Bluff, and the Nushagak River drainage**.

What is the issue you would like the board to address and why? The Nushagak River fisheries that harvest king salmon have been managed under the direction of the Nushagak-Mulchatna King Salmon Plan (5 AAC 06.361) since 1992. Salmon fishery dynamics changed notably over the life of the Plan. King salmon runs declined to some of the lowest levels recorded and sockeye runs to the Wood and Nushagak Rivers increased in magnitude to some of the highest levels recorded. Commercial fishing directed at king salmon has remained closed since 2014, and sport fishing regulations have become increasingly conservative. At the same time, substantial uncertainties have expanded over the ability of the sonar to estimate inriver run abundance.

Restrictions to the sport fishery due to low early season inriver passage of king salmon combined with sometimes intense fishing for sockeye in the Nushagak District in the mid-2010's led to calls to enact paired restrictions in the commercial and sport fishery in 2018 (Proposals 41 and 42, 2018

Bristol Bay Board meeting). The Board, in response to the proposals, removed several triggers in the Plan that affect the sport fishery. The Board also established a committee to develop a comprehensive solution to the Plan through RC 84 and a charge statement (2018-291-FB) and charged the committee with reporting back to the Board. At the 2018 Board meeting, the Bristol Bay Science and Research Institute (BBSRI) committed to supporting the committee's work through a stakeholder-led technical analysis of options the committee was expected to consider (RC 80).

The committee first met in Anchorage on October 21, 2019 (a meeting summary can be found on the Alaska Board of Fisheries website) and break-out groups met in December 2019 and February 2020. At the Upper Cook Inlet meeting in February 2020, the Board disbanded the formal committee but encouraged stakeholders on the committee to continue to work together in preparation for the next in-cycle Bristol Bay meeting. BBSRI reasserted its commitment to serving the committee and moving toward its original mission outlined in the charge statement: a comprehensive solution to the Plan. Committee makeup remained the same as selected by the Board initially in February 19, minus the two Board members. The committee met on a consensus basis 15 times from Fall 2019 through early April 2022; 9 times as a full committee and 6 partial committee meetings.

This regulatory proposal is one part of a larger, more comprehensive solution envisioned by the committee to address issues plaguing management of the Nushagak king salmon fisheries. Other components will include additional technical analyses, recommendations for improving stock assessment, and other non-regulatory actions or recommendations. As one example of a non- regulatory action, BBSRI has secured funding to field a district test boat program to better inform managers of sockeye and king salmon abundance in the Nushagak District and thereby reduce incidental harvest of king salmon and better target sockeye salmon in the district. A report will be made available in advance of the November 2022 Board meeting to summarize the committee process and work products and present the full scope of the comprehensive solution. Work products including the report will be posted on the BBSRI website as they become available.

PROPOSED BY: Nushagak-Mulchatna King Salmon Committee (HQ-F22-028)

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PC54

Name: Nushagak King Salmon Committee

Community of Residence: Alaska

Comment:

Proposal 11 - Support

During the December 2018 Bristol Bay Finfish meeting, the Alaska Board of Fisheries struck a committee to review Nushagak River and District fisheries and regulations, and to provide recommendations on a comprehensive solution to Chinook salmon management. The first two report documents are two of four document's that are being prepared for the BOF. The first report captures the process and outcomes from the committee, which met between February 2019 and April 2022. The second is an updated historical report on the Nushagak King salmon stock and the associated fisheries.

Proposal 11 includes the seven proposed actions agreed to be the committee:

1. Manage large sockeye runs so that escapements fall in the upper portion of the escapement goal range.

2. Use a Nushagak District Test Fishery to assess relative abundance of sockeye and king salmon.

3. Modify/Clarify the Wood River trigger and establish a Nushagak River trigger,

4. Provide a directed commercial fishery for King Salmon when surplus clearly exists

5. Modify/reduce the annual limit for king salmon.

6. Avoid complete closures of the sport fishery when possible.

7. Provide ADF&G with flexibility to restrict but not close the subsistence fishery in low inriver run scenarios and standardize subsistence fishing schedule and area under a restricted scenario

See attached for additional information - Report #2

PC54

Historical Review of Nushagak River King Salmon Management

Prepared by

Tom Brookover

Anchorage, AK
tbrookak@gmail.com

Prepared for

Board of Fisheries Committee to examine the Nushagak-Mulchatna King Salmon Management Plan

and

Bristol Bay Science and Research Institute

September 19, 2022

Table of Contents

Introduction

In 1992, the Alaska Board of Fisheries (Board) adopted the Nushagak-Mulchatna King Salmon Management Plan (Plan) to guide management of the subsistence, commercial and sport fisheries that harvest this important stock. The Nushagak River fisheries that harvest Chinook (king) salmon have been managed under the direction of the Plan since then. However, restrictions to the sport fishery due to low early season inriver passage of king salmon combined with sometimes intense fishing for sockeye in the Nushagak District in the mid-2010's led to calls to pair restrictions in the commercial and sport fishery in 2018. Proposals 41 and 42, submitted for deliberation at the November 2018 Bristol Bay Board meeting, both sought to restrict time in the commercial fishery when the sport fishery is restricted inseason by emergency order.

In response to the proposals, the Board established a committee at the 2018 meeting to develop a comprehensive solution to the Plan and charged the committee with reporting back to the Board. The Bristol Bay Science and Research Institute (BBSRI) also committed to supporting the committee's work through a stakeholder-led technical analysis of options the committee was expected to consider. Possible committee products included regulatory proposals and/or other non-regulatory recommendations.

An early (October 14, 2019) draft version of this report was developed to summarize management of Nushagak River king salmon for the committee's benefit. The history of the fishery through the mid-1980s was well documented in a comprehensive, albeit dated, report (Nelson, 1987). The 2019 draft of this report provided an updated comprehensive historical overview summarizing Nelson's report as a basis, then describing the evolution of the fisheries that followed.

The purpose of the 2019 draft was to provide committee members with key information, help create a better understanding, and provide a basis for future recommendations concerning management of the Nushagak River king salmon fisheries. The draft was intended as a "living" document and was expected to evolve with input from committee members and others and as new fishery information came available.

The committee met initially October 21, 2019, in Anchorage to get underway and discuss preliminary analysis of the fishery's history, including information presented in the draft report, and technical challenges associated with the monitoring and management of the fishery. Break-out groups met in December 2019 and February 2020. At the Upper Cook Inlet meeting in February 2020, the Board disbanded the formal committee but encouraged stakeholders on the committee to continue to work together in preparation for the next in-cycle Bristol Bay meeting. Since then, the committee met on numerous occasions toward developing comprehensive recommendations to improve the Plan and stock assessment programs in preparation for the Bristol Bay Board meeting scheduled for November 2022. BBSRI facilitated the meetings and provided technical analysis and support. The committee

process and outcomes are to be discussed in depth in a separate report and are therefore not discussed in this one.

In this report, historical king salmon management in the Nushagak District is portioned into three eras:

- 1884-1986 (recap of Nelson (1987))
- 1987-1992 (development of the Plan)
- 1992 through 2021 (the Plan years)

This report includes fishery data for the years that followed the early draft (2019, 2020 and 2021). Discussion of fishery trends have been adjusted accordingly. Comments received from committee members and staff from the Alaska Department of Fish and Game (ADF&G) have also been incorporated. The report is intended to be made available with other work products, including a separate report on the committee process and a proposal to the Board detailing changes to the Plan, to the public prior to the 2022 Board meeting. Like the 2019 draft, its purpose is to improve understanding of the Nushagak River king salmon fisheries and their management and provide a basis for committee recommendations.

Pre-1987

The history of the Nushagak king salmon fisheries from the inception of the commercial fishery in Nushagak Bay in 1884 through the mid-1980s was well documented in a comprehensive report (Nelson, 1987). Mike Nelson worked as the Area Biologist for the ADF&G in Dillingham and oversaw management of the Nushagak commercial and subsistence fisheries from shortly after statehood until his retirement in 1987. The purpose of the report was to assist in creating a better understanding of the king salmon management program and provide a basis for future recommendations regarding fishing regulations. Nelson (1987) helped set the stage for the development of the Nushagak-Mulchatna King Salmon Management Plan in 1991.

This section summarizes Nelson's findings. By the time the report was published, the commercial fishery had "traditionally extracted a heavy toll from the total run, while freshwater sport fishing interests (were) growing rapidly." There was a growing concern that spawning escapements may be jeopardized, and that the natural productivity could not be maintained. As greater fishing pressure was exerted on the stock, the fisheries were subjected to progressively more stringent regulations. Under this background, Nelson foresaw a clear need for "a careful, quantitative appraisal of the fishery impacts and of regulatory options" to maintain or increase productivity and address hardships among the various participants.

Key Management Issues

Nelson (1987) clearly recognized the value of Nushagak River king salmon to the area's commercial, subsistence and sport fisheries, as well as the challenges presented by then-

apparent very high exploitation rates and fishery practices. These included the potential for friction among the fisheries in the face of increasing demand as well as conservation-related concerns for the quantity and quality of escapement and resultant impacts to productivity of the stock. Several salient points discussed in the report included:

- exploitation rates had exceeded 95% of the early run component and were expected to remain high without further restrictions,
- gill net mesh size and depth directly influenced exploitation rates and quantity and quality of escapement,
- fish holding within and above the district created difficulties in obtaining escapement throughout the run, and
- methods to assess inriver abundance/spawning escapement were under development

Each of these points are discussed in more detail in the following sections.

Harvests and Exploitation rates

The commercial fishery for salmon in Bristol Bay began in 1884. Sockeye salmon were, and remain, the targeted species and main emphasis for the Bristol Bay and Nushagak fishery. However, the commercial harvest of king salmon in the Nushagak District advanced rapidly once development began. After sustained commercial utilization (1955-1971), catches declined (1972-1975) but recovered, and then reached a historical peak over the decade 1976-1986. Recovering salmon markets and advances in gear effectiveness at catching king salmon were primary factors driving the renewed commercial interest in early season fishing effort. However, peak production of king salmon in the early 1980s resulted in a surge of interest and record harvests in the commercial fishery. Nelson (1987) chronicles the trends in commercial harvest from the fishery inception through 1986; annual harvests ranged from 1,635 (1935) to 195,287 (1982) fish with the three largest harvests occurring in 1979, 1981 and 1982. By 1987, the Nushagak watershed produced the state's second largest stock-specific commercial king salmon fishery, nearly matching those of the Yukon River.

He similarly discussed trends in the subsistence and sport fisheries. While subsistence use of salmon dated back beyond the availability of written literature, little data on harvest was available prior to 1963 when a permit system was initiated. Subsistence harvests in the Nushagak District normally ranged between 50 and 80 thousand salmon and had been increasing due to increased effort from local population increases and annual influxes from non-watershed participants, and better harvest reporting. As king salmon are the first species to arrive in the spring, they received considerable interest and fishing pressure. From 1963 through 1986, subsistence harvests averaged 7,200 and ranged from 2,900 (1964) to 12,600 (1986) king salmon. Effort and harvest of king salmon had increased since 1970 and, like the commercial fishery, the subsistence fishery accounted for its largest harvests in the early 1980s.

Development of sport fisheries in Bristol Bay had occurred more recently relative to commercial and subsistence fisheries. Nelson cited Paddock (1964) describing the first significant instance of king salmon sport use on the Nushagak River taking place at Portage Creek in 1963. Since then, sport fishing had became more popular in Bristol Bay, and the peak production of king salmon in the early 1980s contributed to the growing fishery on the Nushagak River, with increasing effort and harvest. Sport harvests were estimated from 1977 to 1986. The largest sport harvest occurred in 1984 (2,382 fish).

Using available catch and escapement data from 1966 through 1986, Nelson (1987) estimated the average Nushagak king salmon total run at over 176,000. He noted an improvement in the adult production trend whereby then-recent runs (1978-1986) averaged 246,000 fish, nearly twice the size of runs averaged from 1966-1977 (125,000 fish). Over the entire period, exploitation rates averaged 54 percent and ranged from 29 (1975) to 72 percent (1969).

Exploitation on the early component of the king salmon run appeared to be of specific concern; then-recent commercial and subsistence exploitation rates had exceeded 95% for this component. Traditionally, the commercial fishery commenced in late May to early June. Approximately 85% of the annual harvest was taken in the month of June and the mid-point was June 18. Nelson (1987) describes a bimodal pattern of harvests taken 1973-1986, with the first peak occurring June 7-14 and the second, June 23-26. He ascribes the bimodal pattern to the established fishing schedule of 5 days per week prior June 16, when the fishery was closed unless opened for fishing by emergency order and notes that, as more pressure was exerted early in the run, fishery managers applied additional time and area closures. The effect of those actions became apparent in 1981, when high catch rates shifted from early in the season to later.

Gillnet mesh size and depth

Gillnets were (and remain) the only fishing gear allowed in the commercial fishery and were the only gear used in the subsistence fishery. Drift gill net gear accounted for most of the total catch. As a result, and because of the characteristics of the gear related to fish size regardless of species, Nelson (1987) focused considerable discussion on the impacts gillnet mesh size and depth have on king salmon.

By 1987, basic data on age, weight and length had been collected from the Nushagak king salmon harvests and spawning escapement. According to Nelson (1987), a statistically adequate number of samples had been collected each year from the commercial fishery beginning 1966, and from subsistence harvests and spawning escapements beginning 1982. Based on analysis of the samples collected, Nelson (1987) described some of the biological characteristics of Nushagak king salmon as follows:

- Age class composition of the run varies from year to year; however, most king salmon (80 percent) return as 5- and 6-year-old fish and over 96 percent return as age 4 through 7.

- Age class differences between males and females is striking; age 4 and 5 fish are predominantly males and in contrast, age 6 and 7 fish are predominately females.
- Based on data from the commercial fishery, there is considerable overlap of lengths between age classes. Females are generally longer than males of the same age class through age 6.
- Mean weight of females tends to be greater for a given age class compared to males.
- Age at sexual maturity varies between males and females.
- A weighted average (1982-1984) of catch and escapement indicated a higher proportion of males (53 percent) in the total runs.
- Based on fecundity data collected from the 1966 and 1968 Nushagak District commercial catches (n=69), number per female averaged over 10,000 eggs. Nushagak River king salmon appeared to have some of the highest fecundity rates found in the species throughout the Pacific Coast.

At that time, the Nushagak gill net fishery showed considerable selectivity by age, size, and sex. Historically, large mesh nets were used to target king salmon while smaller mesh nets were used to target sockeye salmon. Gillnet specification varied from year to year but by the mid- 1970s, 8 to 8 ½ inch mesh was commonly used to target king salmon (early in the season), while sockeye salmon were targeted using 5 1/8 to 5 ½ inch mesh gillnets (later in the season). Smaller mesh nets (5 3/8 inch) tended to selectively capture smaller king salmon which are primarily males, while larger mesh nets (8¼ to 8½ inch) tended to select for larger salmon which are primarily females. Thus, early season (large) mesh accounted for a heavy preponderance of large females in the catch, while smaller mesh sockeye gear accounted for a higher proportion of younger age males. Some important additional points regarding mesh selectivity made by Nelson (1987) follow:

- The commercial fishery showed an overall higher percent of males which Nelson attributed to a relatively greater abundance of early maturing, smaller age 4 and 5 males.
- Mesh selectivity affected the age and sex composition of the escapement.
- A weighted average (1982-1984) of catch and escapement indicated a higher proportion of males in the catch and a higher proportion of females in the escapement.
- Since large mesh gill nets tend to harvest larger female fish, mesh selectivity affected the average fecundity of the female spawning population. King salmon harvested with large mesh, i.e., 8 ½ inch, nets vs small mesh, i.e., 6 ½ inch, nets resulted in a two-fold difference in egg deposition on the spawning grounds.
- Large mesh gill nets were restricted for the first time in 1985 and 1986 to reduce catch rates and were felt to be effective in allowing additional large king salmon into the river to spawn.

While mesh size restrictions were historically implemented to manage sockeye salmon harvest, then-recent use of inseason restrictions on the use of large mesh showed promise in reducing exploitation of large fecund females.

Nelson stated that gillnet (mesh) depth was of equal importance to mesh size with respect to catch rates for king salmon. King salmon appear to follow deeper water channels in the generally shallow waters of the Nushagak District, where deeper nets are more effective.

Gillnet length and mesh size varied during the early years of the fishery until 1923 when the U.S. Bureau of Fisheries restricted both. At the time of the report, little information existed on the depth of king salmon nets in existing literature, and the depth used appeared to closely follow a 28-mesh restriction enacted in 1925 for sockeye salmon nets.

As interest in king salmon increased in the 1940's, some Nushagak fishermen began to experiment with deeper nets. Reports from fisherman indicated higher success rates with deeper nets through the mid-1950s and, as fishermen became more effective with deeper nets, interest and participation in the fishery accelerated.

By 1957, Federal fishery managers recognized that the increase in fishing effort required additional closed time for king salmon conservation purposes. In 1958, weekly fishing time (prior to June 22) was reduced by 36 hours and nets were limited to 28 meshes in depth. Nelson cited an experienced fisherman attesting to effectiveness of the depth restriction in reducing the increased exploitation on and stated that the depth restriction is an essential component of the regulatory management program for the species.

Migratory behavior and timing

Nelson made the point that, considering the rapid growth and "gross mismanagement" of the early Bristol Bay sockeye salmon fishery, Nushagak king salmon were fortunate in that the run arrived before the sockeye fishery began in earnest. Thus, the advanced (earlier) run timing of the species, along with the relatively low commercial interest in its smaller run, helped the stock survive the development of the sockeye fishery.

Fishery managers began to use this difference in timing to manage for conservation of king salmon in 1958. When weekly fishing time was reduced and net depth was restricted that year, the restrictions were applied prior to June 22 when king salmon were the primary species present. As fishermen became more effective at targeting king salmon and effort targeting the species increased, fishing time prior to June 16 was further reduced. For the 1987 season, ADF&G planned to prohibit fishing prior to June 1 and replace the 5-day fishing schedule then in place prior to June 16 with a 3-day schedule. At the time, fishing beginning June 16 was closed unless and until opened by emergency order. Future action, including replacing the fishing schedule prior to June 16 with emergency order management, would be considered depending on the success of the 1987 measures.

While the earlier run timing relative to sockeye salmon contributed to king salmon sustainability and provided a means to manage the species separately for conservation, other migration tendencies posed management challenges. King salmon often mill and hold within the district, are believed by many fishermen to hold deep during calm weather and therefore unavailable to the fishery and appear to move upriver and become available to the fishery under the influence of strong winds. For these reasons, the effectiveness of early

season closures on reducing harvest rates was limited at times; early season closures coincided with a noticeable shift in high catch rates from early to later in the season in the early 1980s.

Run timing data was collected from four sources: commercial, subsistence and sport harvests, and sonar-based enumeration. Over half (55 percent) of the commercial harvest was accumulated by June 16-20. Subsistence harvest in the Dillingham area peaked between June 20-30 (later upriver). Sport catches inriver peaked between June 26 and July 6. And available sonar data indicated 50% of the inriver run had passed the sonar site July 1-2. Nelson acknowledged the commercial fishery can influence the migration timing of the inriver run but pointed out that the data collectively indicated that most king salmon migrate into the lower river during late June to early July.

Inriver abundance and escapement assessment

Management of salmon fisheries in Alaska is based primarily on achieving escapement levels that support sustainable harvests. As Nelson stated: "the criterion of escapement has been the primary factor in determining fishing regulations in Alaska, from the passage of the White Act in 1924 to the present time." Yet, the magnitude (and quality) of spawning escapements has not always been estimated. Escapement data for king salmon is relatively difficult to collect because spawning is generally concentrated in mainstem reaches of larger, turbid river systems.

Aerial surveys to locate king salmon spawning areas and assess spawning magnitude in the Nushagak River began in 1956 and continued through publication of the report (and beyond). One of the objectives of the aerial survey assessments was to develop methods to use aerial survey counts to estimate total escapement.

In 1979, a side scanning sonar project to enumerate adult sockeye salmon was initiated on the lower Nushagak River near Portage Creek. Nelson acknowledged the potential of the sonar project to estimate king salmon escapement but continued aerial surveys during the subsequent years due to operational difficulties and sampling problems experienced by the sonar project. Some of the initial challenges of using sonar to estimate passage included exceeding the density threshold of the Bendix units, limited sonar range/coverage of the migratory pathway of the larger king salmon, and difficulties in apportioning sonar targets to specific species among the sockeye, chum, and king salmon that comigrate past Portage Creek.

Annual monitoring of daily subsistence catches at Lewis Point on the lower Nushagak River was initiated in 1980 to provide daily estimates of king salmon escapement in advance of estimates provided by the sonar project. Unlike aerial survey assessments conducted on the spawning grounds, both the sonar and Lewis Point catch monitoring projects provided the added benefit of inseason "real-time" data on inriver abundance in the Nushagak River. However, problems with the Lewis Point project also kept the emphasis on the aerial survey program as the primary means to estimate spawning escapement.

Visual counts of salmon passing by points on the shoreline were conducted from counting towers beginning in 1953 to estimate sockeye escapement. Incidental tower counts were also collected routinely for king salmon. Counting periods, designed to capture the duration of the sockeye run, did not cover the duration of king salmon run and counts were of limited use as a result. One weir project – 1968 Stuyahok River weir - had been implemented in Bristol Bay to enumerate king salmon.

Beginning in 1966, an expanded 'comprehensive' aerial survey program was used to expand counts of king salmon to total inriver spawning abundance. Expansion factors and methodology varied by year and had not been rigorously evaluated until 1982 after an extensive series of escapement data had been collected from numerous spawning streams within the Nushagak drainage. In that evaluation, selected portions of the Nushagak and Mulchatna main stems, for which counts had been collected for eight years, were correlated with total counts for years when they were available. The correlation, in turn, was then used to estimate total escapement in the Nushagak drainage. Resulting escapement estimates from 1966-1986 averaged 82,000 and ranged from 25,000 (1972) to 162,000 (1983).

Management Program/Tools

Unlike the Bristol Bay sockeye salmon fishery, the Nushagak king salmon fishery received little directed effort at research and management until the 1950s. In the 1960s the management strategy was to limit harvest to a range of 60,000 to 80,000 fish with exceptions. As pressure on king salmon increased in the 1970s, the need for more robust escapement data collection also increased. And as the sport fishery grew so did the need for information on sport fishing use. In addition to funding and staffing the Dillingham area office with biologists and technicians assigned to commercial and sport fish management and research in the Nushagak District, ADF&G conducted a suite of programs aimed at king salmon at the time the report was written:

- Commercial and subsistence harvest monitoring – daily contact with processors enabled commercial catch estimates and harvest rates. Project objectives included inseason estimates of catch and fishing effort for king salmon by period, and inseason catch per unit effort.
- Commercial catch sampling – king salmon from commercial harvests were measured for weight and length, sex determined, and scale removed for age determination. Project objectives were to provide age, weigh, length, and sex data for commercially harvested king salmon.
- Sport fishery harvest monitoring
    - Creel surveys in the lower Nushagak River – anglers were interviewed inseason to collect catch and harvest data, and sample harvested fish. Project objectives included estimates of angling effort, catch and harvest rates, and collection of biological and demographic data.
    - Statewide Harvest Survey – postal surveys were mailed annually to anglers that fished in Alaska to collect effort and harvest data. Results provide harvest estimates for the Nushagak king salmon sport fishery.

- District test fishing – Fishing with gillnets took place within the Nushagak District to capture salmon. The primary objective was to monitor magnitude and entry pattern of sockeye salmon in the district. A secondary objective was to provide indications of when king salmon were present, holding, and moving upriver of the district.
- Lewis Point subsistence/test fishery – Lewis Point subsistence catches were monitored and sampled. Objectives were to estimate escapement into the river using subsistence catches, and sample catches for age, sex, and length data.
- Post-season aerial surveys – comprehensive surveys were flown to count spawning king salmon. Primary objectives were to provide estimates of drainage-wide escapement and spawning distribution.
- Portage Creek Sonar – obtain daily salmon passage rates from two Bendix side-scanning sonar units in the lower river near Portage Creek, sample salmon for age, sex, and length data, and adjust sonar counts by species. Project objective was to estimate inseason escapement of salmon by species.

At the time Nelson (1987) was published, data collected from these projects were used for king salmon inseason fishery management, post-season management assessment, and beginning in 1984, pre-season forecasts of projected run size.

Recommendations

Nelson (1987) identified four categories of needs that should be addressed: habitat protection, optimum escapement objectives, methods to accurately estimate escapement, and methods to achieve escapement objectives.

Habitat Protection

Nelson described the protection of freshwater spawning and rearing habitat a priority requirement to sustained and increased king salmon production. Three habitat objectives were identified as referenced from the 1986 Comprehensive Salmon Plan:

- Maintain present quantity and quality of salmon habitat
- Enforce state water quality and anadromous stream protection regulations, and
- Develop land use plans for public lands adjoining salmon waters

"Optimum" Escapement Goal

Although provisional escapement objectives were in place, Nelson indicated a final goal should be developed and suggested delaying its development until after the 1990 run, when returns from the large escapements in 1981-1983 would be complete.

- Develop an optimum[1] escapement goal (after 1990 run)

[1]Nelson used the term *optimum* escapement goal like the way we currently use biological escapement goal (BEG) based on expected maximum sustainable yield (MSY). He did not use it to mean the same thing as today's Optimum Escapement Goal (OEG) in the State's escapement goal

- Continue to collect age, sex, length, and weight data needed for escapement goal development and run forecasting
- Conduct a mesh size study to determine the effects of mesh size on reproductive potential, and assess the use of regulatory mesh size restrictions as a king salmon management tool
- Conduct a tagging study to assess movement and holding patterns in the fishery, district, and lower river.

Estimation of Escapement

Nelson envisioned substantial benefits to providing more accurate and timely information with which to estimate inseason escapement rates. Primary benefits included allowing for additional harvest during strong runs while providing additional protection to smaller runs.

- Improved subsistence monitoring, i.e., test fish project at Kanakanak Beach, to provide daily catch estimates and possibly additional data
- Continued development of the Portage Creek sonar to provide inseason and total estimates of escapement. Species apportionment was the primary challenge to reaching this objective. Successful development would allow the termination of the aerial survey program.

Achievement of Escapement

This goal was aimed at providing managers with effective methods to control fishing pressure and achieve escapement goals. It was predicated on defining optimum escapement objectives and developing methods to accurately estimate inseason escapement rates.

- Conduct the commercial fishery entirely under day-to-day (emergency order) management if planned regulatory changes in 1987 were not effective in reducing the exploitation rate to achieve better distribution of escapement through time.
- Restrict large mesh gill net gear to reduce catch rates

Finally, Nelson noted positive attributes of the Nushagak king salmon stocks compared to others in Alaska: the stock is generally in good condition; is concentrated in a large river system that can be managed independently; the fisheries on the stock are conducted in a terminal area where allocation considerations are modest and, king salmon are somewhat separated from other species by timing differences in most years. Ultimately, he noted: "*the success of management will depend on the effectiveness of stock assessment capabilities and maintenance of a management strategy that is responsive to stock abundance, while retaining an element of conservatism in response to uncertainty about stock productivity*."

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policy, which is set by the Board of Fisheries and takes into account biological and socio-economic factors to set the escapement goal target.

Summary, Pre-1987

The period from the early 1950s through 1986 was formative in the development of the Nushagak fisheries and their management. The period experienced a growing interest in Nushagak River king salmon, and peak production of king salmon enjoyed in the early 1980s resulted in a surge of interest and record harvests in the commercial fishery, and development of a growing sport fishery. Together, these dynamics presented concerns for adequate spawning escapement and potential for user conflicts.

Fishery managers responded to the increase in interest by enacting fishery restrictions to ensure enough king salmon for spawning escapement. In 1958, Federal fishery managers had restricted weekly commercial fishing time and gillnet depth to boost the escapement. Subsequent restrictions to fishing time, area and gear were implemented by state managers through the mid-1980s. In 1985 and 1986, large mesh gill nets were prohibited by emergency order. Plans for 1987 called for reducing area in the outer district, prohibiting fishing before June 1, and reducing the weekly fishing schedule prior to June 16 from five to three days.

Fishery managers also responded to the increased interest in the fishery by adding stock assessment programs to ensure conservation of Nushagak king salmon. Aerial surveys to document escapement began in 1956. In the 1960s, State managers expanded the aerial survey program to additional systems within the drainage and implemented a subsistence permit system in part to provide better accounting of subsistence fishing activity. In 1979, the side-scanning sonar project at Portage Creek was implemented to enumerate sockeye salmon with an interest in using that system to index or enumerate king salmon. In the 1980s, creel surveys were initiated to estimate sport fishing effort and harvest.

Improved stock assessment allowed for additional tools to use in managing the Nushagak king salmon fishery. By 1987, fishery managers had compiled a time series of estimated harvests for each fishery component and escapement, which allowed for annual estimates of total run size. Age composition estimates obtained for each component allowed for the development of brood tables, which in turn provided information needed to develop a biological escapement goal and, beginning in 1984, an annual pre-season forecast of the run.

Despite the advances in stock assessment and increasingly conservative management of the fisheries, conservation issues remained to be addressed as of 1987. A formal escapement goal had yet to be developed. Accurate and timely (daily) inseason escapement estimates, needed to take advantage of harvestable surplus of large runs and conserve small runs, required continued research and development of the sonar program at Portage Creek. Species apportionment of fish counted by sonar continued as a major obstacle to inseason assessment. Finally, managers recognized that additional management measures may be needed should the restrictions envisioned for 1987 not be effective enough to control fishing pressure and achieve escapement objectives.

Development of the 1992 Nushagak-Mulchatna Chinook Salmon Management Plan

Pre-Plan, 1987-1991

While the period spanning the 1950s to the mid-1980s was formative in the development of the fisheries and their management, the following several years cemented the need for a structured management plan. A weak king salmon run in 1986, coupled with a poor forecast for the 1987 run, indicated that the large runs experienced in the late 1970s and early 1980s were coming to an end (Minard et al., 1992). Indeed, runs observed from 1987 through 1990 (range 86 to 146 thousand) declined from the very large runs observed from 1978 to 1983 (range 218 to 356 thousand) to a level generally considered as 'depressed'.

By 1991, it had become evident that the large runs experienced in the early 1980s had produced poorly; spawning escapements from brood years 1981-1985 had produced only as many fish as had spawned in those years, or fewer. After a comprehensive review of production data, Minard et al. (1992) stated that the decrease in production at higher escapement levels was the most notable trend in the spawner-return data. Normally, this would indicate density-dependent factors in the freshwater environment. However, in this case where large escapements all occurred sequentially among brood years 1981-1985, it is difficult to determine whether the decrease in production was caused by the high levels of escapement or by other factors that may have occurred during the life cycle of salmon produced in those years (e.g.., changes in ocean carrying capacity, high seas fisheries interceptions, freshwater habitat degradation, competition with other species in the fresh and/or marine environment).

The return to more typical (or depressed) run sizes in the mid-1980s prompted managers to implement additional conservation measures. These included emergency order management of the commercial fishery that Nelson had suggested, which ultimately led to closure of the directed commercial fishery. The 1987 commercial fishery opened normally but was closed by EO after approximately 5,000 king salmon were caught with little indication of fish movement into the river. The commercial fishery was similarly closed by EO each of the three subsequent years, prompted by low pre-season forecasts and a likelihood of large incidental harvests of king salmon in the sockeye fishery. An improved forecast in 1991 and indications of escapement more than the goal prompted a commercial period June 24, 1991. However, a boycott by commercial harvesters over salmon prices kept fishing effort low.

During this period, the Board of Fisheries implemented several conservation measures affecting the commercial and sport fisheries.

- Prior to the 1988 season: the outer king salmon boundary was eliminated by regulation; the commercial district was redefined to include only the sockeye salmon boundary as the southern-most district boundary line. This effectively reduced potential fishing area for king salmon.

- the regulatory commercial fishing season was reduced from May 1 to June 1.
- sport fishing bag limits in the Nushagak drainage were reduced from 5 king salmon per day and in possession, of which only 2 may be over 28 inches, to 3 king salmon per day and in possession, of which only 2 may be over 28 inches.
- The following year (1989), the Board abolished the minimum mesh size requirement of 6 ¾ inch mesh in place in the commercial fishery prior to June 16.
- In 1990, the Board closed the Nushagak River drainage upstream from its confluence with the Iowithla River, including the Iowithla River, to the taking of king salmon from July 25 through December 31.

The poor runs experienced during this period underscored the need for a revised escapement goal as recommended by Nelson. Other dynamics further heightened the need. The provisional escapement goal was not attained in 1986, 1988, and 1990. Additionally, commercial salmon fishery managers in Bristol Bay had traditionally accounted for returns as either commercial catch or escapement, the notion being inriver harvests were so small that their impact on inriver abundance was insignificant. With growth in the subsistence and sport fisheries, and ADF&G's mandate to manage for sustained yield, inriver harvests had to be explicitly accounted for in the escapement goal. This meant that the provisional 'escapement' goal of 75,000 was an inriver goal, and by managing for 75,000 fish at the Portage Creek sonar, the goal of attaining a spawning magnitude of 75,000 king salmon would not be realized.

Nelson (1987) described concerns with the heavy toll extracted by the commercial fishery and the growing sport fishery, and identified the need for improved escapement monitoring, a formal escapement goal, and additional management measures for the Nushagak king salmon fisheries in 1987. The poor performance of the large escapements during the early 1980s, the increasingly severe restrictions in the late 1980s resulting from the depressed runs, and the state of the provisional escapement goal all heightened concerns over conservation and exacerbated user conflicts that had begun to develop prior to 1987. During this period, they were raised to a level that received the attention of fishery participants, managers, and regulators alike, and turned the heat up on the need to develop and implement a formal management plan. Because such a plan would affect allocation among users, it had to be developed via the Board of Fisheries process to be effective.

Development of the 1992 Plan

Prior to the 1992 Bristol Bay Board meeting and under correspondence from the Board, the Nushagak Advisory Committee (NAC) submitted Proposal 157, and ADF&G submitted Proposal 158 to develop a management plan for Nushagak River king salmon. Both proposals expressed concern over poor recent runs and poor production trend and a need to provide ADF&G with management direction. The NAC proposal specified high seas bycatch and interception as a concern (but recognized that the issue was outside of the scope of the Board of Fisheries), and referenced habitat degradation and inriver harvest as possible factors influencing low return rates. The ADF&G proposal recognized the need to change the escapement goal to better account for biological needs and upriver harvests.

In support of the planning efforts, ADF&G conducted a review of the then-present escapement goal (Minard et al. 1992). Estimates for number and age of king salmon harvested in each fishery and for spawning escapement were available with limitations, and significant assumptions were made regarding the applicability of the data. Estimates of "biological escapement requirement" (BER), what we would call a Biological Escapement Goal (BEG) today, were derived using multiple methods, and ranged from 50,000 (early-years Ricker model) to 65,000 (all-years Ricker model) king salmon spawners. ADF&G recommended a BER at the upper end of this range to be conservative because of uncertainty in the brood tables and the uncertainty over the cause of the poor returns from the 1980-1985 runs.

Both the NAC and ADF&G proposed developing a plan that would distinguish inriver harvests from the BER, include management guidelines developed by the Board to share the burden of conservation among fisheries and provide staff with management direction, and achieve the BER. The NAC proposal prescribed specific management measures for each fishery under various projected escapement levels. Both proposals recognized that: "without a well described management plan, continued exploitation by the user groups on an apparently declining stock could have a long-term negative affect on this important stock."

Prior to the January 1992 Board meeting, ADF&G and the NAC worked together on further developing a plan. By December 1991 the committee with ADF&G's assistance had developed a draft (December 18, 1991) that contained much of the structure and content ultimately adopted by the Board in January 1992. The December 1991 draft included a BER of 65,000 spawners established by ADF&G during the then-recent escapement goal review. It included an inriver goal of 75,000 king salmon to provide for the BER and subsistence and sport harvest occurring upstream of the sonar. And it included management measures for the fisheries under three tiers based directly on projected inriver abundance estimates at the sonar.

Using the NAC draft plan as a template, the Board of Fisheries deliberated over the course of two days and approved the Nushagak-Mulchatna King Salmon Management Plan January 8, 1992 (Appendix A). The Plan directed ADF&G to manage the commercial fishery to achieve an inriver goal of 75,000 king salmon upstream from the Portage sonar site. The inriver goal provided for a BER of 65,000 and harvests above the sonar in the subsistence and recreational fishery. The Plan also set a cap on the recreational harvest not to exceed 5,000 king salmon.

The Plan was structured under three tiers and associated triggers tied to projected inriver run levels, much as it is remains today.

- At projected runs less than 40,000 king salmon, the sport and directed commercial fisheries were to be closed, the commercial fishery for sockeye was to remain closed until 10% of the Wood River escapement goal is projected, and the subsistence fishery was to be restricted by time or area.

- At inriver runs projected between 40,000 and 75,000, the directed commercial fishery for king salmon was to be closed and gillnets with greater than 5 ½ inch mesh were to be prohibited. At inriver runs projected between 40,000 and 65,000, sport fishing was to be restricted.
- At projections above 75,000 the Plan called for no restrictions on the commercial or subsistence fishery. However, at projections from 75,000 to 95,000 the sport fishery was to be managed such that harvests did not exceed 6,000 king salmon.

The third tier, in which inriver runs are projected to exceed the inriver goal, received considerable attention at the board meeting. The 'cap' on the sport fishery was one of the more controversial elements of the Plan. Some considered capping the sport harvest when harvestable surplus was available as consistent with the purpose of harvesting king salmon in the fisheries that historically harvest them. Others argued that capping sport harvest at or above optimum levels of yield was inconsistent with the sustained yield principle, particularly after other fisheries are afforded harvest under the same scenario.

Post-1992; Plan Changes, Fishery Trends, and Plan Performance

Thirty years have now passed since the Board adopted the original Plan. Over time, changes have occurred in the Nushagak king salmon commercial, subsistence and sport fisheries and the Plan. This section is intended to highlight some of the key dynamics in the fisheries governed by the Plan since 1992 and characterize how the Plan has performed relative to its stated objectives over time.

Plan Modifications

The Plan has been modified seven times by the Board of Fisheries (Table 1). Its purpose and structure, with management actions directly based on inriver run projections to the sonar, has remained very similar to the original version.

Management trigger levels (inriver projection levels of 40,000, 65,000, 75,000 and 95,000 king salmon) have changed twice. The first, in 1997, was specific and effectively reduced the range in which sport fishery restrictions were to be issued from 40,000-65,000 to 40,000-55,000. The 55,000-fish trigger was adopted partly based on analysis that showed little difference in expected productivity between the two levels. In addition, the 65,000-fish trigger had become disruptive to the sport fishery by precipitating frequent inseason restrictions prior to 1997.

The second, in 2012, changed the inriver and escapement goals and all management triggers contained in the Plan. The Board made these changes as requested in a proposal submitted by ADF&G to reflect a transition/conversion from Bendix to DIDSON sonar, because DIDSON accounted for a higher proportion of the king salmon that migrate up the Nushagak River. The biological escapement goal was changed from 65,000 to a range of 55,000-120,000 king salmon, the inriver goal was revised from 65,000 to 95,000 king salmon, and the various management triggers were changed as well.

Other changes to the Plan are discussed under the relevant fisheries below. The current Plan can be found in Appendix B.

Commercial Fishery

Regulation and Fishing Effort and Harvest

Directed commercial fishing for king salmon resumed under the Plan in 1992 (Table 2). Decisions to open the directed fishery and set the opening durations were based largely on the pre-season forecast and inseason indicators of run strength, including commercial harvest performance, subsistence harvest rates, an inriver passage rates estimated at the Portage Creek sonar (Brookover et al., 1997; Morstad et al., 2010).

The approach to scheduling directed openings varied from 1992 to present. Initially, the number and duration of openings were limited. Openings were generally scheduled to follow inriver pulses of fish evidenced by spikes in subsistence catch rates and other indicators (Brookover et al., 1997). This ensured fish migrate inriver prior to exposure to the commercial fishery. From 1994 to 1996, the directed fishery was managed more aggressively to harvest available surplus by scheduling more openings during lulls in fish passage. However, due to escapement quality problems observed in 1995 and 1996, commercial fishing periods in 1997 were scheduled directly after pulses of fish were observed moving into the river again, to reduce selectivity for large fish. The Board subsequently modified the Plan directing ADF&G to schedule openings to provide pulses of fish into the river that haven't been subject to harvest with commercial gear. From 2003 through 2009, the management strategy included openings earlier in June, with more space between openings, when a surplus appeared to be available (Fair et al., 2004; Westing et al., 2005, Morstad et al., 2010). Opening early in June during the first third of the run was intended to allow for lower levels of harvest over a larger portion of the run, still provide for fish movement past the district, and provide improved market quality and value to fishermen but carried the potential of overharvesting the early part of the run. Beginning in 2010, stakeholder meetings were used to help establish directed fishery schedules prior to the season (Salomone et al., 2011).

From 1992 through 2010, the directed commercial fishery was opened every year except two (2000 and 2001; Figure 1). Commercial fishing opportunity, based on the number of openings and total fishing time, was highest during 1994, 1995, 1998, and 2005-2007. During the 1990s, 200 or more drift boats participated based on boat counts conducted during the open fishing periods, with the largest boat counts recorded in 1994 and 1995. As an indication of the popularity of the directed fishery, the peak daily commercial drift permit registration for the 1994 and 1995 seasons occurred on dates during the directed fishery; in all other years the peak daily registration for the season occurred during the sockeye salmon fishery (Table 3). Number of drift deliveries peaked in 2005 and 2006. Based on these trends, fishing effort and harvest opportunity in the directed commercial fishery appeared to peak in 1994-1995, and again in 2005-2006.

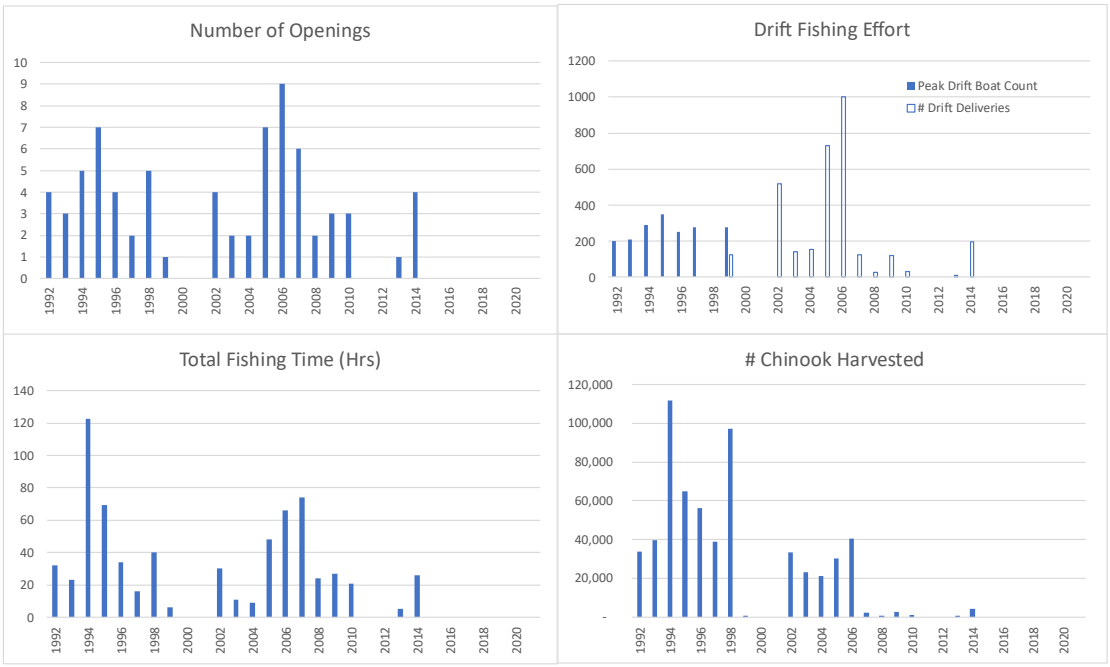

Figure 1. Trends in fishing opportunity, drift fishing effort, and king salmon harvest in the directed commercial fishery, 1992-2021.

From 1992-2010, annual commercial harvests ranged from just over 11,000 (1999) to nearly 119,000 (1994) king salmon and exhibited a general declining trend (Figure 2). Directed fishery harvests during this period varied greatly, comprising from 3% (2008) to 98% (1994) of the total commercial harvest during any given year (average 48%). Directed fishery harvests 1992-1998 comprised a much greater proportion (77% average) of the seasonal harvest than any other period since except for 2002 (85%). From 2003-2006 the directed fishery comprised 43% of the seasonal harvest - still much higher than the 5% average experienced 2007-2010. Across all years since 1992 during which a directed fishery occurred, harvests in the directed fishery comprised an average of 45% of the total season harvest.

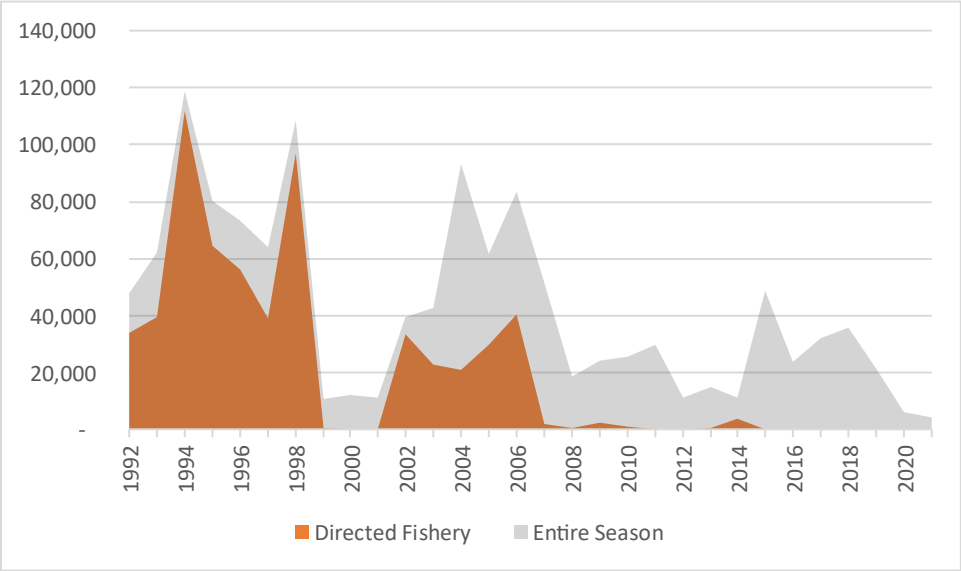

Figure 2. Commercial harvests of king salmon in the Nushagak District, 1992-2021.

The directed commercial fishery waned considerably after the 2010 season. The ADF&G ceased issuing a pre-season forecast for king salmon beginning 2011 (Jones et al., 2012). After experiencing a poor run in 2010 and lacking a reliable forecast, managers employed a conservative strategy for the next several years whereby fishing would be scheduled only if a harvestable surplus could be projected using inseason escapement rates. The directed fishery was re-opened in 2013 and 2014 but participation and harvests were relatively low. Indications of a strong run exhibited early in the 2014 season were followed by very poor abundance in the second half and failed to indicate the weak run that ultimately resulted.

Strong sockeye salmon run forecasts for the Nushagak and Wood rivers increasingly factored into management of the Nushagak District beginning in 2015, whereby fishing for sockeye salmon was planned to begin earlier in June to control sockeye salmon escapement (Jones et al., 2016). The directed fishery has not been initiated since 2014 due to poor runs experienced 2010-2014, lack of a pre-season forecast to guide any early season fishing, and the expected increased potential for incidental harvest of king during large sockeye runs.

Incidental harvests of king salmon taken during the commercial fishery for sockeye comprised 55% of the annual king salmon commercial fishery harvest, on average, during years when the directed fishery was opened. During these years, incidental harvests ranged from 5,900 to 72,200 and averaged 22,700 king salmon (Figure 3). During years when the directed fishery was not opened, 4,100 to 49,000 king salmon (average 21,600) were harvested incidentally. From 1992 to 2002, the annual incidental harvest averaged 13,800 and ranged from 5,900 to 25,300 king salmon. Since 2003, the annual incidental harvest in the commercial sockeye fishery averaged 27,200 and ranged from 4,100 to 49,300. The higher incidental king salmon catches in the latter period are likely due to a combination of factors, including a shift from king salmon that would have historically been caught in directed fishing effort to occurring in the sockeye fishery, generally larger sockeye returns

resulting in earlier and more intensive fishing directed at sockeye salmon, and in a few years, due to very early sockeye runs (e.g., 2003, 2013).

Large sockeye runs (~10 million+) observed since 2014 have contributed to increased king salmon harvest levels. King salmon run size is also a factor. However, care should be taken in characterizing apparent trends in the incidental harvest and total return given the uncertainty that exists in escapement estimates, which comprise a large component of the total run during low run years. Of note, commercial harvests of king salmon during the 2020 and 2021 seasons were the 3rd lowest and lowest reported since the Plan was adopted.

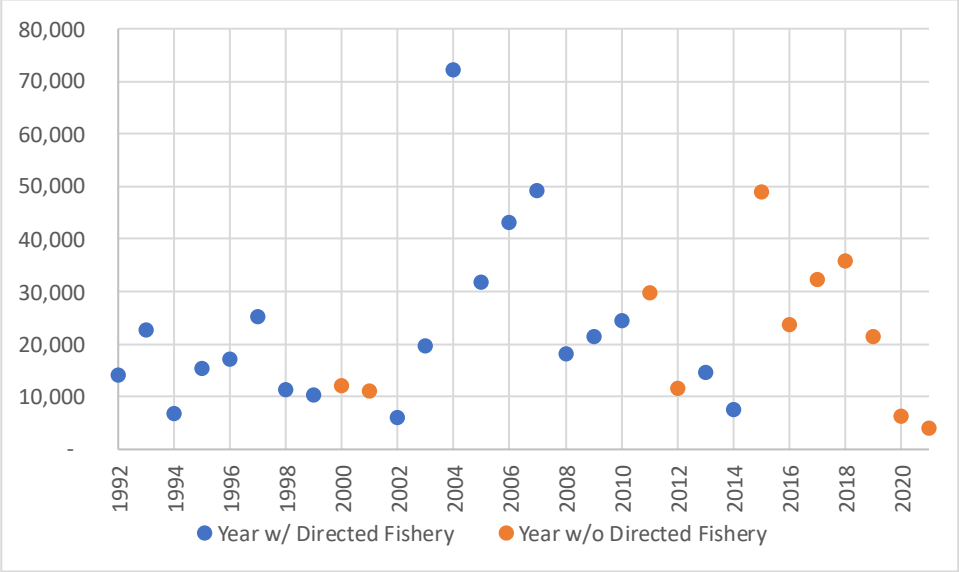

Figure 3. Number of king salmon harvested incidentally during the commercial sockeye season, 1992-2021.

Since the NMCSP was adopted in 1992, sockeye runs to the Wood, Nushagak and Igushik Rivers have increased over time (Figure 4; Table 4). Average run sizes increased from 6.5 million sockeye salmon in the 1990s, to 9.4 million (2000-2010) to 13.1 million (2011-2020). Runs to the Nushagak district set all-time records in 2006, and again in 2017 and 2018. The 2021 run was the third largest on record.

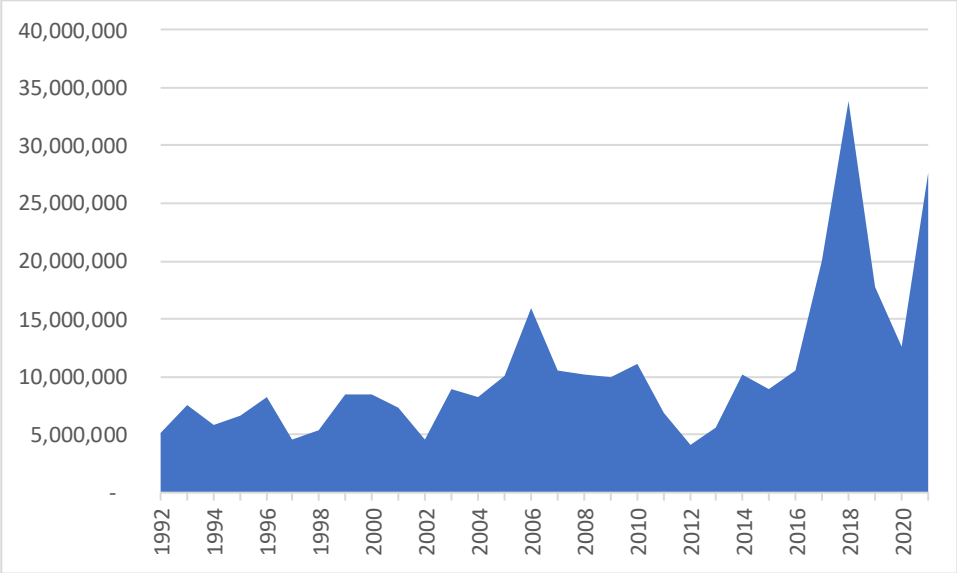

Figure 4. Nushagak District sockeye salmon runs (district catch and escapement to Nushagak, Wood and Igushik Rivers), 1992-2021.

With both large and early sockeye runs, managers tend to open the commercial fishery earlier in June, and in the case of large runs, schedule fishing time more intensively throughout the season to control sockeye harvest and escapement (Jones et al., 2016). Figure 5 depicts dates on which the Nushagak District opened to commercial fishing for sockeye salmon with drift gillnets, dates on which fishing began on an every-tide basis for the season, and dates on which fishing was extended until further notice. All three sets of dates, particularly season opening dates, exhibit a trend toward earlier starts to the sockeye fishery and intensive fishing regimes. This trend suggests a direct correlation to the increasing sockeye salmon run size in the Nushagak District.

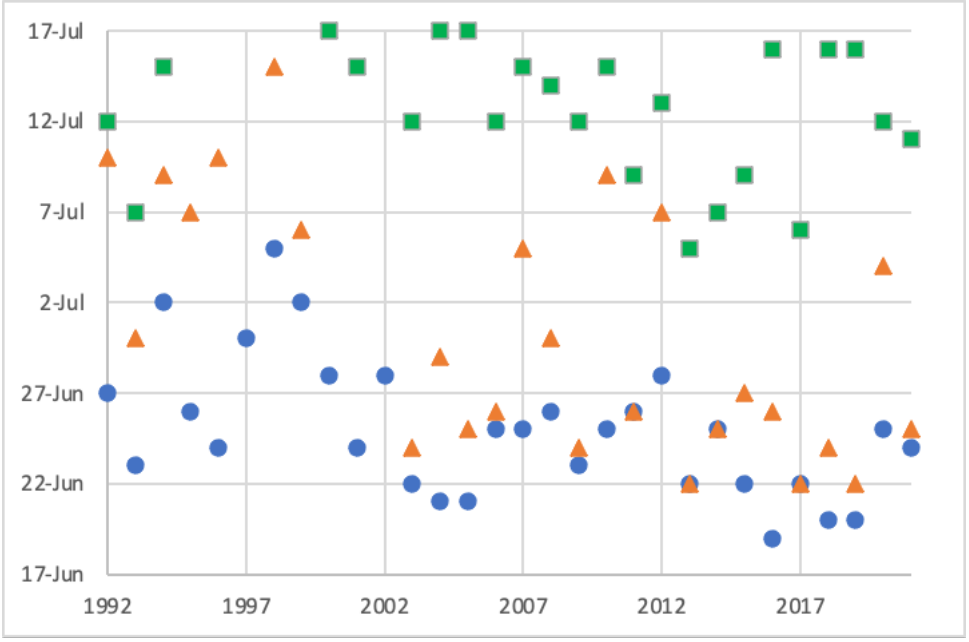

Figure 5. Key dates associated with the annual commercial drift net fishery for sockeye, including the season opening date (blue circle), start date for fishing on an every-tide basis (orange triangle), and dates on which fishing was extended until further notice (green square).

Since the Plan was adopted in 1992, commercial fishing effort appears to have increased based on permit registration statistics. Annual permit registration increased from the 1990s, when the average approximated 320 permits, to the 2000s and 2010s when the average approximated 415 permits (Table 3; Figure 6). Peak daily drift permit registrations showed a similar trend.

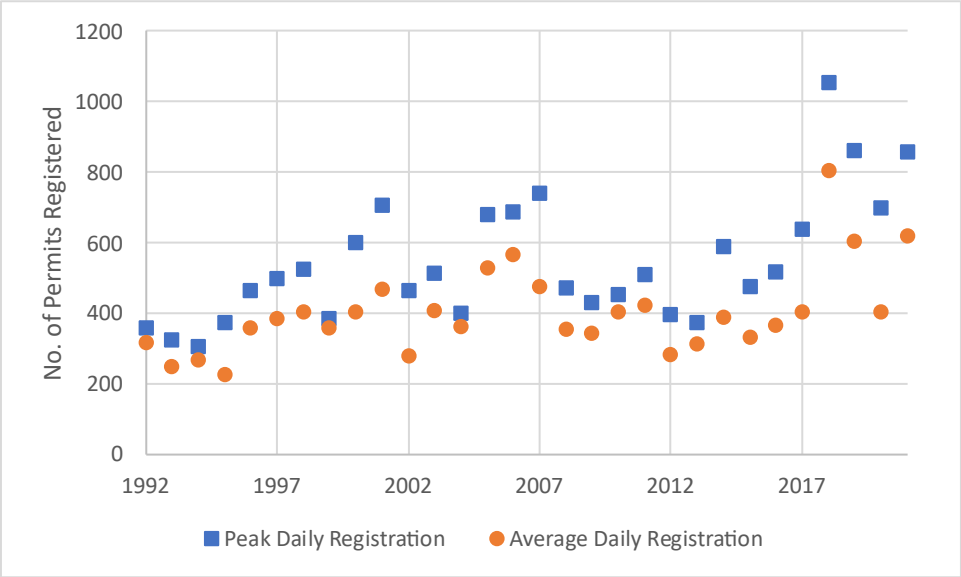

Figure 6. Average and peak number of commercial drift net permits registered in the Nushagak District, 1992-2021.

Compounding the increase in effort, the peak registration date also appears to have trended earlier over time (Figure 7), consistent with the increasing size of sockeye runs in recent years.

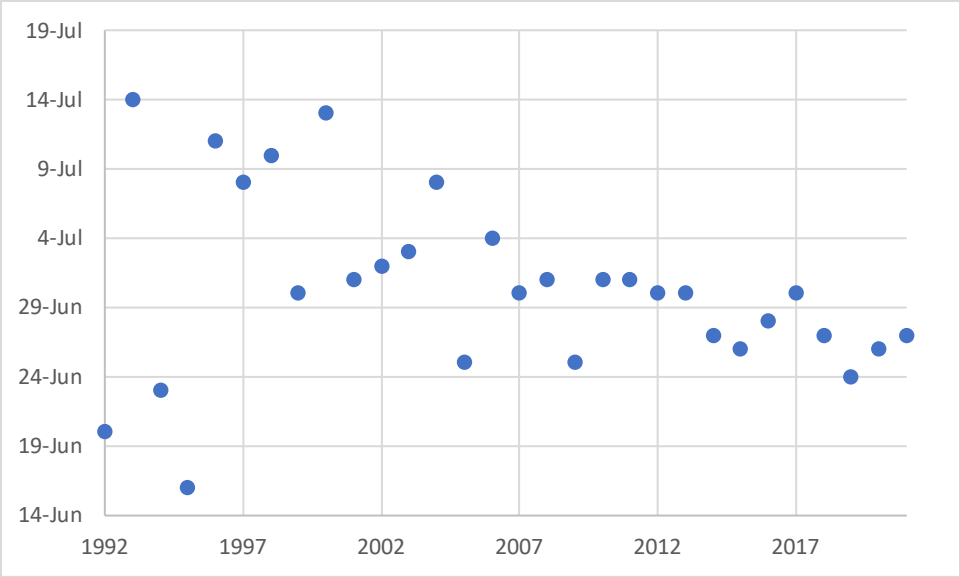

Figure 7. Peak daily drift permit registration dates, 1992-2021.

Sport Fishery

Regulations

Sport fishing regulations pertaining to Nushagak River king salmon – which consist of Bristol Bay-wide regulations, Nushagak River specific regulations, and Plan provisions - have been modified six times since the Plan was adopted (Table 5). Regulations governing the sport fishery for king salmon have generally become increasingly restrictive, conservative, and complex throughout the life of the Plan.

Most changes consisted of gear restrictions, season closures, bag limit reductions, and imposition of annual limits adopted for a combination of conservation (e.g., spawning season closures) and/or social or allocative reasons (guideline harvest of 5,000 fish). One notable relaxation of restrictive regulations is the most recent change made December 2018 that repealed Plan provisions directing the ADF&G to restrict the sport fishery under inriver run projection scenarios between 55,000-95,000 fish.

Emergency orders were issued during 12 seasons to restrict the sport fishery as directed by the Plan (Table 6). Within the past 15 seasons, the king salmon fishery was restricted inseason for conservation purposes during nine. Bag limit reductions, followed by reductions in the annual limit, were the most common restrictions enacted. Fishing was restricted inseason to catch-and-release during four years (1996, 1997, 2010, and 2019) and the season was closed to fishing for king salmon during two (1999 and 2010). During three of the years when the fishery was restricted (1999, 2011, and 2012), subsequent

increases in the projected inriver run led managers to ease restrictions partially or completely.

Effort

Sport fishing effort for king salmon is concentrated in three areas: the lower Nushagak River near the village of Portage Creek, the middle section of the Nushagak River near the village of Ekwok, and the midsection of the Mulchatna River between the Stuyahok and Koktuli rivers (Dye and Borden, 2018). Between 1992 and 1997, effort in the Ekwok area was highly variable. Since about 1999, the lower river fishery has steadily expanded upriver to Ekwok and the 2 areas are merging into a single fishery. Most effort for king salmon in the Nushagak River drainage is concentrated near Portage Creek; areas near Ekwok and in the Mulchatna River support lower levels.

Figure 8 and Table 7 depict sport fishing effort in the Nushagak River for all salmon and freshwater species. Dye and Borden (2018) reported that angling for king salmon in the middle section of the Mulchatna River seemed to have diminished since bait was prohibited there in 1992. In the mainstem Nushagak River, effort varied from approximately 10,000 to 20,000 angler days until 2020, the first year of the Covid-19 pandemic, when it fell to 3,400 angler days.

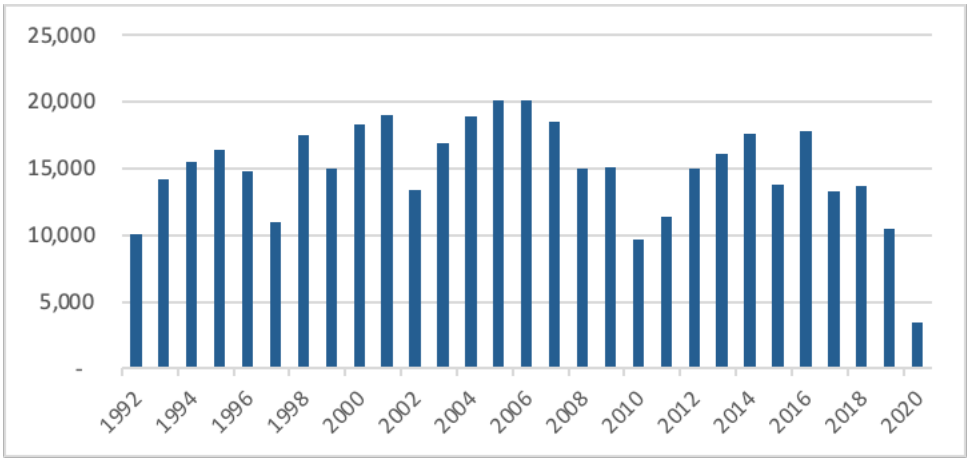

Figure 8. Sport fishing effort (angler-days) in the Nushagak River, 1992-2020.

Based on freshwater logbook data from the period 2006-2018, 41 to 65 (average 51) guide businesses and 155-250 (average 213) guides have operated on the Nushagak River (all species) (Figure 9; Table 8). During any given year, the guide industry served approximately 1,400 to 3,100 clients (average 2,505), many of whom fished for king salmon. Business and guide activity were at their highest early during this period. Like trends observed above for angling effort, the number of guides and businesses declined through about 2010-2012 and then increased to a level slightly lower than that observed in 2006-2007. Guided effort (client days) and harvest followed a very similar trend. Reasons for the decline in participation between 2005-2010 are varied. However, national economic downturns experienced during that time likely played a primary role in the dynamics observed in

guided fishing activity. The ADF&G logbook program was discontinued following the 2018 season.

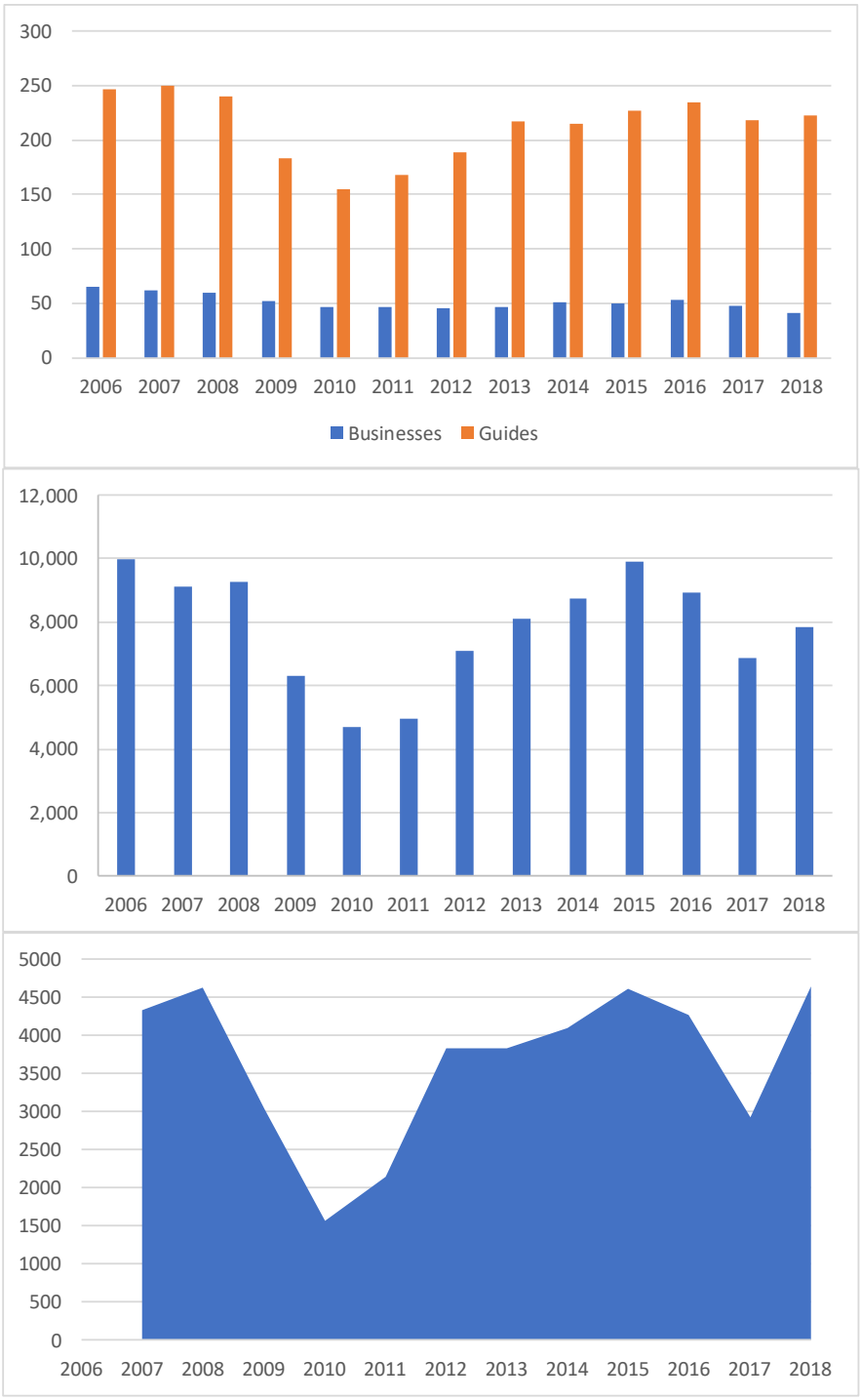

Figure 9. Number of sport fishing businesses and guides (top), client days (middle), and king salmon harvest by clients (bottom) as estimated by the ADF&G Freshwater Logbook program for the Nushagak River, 2006-2018.

Harvests

Sport harvests of king salmon (guided and unguided) in the Nushagak River ranged from approximately 1,950 (2020) to 10,600 (1994) and averaged 6,130 fish (Figure 10; Table 7). Approximately one-third (39%) of the harvest occurs below the sonar. Like trends in sport fishing effort, annual harvests have varied but have remained generally stable. Prior to 2020, early in the Covid pandemic, no less than 3,500 king salmon were harvested in the fishery during any given year since the Plan was adopted.

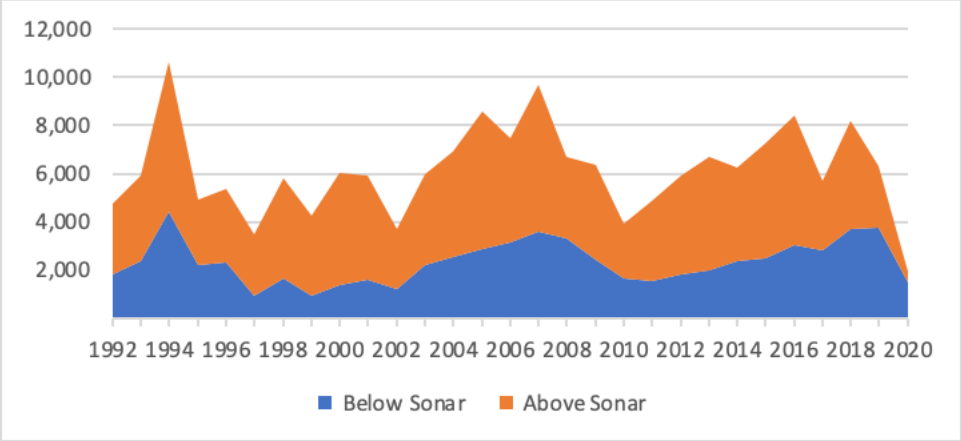

Figure 10. Sport harvests of king salmon in the Nushagak River, 1992-2020.

Subsistence Fishery

Regulations, Effort, and Harvest

Nelson (1987) noted that, compared to commercial fishing regulations, few restrictions had been imposed on the subsistence fisheries in Bristol Bay. Of the restrictions that had been enacted prior to the mid-1980s, Nelson noted that the 1974 limit on fishing time (3 days/week) and net length (10 fathoms) on the Dillingham beaches from June 16 to July 17 had the most impact on king salmon harvest rates. Relatively few regulatory changes to the Nushagak subsistence fishery have been enacted since the adoption of the Plan, with two notable exceptions. In 2018, the Board repealed the limits to subsistence fishing periods (i.e., weekly 3-day schedule) and allowed subsistence fishing with dip nets near Dillingham.

Participation in the subsistence fishery (for all salmon species), based on the number of permits issued, appears to have increased steadily but incrementally since adoption of the Plan (Halas and Neufeld, 2018). Comparing average figures for 1992-1996 against those for 2017-2021 indicates the number of subsistence salmon permits issued increased by about 22% (Figure 11, Table 9; Note: estimates for 2020 and 2021 are preliminary). Between the same two time periods, the number of king salmon harvested annually declined by over 38%, and the number per permit decreased by about 49%. Annual harvests and harvest rates began a steady decline in 2018, and in 2020 and 2021 were the lowest since the adoption of the Plan. These recent declines correlate with record large sockeye salmon runs

which have contributed to increased subsistence harvests of sockeye salmon. Both small recent king salmon runs and increased harvests of sockeye salmon in the subsistence fishery likely contributed to the recent decrease in king salmon harvest rates in the subsistence fishery.

Trends in the subsistence fishery, apart from recent low king salmon harvests, are not unlike those observed by Nelson over 30 years ago. He stated then: “Since subsistence fishing is considered a priority use of the resource in Alaska, subsistence use can be expected to continue at near record levels of effort. Harvest levels are expected to remain high, and will continue to be somewhat independent of stock abundance…” It is likely the same outlook holds true today, albeit with a question concerning harvest levels in the near future.

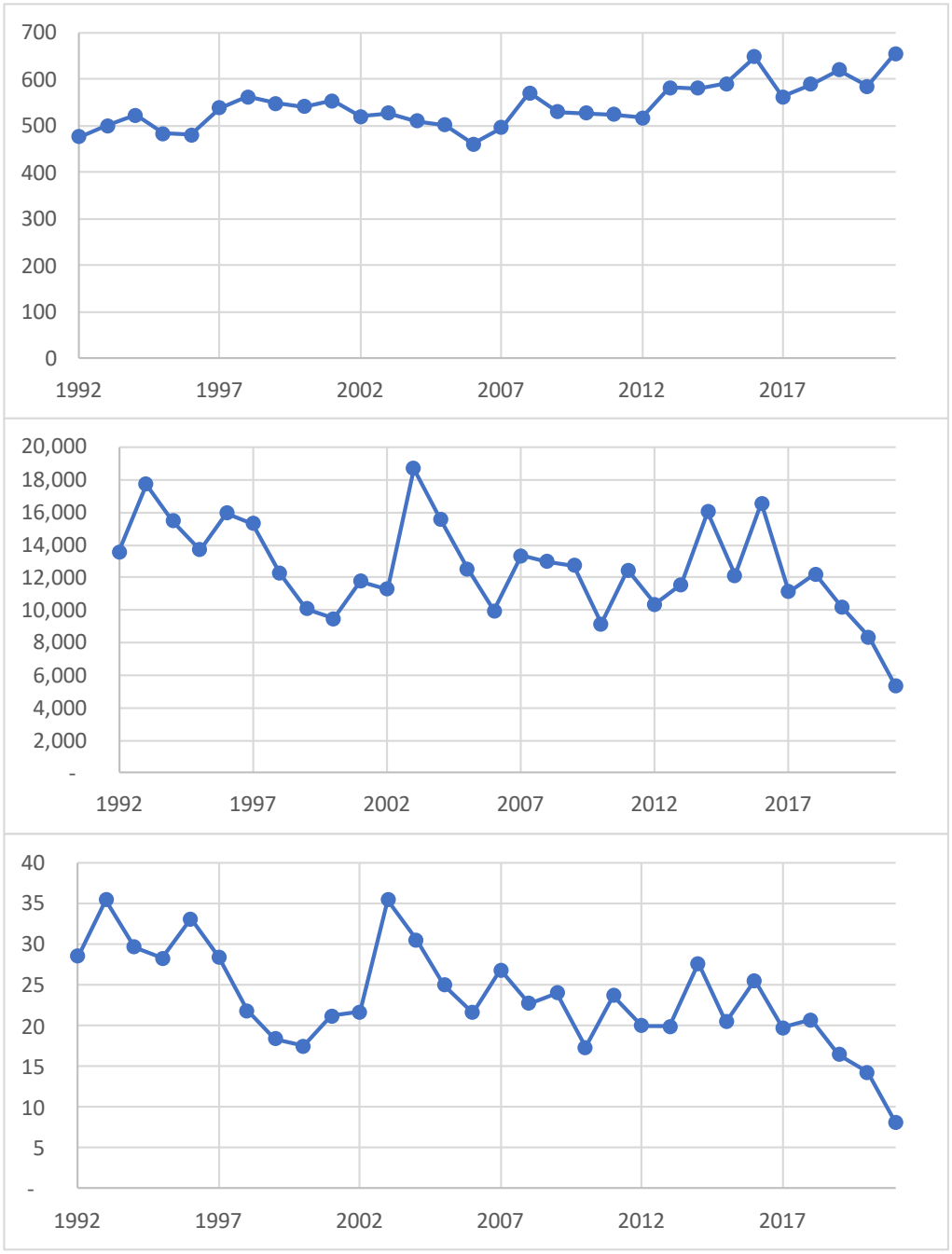

Figure 11. Number of subsistence fishing permits issued (top), estimated king salmon harvest (middle), and harvest per permit (bottom) in the Nushagak District, 1992-2021.

Plan Performance

This section will discuss how the fisheries have performed with respect to management objectives within the Plan.

Changes in Escapement Assessment Tool

Before going further, some discussion is needed regarding the inriver assessment of king salmon because two objectives (inriver run goal and biological escapement goal) rely directly on it and significant uncertainties surround the sonar project and its results.

In 1997, aerial surveys of king salmon spawners raised concern over the accuracy of the sonar counts (Brookover et al., 1997). A distribution study on coho salmon that year coupled with low water conditions indicated that a substantial number of king salmon migrated offshore of the effective reach of the sonar and, as a result, the ADF&G committed to assessing offshore distribution of salmon as an integral component of the project in the future.

Beginning 2002, the ADF&G began using dual frequency identification sonar (DIDSON) concurrently with the Bendix acoustic system then in use (Buck et al., 2012). DIDSON is a type of imaging sonar considered to be generally superior to the 1960s technology used for the Bendix equipment[2]. Comparisons over the next few years found that the DIDSON detected a higher number of fish than the Bendix system, particularly in the more distant-from-shore areas that had been ensonified. In 2005, after a few partial-year, partial-river-segment comparisons of counts from each sonar the ADF&G transitioned to using the DIDSON technology to measure the inriver salmon runs at Portage Creek, and discontinued use of the aging and increasingly difficult-to-service Bendix equipment. Conversion factors for king salmon and other species were subsequently calculated from the relationship between DIDSON and Bendix passage and applied to historical Bendix passage estimates. The revised estimates were then used to produce revised total run and brood tables for Nushagak salmon composed of DIDSON or equivalent estimates.

More recently, ADF&G updated the time series for Nushagak River king salmon to include various sources of historical harvest and escapement data and conducted a run reconstruction and stock recruit analysis using the updated time series (ADF&G Nushagak escapement goal memo, July 11, 2019). During the review, it had become apparent to ADF&G that the run reconstruction and analysis were compromised by a lack of year-to-year overlap among the methods used to estimate escapement. Paired Bendix and DIDSON counts for both riverbanks and multiple years were lacking, Bendix estimates did not align well with paired aerial survey data, and aerial survey data did not overlap in time with DIDSON estimates.

Erickson et al. (2018) summed up uncertainties associated with the current sonar program in a report to the Board in December 2018. A 2011–2014 acoustic tagging study estimated that the sonar beam covered less than a third of the Nushagak River channel. “Preliminary results from the 2011–2014 acoustic tagging study estimated the proportion of king salmon

[2] In addition, the Bendix equipment was becoming more and more difficult to service and maintain. Al Menin, who invented the Bendix sonar, continued to service the Bendix equipment until 2005.

traveling outside the sonar beam range was 47–65% with a mean of 57%. Similarly, a 2014–2016 mark–recapture study estimated the abundance of adult king salmon in the Nushagak River independently from the sonar estimate. Both studies indicated that a substantial number of king salmon are not enumerated by the existing sonar assessment and that the current sonar assessment is an index of abundance. At this time, ADF&G has not quantified the consistency of the sonar index."

This assessment of Plan performance takes the current inriver abundance estimates, and resulting spawning escapement and total run estimates, at face value (Table 10). This is problematic in that inriver abundance estimates prior to 2013 were revised by Buck et al. (2012). As a result, management performance in achieving an inriver or escapement goal, for example, can not readily be assessed, at least using the revised estimates, for years prior to 2013. The 1997 season provides a good example of the challenges. In 1997, spawning escapement estimated by aerial surveys (82,000) was twice the sonar count, indicating a problem with the sonar. The revised inriver run estimate presented in Buck et al. (2012) is 170,610. Using the original sonar count, the inriver goal of 75,000 at the time was not met. Using the aerial survey count, the inriver goal was met. And using the current estimate the inriver goal was far exceeded.

Figure 12 and Table 10 depict the Nushagak River king salmon total run estimates. Based on these estimates, runs have generally declined since the Plan was adopted. Recent runs (2016-2020) have averaged about 111,000 fish which is about 42% less than the long-term (1992-2020) average. The most recent three runs (2019-2021) are the smallest since the Plan was adopted. The 2020 king salmon run is the smallest on record, followed by the 2019 run. Once harvest estimates become available for the sport fishery, the 2021 run is likely to replace the 2019 run as the second lowest. Harvest among the fisheries has generally followed the same downward trend throughout the period. This includes the recent three years, and particularly 2020 and 2021 for which total harvests were the lowest observed since the plan was adopted.

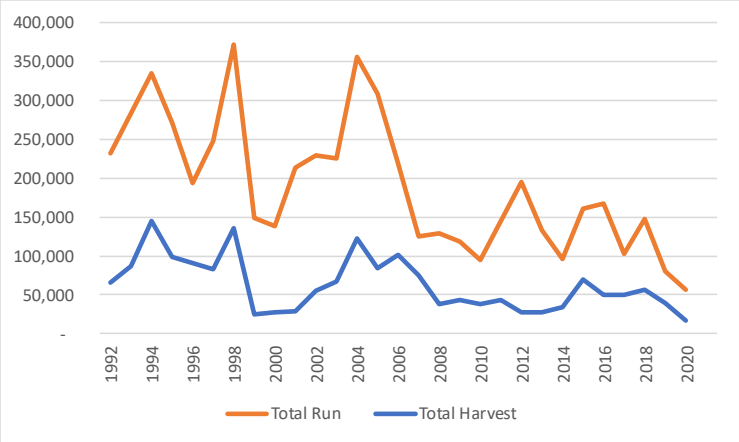

Figure 12. Nushagak king salmon total run and harvest (all fisheries combined), 1992-2020.

Plan Objectives:

The department shall manage the commercial and sport fisheries in the Nushagak District to achieve an inriver goal of 95,000 king salmon in the Nushagak River upstream from the department sonar counter.

Inriver run performance can be assessed by a simple comparison of the estimated inriver run as enumerated at the sonar with the inriver run goal. The combination of changes to the inriver run goal and as stated above, the Bendix-DIDSON conversion makes assessment difficult for years prior to 2013. For this reason, only 2013 through the current year is assessed. Since 2013, the estimated inriver run exceeded the inriver run goal four times but fell short five, including the three most recent years (Figure 13). In 2019-2021, estimated total runs were not large enough to provide for the inriver goal even if no king salmon would have been harvested.

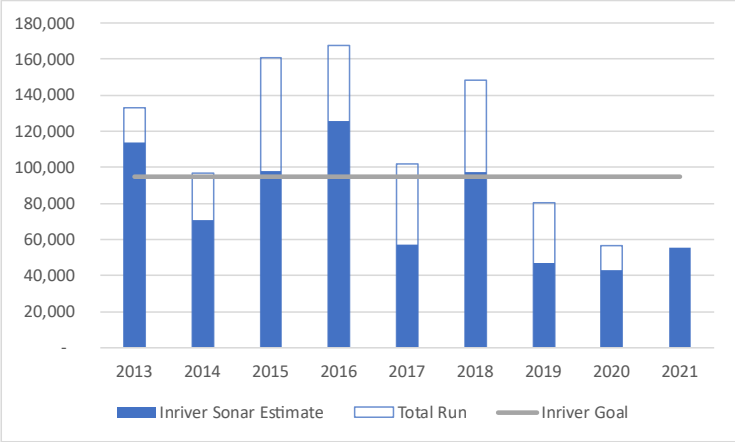

Figure 13. Inriver (and total) run estimates compared to the inriver run goal, 2013-2021.

Provide for a biological escapement goal of 55,000 - 120,000 fish.

Since 2013, estimated spawning escapement fell within the goal range (55,000-120,000 spawners) in five years and fell short in three (Figure 14). Although the spawning escapement estimate is not yet available for 2021, it very likely fell short of the lower bound considering harvests that occur upstream of the sonar, where inriver abundance was estimated at 55,222 king salmon. Aerial surveys conducted in 2017, 2019 and 2021 indicated that actual spawning escapement was likely greater than estimated by sonar; surveys conducted in 2020 seemed to corroborate the low (sonar-based) estimate that year (J. Head, ADF&G, personal communication). From a biological standpoint, the Plan appears to be working generally well in ensuring spawning goals are achieved over the long term. However, should future king salmon runs continue near current levels, achieving inriver goals will likely pose a continued challenge.

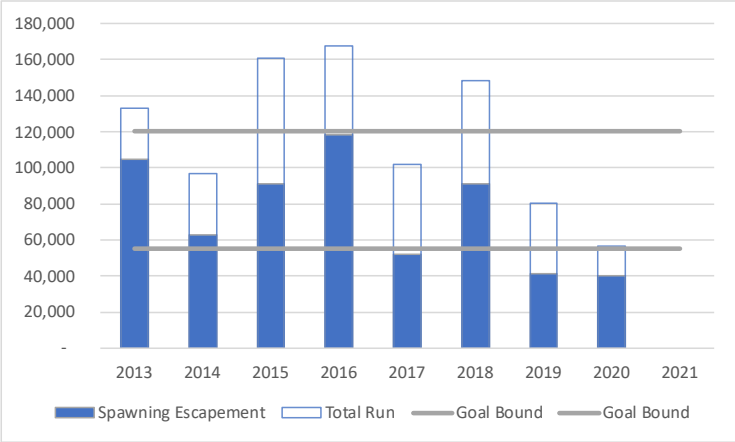

Figure 14. Spawning escapement (and total run) estimates compared to the escapement goal (55,000-120,000), 2013-2021.

Provide for reasonable opportunity for subsistence harvest of king salmon; and a king salmon sport fishery guideline harvest level of 5,000 fish, 20 inches or greater in length.

King salmon harvests have declined in the commercial fishery and have remained relatively stable in subsistence and sport fisheries until 2020, when harvests in both fisheries sharply declined (Figure 15; Table 10).

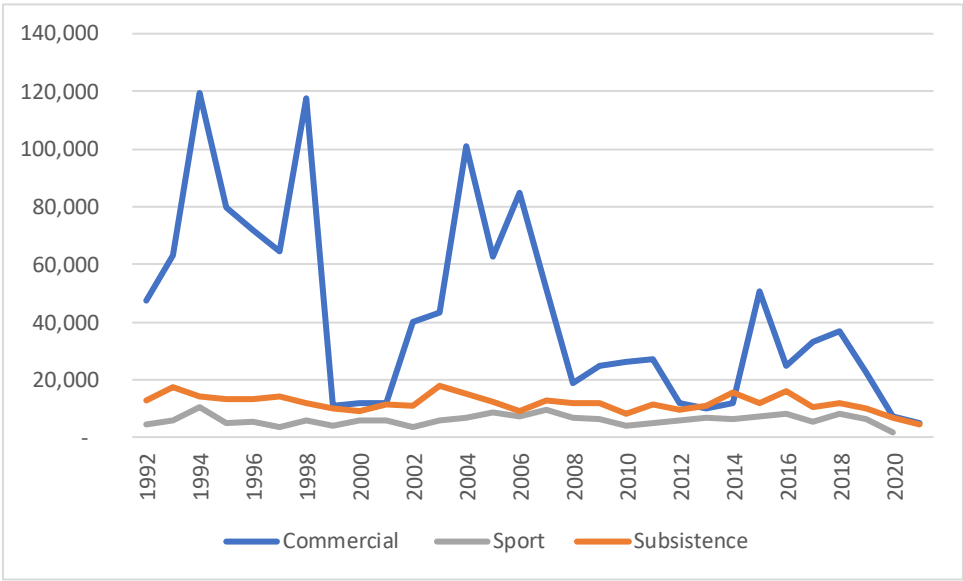

Figure 15. Trends in harvests of Nushagak River king salmon among the commercial, subsistence and sport fisheries, 1992-2021.

The sport fishery guideline harvest level (5,000 king salmon) applies when projected inriver runs do not exceed the inriver goal of 95,000 king salmon. Since 2013, inriver run estimates fell at or below the inriver run goal in 5 years: 2014, 2017 and 2019-2021. Sport harvest estimates are not available for 2021. Harvests in the remaining four years exceeded the guideline harvest level in three years (2014, 2017 and 2019) and fell below in 2020.

Maintain a natural representation of age classes in the escapement.

The Plan's objective to maintain a natural representation of age classes in the escapement has not been addressed in this analysis. Nor has the objective of providing reasonable opportunity for subsistence harvest of king salmon. Addressing the first was beyond the time available to prepare this draft report. The second was beyond the scope. Both, however, are core Plan objectives and should be assessed.

Management Challenges

Many of the recommendations Nelson made in 1987 have been partially or fully carried out. A biological escapement goal was developed in 1992 and subsequently refined in 2012. Development of the Portage Creek sonar has continued through conversion to DIDSON technology, which expanded the portion of the river width ensonified, and the commercial fishery is managed as recommended – by emergency order and using mesh size restrictions to reduce catch rates and achieve a better distribution of escapement through time.

However, several challenges Nelson identified in 1987 – inriver run abundance assessment, overlap between king salmon and sockeye salmon run timing, and size selectivity - remain today. More recently, dynamics have emerged creating new types of challenges. Large record-setting sockeye runs to the Wood and Nushagak Rivers have coincided with poor king salmon runs and exacerbated the difficulties inherent to managing the two species for independent inriver abundance goals. Recent tagging studies and aerial surveys cast considerable uncertainty on the use of sonar-based inriver abundance estimates for managing the Nushagak River fisheries and raised questions after-the-fact on some restrictions predicated on the sonar.

To address these challenges and develop comprehensive recommendations to the Board, the working committee met on numerous occasions over the past three years and discussed possible changes to the NMKSMP for consideration at the November 2022 Bristol Bay meeting. Findings of the committee, including a more robust assessment of current challenges associated with Nushagak River king salmon, will be presented in a separate report.

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Appendix A. 1992 Version, Nushagak-Mulchatna Chinook Salmon Management Plan.

5 AAC 06.361. NUSHAGAK-MULCHATNA CHINOOK SALMON MANAGEMENT PLAN. (a) The purpose of this management plan is to ensure adequate spawning escapement of chinook salmon into the Nushagak-Mulchatna river systems. It is the intent of the Board of Fisheries that Nushagak-Mulchatna chinook salmon be harvested in the fisheries that have historically harvested them. The plan in this section provides management guidelines to the department in an effort to preclude allocation conflicts between the various users of this resource. The department shall manage Nushagak-Mulchatna chinook salmon stocks in a conservative manner consistent with sustained yield principles and the subsistence priority.

(b) The department shall manage the commercial fishery in the Nushagak District to achieve an inriver goal of 75,000 chinook salmon present in the Nushagak River upstream from the department sonar. The inriver goal provides for:

(1) a biological escapement requirement of 65,000 fish;

(2) reasonable opportunity for subsistence harvest, and;

(3) a chinook salmon sport fishery harvest of not more than 5,000 fish.

(c) If the total inriver chinook salmon return in the Nushagak River is projected between 75,000 and 95,000 fish, the inriver chinook salmon sport fishery harvest shall not exceed 6,000 fish.

(d) If the total inriver chinook salmon return in the Nushagak River is projected to be between 40,000 and 74,999 fish, the department shall;

(1) by emergency order, close the directed chinook salmon commercial fishery in the Nushagak District; during a closure under this paragraph, the use of a commercial gillnets with webbing larger than 5 1/2 inches, is prohibited; and

(2) if the projected inriver return of chinook salmon in the Nushagak River is less than 65,000 fish, restrict the chinook salmon sport fishery in the Nushagak River by establishing periods by emergency order during which, at the departments discretion, one or more of the following is in effect;

(A) bag and possession limits are reduced to one (1) fish;

(B) the use of bait is prohibited;

(C) time or area for fishing is reduced;

(D) the chinook salmon sport fishery is closed.

(e) If the total inriver chinook salmon return in the Nushagak River is projected to be less than 40,000, the department shall;

(1) close the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement into the Wood River exceeds 100,000 fish;

(2) close the sport fishery in the Nushagak River to the taking of chinook salmon; and

(3) by emergency order, establish periods during which time or area is reduced for the inriver chinook salmon subsistence fishery in the Nushagak River.

Appendix B. 2019 Version, Nushagak-Mulchatna King Salmon Management Plan.

5 AAC 06.361. Nushagak-Mulchatna King Salmon Management Plan (a) The purpose of this management plan is to ensure biological spawning escapement requirements of king salmon into the Nushagak-Mulchatna river systems. It is the intent of the Alaska Board of Fisheries (board) that Nushagak-Mulchatna king salmon be harvested in the fisheries that have historically harvested them. This management plan provides guidelines to the department in an effort to preclude allocation conflicts between the various users of this resource. The department shall manage Nushagak-Mulchatna king salmon stocks in a conservative manner consistent with sustained yield principles and the subsistence priority.

(b) The department shall manage the commercial and sport fisheries in the Nushagak District as follows:

(1) to achieve an inriver goal of 95,000 king salmon present in the Nushagak River upstream from the department sonar counter; the inriver goal provides for

(A) a biological escapement goal of 55,000 - 120,000 fish;

(B) reasonable opportunity for subsistence harvest of king salmon; and

(C) a king salmon sport fishery guideline harvest level of 5,000 fish, 20 inches or greater in length;

(2) in order to maintain a natural representation of age classes in the escapement, the department shall attempt to schedule commercial openings to provide pulses of fish into the river that have not been subject to harvest by commercial gear;

(3) the department may close the commercial drift or set gillnet fishery if the harvest in the directed commercial king salmon fishery for either gear group is more than two sockeye salmon for every one king salmon.

(c) If the total inriver king salmon return in the Nushagak River is projected to exceed 95,000 fish, the guideline harvest level described in (b)(1)(C) of this section does not apply. (d) If the spawning escapement of king salmon in the Nushagak River is projected to be more than 55,000 fish and the projected inriver return is less than 95,000 fish, the commissioner

(1) shall close, by emergency order, the directed king salmon commercial fishery in the Nushagak District; during a closure under this paragraph, the use of a commercial gillnet with webbing larger than five and one-half inches in another commercial salmon fishery is prohibited;

(2) repealed 5/31/2019;

(3) repealed 5/31/2019;

(e) If the spawning escapement of king salmon in the Nushagak River is projected to be less than 55,000 fish, the commissioner

(1) shall close, by emergency order, the sockeye salmon commercial fishery in the Nushagak District until the projected sockeye salmon escapement into the Wood River exceeds 100,000 fish;

(2) shall close, by emergency order, the sport fishery in the Nushagak River to the taking of salmon and prohibit the use of bait for fishing for all species of fish until the end of the king salmon season specified in 5 AAC 67.020 and 5 AAC 67.022(g); and

(3) shall establish, by emergency order, fishing periods during which the time or area is reduced for the inriver king salmon subsistence fishery in the Nushagak River.

(f) Notwithstanding 5 AAC 06.200, in a directed king salmon commercial fishery, the southern boundary of the Nushagak District is a line from an ADF&G regulatory marker located at Etolin Point at 58° 39.37' N. lat., 158° 19.31' W. long., to 58° 33.92' N. lat., 158° 24.94' W. long. to Protection Point at 58° 29.27' N. lat., 158° 41.78' W. long.

(g) During a directed king salmon commercial fishery in the Nushagak District, drift gillnet and set gillnet fishing periods will be of equal length, but do not have to be open concurrently.

Appendix C. Tables.

Table 1. A chronology of regulatory changes to the Nushagak-Mulchatna River King Salmon Management Plan, 1992-2021.

Year		Modification
1992		Nushagak and Mulchatna King Salmon Management Plan (5 AAC 06.361; Appendix A) is adopted.
1994		Set the sport harvest allocation of 5,000 as a guideline harvest rather than a cap.
1997		Modified the plan directing the department to attempt to schedule commercial openings to provide pulses of chinook salmon into the river that have not been exposed to commercial gear.
		Established an escapement projection of 55,000 king salmon below which inseason restrictions in the sport fishery must be imposed.
2001		Allowed a catch-and-release fishery when the final inriver abundance is projected to be below 55,000 fish but above 40,000 fish. When the king salmon sport fishery is restricted to catch-and-release or is closed for conservation, the use of bait must be prohibited.
2003		Modified provision (d) directing the department to reduce the sport fishing bag limit to 1 per day and in possession, any size, if the projected inrver return falls between 55,000 and 75,000 king salmon.
		Added provision allowing the department to close the commercial drift or set gillnet fishery if the harvest in the directed commercial fishery for either gear group is more than two sockeye salmon for every one king salmon.
2006		Provision added to require, during a directed commercial opening, drift and set gillnet fishing periods to be of equal length, but do not have to be open concurrently.
2012		Modified the biological escapement requirement, inriver goal, and management triggers to reflect changes in inriver sonar operations (Bendix to DIDSON conversion).
2018		Repealed provisions (d)(2) and (3) directing the department to restrict the sport fishery if the projected inriver return falls between 55,000 and 95,000 king salmon.

[a] Source: Dye & Borden (2018), Alaska Board of Fisheries Meeting Information [Internet].

Table 2. Fishery statistics for Nushagak District commercial fishing periods targeting king salmon (directed king salmon openings), 1992-2021. All data are preliminary, as reported in annual management reports.

Year	Number of Openings	Opening Duration (Hrs)		Peak Drift Boat Count	# of Deliveries		# Chinook Harvested (Drift & Set)		Source
					Drift	Set	Directed Fishery	Entire Season	
1992	4	32		200			33,905	47,897	*ADF&G (1993)*
1993	3	23		211			39,536	62,294	*ADF&G (1994)*
1994	5	122.5		290			111,886	118,643	*Browning and Miller (1995)*
1995	7	70		347			64,745	80,180	*ADF&G (1996)*
1996	4	34		252			56,256	73,365	*ADF&G (1997)*
1997	2	16		278			39,003	64,294	*ADF&G (1998)*
1998	5	40		-			97,169	108,486	*ADF&G (1999)*
1999	1	6		279	125	23	563	11,008	*Morstad (2000)*
2000	-	-			-	-	-	12,055	*ADF&G (2001)*
2001	-	-			-	-	-	11,050	*Fair (2002)*
2002	4	30		-	519	594	33,447	39,382	*Weiland et al. (2003)*
2003	2	11		-	140	48	23,008	42,615	*Fair et al. (2004)*
2004	2	9		-	153	58	21,233	93,414	*Westing et al. (2005)*
2005	7	48		-	731	100	30,003	61,854	*Westing et al. (2006)*
2006	9	66	[a]	-	1,000	194	40,503	83,679	*Salomone et al. (2007)*
2007	6	74		-	125	2	2,049	51,350	*Sands et al. (2008)*
2008	2	24		-	26	-	496	18,634	*Jones et al. (2009)*
2009	3	27		-	122	156	2,575	24,058	*Morstad et al. (2010)*
2010	3	21		-	33	35	1,143	25,580	*Salomone et al. (2011)*
2011	-	-			-	-	-	29,811	*Jones et al. (2012)*
2012	-	-			-	-	-	11,501	*Jones et al. (2013)*
2013	1	5			8	9	518	15,175	*Jones et al. (2014)*
2014	4	26	[b]		197	49	3,985	11,448	*Elison et al. (2015)*
2015	-	-			-	-	-	48,968	*Jones et al. (2016)*
2016	-	-			-	-	-	23,783	*Salomone et al. (2017)*
2017	-	-			-	-	-	32,194	*Elison et al. (2017)*
2018	-	-			-	-	-	35,938	*Salomone et al. (2019)*
2019	-	-			-	-	-	21,509	*Tiernan et al. (2021a)*
2020	-	-			-	-	-	6,363	*Tiernan et al. (2021b)*
2021	-	-			-	-	-	4,103	*ADF&G (2021)*

[a] drift and setnet openings managed separately; drift and setnet hours totaled 66 and 108.

[b] drift and setnet openings managed separately; drift and setnet hours totaled 26 and 8.

Table 3. Annual drift gill net permit registration statistics, Nushagak District commercial fishery, 1992-2021.

	Average Daily Registration			Peak Daily Registration			
	Total Permits[a]	Dual Permits		Total Permits[a]	Dual Permits	Peak Date	Source
1992	317			360		20-Jun	*ADF&G (1993)*
1993	250			326		14-Jul	*ADF&G (1994)*
1994	269			304		23-Jun	*Browning and Miller (1995)*
1995	225			374		16-Jun	*ADF&G (1996)*
1996	357			465		11-Jul	*ADF&G (1997)*
1997	386			499		8-Jul	*ADF&G (1998)*
1998	404			526		10-Jul	*ADF&G (1999)*
1999	358			383		30-Jun	*Morstad (2000)*
2000	402			598		13-Jul	*ADF&G (2001)*
2001	467			705		1-Jul	*Fair (2002)*
2002	279			465		2-Jul	*Weiland et al. (2003)*
2003	407			512		3-Jul	*Fair et al. (2004)*
2004	362			399		8-Jul	*Westing et al. (2005)*
2005	527			678		25-Jun	*Westing et al. (2006)*
2006	564			687		4-Jul	*Salomone et al. (2007)*
2007	475			741		30-Jun	*Sands et al. (2008)*
2008	354			470		1-Jul	*Jones et al. (2009)*
2009	342			431		25-Jun	*Morstad et al. (2010)*
2010	405			453		1-Jul	*Salomone et al. (2011)*
2011	424			508		1-Jul	*Jones et al. (2012)*
2012	282			395		30-Jun	*Jones et al. (2013)*
2013	313	49		372	60	30-Jun	*Jones et al. (2014)*
2014	389	65		590	119	27-Jun	*Elison et al. (2015)*
2015	332	53		474	84	26-Jun	*Jones et al. (2016)*
2016	364	167		518	244	28-Jun	*Salomone et al. (2017)*
2017	403	167		636	244	30-Jun	*Elison et al. (2017)*
2018	803	412		1053	548	27-Jun	*Salomone et al. (2019)*
2019	603	140		861	207	24-Jun	*Tiernan et al. (2021a)*
2020	402	84		697	168	26-Jun	*Tiernan et al. (2021b)*
2021	619	151		855	225	27-Jun	*Tim Sands, pers. comm.*

[a] Total permit sum includes dual boat registrations.

Table 4. Start dates for initial, intensive, and continuous fishing periods in the commercial fishery for sockeye salmon, and total sockeye run, Nushagak District, 1992-2021. All data are preliminary, as reported in annual management reports (See Table 3 for data sources).

	Start Date[a]		Intensive Fishing[b] Start Date		Continuous Fishing[c] Start Date		Sockeye Salmon Total Run	
Year	Drift	Setnet	Drift	Setnet	Drift	Setnet	Pre-season Forecast	Actual
1992	27-Jun	27-Jun	10-Jul	10-Jul	12-Jul	12-Jul	4,600,000	5,187,351
1993	23-Jun	23-Jun	30-Jun	30-Jun	7-Jul	7-Jul	5,100,000	7,624,224
1994	2-Jul	2-Jul	9-Jul	9-Jul	15-Jul	15-Jul	5,300,000	5,881,064
1995	26-Jun	26-Jun	7-Jul	7-Jul			5,300,000	6,704,568
1996	24-Jun	24-Jun	10-Jul	10-Jul			5,800,000	8,303,614
1997	30-Jun	30-Jun [d]					5,700,000	4,639,699
1998	5-Jul	5-Jul	15-Jul	15-Jul			5,300,000	5,402,866
1999	2-Jul	2-Jul	6-Jul	6-Jul			4,900,000	8,533,542
2000	28-Jun	28-Jun		12-Jul	17-Jul	14-Jul	5,490,000	8,484,050
2001	24-Jun	24-Jun		2-Jul	15-Jul	10-Jul	7,800,000	7,289,194
2002	28-Jun	27-Jun [d]		29-Jun			5,200,000	4,538,394
2003	22-Jun	23-Jun	24-Jun	24-Jun	12-Jul	29-Jun	6,700,000	8,907,474
2004	21-Jun	20-Jun	29-Jun	24-Jun [e]	17-Jul	1-Jul	7,300,000	8,232,466
2005	21-Jun	21-Jun	25-Jun	26-Jun [e]	17-Jul	30-Jun	7,400,000	10,090,869
2006	25-Jun	25-Jun	26-Jun	26-Jun	12-Jul	27-Jun	7,500,000	15,923,444
2007	25-Jun	24-Jun	5-Jul	25-Jun	15-Jul	6-Jul	8,900,000	10,604,183
2008	26-Jun	26-Jun	30-Jun	27-Jun	14-Jul	2-Jul	10,410,000	10,160,079
2009	23-Jun	22-Jun	24-Jun	23-Jun [f]	12-Jul	3-Jul	8,930,000	9,988,322
2010	25-Jun	25-Jun	9-Jul	8-Jul	15-Jul	12-Jul	10,600,000	11,100,363
2011	26-Jun	25-Jun	26-Jun	25-Jun [e]	9-Jul	2-Jul	9,500,000	6,922,015
2012	28-Jun	26-Jun	7-Jul	11-Jul	13-Jul	13-Jul	6,800,000	4,098,632
2013	22-Jun	21-Jun	22-Jun	21-Jun	5-Jul	25-Jun	5,100,000	5,648,859
2014	25-Jun	24-Jun	25-Jun	25-Jun	7-Jul	30-Jun	8,900,000	10,171,331
2015	22-Jun	21-Jun	27-Jun	27-Jun	9-Jul	3-Jul	8,100,000	8,987,563
2016	19-Jun	19-Jun	26-Jun	26-Jun	16-Jul	9-Jul	10,300,000	10,569,247
2017	22-Jun	21-Jun	22-Jun	22-Jun	6-Jul	26-Jun	8,300,000	20,027,749
2018	20-Jun	19-Jun	24-Jun	19-Jun	16-Jul	13-Jul	21,200,000	33,755,636
2019	20-Jun	20-Jun	22-Jun	20-Jun	16-Jul	23-Jun	9,990,000	17,794,604
2020	25-Jun	25-Jun	4-Jul	1-Jul	12-Jul	6-Jul	12,030,000	12,656,061
2021	24-Jun	24-Jun	25-Jun	25-Jun [e]	11-Jul	29-Jun	14,760,000	27,637,560

[a] Dates represent the day on which the Nushagak Section opened to commercial fishing for sockeye salmon. From 1992-1998, the entire district including Nushagak Section was opened to both gear types. Beginning in 1998, openings were established for each gear type and section independently.

[b] Dates represent the day on which fishing began to occur on an every-tide basis, regardless of number of hours fished per tide.

[c] Dates represent the day on which fishing was extended 'until further notice' by EO.

[d] After July 5 (in both 1997 and 2002), all fishing occurred in the WRSHA; the district did not re-open.

[e] A 1-tide break in fishing occurred for the drift fleet (July 5, 2004; June 30, 2005; July 1, 2011, June 29, 2021).

[f] Two breaks in fishing occurred for the drift fleet (June 27 and July 8, 2009).

Table 5. A chronology of significant sport fishing regulation changes for the Nushagak and Mulchatna Rivers, 1990-2021.[a]

Effective year	Bay-Wide Sport	Nushagak-Mulchatna Sport	Nushagak-Mulchatna King Salmon Plan
1990		Season established from January 1 to July 25 upstream of and including the Iowithla River.	
1992		Gear restricted to single-hook artificial lures for the portion of the Mulchatna River between the Koktuli and Stuyahok rivers.	
1992			Nushagak and Mulchatna King Salmon Management Plan (5 AAC 06.361) is adopted. Sport harvest capped at 5,000 fish; escapement projection of 65,000 established as trigger for inseason restrictions in the sport fishery.
1994			Sport allocation set as aguideline harvest rather than a cap.
1997	Bay-wide annual harvest limit of 5 king salmon was adopted. Guides prohibited from retaining any species of fish while guiding.	Bag and possession limit reduced to 2 king salmon per day, only 1 over 28 inches. Annual harvest limit of 4 king salmon adopted for the entire Nushagak–Mulchatna drainage. Kokwok River and Nushagak River upstream from its confluence with Harris Creek closed to fishing for king salmon. July 31 spawning season closure adopted for Nushagak River drainage downstream of Iowithla River outlet.	Escapement projection of 55,000 king salmon established as trigger below which inseason restrictions in the sport fishery must be imposed.
2001	Anglers prohibited from removing king salmon from the water if the fish were to be released. Bag and possession limit for king salmon under 20 inches of 10 per day is adopted bay-wide except Nushagak drainage.		Allow a catch-and-release fishery when the final inriver abundance is projected to be below 55,000 fish but above 40,000 fish. Stipulates that when the king salmon sport fishery is restricted to catch-and-release or is closed for conservation, the use of bait must be prohibited.
2003		Bag and possession limit for king salmon under 20 inches of 5 per day is implemented on the Nushagak drainage. King salmon under 20 inches do not count toward the annual limit of 4 and are in addition to the bag limit for king salmon 20 inches or longer.	If inriver projections fall below 75,000, a bag limit of 1 per day, 1 in possession, no size limit, is implemented.
2012		From May 1 to July 31 only 1 single-hook or single-hook lure may be used and the use of bait is allowed UNTIL an angler harvests a daily bag limit of king salmon 20 inches or greater in length, then that angler can only fish with 1 UNBAITED, single-hook or single-hook lure for the remainder of that day.	Plan amended to reflect counts from the new dual frequency identification sonar counter.
2018			Repealed provisions (d)(2) and (3) directing the department to restrict the sport fishery if the projected inriver return falls between 55,000 and 95,000 king salmon.

[a] Source: Dye & Borden (2018), Alaska Board of Fisheries Meeting Information [Internet].

Table 6. Emergency orders issued for the sport and subsistence fisheries under direction of the Nushagak-Mulchatna King Salmon Management Plan, 1992-2021.[a]

Year	Effective Date	Sport	Subsistence
1992			
1993			
1994			
1995			
1996	Preseason	Preseason: Bag and possession limit reduced from 3, 2 over 28 inches, to one of any size.	
	9-Jul	Catch and release only for king salmon.	
1997	Preseason	Bag and possession limit reduced from 3, 2 over 28 inches, to one of any size.	
	30-Jun	Catch and release only for king salmon.	
1998			
1999	30-Jun	Seasonal limit reduced from 4 to 2 fish.	
	2-Jul	Fishing for king salmon closed.	
	6-Jul	Season re-opened with seasonal limit of 2 fish.	
	2-Jul		Fishing in the Nushagak River drainage reduced to 3 days per week until August 1.
2000			
2001			
2002			
2003			
2004			
2005			
2006			
2007	7-Jul	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size.	
2008			
2009			
2010	27-Jun	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size.	
	30-Jun	Retention and use of bait prohibited.	
	5-Jul	Fishing for king salmon closed, bait prohibited.	
	6-Jul		Fishing in the Nushagak River drainage reduced to 3 days per week until August 1.
2011	24-Jun	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size. Annual limit reduced from 4 to 2 fish.	
	13-Jul	Annual limit restored to 4 fish.	
2012	28-Jun	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size. Annual limit reduced from 4 to 2 fish.	
	3-Jul	Annual limit restored to 4 fish.	
	7-Jul	Bag and possession limit restored to 2, 1 over 28 inches.	
2013			
2014	7-Jul	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size.	
2015			
2016			
2017	23-Jun	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size. Annual limit reduced from 4 to 2 fish.	
2018			
2019	3-Jul	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size. Annual limit reduced from 4 to 2 fish.	
	10-Jul	Retention and use of bait prohibited.	
2020	10-Jul	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size. Annual limit reduced from 4 to 2 fish.	
2021	27-Jun	Bag and possession limit reduced from 2, 1 over 28 inches, to one of any size. Annual limit reduced from 4 to 2 fish.	

[a] Source: Alaska Department of Fish and Game Emergency Orders and Press Releases [Internet], Morstad (2000), Salomone et al. (2011).

Table 7. ADF&G Alaska Sport Fishing Survey summary of angler effort and harvest in the Nushagak River, 1992-2020.

		Harvest[b]		
Year	Angler Days[a]	Below Sonar	Above Sonar	Total
1992	10,031	1,844	2,911	4,755
1993	14,168	2,408	3,492	5,899
1994	15,460	4,436	6,191	10,626
1995	16,410	2,238	2,713	4,951
1996	14,736	2,346	3,045	5,390
1997	10,958	931	2,567	3,497
1998	17,480	1,640	4,188	5,827
1999	15,028	934	3,304	4,237
2000	18,285	1,389	4,628	6,016
2001	18,951	1,600	4,299	5,899
2002	13,396	1,193	2,500	3,693
2003	16,834	2,203	3,752	5,955
2004	18,869	2,567	4,339	6,906
2005	20,050	2,863	5,702	8,565
2006	20,045	3,166	4,307	7,473
2007	18,457	3,581	6,088	9,669
2008	14,936	3,305	3,395	6,700
2009	15,051	2,451	3,903	6,354
2010	9,668	1,659	2,248	3,907
2011	11,329	1,542	3,302	4,844
2012	14,973	1,833	4,098	5,931
2013	16,082	1,971	4,714	6,685
2014	17,576	2,369	3,891	6,260
2015	13,766	2,514	4,720	7,234
2016	17,737	3,053	5,358	8,411
2017	13,299	2,834	2,837	5,671
2018	13,705	3,715	4,477	8,192
2019	10,460	3,768	2,538	6,306
2020	3,427	1,496	454	1,950
Mean 92-96	14,161	2,654	3,670	6,324
Mean 16-20	11,726	2,973	3,133	6,106
Mean 92-20	14,868	2,340	3,792	6,131

[a] 1996-2020; Alaska Sport Fishing Survey database [Internet], 1995; Howe et al.(1996), 1994; Howe et al.(1995), 1993: Mills (1994), 1992; Mills (1993). Only estimates for Nushagak River proper were included, i.e. estimates exclude Mulchatna and Nuyakuk Rivers.

[b] 1992-2017; Dye and Borden (2018), 2018 and 2019; Jason Dye personal communication, 2020; Lee Borden personal communication.

Table 8. ADF&G Freshwater logbook summary of guided sport fishing in the Nushagak drainage, 2006-2018.

Year	Businesses	Guides	Trips	Clients[a]	Client Days	Crew Days[b]	Harvest[c]
2006	65	247	3,422	2,971	9,960	395	
2007	62	250	3,147	2,891	9,111	124	4,324
2008	60	240	3,140	2,836	9,259	143	4,621
2009	52	183	2,163	1,931	6,309	124	3,030
2010	47	155	1,697	1,401	4,715	136	1,567
2011	47	168	1,864	1,895	4,970	74	2,140
2012	46	189	2,504	2,299	7,105	102	3,827
2013	47	217	2,932	2,553	8,096	174	3,823
2014	51	215	3,066	2,883	8,760	181	4,095
2015	50	227	3,492	3,091	9,903	193	4,613
2016	53	234	3,186	2,770	8,934	159	4,273
2017	48	218	2,468	2,395	6,878	125	2,925
2018	41	223	2,786	2,644	7,827	136	4,647
Mean	51	213	2,759	2,505	7,833	159	3,657

[a] Clients excludes youth anglers and anglers without a sport fishing license written. Crew is also excluded, since they aren't clients.

[b] Crew days are the number of days crew fished and excludes client days.

[c] Source: 2006-2016; Dye and Borden (2018), 2017 and 2018; Jason Dye personal communication.

Table 9. Nushagak Bay watershed subsistence fishery parameter estimates, 1992-2021.[a]

Year	Subsistence Permits Issued	King Salmon Harvest	Harvest/ Permit
1992	476	13,588	29
1993	500	17,709	35
1994	523	15,490	30
1995	484	13,701	28
1996	481	15,941	33
1997	538	15,318	28
1998	562	12,258	22
1999	548	10,057	18
2000	541	9,470	18
2001	554	11,760	21
2002	520	11,281	22
2003	527	18,686	35
2004	511	15,610	31
2005	502	12,529	25
2006	461	9,971	22
2007	496	13,330	27
2008	571	12,960	23
2009	530	12,737	24
2010	528	9,150	17
2011	525	12,461	24
2012	517	10,350	20
2013	582	11,567	20
2014	581	16,049	28
2015	591	12,117	21
2016	649	16,576	26
2017	563	11,122	20
2018	589	12,206	21
2019	620	10,206	16
2020	585	8,350	14
2021	656	5,349	8
Mean 92-96	493	15,286	31
Mean 17-21	603	9,447	16
Mean 92-21	544	12,597	23

[a] Source: 1992-2015; Halas and Neufeld (2018), 2016-2019; Gayle Neufeld, ADF&G, personal communication, 2020-2021; Terri Lemons, ADF&G, personal communication. Estimates include the Nushagak, Wood, Snake and Igushik River drainages. 2020 and 2021 data is preliminary.

Table 10. King salmon commercial, subsistence, and sport harvest, and escapement for the Nushagak River drainage, 1992-2021.[a]

		Harvests Below Sonar				Harvests Above Sonar		
Year	Total Run	Commercial	Subsistence	Sport	Inriver Sonar Estimate	Subsistence	Sport	Spawning Escapement[b]
1992	232,103	47,563	10,322	1,844	172,374	2,498	2,911	166,965
1993	283,393	62,979	14,498	2,408	203,508	2,919	3,492	197,098
1994	334,606	119,480	11,048	4,436	199,643	3,331	6,191	190,121
1995	271,127	79,943	10,800	2,238	178,146	2,419	2,713	173,014
1996	193,141	72,123	10,217	2,346	108,456	3,063	3,045	102,348
1997	247,327	64,390	11,397	931	170,610	2,981	2,567	165,062
1998	371,638	117,820	7,717	1,640	244,461	4,429	4,188	235,845
1999	149,248	11,178	7,450	934	129,686	2,477	3,304	123,906
2000	138,044	12,120	7,247	1,389	117,288	1,979	4,628	110,682
2001	213,306	11,746	7,972	1,600	191,988	3,372	4,299	184,317
2002	229,485	40,039	6,946	1,193	181,307	4,103	2,500	174,704
2003	225,594	43,485	13,399	2,203	166,507	4,448	3,752	158,307
2004	356,240	100,846 [c]	10,644	2,567	242,183	4,422	4,339	233,422
2005	307,701	62,764	7,951	2,863	234,123	4,471	5,702	223,950
2006	218,861	84,881	6,131	3,166	124,683	3,012	4,307	117,364
2007	125,435	51,831	9,564	3,581	60,459	3,411	6,088	50,960
2008	128,752	18,968	9,149	3,305	97,330	2,571	3,395	91,364
2009	117,936	24,693	9,312	2,451	81,480	2,796	3,903	74,781
2010	94,245	26,056	6,345	1,659	60,185	1,845	2,248	56,092
2011	145,232	26,927	8,485	1,542	108,278	2,981	3,302	101,995
2012	195,106	11,952	7,236	1,833	174,085	2,398	4,098	167,589
2013	132,782	10,213	6,889	1,971	113,709	4,201	4,714	104,794
2014	96,639	11,868	11,942	2,369	70,460	3,890	3,891	62,679
2015	160,713	50,675	9,505	2,514	98,019	2,209	4,720	91,090
2016	167,540	24,937	14,182	3,053	125,368	1,933	5,358	118,077
2017	102,083	33,376	8,912	2,834	56,961	1,827	2,837	52,297
2018	148,007	36,626	10,427	3,715	97,239	1,408	4,477	91,354
2019	80,418	22,725	7,162	3,768	46,763	2,967	2,538	41,258
2020	56,705	7,452	4,725	1,496	43,032	2,265	454	40,313
2021		4,820	3,159		55,222	1,297		
Average								
1992-1996	262,874	76,418	11,377	2,654	172,425	2,846	3,670	165,909
2016-2020	110,951	25,023	9,082	2,973	73,873	2,080	3,133	68,660
1992-2020	190,462	44,471	9,227	2,340	134,425	2,987	3,792	127,647
Percent								
1992-1996		79%	12%	3%		3%	4%	
2015-2019		59%	21%	7%		5%	7%	
1992-2019		71%	15%	4%		5%	6%	

[a] Source: 1992-2011 Buck et. al 2012 with the following exceptions: Commercial Harvest data source; ADF&G Fish Ticket Data, Subsistence Harvest data for 2004, 2006, 2008, 2010 and 2011; Jordan Head (ADF&G) personal communication, 2012-2021; Jordan Head (ADF&G) personal communication, 2021 Subsistence Harvest data; Terri Lemons (ADF&G) personal communication.

[b] Spawning escapement estimated from inriver sonar abundance less upriver harvest for all years except 1997. 1997 estimate based on aerial surveys that have been expanded to DIDSON Equivilants (Buck et al. 2012).

[c] Commercial Harvest includes harvest of 4,087 Chinook salmon that were caught in General District 320-05 as they are most likely of Nushagak origin. (Buck et al 2012)

PC55

Name: John O'Connor

Community of Residence: Wasilla, Alaska

Comment:

Way point map for proposal No. 41

BRISTOL BAY PROPOSAL No. 41 WAY POINT MAP

HORIZONTAL CONTROL FOR THIS SURVEY IS BASED ON A NGS OPUS STATIC SOLUTION.
NGS POST PROCESSED DATA COLLECTED AND COMPUTED LAT, AND LON FOR GPS SETUP.

ELEVATION CONTROL NOTE:
THE ELEVATIONS ON THIS SURVEY ARE BASED ON NOAA TIDAL BENCH MARK 5621 B 2012
ELEVATION=1.399 METERS ABOVE MHW
MHW= 5.757 METERS
PER NOAA'S DATA SHEET FOR CLARKS POINT TIDAL BENCH MARKS
DATA SHEET ATTACHED.

SURVEYOR'S CERTIFICATE:

I, JOHN O'CONNOR, PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I AM DULY LICENSED TO PRACTICE LAND SURVEYING IN THE STATE OF ALASKA AND THAT THIS PLAT REPRESENTS A SURVEY MADE BY ME, THAT THE MONUMENTS SHOWN HEREON ACTUALLY EXIST AS DESCRIBED, AND THAT ALL DIMENSIONS AND OTHER DETAILS ARE CORRECT.

John O'Connor 11/14/2022

JOHN P. O'CONNOR LS 10406 DATE

STATE OF ALASKA
JOHN P. O'CONNOR
LS-10406
DATE11/14/2022
REGISTERED PROFESSIONAL LAND SURVEYOR

PC56

United States Department of the Interior

Office of Subsistence Management
1011 East Tudor Road MS 121
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:
OSM.22117.JK

NOV 10 2022

Ms. Märit Carlson-Van Dort, Chair
Alaska Board of Fisheries
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, Alaska 99811-5526

Dear Chair Carlson-Van Dort:

The Alaska Board of Fisheries will consider 52 proposals at its Bristol Bay Finfish Meeting from November 29-December 3, 2022.

The Office of Subsistence Management (OSM), working with other Federal agencies, has reviewed the proposals and believes that adoption of any of these proposals will not have significant impacts on Federal subsistence users or fisheries. During the meeting, OSM may wish to comment on other agenda items that may impact Federally qualified subsistence users.

We appreciate the opportunity to comment on these important regulatory matters and look forward to continuing to work with the Alaska Board of Fisheries and the Alaska Department of Fish and Game.

Sincerely,

Amee R. Howard
Assistant Regional Director, Acting
Office of Subsistence Management

cc: Anthony Christianson, Chair, Federal Subsistence Board
Interagency Staff Committee
Benjamin Mulligan, Alaska Department of Fish and Game, Anchorage
Art Nelson, Alaska Department of Fish and Game, Juneau
Mark Burch, Alaska Department of Fish and Game, Palmer
Administrative Record, Office of Subsistence Management, Anchorage

Proposal 17: I am in support of this. I have guided in Bristol Bay for 4 seasons now and have seen overpopulated rivers and creeks. This is supposed to be a wilderness experience in remote Alaska. It sounds like the Naknek is headed in the direction of a present-day Kenai River which is a monstrosity of a fishery with the amount of angler per day.

Personally, I think with how many lodges fish the Naknek, 8 anglers might be too many still. I will leave that up to the board to decide. But overall, something needs to be done to keep the fishery from getting pounded into extinction.

Proposal 19: I am not in support of this. Although I believe making it a single, barbless fishery would accomplish what Mr. Klutsch is going for.

Proposal 21: I support this. It is safe to say non-residents come to this part of Alaska for catch and release fisheries. So why not just add it to the regulation?

Proposal 24: I am in support of this.

Proposal 28: I am in support of this. It is clear that the King numbers in the Nush are declining over the past decades so this new regulation will only help increase those numbers and let those fish spawn in peace. If this is not past I will be really surprised.

Proposal 30: I am in support of this. Four days throughout the summer is not asking too much. It will boost morale in the community along with getting kids outside and enjoy their ancestorial lands.

Proposal 163: I am against this.

PC58

PVOA BOF Bristol Bay Finfish
PO Box 232 Petersburg, AK 99833
Petersburg Vessel Owner's Association
(907) 772-9323
email: pvoa@gci.net

November 12, 2022

Alaska Department of Fish and Game
Board of Fisheries
PO Box 115526
Juneau, AK 99811
Via email: dfg.bof.comments@alaska.gov

RE: Comments on Bristol Bay Finfish November 29-December 3, 2022

Dear Madam Chair Carlson-Van Dort and Board of Fisheries Members,

Petersburg Vessel Owner's Association (PVOA) is composed of 85 members participating in a wide variety of species and gear type fisheries in state and federally managed waters and businesses supportive to the industry. PVOA members fish throughout Alaska from Southeast to the Bering Sea. Targeted species include salmon, herring, halibut, sablefish, crab, shrimp, sea cucumbers, and geoducks.

Thank you for the opportunity to comment on the following proposals:

Proposals 11-13 – Oppose

PVOA Members believe these changes in mesh size and time/area may not have big impacts on the sockeye fishery during this current period of large returns. However, we are concerned for the effectiveness of the fleet in future, smaller runs when salmon will be larger. Additionally, we believe changes in time/dates are not warranted as ADF&G currently uses precaution in selecting opening days and times to ensure king salmon escapement while trying to prevent sockeye over escapement.

Proposals 33-35 – Oppose

PVOA members support the current time/area allocation in regulation for the drift gillnet and set gillnet fleets.

Proposals 42-45 – Oppose

These proposals would be a major disruption to established fishing practices that vessel owners and crew have built businesses on. PVOA members don't want to disincentivize the practice of using dual permits as it is often an entry level avenue for the next generation of fishermen. The evolution of a fishing business often begins by crewing, followed by investing in permits/quota, and ultimately leasing/purchasing boats. Bristol Bay's dual permit regulations are an important intermediate step for hundreds of crewmen to take the plunge from crew to captain.

PVOA BOF Bristol Bay Finfish
PO Box 232 Petersburg, AK 99833
Petersburg Vessel Owner's Association
(907) 772-9323
email: pvoa@gci.net

Additionally, under current regulations, dual permits significantly reduce the amount of gear in the water and therefore opportunity to lose gear.

Proposals 46-47 – Oppose

As mentioned in previous proposals, dual regulations are an important entry level step for many crewmen to grow a fishing business for themselves. PVOA is opposed to these proposals that would undermine that practice and lead to consolidation of assets within the fleet.

Proposal 58 – Support

ADF&G managers already have the authority to do this under Emergency Order regulations. However, we support the intention of the proposal to provide increased commercial harvest opportunity in the Naknek River Special Harvest Area to prevent over escapement.

Thank you for your time and dedication in considering public comments. We are happy to answer any question in by phone or by email at: pvoa@gci.net.

Respectfully,

Megan O'Neil

Megan O'Neil
Executive Director

PC59

Name: kim rice

Community of Residence: girdwood alaska

Comment:

Proposal 35 yes. support proposal as written

38. yes. 150 ft is enough

39 no. lease covers net location only

43 yes.

46 no. no stacking

47 no. no stacking

49-54 no. our management plans are based on terminal fisheries

56 no. drop card

59 no. this is part of Egegik allocation plan it allows some fish to enter river to spread harvest out among setnets. it works

PC60

Name: Chris Roach

Community of Residence: Little falls, Minnesota

Comment:

Supporting my ugashik set net association being a member and a set netter in the ugashik district.

PC61

Name: MICHAEL SCHOLS

Community of Residence: WITTMANN, ARIZONA

Comment:

Proposal 35 I oppose. 1. If this proposal did get changed from 100 feet to 300 feet of the offshore end of a set gillnet it would be devastating to drift gillnet fisherman. It is well documented that in certain years a huge majority of the salmon returning to Bristol Bay, do return in the very shallow water. Moving drift fisherman futher offshore would create even a bigger allocation disadvantage. Please " see attached "sheets for Allocation of Bristol Bay drift and set net harvest for 2021 and 2022.

2. If this proposal did get changed, certain fishing district boundaries would have to be changed, causing ADF&G, Enforcement, and fishermen logistical nightmares.

3. It would be very, very, hard to gauge how far a person is off of a set gillnet at 300 feet, creating more hardship to drift fishermen.

Proposals 42,43, and 44. I oppose these proposals as I beleive we should continue with ths D permit system to get the fleet size reduced to the CFEC adopted optimun number of drift permits to 900-1400 based on a set of statutory standards.

Proposals 46 and 47 I strongly agree with. The drift and set net fleet has become super efficient in the last five years. By allowing one person to hold and fish two permits in their name would greatly help reduce the number of drift boats fishing. Less boats equals less nets in the water equals more fish for the people who are participating. It would help with safety, enforcement, and productivty for all involved.

Proposals 49-54 I strongly agree with. It just makes great sense to open up the general area to be fished after all escapment goals have been met. I do not think there are very many drift or set net fishermen in Bristol Bay who would oppose these proposals.

Proposal 55 I strongly agree with. It would make a very confusing matter simple for fishermen and enforcement.

Thank you for your time,

Michael Schols SEE ATTACHED

Table 6.–2021 Chinook salmon preliminary harvest data and 20-year average by district.

District	2001–2020 Average Chinook salmon harvest	2021 Chinook salmon harvest
Naknek-Kvichak	1,714	604
Egegik	784	318
Ugashik	996	358
Nushagak	34,632	4,103
To iak	4,970	725
Totals	43,096	6,108

Table 7.–Allocation of Bristol Bay drift and set gillnet harvest, 2021.

District	Drift gillnet percent of harvest allocated /caught	District set gillnet percent of harvest allocated /caught	Section set gillnet percent of harvest allocated /caught
Naknek-Kvichak	84% / 75%	16% / 25%	Naknek: 8% / 13% Kvichak: 8% / 12%
Egegik	86% / 84%	14% / 16%	–
Ugashik	90% / 87%	10% / 13%	–
Nushagak[a]	74% / 81 %	26% / 19%	Nushagak: 20% / 16% I ushik: 6% / 3%

[a] Wood River Special Harvest Area harvest was entirely set gillnet and is included in the 19% listed above.

Table 6.–2022 Chinook salmon preliminary harvest data and 20-year averages by district.

District	2002–2021 Average Chinook salmon harvest	2022 Chinook salmon harvest
Naknek-Kvichak	1,714	1,129
Egegik	760	272
Ugashik	968	277
Nushagak	34,260	5,325
Togiak	4,956	1,371
Totals	42,658	8,374

Table 7.–Allocation of Bristol Bay drift and set gillnet harvest, 2022.

District	Drift gillnet percent of harvest allocated /caught	District set gillnet percent of harvest allocated /caught	Section set gillnet percent of harvest allocated /caught
Naknek-Kvichak	84% / 75%	16% / 25%	Naknek: 8% / 14% Kvichak: 8% / 11%
Egegik	86% / 79%	14% / 21%	–
Ugashik	90% /89%	10% / 11%	–
Nushagak [a]	74% /82 %	26% / 18%	Nushagak: 20% / 13% Igushik: 6% / 2% Wood River 3%

[a] Wood River Special Harvest Area harvest was entirely set gillnet and is included in the 20% listed above.

PC62

Name: Scott Schumacher

Community of Residence: Livingston, MT

Comment:

I have guided sport fishermen in the region for 36 years. I am supporting Proposals 11,13, 18, 30, and 31 because I believe they can help increase king numbers (11&13) and improve the sport fishing quality in the Bristol Bay region.

I am opposing proposal 28 because it doesn't make much sense for the Nuyakuk river and Nushagak above the confluence. There is hardly any pressure in those areas, and the king spawning habitat is protected by the current regulation of no king fishing above Harris creek on the Nush and the season closure date. I'm not sure about the Mulchatna river portion as I have not guided there. If a regulation like this is made maybe it should be only for the Mulchatna.

PC63

Name: ROBERT SEID

Community of Residence: SAN DIEGO, CA

Comment:

Proposal #53

I support this proposal. It would greatly reduce the risk required to compete with such an "over the line" fishery. Once escapement goals are met, more space would allow for a more fair and equitable fishery for permit holders and their crew.

PC64

Name: Ryan Stomberg

Community of Residence: Portales, New Mexico

Comment:

STRONGLY OPPOSE: 43, 44

STRONGLY APPROVE: 47, 48, 49, 51-55

PC65

Name: Reid Ten Kley

Community of Residence: Vancouver, WA

Comment:

I support proposal 40 and wish to add this map in order to clarify this issue, and provide context regarding where the current GPS coordinates are, and where they are proposed to move to. SEE ATTACHED

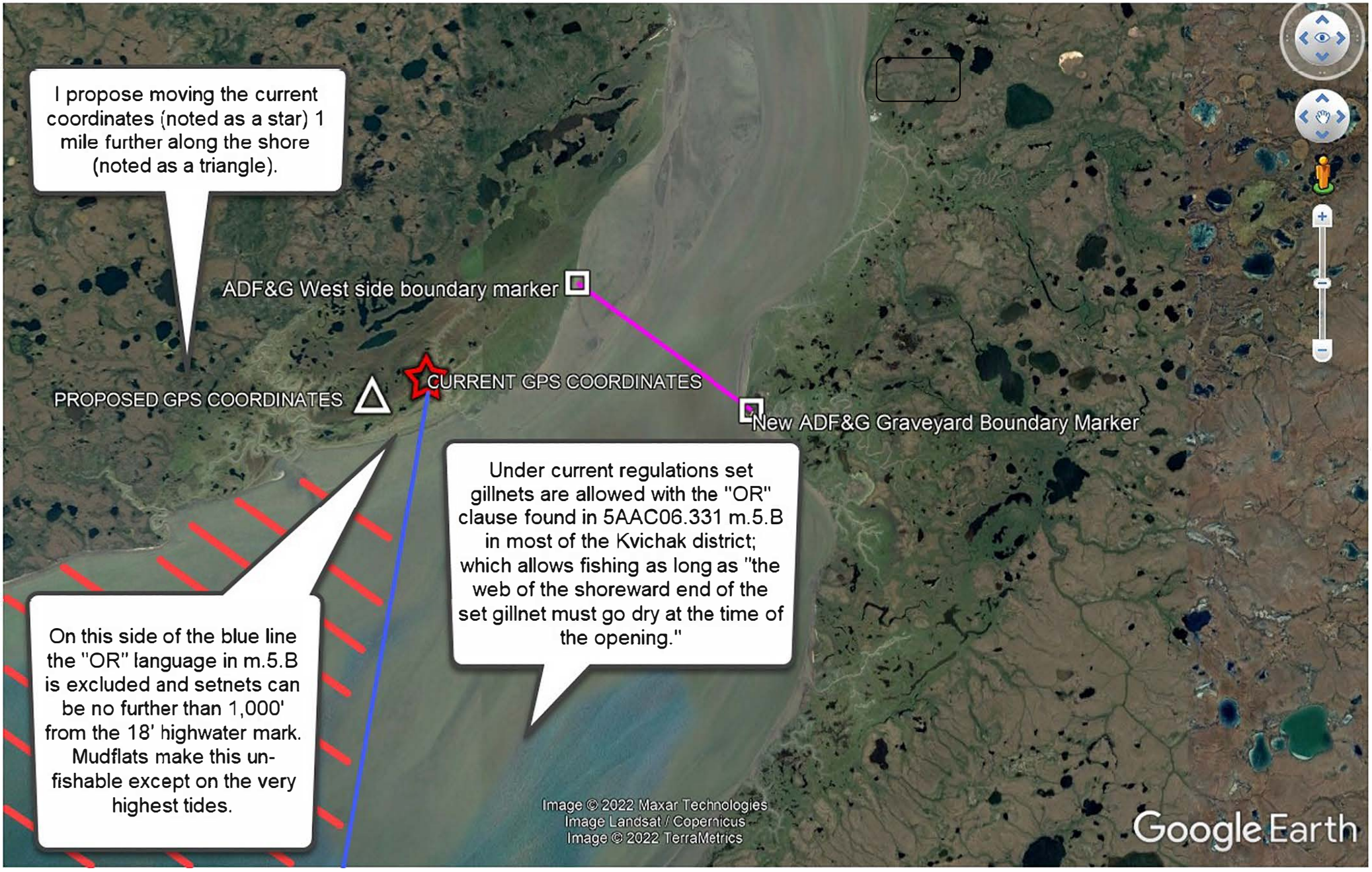
I support proposal 35 for the reasons the author outlines, longer nets make it increasingly more likely for drift nets to become entangled in a setnet and I have often seen boats towing under full power to get off a setnet buoy which is dangerous for the setnet fishermen and can cause significant lost fishing time and damage to gear. Often times they become entangled due to extreme currents or wind which are very difficult to overcome with a 200 fathom net in a fishery such as Bristol Bay.

I support proposals 37, 37, and 38

The main advantage of a super long tow line is to enable fishing contrary to regulations where the drift boat lets the end of the net go dry in shallow water. According to current regulations drift nets and boats are meant to drift, not become stationary. This strategy of fishing is very productive, but often results in low-quality fish that are damaged due to excessively long sets (several hours), and exposed to extreme towing (in order to keep the net mostly wet). A reasonably long tow line as proposed in these three proposals would not hinder legal operation of a drift net.

Comment for Proposal 40

PC65



Comments to the Board of Fish for BB finfish meeting by Ugashik Setnet Assoc.

The Ugashik Setnet Association is a vital and active association. We have held 6 meetings in 2022 and commonly get 40% of all Ugashik District setnet permit holders at our meetings. 65% of all setnet permits in the Ugashik District are dues paying members. Non-dues paying members are always included in our communications as well.

The Ugashik Setnet Association SUPPORTS proposal no. 15

We are in support of **proposal 15** to allow fishwheels to be used for subsistence in Ugashik Bay and River. The basket size can regulate the amount of fish caught, the fish would be higher quality then nets, and it would be a positive way to get young people interested in subsistence fishing.

The Ugashik Setnet Association SUPPORTS proposal no. 34

We would like to amend the proposal to use to stat areas as well as lat long to describe the area.

The following regulation would become 5 AAC 06.335 (d). (a)In the Ugashik Bay district, no drift gillnet may be operated within 1000 ft of the 18 ft high tide line on all waters **in stat areas 321-20, 321-30, 321-40, and in stat area 321-10 from approximately 57°37.23'N 157°69.95' W south to Smokey Point** during the regulatory season.

The Ugashik Setnet Association SUPPORTS proposal no. 35

Our members have experienced an increase in incidents of drift nets coming into contact with their set nets.

We agree with all the points stated in Proposal #35;

- Safety risks have become more serious as more boats fish shallow waters.
-Setnetters are bearing the brunt of the fisheries change towards more jet boats.
-There is a lack of reasonable recourse with enforcement as incidents are too difficult to document.
-Setnetters are the ones who end up with economic loss due to gear entanglements and lost fishing time.

We agree that being able to estimate if a drift net will come within 100’ of the set net is too difficult. It is almost impossible for set netters to document these infractions well enough for

enforcement to have what they need to cite delinquent drift boats. Increasing the distance between the outside end of a set net to a drift net from 100' to 300' will give everyone more leeway, reduce the number of incidences and make it more possible to document the incident so that the regulation is enforceable.

The Ugashik Setnet Association SUPPORTS proposal number 36.

Using long towlines allows drift boats to anchor their nets in the mud in shallow water making them stationary while the boat is out in water deep enough to allow maneuvering and the ability to tow the net off into deeper water so it doesn't go dry.

Ideally this activity would be curtailed by enforcement since it is illegal for a drift net to be stationary. Since there is not enough enforcement to cover all areas, this regulation will help reduce this problem.

The Ugashik Setnet Association SUPPORTS proposal number 37.

Using long towlines allows drift boats to anchor their nets in the mud in shallow water making them stationary while the boat is out in water deep enough to allow maneuvering and the ability to tow the net off into deeper water so it doesn't go dry.

Ideally this activity would be curtailed by enforcement since it is illegal for a drift net to be stationary. Since there is not enough enforcement to cover all areas, this regulation will help reduce this problem.

The Ugashik Setnet Association OPPOSES proposal number 46.
Permit stacking (having two permits in one persons name) was looked at thoroughly by the BOF for the set net fleet in Bristol Bay during recent board cycles and was denied.
The same rational should apply to the drift fleet. We oppose drift net permit stacking.

The Ugashik Setnet Association OPPOSES proposal number 47.

Permit stacking (having two permits in one name) was looked at thoroughly by the BOF for the set net fleet in Bristol Bay during recent board cycles and was denied.
The same rational should apply to the drift fleet. We oppose drift net permit stacking.

UGASHIK TRADITIONAL VILLAGE
UGASHIK, ALASKA

2525 Blueberry Road, Suite 205 · Anchorage, Alaska 99503 Phone (907) 338-7611 · Fax (907) 338-7659
Email: manager@ugashikvillage.com

PC67

November 11, 2022

Marit Carlson-Van Dort, Chair
Alaska Board of Fisheries
dfg.bof.comments@alaska.gov
Submitted via online portal & email

Dear Chairman Carlson-Van Dort,

I am writing to you on behalf of Ugashik Village Traditional Village.

The commercial fishing industry in the Village of Ugashik has had active participants in the fishery and have fished the Ugashik River since the late 1930's. The Ugashik Traditional Village Council is in strong support of this proposal and feel that if passed, it would be in the best interests of the fishery, its participants, and the State of Alaska.

Background: For the past four fishing seasons, an extensive mudbank has developed along the inshore end of the area where we fish and set our gillnets. This mudbank impedes us from fishing to our best potential. As a result we have less functional fishing time. Of course, this impacts the capacity of fish we can harvest. Currently our offshore distance limitation is six hundred feet from the 18-foot-high tide mark. Due to the mudbank, this limitation precludes us from fishing the full extent of our allowable gear, and diminishes the efficiency of the fishing time we're allowed. As a result, we are losing an estimated 20% of our harvest potential due to less hours of available fishing time because our nets are not in the water.

In 2016 the BOF adopted the "Criteria for Board Deliberations on Commercial Set Gillnet Proposals Impacted by Coastal Erosion" (2016-238-FB) which outlines the criteria that the board will consider and weigh when deliberating on a proposal related to set gillnet sites impacted by coastal erosion. We feel that our situation in Ugashik Village clearly fits Criteria #1 which states that "*issues that arise from land that has either eroded or accreted through natural or artificial causes contiguous to the leasehold*" need to be taken into consideration when the Board deliberates on these types of situations.

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PC67

Proposal 33: To address this issue, we would like to propose that the maximum offshore distance be increased from 600 feet from the 18-foot high tide mark to 800 feet from the 18-foot high tide mark. Increasing the offshore distance will enable the set gillnets in Ugashik Village to fish more effectively by allowing us to meet the historic amount of time that our nets can be in the water, and determined by the tides of the day.

The eleven sites currently fishing in this area would all have the ability to fish farther offshore negating any allocative effects potentially arising from this solution. This is an area that is only open to set gillnets, drift gillnets are not a legal type of gear. At the time of the submittal of this proposal ten out of the eleven sites concur that the maximum offshore distance should be amended by the board to 800 feet from the 18-foot high tide mark.

Feel free to contact me directly should you have any questions.

Sincerely,

Steven Alvarez
Tribal Administrator/Manager
Ugashik Traditional Village
907.338.7694 Direct
manager@ugashikvillage.com

PC68

Name: David Vardy

Community of Residence: Stanwood

Comment:

Proposal 40: Strongly Opposed. Drift fishermen would be losing the ability to fish the bank in that area as it would be littered with set net cans and buoys and anchors. Drifters should not lose any additional beach opportunities under any circumstances.

Proposal 42: Strongly Opposed. Repealing the D/Dual regulation would create a much larger carbon footprint for the fishery and likely reduce fishing time as there would be much more net in the waters of Bristol Bay quickly absorbing district fish build-up. The Nushagak suffers foregone harvest issues due to allocation management rather than a lack of nets in the water. Imagine the 2022 run in the Nushagak with even more vessels pushing the south line out to even father than .5 NM OVER the district line due to congestion with the current lack of trooper enforcement because that's exactly what adding boats and nets would do under the same circumstances. Bristol bay has become a much more tame fishery with the D/dual regulation. Repealing it would result in 80's/90's era recklessness and lawlessness.

The author of proposal 42 also notes that the implementation of the D/Dual regulation was dude to 35-40 cent prices that fishermen received for their catch over 20 years ago in the years 2000-2001. It should be noted that in 2015, our processors graced us fishermen with a 50 cent base price. In 2020 we were again presented with a low base price of 70 cents. When we experience price crashes in the bay, it should be noted that when calculated for CPI the figures from 2000 to 2015/2020 are not far off. The argument against the Dual permit regulation when correlated with ex-vessel price is a moot point and the author of this proposal clearly has not considered the ramifications nor have they completed their due-diligence.

The author of proposal 42 should have taken some time to compare the limited entry to the system that is in place in Washington State where the crab buyers own too many permits and you are actually in many cases forced to lease from them AND sell to them under stipulations of the lease.

Proposal 44: Strongly Opposed due to being poorly written and for the same reasons as stated above in responses to Proposal 42.

Proposal 45: Strongly Opposed. This particular proposal makes zero sense and would be impossible to adapt to the overwhelmingly successful management structure that most of our biologists have implemented over the last boon of 50+ million fish runs.

Proposals 46 AND 47: Strongly Approve. Every Dual vessel removes 50 fathoms of gear from the waters of Bristol Bay per Dual boat. This improves our carbon footprint and sets a clear example of our fisheries stance on keeping the waters of Bristol Bay Clean in our long going battle against Pebble Mine.

It should also be noted that the crews benefit greatly from D/Dual vessels which if I am not mistaken, was one of the reasons for original implementation. Many dual permit holders jump onto vessels after negotiating a lease fee AND a crew share percentage. The non permit holding deckhands benefit from a higher vessel gross which in turn rewards them with a larger payday if one believes that a Dual boat brings in a higher catch which I am sure we can all agree on and in all likelihood back up with CFEC data.

I completely agree with the proposer(s).

Proposals 49 & 51-55: Strongly Agree with the proposals and urge the board to approve one of these measures. It is quickly becoming the wild wild west in the late season when the SOA withdrawals the trooper enforcement from the fishery. This is the highest valued fishery in the state and we can't depend on our enforcement to be adequately funded or given clear orders on what we the fishermen require to protect our interests when harvesting salmon in the latter parts of July every season.

The clear and rational solution is to remove the line fishery from the equation once these east side districts have met their escapement goals. It is a very simple set of proposals and the board can pick and choose their favorite form the hand-full of variants which have been presented to them.

Every participating vessel should be able to fish the east side districts without battling an invisible line when the enforcement is gone and the lines are run by literal gangs of boats (some numbering close to 20 vessels) that just immediately cork off anyone that interrupts their mafia style approach to bullying and upping the risk associated with the reward by simply setting over the line further and further. This is a massive issue that needs to be addressed immediately and the board has the perfect opportunity to fix one of the greatest problems this fishery currently faces with respect to inclusion and opportunity for all fishers.

With regard to fish taxation in respect to the proposals and the individual districts, I believe it would be easiest to simply tax the resource based on tender delivery locations within the river systems as normal and perhaps even restrict deliveries to the existing terminals (within district boundaries). I can't imagine for instance, that someone fishing in Egegik would run to Naknek to deliver their fish, however, I could imagine the opposite in order to avoid a chum by-catch on their fish ticket. A simple fix for this or any other trickery associated with the worry of altered resource taxation would be to use historical catch/tax data for the previous 5-10 years in each district in order to develop a baseline on the tax averages for late season fishing which would allow all cities to receive their typical fish taxes based on share of catch.

These proposals will greatly benefit everyone that fishes the east side in the late season. Drifters will be able to efficiently fish the beach lines outside of the terminal where set netters leave their screw anchors attached to un-lighted corks even long after they have quit fishing for the season (North line EGK all of the way to Coffee Pt.). This is an issue that I will address in the next round of proposals) which are a navigational hazard as well as a hinderance to anyone that wants to fish shallow without causing hundreds if not thousands of dollars of damage to their gear.

PC69

Name: Linda Vardy

Community of Residence: Stanwood Wa

Comment:

43 & 44 strongly oppose

47,48,49,51,52,53,54,55 strongly support

PC70

Name: Timothy Vardy

Community of Residence: Stanwood , Wa.

Comment:

43 44 strongly oppose

47 48 49 51 52 53 54 55 Strongly support

Chair Carlson-Van Dort and Members of the Board,

My name is Erik Velsko and I have been a permit holder in the Bristol Bay drift gillnet fishery since 2005, fishing a leased vessel my first season until purchasing my own in 2006. I am a lifelong Alaskan that has participated in many state and federal fisheries over the last twenty years. The Board has a number of proposals on the table for the Bristol Bay Finfish cycle and my support and opposition is as follows:

I would like to support proposals 36, 37 and 38 for Bristol Bay Finfish listed under the Gear Specifications and Operations; Vessel Specifications and Operations.

The Bristol Bay drift gillnet fishery has changed significantly over the last several seasons with an explosive growth of shallow-draft jet boats. As the shallow-water aspect of the fishery has further developed, stakeholders have noticed changes in fishing patterns and styles. Currently, the Bristol Bay drift fishery has no maximum towline length. Increased competition in shallow water has created a minority of vessels using excessively long towlines to execute their fishing operations. It is not uncommon to see vessels with towlines over 1000' or more.

Proposals 36, 37 and 38 seek to reign in the unlimited towline length, and create some stability in the current regulations. Proposals 36 and 37 call for a maximum length of 100' while proposal 38 calls for a maximum length of 150'. In some instances, longer towlines may be warranted in the Bristol Bay drift fishery in heavy weather or when the tidal conditions are such that a vessel needs the extra length in towline to transit to deeper water and retrieve his/her net. I believe the reasonable number falls somewhere between 100'- 300'. The Board may need to use their own discretion in arriving at a maximum towline length based on public testimony and other comments. Standard units of measurement of shackles of fishing gear in the Bristol Bay fishery are 25 fathoms, 37.5 fathoms and 50 fathoms, and the Board may wish to base maximum towline length on one of these units.

The three main problems the Bristol Bay fishery has experienced with the allowance of an unlimited towline length are grounds pre-emption, safety and quality of fish. The footprint of a vessel with a full 150 or 200 fathoms coupled with a towline in excess of 1000' takes up a disproportionate amount of fishable grounds as vessels fishing around them must stay clear of the 2000' feet of area that the long towline, the net and the vessel encompass. Furthermore, the use of excessively long towlines exacerbates the act of anchoring drift gillnets in shallow water, and allowing the vessel to transit to deeper water while the net is stationary. Anchoring of a drift gillnet on the bottom is already a violation, and adoption of a maximum towline length would help aid in remedying this reality.

There is a significant safety factor to be considered when excessively long towlines are employed by vessels. Generally, small size line (3/8"-9/16" high tensile strength line) is used in order to be accommodated on a gillnet drum for these towlines. When a vessel is 800'-1200' from his/her net it can be extremely hard for vessels traveling and/or fishing in the vicinity to see where the towline and net are. The pace of the Bristol Bay salmon fishery lends itself to

long hours and tired vessel operators, and it's only a matter of time before serious injuries will result from a transiting vessel close-lining a long towline that is difficult to see in poor visibility.

The last problem to note is that the use of an excessively long towline perpetuates poor quality of fish. The fishing method used while employing the use of a long towline seeks to anchor the net shallow and let the net accumulate with fish while the vessel maintains enough draft to stay afloat. The net is then towed out of the shallow water, and cleared. Although, quality concerns don't necessarily arise as issues that the Board address, I believe it still warrants mentioning and must be taken into consideration.

I would like to also support proposals 49-54 in regards to a General District Salmon Management Plan listed under Registration and Re-registration; Time and Area; Area and District Descriptions. There are a few different ways to structure a general district and I believe the Board has enough information from previous Board action and current cycle proposals to make an educated decision. When escapement goals are met in the eastside districts it only makes sense to relax the regulatory lines and allow the fleet to spread out to maximize harvest in the late season and help in curbing over-escapement of river systems.

I would like to support Proposal 55 in regards to aligning the Naknek Section southern boundary line with Naknek-Kvichak District southern boundary line. On any given season there are a number of vessels that confuse the two lines as there are regularly Naknek only and Naknek/Kvichak openings during the same day.

I would like to oppose part (b) of Proposal 35 (5 AAC 06.335) in regards to extending the offshore distance between operation of set and drift gillnet gear from 100' to 300'. This aspect of Proposal 35 seeks to push the drift gillnet fishermen further outside of historically productive areas. In certain areas of Bristol Bay there are steeper sloping banks that lend themselves to productive and legal drift gillnet fishing. Increasing the offshore distance between set and drift gillnet gear will only increase the potential for over-escapement, and erode access to historic drift gillnet fishing grounds.

I want to thank the Board for their time and commitment in managing the productive Bristol Bay salmon fishery.

Regards,

Erik Velsko

PC72

Name: pat vermillion

Community of Residence: Dillingham, Ak

Comment:

I approve of measures that encourage a healthy King Salmon and Chum Salmon escapement on all Bristol Bay Waters. We cannot afford to risk losing our King and Chum salmon, which are our current trends. It would appear that proposal 11,12, and 13 offer more protections for these salmon to reach their escapement. If the board feels that this would help protect our salmon runs then I approve of 11, 12, and 13.

I approve of proposal 18. The use of salmon eggs for bait, or chumming is a bad precedent. It causes increased catch rates, and deep hooked fish of both salmon and fish predators, that correlates to a higher sport fishing impact on our endangered King salmon. This would also outlaw chumming with eggs throughout Bristol Bay which would be fantastic. Chumming alters migration patterns of egg predators (trout, dolly varden, char, grayling), drastically increases catch rates of egg predators, affects other fisherman not using eggs in the area, and challenges the concept of "fair chase". Fisherman are also introducing foreign eggs into the fisheries, a possible route for disease to spread between rivers. Anyone who has seen a rainbow trout or dolly varden caught on a 3/0 king salmon hook covered in eggs knows that it kills these smaller fish.

I approve of proposal 20 mostly because of the single hook barbless aspect as it reduces our impact on our fisheries. I am not opposed to gear fisherman. If I could rewrite this I would get rid of the "fly only" portion of this proposal.

I strongly disapprove of proposal 28. These fisheries close before King salmon start to spawn on the Nushagak, so there is no "excess amounts of pressure on the spawning areas for Chinook salmon". The Upper Nushagak, and Nuyakuk Rivers see extremely light King salmon fishing pressure, but it is still very important to our sport fisherman. Right now these mentioned areas are zones where fisherman can fish without the crowds of the lower Nushagak. If you close these areas you will concentrate the fisherman even more as they will have no choice to fish with the crowds, or just not come to Alaska. (Our knowledge does not include the Mulchatna so the above comments are for the Nuyakuk and the small section of the upper Nushagak mentioned in this proposal. This is our home water (Nuyakuk) and we fish it daily for trout, and for a very limited amount of salmon fishing. This proposal would have a drastic affect on our operation).

Proposal 28 is not a management tool as the impact is so small, our guess from our experience would be maybe 20-30 Kings are caught annually on the Nuyakuk and upper Nushagak zones. All with single hook no bait operations, and no harvest. If we need to protect the King Salmon please do it drainage wide, or pick a tool that will be more effective.

I approve of proposal 29. The King run on the Togiak needs to be protected as it has gotten so small. If the board feels like this would help protect the Togiak King run then yes please approve it.

I have spent the last 32 years sport fishing and guiding in Bristol Bay. We run the Royal Coachman Lodge, and Copper River Lodge. We strongly believe the board should manage these fisheries for the long term health of all 5 salmon runs and feel the above comments work towards that goal.

Please email me if you would like more comments.

PC73

Name: Sam Volk

Community of Residence: Anchorage, AK

Comment:

I strongly oppose a few of these proposals. First off, I do not think that the minimum distance between set and drift gillnet gear should be extended. If anything, this just gives set netters an advantage and more room to fish. I think the 100' of clearance should remain the rule. If anything, that rule should be enforced more heavily, but the distance should not be extended.

Second, I disagree with the proposals to limit the length of drift net towlines. Mainly because I do not think it is fair to specifically target portions of the fleet with specific rules. Second, I run a run of the mill prop boat, and often use much more than 100ft of tow line. If it's stormy, we often let out more than 100' and drift on the leeward side of the net. This extra tow line allows us to maintain a safe distance from the net and lower the chance of fouling gear while taking a nap.

Finally, I STRONGLY OPPOSE the introduction of permit stacking. I think the fishery is hard enough to get into for the younger population, or those living in the local area with less economic opportunity. If permit stacking was introduced, I fear all of the permits would migrate towards the highest producers, until all the highest catcher boats owned the permits, and there was no way to buy into a limited entry fishery. Many a deckhand has gotten their start by first buying a permit, saving the extra money they make from a increased crew share, then buying a boat. Permit stacking would create a huge barrier of entry into the fishery.

PC74

Fish Alaska magazine
10421 VFW Rd, Suite 102
Eagle River, AK 99577

11/11/22

RE: Comments on Proposals 18 and 29

To whom it may concern,

This public comment addresses Proposals 18 and 29.

Proposal 18

I object to this proposal because it is overreaching and too generalized. Certain techniques that employ salmon eggs for bait can result in deep hook placement, while others do not. The temporary restriction of salmon eggs as bait is a management practice that can be used in certain occasions when needed, but I object to the ban of salmon eggs as bait as a permanent policy.

Proposal 29

Sport anglers are taking an active role in king salmon conservation on the Togiak River. In my recent 2022 visit to Togiak River Lodge, I witnessed proactive conservation practices: advocating that anglers catch-and-release big kings and especially strive to let all hens go, practicing best catch-and-release practices to help reduce catch-and-release mortality and to employ fishing techniques that reduce mortality. The owners of Togiak River Lodge are doing an admirable job of advocating for king salmon conservation.

I object to this proposal because it puts the onus of conservation on the sportfishing angler only, rather than spread across all user groups. Compared to many popular king salmon fisheries across Alaska, the Togiak experiences very little sportfishing pressure.

If further conservation mechanisms are to be put in place, I would advocate the increase in limits on king salmon from 20 to 28 inches to reduce harvest on big kings.

Thank you for considering my comments.

Respectfully,

Marcus Weiner
Publisher / Founder
Fish Alaska magazine

My name is Geffrey Werning and I am a set net fisherman in the Naknek/Kvichak District. I have fished both the East and West side of the Kvichak and currently hold sites that would be irreparably and permanently harmed by the passage of proposal 40. I currently hold the site lease ADL 231006 and **I would like to oppose Proposal 40.**

This proposal boils down to a deceptive attempt to gain territory and take new fishing grounds. The assumption that there is a problem that needs solved is misleading. When I began fishing on the West side in 2013 there were, and still are, the exact same number of lease holdings in the area being discussed.

1. The current regulation allows for approximately 2.25 miles of territory that is made available by the "shoreward end must go dry at the time of the opening" provision. This allows for the potential of roughly 39 fishing sites available.
2. Only 4 leased sites are being fished each season farther than 1,000 feet out. This leaves 35 net locations open for alternate opportunity. That is 89% of the area made available by the current regulation.
3. The areas available are proven productive by experienced fisherman each year. I have fished the areas said to be virtually un-fishable; there are times this area is far more productive than my own sites. To call the area unproductive or un-fishable is a fabrication. Just because anchors must be employed instead of running lines, it is not rendered un-fishable.

The attached map (referenced from alaska.gov Mapper) shows:

1. Current leases in red boxes.
2. Black line refers to the district boundary at the river mouth.
3. Blue line shows currently underutilized site locations/fishing opportunity.
4. Orange line is the current boundary.
5. Green line is the proposed new territory.
6. All referenced distances and site availability was figured using the measure tool on alaska.gov Mapper and figured based on site spacing defined in the ADF&G regulation book.

The current regulation was a group effort in 1985 involving the Alaska State Troopers, displaced West side set net fisherman and the drifters who traditionally fished the cut-bank on Albert Channel. The silting in and creation of the giant mud flat rendered the fishing sites on the west side un-fishable if adhering to the 1,000 foot regulation. This event occurred in the 1980's not recent years. The troopers helped find a workable solution at the fish board meeting. Using the Un-named Creek as a division line was agreed to be fair for both types of gear. It allows 2.25 miles of fishing opportunity to set net and 2 miles preserved for drift fishing on the bank. It also established a permanent, visible monument to define the boundary.

The mudflat has changed very little since the time of the last regulation change in 1985. This is not conjecture, but first hand knowledge from the last remaining fishermen that was involved in the 1985 modification. The Proposers state that "this section of the district has developed a massive mudflat" as reason for altering the regulation. Please

consider denying this proposal simply on this claim. This concern was addressed in 1985 to correct the exact situation being argued now.

With this understood, the question is, what are the sponsors really looking for? A land grab of the most productive fishing. In recent years, both East side site holders, and new permits to the district moved into the west side. The proposed new territory is easier to fish and is the most premium mile on Albert channel; I would fish there if legally allowed. Many have fished beyond the boundary. Some would heed the rule when informed of the law, but many continued to poach fish beyond 1,000 feet out. This practice of illegal catch has continued into the 2022 season. These fisherman would pass up available and legal fishing to move onto the cut bank.

The fish on the West Side run differently than on the East side. I typically do not see good fishing until the East side has been catching for several days sometimes a week. I do not have the chance to seek "Alternate Fishing Opportunity" on the East side while tending empty nets waiting for fish to show up. To allow this change would accommodate 16 new fishing sites put in priority in front of mine. These fisherman would have the opportunity to fish high water on their East side leases and then fish low water on the West-side when fishing becomes productive. **I do not have anywhere to fish at high water, or any alternative location to fish the East side**. When the fish run the west side, the water current flow is such that fish run close to the bank. My nets (number 3 & 4 in priority from the boundary line) catch about a third as many fish as the gentleman fishing the 1st and 2nd position. Allowing 16 more nets would have a catastrophic effect on the production and value of my long established lease sites. This is further supported when drift fishing is allowed in district. On drift openings, just 5 boats on the bank upstream effectively shuts off my catch. Luckily, they do not fish until escapement goals have been reached toward the later part of the season. 16 set net sites, fished all season, will devastate my ability to provide for my family.

The proposers stated that the current boundary is an "arbitrary reference point". This could not be farther from the truth. It is the result of negations led by Alaska Troopers, drifters and set-netters. It is located at a physical, visible monument that does not require GPS to locate. The suggested change would move the boundary to a spot in no man's land on a long mud flat. In a conversation with Sergeant David Bump (SW Region King Salmon Post), he agreed that there was a problem with fishing over the line. His concern was enforceability due to the ambiguity of only having one point of reference. His suggestion was a "housekeeping Change" adding a second physical point of reference to create a clear "line". Moving the current location from a permanent creek to an arbitrary point on a mud flat would be contrary to his recommendation. Utilizing a second point, such as a line from the current point at the Un-named creek to the Libbyville Dock (Libbyville Dock is already the current boundary of this regulation on the East side) would actually help law enforcement concerns as opposed to make it even more unclear.

The “Graveyard Point” area of the Kvichak section has been restricted by processor limits for as long as I have been fishing. Low draft tenders, capable of servicing the shallow channels around Graveyard are very hard to find. While other areas can catch with no limits, we find ourselves restricted by tender capacity divided equally amongst the number of permits fishing in the area. During peak fishing, it is the norm to pull gear early in the tide because permit limits have been satisfied. A select few fishers in the Graveyard area have pooled effort into groups that have greater capacity to deliver. Their increase in delivery capability has fed the desire for “Alternate fishing opportunity”. By allowing more effort and providing no protection from new permit migration, there will be a certain negative effect on those fisherman not involved in these large co-op style permit pools. Small operations, often represented by local and native fishers would feel the biggest squeeze on an already stressed area.

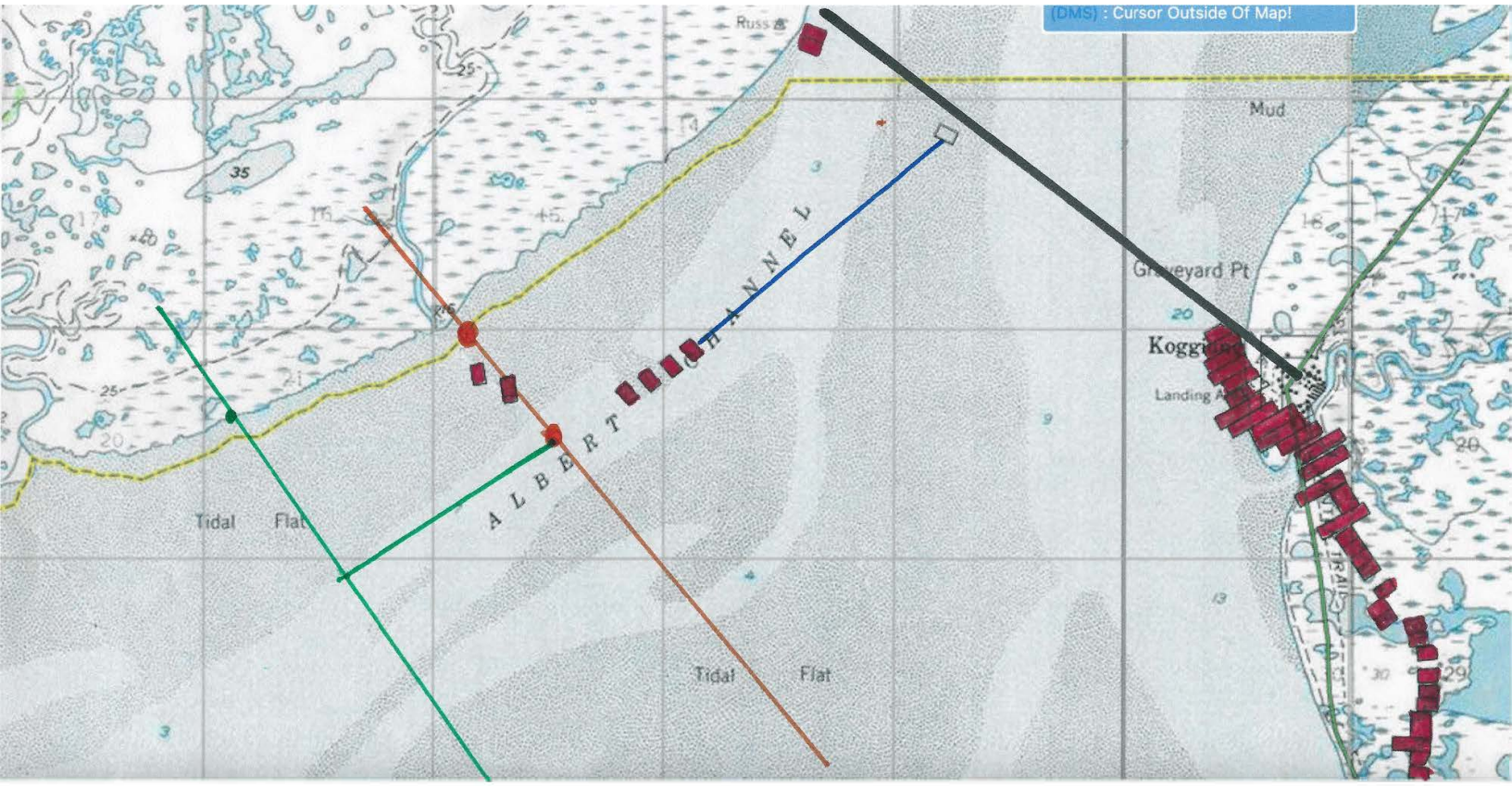
Finally, please consider these summary points:

1. **They are asking for alternate not displaced opportunity.**
2. **There is no current shortage of fishing grounds under current rules.**
3. **There has been no significant change to the topography/mud flat since 1985.**
4. **It creates additional ambiguity, decreasing law enforcements effectiveness.**
5. **It would cripple my ability to provide for myself and my family. Please do not allow regulation changes that would negatively impact the current leaseholders in the area.**

Please vote No! Doing nothing harms no one, voting yes has too many negative consequences!

Thank you for your consideration,
Geff Werning
970.443.2286
gwerning@gmail.com

PC75


(DMS) : Cursor Outside Of Map!
Mud
Graveyard Pt
Tidal Flat
ALBERT CHANNEL
Tidal Flat

PC76

Name: bruce Whiting

Community of Residence: everett,WA

Comment:

I totally support proposal Numbers: 46, 47, 49, 50, 51, 52, 53, 54, 55, 56

PC77

Name: Jack Wilson

Community of Residence: Everett, WA

Comment:

Dual Permitting("D" Permit) since its inception and resultant practice is Inequal Treatment by its creation of an excluded class.

Allowing of D-permitting needs to be immediately eliminated.

No reason other than the argument of vessel availablitity - which the market shows to be a saturated market of available viable vessels created by the influx of new vessels amounting to at least 10 per year the last 5 years, exists that should not justify the repeal of the regulation within one year, and thereby require individual boats for each permit for the 2024 season.

PC78

Name: Kevin Wilson

Community of Residence: Tacoma, Washington

Comment:

Prop 34- I firmly oppose proposition 34. I believe that the premise that some gillneters are ignoring the current regulations requires an increased distance between gear and a near complete ban on gillnetting in shallow water in specifically the Ugashik district is flawed. If gillnetters are allegedly breaking the current laws it would seem more enforcement would be the solution not an expansion of fishing area for setnetters. I believe this proposal is intended to greatly decrease fishing area for gillnetter and provide an unfair advantage to set netters in the Ugashik district. I believe this is not only unfair but also unnecessary. According to the ADF&G 2022 Run Summary, Ugashik set netters harvested 11 percent of the district catch while their allocation is only 10 percent. If they are catching more than they are allocated, I do not see the necessity to grant them special fishing privileges. Additionally, why should Ugashik set netters be entitled to special protections that are not granted to set netters operating in other districts? Dago Creek is an important fishing area for both set netters and gillneters. I believe the current arrangement does require some awareness and caution when operating during fishing periods but is safe and maximized fishing opportunities for both gear types. Some simple cooperation and communication on the water is all that is required to keep Dago navigable and safe. A drift net ban is completely unjustified.

Prop 35- I firmly oppose prop 35. Again, I think that if the alleged problem is that driftnetters are not adhering to the 100ft rule then the solution should be more enforcement focus on this issue not an expansion of the distance. As the proposal says there have only been 8 citations given during the last 5 years, which does not seem to indicate this is a regular occurrence. If enforcement makes it more of a priority and citations for such offenses increases dramatically then perhaps a change in the rules is warranted but to preemptively make a rule change which eliminates so much potential fishing area for one gear type seems premature and unjust. If it is indeed a safety issue that would indicate that the set netter is very close to their net and should be able to capture/report the incident. I completely understand and support the current buffer zone. Set netters should not be impeded by gillnets and I think the current regulations support that as is with no increase necessary.

Prop 36-38: I oppose proposition 36-38. I believe that limits on towline length are unnecessary at this time. Fishing in shallow water, often on ebbing tides, is part of the Bristol Bay fishery. Allowing fishermen the ability to determine the length of their towlines allows them to prevent them from running aground with their net out which is both illegal and dangerous. Additionally, it allows deeper draft boats the ability to safely fish in shallow water that would only be available to jet boats if the proposed towline limits were enacted. I believe we already have several regulations that punish misuse of a long towline ie anchoring the net or going dry with your net out so additional regulation is unnecessary.

Prop 42-45: I oppose the elimination of the D permit regulation. I believe the D permit helps all participants in the fishery by removing nets from the water. Even if you choice not to fish a D permit you are benefiting because there is less boats on the water and less competition. Given how profitable the fishery has been recently a removal of the D system would cause a huge increase in the number of boats fishing and amount of gear in the water.

Prop 46: I am in favor of allowing permit stacking. I think that the more boats fishing with D permits the more profitable the fishery is for all participants. It is much like a permit buyback but it is solely funded by the fishermen wishing to fish an additional 50f of gear.

Prop 49-54: I am in favor of opening the Eastside general district management area after all rivers reach their upper end escapement goals. I think that if the state cannot afford to enforce the boundaries late season, which is currently what is happening, it creates a terrible situation that only benefits a few fishermen that have no problem breaking the law. It puts everyone else at a disadvantage for no reason. As long as the fish taxes are accurately collected and the rivers have reached their goals I see no downside to this rule change. I strongly support it and think it would make for a much more equitable and fair end of the season.